

AllFusion™ Endeavor® Change Manager

Packages Guide
4.0



Computer Associates®

SP1
ENPKG400

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Chapter 1. Package Overview

A package is a set of Endeavor actions that may require approval before being executed. You create a package by creating SCL specifying actions to be performed against elements. The SCL in a package must be explicit. Wildcarding is NOT allowed in any SCL contained within a package.

1.1 Documentation Overview

This manual is part of a comprehensive documentation set that fully describes the features and functions of Endeavor and explains how to perform everyday tasks. For a complete list of Endeavor manuals, see the README file.

The following sections describe documentation and product conventions.

Note: Throughout this book any references to:

- *AllFusion™: Endeavor Change Manager*
- *eTrust™: CA-ACF2*
- *eTrust™: CA-Top Secret*
- *AllFusion™: CA-Librarian*
- *AllFusion™: CA-Panvalet*
- *CONNECT:Direct™ (formerly known as NDM or Network DataMover)*

will simply be referred to as:

- Endeavor
- CA-ACF2
- CA-Top Secret
- CA-Librarian
- CA-Panvalet
- CONNECT:Direct

1.2 Features of Packages

Packages offer the following features:

- You can lock the elements in a package, thereby preventing modification of the element at the source and target of the package action.
- The actions against elements in the package can be validated prior to execution.
- You can require that a package be approved before it can be executed. Approver groups can be defined locally or to an external security product (e.g. Top Secret, RACF and ACF2).
- You can inspect the elements in a package, for security, signout, and synchronization conflicts and source changes that might affect its successful execution. See Chapter 3, "Performing Package Processing in Batch," for information on inspecting packages prior to execution.
- By validating package components, you can prevent elements from being moved until the elements have been assembled, compiled, or linked with current versions of all their dependencies.
- A package can be restarted if it fails during execution. The package is "checkpointed" and, when re-executed, begins at the first action that failed and re-executes the failed actions.
- Package outputs can be backed out (and subsequently backed in) after a package has been executed. See *Option 7: Backing Out/Backing In Package Outputs* for more information.
- Package outputs can be shipped to remote locations. See Chapter 5, "Shipping Package Outputs," for more information.
- Package actions can be secured using the External Security Interface (ESI) or using approver groups.

Note: Refer to the *Security Guide* for additional information about the ESI feature.

- There are exit points before and after each package function, allowing you to customize package processing. See the *Exits Guide* for more information.
- Package functions can be executed in batch mode.

1.3 Package Life Cycle

1.3.1 Overview

There are five steps in the package life cycle:

- Create
- Cast
- Review
- Execute
- Commit

Endevor assigns packages a status at each phase of the life cycle. This section summarizes each step in the life cycle and the status associated with it.

1.3.2 Step 1: Creating the Package

Creating a package involves:

- Identifying the elements to be included in the package.
- Building a file of actions to be performed against the elements.
- Identifying the package as standard or emergency.
- Specifying dates between which the package must be executed.

You can also create a package by reusing an existing package.

After creation, a package has a status of In-edit. You can modify a package as long as it has a status of In-edit.

Phase	Status	Next Action
After Create	In-edit	Cast

1.3.3 Step 2: Casting the Package

Casting a package prepares the package for review and subsequent execution. When you cast a package, Endevor:

- Determines whether approvers have been assigned to the inventory area(s) included in the package.
- Makes sure that the person casting the package has authority to perform the package actions against the package inventory areas.

- Checks the integrity of the package components.
- Makes sure that the package contains the most recent versions of all components.
- Validates lock status, then locks the elements in a package to prevent their modification or inclusion in another package.

A package cannot be edited once it is cast.

Phase	Status	Next Action
Before Cast	In-edit	Cast
After Cast	In-approval (if approval required)	Review
	Approved (if approval not required)	Execute

1.3.4 Step 3: Reviewing the Package

A package must be reviewed if one or more approver groups are associated with the inventory area(s) included in the package. Once a package is in the review phase, only designated approvers can access the package and review its contents.

To be approved, a package must:

- Receive approval from at least the required approvers.
- Receive approval from a quorum of approvers.
- Not be denied approval by any approvers

A local approver group is an approver group which contains approver user IDs defined to Endeavor. An external approver group is an approver group which has no user IDs defined in Endeavor. Instead, the user IDs are defined to the external security packages such as Top Secret, RACF or ACF2. (See Chapter 4, "Approver Groups," for more information.)

1.3.4.1 Example

The approver group PKGQA consists of three approvers. The approver group was established with a quorum size of 2, with one approver required. This means that in addition to the required approver, one of the two remaining members of the approver group must approve the package in order for it to be executed.

Phase	Status	Next Action
Before Review	In-approval	Review

Phase	Status	Next Action
After Review	Approved (if approval granted)	Execute
	Denied (if approval not granted)	Reset and Correct

1.3.5 Step 4: Executing the Package

The package can be either executed online or submitted in batch. The user performing the execution must have the authority to execute the package and also have the authority to perform the actions contained in the package.

The outputs of packages that have been executed can be backed out, backed in, or shipped to remote locations.

Phase	Status	Next Action
Before Execution	Approved	Execute
During Execution	In-execution	
Successful	Executed	Backout, backin, ship, or commit
Unsuccessful	Exec-failed	Correct and re-execute, backout, backin

Note: Endeavor releases element locks during package execution. Each lock is released after the associated action completes successfully.

1.3.6 Step 5: Committing the Package

As mentioned previously, package processing provides you with the ability to backout, and subsequently backin, change packages, if necessary. The BACKOUT/BACKIN option is available only after you have executed a package. All package event information (user, date, and time information pertaining to each step of the package processing procedure), as well as backout/backin data, is maintained with the package until you *commit* the package.

Committing a package simply removes any backout/backin data while retaining package event information. A package should be committed only when you are sure that you will no longer need to back it out or in.

Phase	Status	Next Action
Before Commit	Executed	Commit, Archive
After Commit	Committed	Delete, Reset, Archive

1.4 Package Life Cycle Summary

The package life cycle consists of five steps. A package is **created**, then **cast** and subsequently **reviewed** by the appropriate approvers. When the package is approved, it is **executed** and, when no further modifications are required, the package can be **committed** and optionally archived and deleted.

After a package has been executed, its outputs can be backed out, backed in, or shipped to remote locations.

Endevor provides exit points before and after all package functions.

The table below summarizes ENDEVOR package functions and associated statuses.

If You Do This	This Status	Changes To	Next Action Is
Create package (build, import, copy)	None	In-edit	Modify or cast
Modify package (edit, import, copy)	In-edit	In-edit	Cast
Cast package	In-edit		Review Execute
Successful	In-edit	In-approval	
Approval	In-edit	Approved	Correct and re-cast
No Approval		In-edit	
Unsuccessful			
Review package	In-approval	Approved	Execute Reset and correct
Approved	In-approval	Denied	
Denied			
Execute package	Approved	In-execution	None, backout, backin, or ship
During execution	In-execution	Executed	
Successful			Correct and re-execute
Unsuccessful	In-execution	Exec-failed	
Commit package	Executed	Committed	Delete, Reset, Archive
Backout package	Executed	Executed	None, backin, ship
Backin package	Executed	Executed	None, backout, ship
Ship package	Executed	Executed	None, backout, backin, or commit

Note: At any time during package processing, you can reset a package to In-edit status. You can backout and backin a package as many times as necessary - until you commit the package.

1.5 Name Masking

A name mask allows you to specify all names, or all names beginning with a particular string, to be considered when performing an action.

Name masks are valid on:

- Element names
- System, subsystem, and type names within FROM clauses
- Report syntax
- ISPF panels
- API requests
- Package IDs

Name masks are not valid on:

- Environment names
- Element names in the following situations:
 - When entering a LEVel in a statement
 - When using the MEMber clause with a particular action
 - When building a package

1.5.1 Usage

There are three ways to mask names: by using the wildcard character (*), by using the placeholder character (%), and by using both together.

The wildcard (*) can be used in one of two ways to specify external file names:

- When coded as the only character of a search string, Endeavor returns all members of the search field. For example, if you coded the statement `ADD ELEMENT *`, all elements would be added.
- When coded as the last character of a search string, Endeavor returns all members of the search field beginning with the characters in the search string preceding the wildcard. For example:
 - The statement `ADD ELEMENT UPD*` would add all elements beginning with "UPD", such as `UPDATED` or `UPDATE`.
 - `PKG*` would return all package IDs beginning with `PKG`.

Note: You cannot use more than one wildcard in a string. The statement `ADD ELEMENT U*PD*` would result in an error.

The placeholder (%), which represents any one character in a string, can also be used in one of two ways:

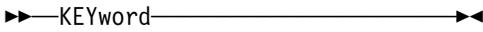
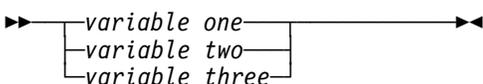
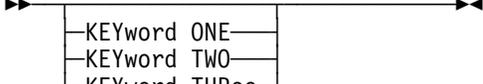
- When coded as the last character in a string, Endeavor returns all members of the search field, beginning with the characters in the search string preceding the placeholder, but which have no more characters than were coded in the search string.
 - If you coded the statement `ADD ELEMENT UPD%`, only those elements with four-character-long names beginning with "UPD" (UPD1 or UPDA, for example) would be added.
 - `PKG%` returns PKGS, PKGB, PKGC, and so on.
- It is also possible to use the placeholder multiple times in a single search string. The statement `ADD ELEMENT U%PD%` would return all elements with five-character-long names that have U as the first character, and PD third and fourth.

The wildcard and the placeholder can be used together, provided that the wildcard appears only at the end of the search string and is used only once. For example:

- The statement `ADD ELEMENT U%D*`, which uses both the wildcard and the placeholder, would add elements with names of any length that have U as the first character, any one character as the second character, and D as the third character.
- `P%G*` returns PKGABCD, POGS, PIGGY, PPG1234NDVR, and so on.

1.6 Syntax Conventions

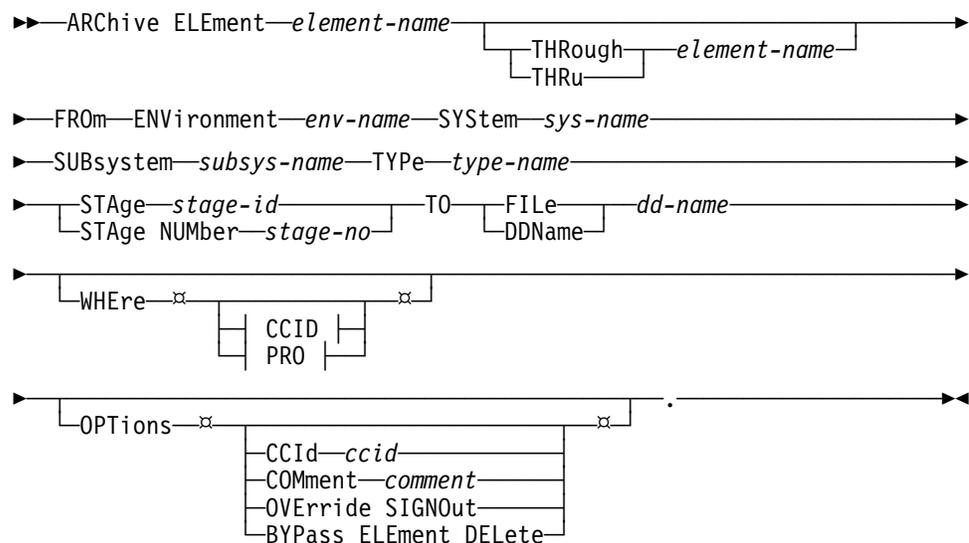
Endevor uses the IBM standard for representing syntax. The following table explains the syntax conventions:

Syntax	Explanation
	Represents the beginning of a syntax statement.
	Represents the end of a syntax statement.
	Represents the continuation of a syntax statement to the following line.
	Represents the continuation of a syntax statement from the preceding line.
	Represents a required keyword. Only the uppercase letters are necessary.
	Represents a required user-defined variable.
	Represents an optional keyword. Optional keywords appear below the syntax line. If coded, only the uppercase letters are necessary.
	Represents an optional user-defined variable. Optional variables appear below the syntax line.
	Represents a choice of required, mutually exclusive keywords. You must choose one and only one keyword.
	Represents a choice of required, mutually exclusive, user-defined variables. You must choose one and only one variable.
	Represents a choice of optional, mutually exclusive keywords. Optional keywords appear below the syntax line.

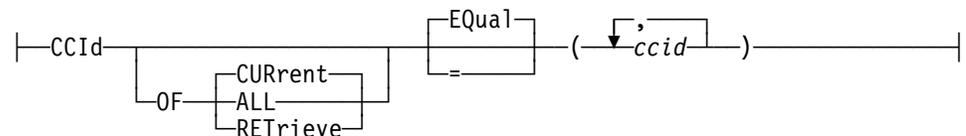
Syntax	Explanation
	<p>Represents a choice of optional, mutually exclusive, user-defined variables. Optional variables appear below the syntax line.</p>
	<p>Represents a choice of optional keywords. The stars (⌘) indicate that the keywords are not mutually exclusive. Code no keyword more than once.</p>
	<p>Represents a choice of optional user-defined variables. The stars (⌘) indicate that the variables are not mutually exclusive. Code no variable more than once.</p>
	<p>Represents a choice of required, mutually exclusive keywords, one of which is the default. In this example, KEYword ONE is the default keyword because it appears above the syntax line.</p>
	<p>Represents a choice of required, mutually exclusive, user-defined variables, one of which is the default. In this example, <i>variable one</i> is the default variable because it appears above the syntax line.</p>
	<p>Represents a choice of optional, mutually exclusive keywords, one of which is the default. In this example, KEYword ONE is the default keyword because it appears above the syntax line.</p>
	<p>Represents a choice of optional, mutually exclusive, user-defined variables, one of which is the default. In this example, <i>variable one</i> is the default variable because it appears above the syntax line.</p>
	<p>Represents a required variable that can be repeated. Separate each occurrence with a comma and enclose any and all variables in a single set of parenthesis.</p>

Syntax	Explanation
	Represents an optional variable that can be repeated. Separate each occurrence with a comma and enclose any and all variables in a single set of parenthesis.
	Represents a variable which must be enclosed by parenthesis.
	Represents a variable which must be enclosed by single quotes.
	Represents a variable which must be enclosed by double quotes.
	Represents a reference to a syntax fragment. Fragments are listed on the lines immediately following the required period at the end of each syntax statement.
<p>FRAGMENT:</p>	Represents a syntax fragment.
	Represents the period required at the end of all syntax statements.

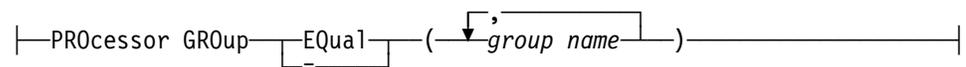
1.6.1 Sample Syntax Diagram



CCID:



PRO:



1.6.2 Syntax Diagram Explanation

Syntax	Explanation
ARChive ELEment <i>element-name</i>	The keyword ARChive ELEment appears on the main line, indicating that it is required. The variable <i>element-name</i> , also on the main line, must be coded.
THRough / THRu <i>element-name</i>	The keywords THRough and THRu appear below the main line, indicating that they are optional. They are also mutually exclusive.
FRom ENVironment ... TYPe <i>type-name</i>	Each keyword and variable in this segment appear on the main line, indicating that they are required.
STAge <i>stage-id</i> / STAge NUMber <i>stage-no</i>	The keywords STAge and STAge NUMber appear on and below the main line, indicating that they are required, mutually exclusive keywords.

Syntax	Explanation
TO ... <i>dd-name</i>	The keyword TO appears on the main line, indicating that it is required. The keywords FILE and DDName appear on and below the main line, indicating that they are required, mutually exclusive keywords. The variable <i>dd-name</i> also appears on the main line, indicating that it is required.
WHERE clause	This clause appears below the main line, indicating that it is optional. The keyword WHERE appears on the main line of the clause, indicating that it is required. CCID and PRO are syntax fragments that appear below the main line, indicating that they are optional. The stars (⌘) indicate that they are not mutually exclusive. For details on the CCID and PRO fragments, see the bottom of this table.
OPTION clause	This clause appears below the main line, indicating that it is optional. The keyword OPTION appears on the main line of the clause, indicating that it is required. The keywords CCID, COMMENT, OVERRIDE SIGNOUT, and BYPASS ELEMENT DELETE all appear below the main line, indicating that they are optional. The stars (⌘) indicate that they are not mutually exclusive.
CCID fragment	<p>The keyword CCID appears on the main line, indicating that it is required. The OF clause appears below the main line, indicating that it is optional. If you code this clause, you must code the keyword OF, as it appears on the main line of the clause. CURRENT, ALL, and RETRIEVE appear above, on, and below the main line of the clause, indicating that they are required, mutually exclusive keywords. CURRENT appears above the main line, indicating that it is the default. If you code the keyword OF, you must choose one and only one of the keywords.</p> <p>The keywords EQUAL and = appear above and below the main line, indicating that they are optional, mutually exclusive keywords. EQUAL appears above the main line, indicating that it is the default. You can include only one. The variable <i>ccid</i> appears on the main line, indicating that it is required. The arrow indicates that you can repeat this variable, separating each instance with a comma. Enclose any and all variables in a single set of parenthesis.</p>

Syntax	Explanation
PRO fragment	The keyword PROcessor GROUp appears on the main line, indicating that it is required. The keywords EQual and = appear on and below the main line, indicating that they are required, mutually exclusive keywords. You must include one. The variable <i>group name</i> appears on the main line, indicating that it is required. The arrow indicates that you can repeat this variable, separating each instance with a comma. Enclose any and all variables in a single set of parenthesis.

1.6.3 General Coding Information

In coding syntax, you must adhere to certain rules and guidelines regarding valid characters, incompatible commands and clauses, and ending statements. In addition, knowing how the SCL parser processes syntax will help you resolve errors and undesired results. The following sections outline these rules and guidelines.

1.6.3.1 Valid Characters

The following characters are allowed when coding syntax:

- Uppercase letters
- Lowercase letters
- Numbers
- National characters
- Hyphen (-)
- Underscore (_)

The following characters are allowed when coding syntax, but must be enclosed in either single (') or double (") quotation marks:

- Space
- Tab
- New line
- Carriage return
- Comma (,)
- Period (.)
- Equal sign (=)
- Greater than sign (>)
- Less than sign (<)

- Parenthesis ()
- Single quotation marks
- Double quotation marks

A string containing single quotation marks must be enclosed in double quotation marks. A string containing double quotation marks must be enclosed in single quotation marks.

To remove information from an existing field in the database, enclose a blank space in single or double quotation marks. For example, the following statement removes the default CCID for user TCS:

```
DEFINE USER TCS  
DEFAULT CCID " ".
```

The characters "*" and "%" are reserved for name masking. See the section "Name Masking" earlier in this chapter for more information.

1.6.3.2 Incompatible Commands and Clauses

The following commands and clauses are mutually exclusive:

- THROugh and MEMber clauses within any action except LIST
- Endeavor location information (environment, system, subsystem, type, and stage) and data set names (DSName)
- File names (DDName) and data set names (DSName)
- The stage id (STAge / STAge ID) and the stage number (STAge NUMBER)
- The SET TO Endeavor location information and the SET TO MEMber clause

1.6.3.3 Ending A Statement

You must enter a period at the end of each statement. If no period is found, you receive an error message and the job terminates.

1.6.3.4 SCL Parsing Information

- The SCL parser does not look for information in columns 73-80 of the input. Therefore, be sure that all relevant information is coded in columns 1-72.
- The SCL parser does not catch duplicate clauses coded for an SCL request. If you code the same clause twice, SCL uses the Boolean "AND" to combine the clauses. If the result is invalid, you receive an error message.
- If you enter an asterisk (*) in column 1, the remainder of the line is considered a comment by the SCL parser and is ignored during processing.
- Any value found to the right of the period terminating the SCL statement is considered a comment by the SCL parser and is ignored during processing.

Chapter 2. Processing Packages in Foreground

2.1 The Package Options Menu

Use the Package Options Menu to select each step of the package processing procedure. For example, you might use this menu to select the CREATE/MODIFY option, then return to the menu again to select the EXECUTE or SHIP option. This section tells you how to use this menu to select a processing option. The sections that follow describe eight of the options in detail. Shipping Package Outputs discusses Option 6, SHIP PACKAGE, in detail.

2.1.1 Step 1: Accessing the Package Options Menu

To begin the package processing procedure, select option **5**, PACKAGE, from the Primary Options Menu and press ENTER. The Package Options Menu appears.

```

----- Package Foreground Options Menu -----
Option ==>
 1 DISPLAY      - Display Package Information
 2 CREATE/MODIFY - Create or Modify Package
 3 CAST        - Prepare Package for Review
 4 REVIEW      - Approve or Deny Package
 5 EXECUTE     - Submit or Execute Package
 6 SHIP        - Ship Packages
 7 BACKOUT     - Perform Backout or Backin Processing
 8 COMMIT      - Clear Backout Information
 9 UTILITIES   - Reset, Delete, or Export Package
   Package ID ==>
Limit selection list options. These are used by the DISPLAY
and UTILITIES functions:
  In-Edit..... Y           In-Execution... Y
  In-Approval... Y       Executed..... Y
  Denied..... Y          Committed..... Y
  Approved..... Y        Enterprise Pkg.. A

```

2.1.2 Step 2: Select a Package Processing Option

Type the number of the option you want to use in the OPTION field. These options are summarized below. The sections that follow describe each option in detail.

Option	Used to:
1 Display	Display information about a package.

Option	Used to:
2 Create/Modify	Build, modify, import, or copy a package. <ul style="list-style-type: none"> ▪ BUILD allows you to create the action (SCL) requests to be performed. ▪ EDIT allows you to edit the SCL requests using the ISPF edit function. ▪ IMPORT allows you to create a package using SCL created outside of Endeavor or through batch processing. ▪ COPY allows you to create a package by copying the SCL from an existing package.
3 Cast	Cast the package, which freezes the data and prevents further changes at that time.
4 Review	Review the package and approve or deny it.
5 Execute	Execute the package, in foreground or batch.
6 Ship	Ship package outputs to remote locations. See Shipping Package Outputs, for information on the SHIP option.
7 Backout	Backout the change package to restore the executable and output modules to the state they were in prior to execution. You can reverse the backout option by using the backin option.
8 Commit	Commit the package, removing all backout/backin data, but retaining package event information.
9 Utilities	Reset, export, or delete the package. <ul style="list-style-type: none"> ▪ RESET allows you to set the status of a package back to in-edit, so the package can be modified. See the description of package status later in this section for more information. ▪ EXPORT allows you to move the package from Endeavor to an external file. ▪ DELETE allows you to delete the entire package from Endeavor.

2.1.3 Step 3: Select a Package

Next you must select the package with which you want to work. You can do this by:

- Leaving the PACKAGE ID field blank. When you press ENTER:
 - A Create/Modify Package panel appears with a package ID assigned, if the GENPKGID exit point has been enabled. See the *Exits Guide* for information on the GENPKGID exit.

- Otherwise, the following prompt panel will be displayed:

```

----- Package ID Prompt -----
COMMAND ==>

*****
*
* You omitted the package id from the previous panel. A significant *
* delay may occur if you do not limit the package selection list. *
*
*
* If you wish to return to the previous panel to make a package id *
* specification, enter the END command. *
*
* Otherwise, press the ENTER key to continue.. *
*
*****
    
```

- Typing an asterisk (*) or name mask in the PACKAGE ID field. When you press enter, a Package Selection list appears.
- Typing a package ID in the PACKAGE ID field. When you press ENTER a Create/Modify Package panel appears for that package ID.

For options **1** (DISPLAY) and **9** (UTILITIES), you can display a Package Selection List that is limited to packages with a particular status. To do so, tab to the status types listed under the heading "LIMIT SELECTION LIST BY PACKAGE STATUS:".

To include a status type, type **Y** next to the status name. To exclude a status from the Package Selection List, type **N** next to the status name. Package status names are defined in Chapter 1, "Package Overview."

Note: Please note that the ENTERPRISE_PKG defined on the Package Foreground Options Menu can be used to limit the package selection list. The following values are valid for this scenario:

- A - Display enterprise and non-enterprise packages in the list.
- E - Limit the list to enterprise packages.
- X - Exclude enterprise packages from the list

2.1.3.1 How Endeavor Builds Package Selection Lists

Endeavor determines the content of package selection lists using a two-step process.

1. Endeavor selects all packages with a status that makes them available for the requested action. For example, if you specify the Cast option, Endeavor first selects all packages with a status of in-edit.
2. Endeavor then uses your user ID to further select from this list, based on whether or not the package has been cast.
 - If a package has not been cast, it is included on the list if you created it, or if it is sharable.

- If a package has been cast, it is included on the list if you are an approver for the package.

Endevor performs this two-step processing both before displaying the list, and after you either select a package or exit the selection list. Exit programs can be coded for either the before-list or after-list processing. See the *Exits Guide* for more information.

2.1.3.2 The Package Selection List

```

DISPLAY ----- PACKAGE SELECTION LIST ----- ROW 1 OF 3
COMMAND ==>                                     SCROLL ==> PAGE
  D - Display Package                               S - Select Package
PACKAGE      STATUS                                DESCRIPTION
DEMO1        IN-EDIT                               UNLOAD GSTUFF
DEMO2        IN-EDIT                               GENERATING ELEMENTS
DEMO3        IN-APPROVAL                           TESTCONT
DOCTEST1     EXEC FAILED                           EXAMPLE SET
DOCTEST2     EXECUTED                              GENNING EXISTING ELEMENTS
***** BOTTOM OF DATA *****

```

The Package Selection List offers you two options:

- **You can display information about a package.** Type **D** next to the package(s) you want to see and press ENTER. The Package Display panel appears for the selected package.

When you have reviewed the information, press the END key. If you selected more than one package to display, a Package Display panel appears for the next package indicated. When all selected packages have been displayed, the Package Selection List is returned.

- **You can select a package for processing.** Type **S** next to the appropriate package(s) and press ENTER. The panel that appears next depends on the option you selected from the Package Options Menu; that is, if you access the Package Selection List with the CAST option selected, the Cast Package panel is returned when you select a package.

When you have finished, press the END key. If you selected more than one package for processing, the processing panel reappears for the next package specified. When all selected packages have been processed, the Package Selection List is returned.

Press the END key from the Package Selection List to return to the Package Options Menu.

2.2 Option 1: Display Package Information

2.2.1 Overview

The Package Display panel provides information about a package, such as a description of the package, its status, and the like. When you have reviewed the information presented on this screen, you can either press the END key to return to the Package Options Menu or look further at the package contents by selecting one of the panel options.

2.2.2 Procedure

To display information about a package:

1. Type **1** in the OPTION field on the Package Options Menu and a fully or partially qualified name in the PACKAGE ID field. Press ENTER.
 - If the Package Display panel appears, go to Step 2.
 - If a Package Selection List appears, select the package you wish to view, then press ENTER to display the Package Display panel.

```

DISPLAY ----- PACKAGE DISPLAY -----
OPTION  ===>

      blank - Display Action Summary          B - Display Backout Information
      A - Display Approvers                  S - Display SCL
      R - Display Cast Report
      N - Display Package Notes
PACKAGE ID: PGM VALIDATION          STATUS: APPROVED
DESCRIPTION: test component validation
PACKAGE TYPE: STANDARD              ENTERPRISE PKG:  N
SHARABLE PACKAGE: Y                CA-7 SCHEDULED PKG EXEC JOB&COLON.
BACKOUT ENABLED: Y                  DEPENDENT JOB&COLON.
EXECUTION WINDOW FROM: 22NOV02 00:00  TO: 31DEC79 00:00

      USER ID  DATE   TIME
CREATED:      MCCPE01 22NOV02 20:19
LAST UPDATED:
CAST:         MCCPE01 22NOV02 20:26
APPROVED/DENIED:      22NOV02 20:26
EXECUTED:
BACKED OUT:
BACKED IN:
COMMITTED:
ENDEVOR RC:
  
```

2. Review the package information.
3. To return to the Package Options Menu, press the END key.

or

To look further at package contents, type the letter of one of the Package Display Panel options listed at the top of the panel (**A**, **B**, **R**, **S**, or **N**) in the OPTION field. These options are described in the following section.

2.2.3 The Package Display Panel Structure

The Package Display Panel enables you to perform two types of functions:

- You can select one of the options listed at the top of the panel (**A**, **B**, **R**, **S**, or **N**) to examine the contents of a package in greater detail.
- You can review general information about a package by reading the package information displayed on the bottom part of the panel.

The sections that follow describe both the Package Display Panel options you can use as well as the display information that appears at the bottom of the screen.

```

DISPLAY ----- PACKAGE DISPLAY -----
OPTION ==>
  blank - Display Action Summary          B - Display Backout Information
  A - Display Approvers                   S - Display SCL
  R - Display Cast Report
  N - Display Package Notes
PACKAGE ID: WS#057 DB2 TABLE             STATUS: EXECUTED
DESCRIPTION: PACKAGE CHANGE FOR WEBSALES
PACKAGE TYPE: STANDARD                   ENTERPRISE PACKAGE: Y
SHARABLE PACKAGE: Y
BACKOUT ENABLED: Y
EXECUTION WINDOW FROM: 25APR01 11:59     TO: 31MAY01 00:01

CREATED:          USER ID  DATE    TIME
LAST UPDATED:    USER01   25MAY01 12:08
CAST:            USER02   05JUN01 15:32
APPROVED/DENIED: USER02   08JUN01 16:58
EXECUTED:        USER02   08JUN01 17:04     ENDEVOR RC: 0004
BACKED OUT:
BACKED IN:
COMMITTED:

```

2.2.4 Package Display Panel Options

Six action options appear at the top of the Package Display Panel:

- **Blank** -- Enables you to view a summary of package contents.
- **A** -- Enables you to view summary information about the approvers for the package.
- **B** -- Enables you to view backout information for the package.
- **R** -- Enables you to view the contents of the Package Cast Report.
- **S** -- Enables you to view full package SCL.
- **N** -- Enables you to view any notes associated with the package.

The sections that follow describe these options in detail.

Note: You can select only those options that are highlighted. An option is highlighted only when there is related information to display. If the package has not been backed out, for example, the DISPLAY BACKOUT INFORMATION option

cannot be used. Similarly, if no approvers exist for a package, the DISPLAY APPROVERS option cannot be used and will not be highlighted.

2.2.4.1 Package Display Information

The following information fields appear at the bottom of the Package Display Panel and are display-only.

Field	Description
Package ID	The package name.
Status	The current status of this package.
Description	The package description, as defined when the package was created.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: <ul style="list-style-type: none">▪ Y -- The package is sharable and can be edited by anyone.▪ N -- The package can be edited only by its creator.
Backout Enabled	Indicates whether the backout/backin facility has been enabled for this package: <ul style="list-style-type: none">▪ Y -- The backout/backin facility can be used.▪ N -- The backout/backin facility cannot be used with this package.
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in <i>ddmmmyy</i> format) and time (in <i>hh:mm</i> format).
Enterprise Package	Indicate whether this package is part of an Enterprise package created in the AllFusion™ Enterprise Workbench.

Field	Description
Package Event Information	<p>This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked:</p> <ul style="list-style-type: none"> ▪ Created -- Indicates when the package was first built ▪ Last updated -- Indicates when the package was last modified. ▪ Cast -- Indicates when the package was cast ▪ Approved -- Indicates when the package was approved. A package is not considered approved until all requisite approvers (required and optional, meeting the quorum requirements) have approved it. ▪ Executed -- Indicates when the package was last executed, and by whom. ▪ Backed out -- Indicates when the package was last backed out, and by whom. ▪ Committed -- Indicates when the package was committed, and by whom.
ENDEVOR RC	<p>The highest Endeavor return code received when processing this package. This field remains blank until the package has been executed.</p>

2.2.5 Display Action Summary

When you leave the OPTION field blank and press ENTER from the Package Display panel, the Package Element Information panel appears with a summary of the SCL statements contained within the package. The information that appears on the Package Element Information panel varies depending on whether the package has been executed or not.

If the package has not been executed, the Package Element Information panel resembles the panel shown below.

```

DISPLAY ----- PACKAGE ELEMENT INFORMATION ---- ROW 1 TO 5 OF 5
COMMAND ==>                                     SCROLL ==> PAGE
PACKAGE ID: MSEAPPR0003                         TYPE: STANDARD      STATUS: IN-APPROVAL
DESCRIPTION: DEF/CAST/APPR - IMRENV1/PREQA1ME/APPR0003/MSE0001
  S - Display summary      B - Browse element  H - Display history
  M - Element master info  C - Display changes
ACTION      ENV      SYSTEM  SUBSYS  ELEMENT  TYPE  STAGE
__ MOVE     From: IMRENV1  PREQA1ME APPR0003 MSE0002  ASMIMAC MVSTEST1
           To:
           CCID: MSE0001      Comment: TEST PROGRAM
__ MOVE     From: IMRENV1  PREQA1ME APPR0003 MSE0003  ASMIMAC MVSTEST1
           To:
           CCID: MSE0001      Comment: TEST PROGRAM
__ MOVE     From: IMRENV1  PREQA1ME APPR0003 MSE0004  ASMIMAC MVSTEST1
           To:
           CCID: MSE0001      Comment: TEST PROGRAM
__ MOVE     From: IMRENV1  PREQA1ME APPR0003 MSE0005  ASMIMAC MVSTEST1
           To:
           CCID: MSE0001      Comment: TEST PROGRAM
***** BOTTOM OF DATA *****

```

PACKAGE ID, DESCRIPTION, and PACKAGE TYPE are listed, as well as the current STATUS of the package. Each SCL statement is then summarized, providing information on the action to take place, the related Endeavor location information (environment, system, subsystem, element name, type, and stage), and CCID and COMMENT information for each action in the package. The CCID and COMMENT fields appear blank if these values are not specified in the package ID. You can request a more detailed package display by placing the appropriate character to the left of the each action. The table below describes each of the display options.

Note: To view component list information with Endeavor ACM, append an "X" to option S, B, C, or H.

Select This Option	To Display
S	A Summary of Levels panel, showing a summary of change history for the element requested. From this panel, you can select a specific level of the element for display, using option B , C , or H . See the section entitled Summary of Levels Panel, for an example of the Summary of Levels Panel.
M	An Element Master panel, showing Master Control File (MCF) information related to the element requested. See the section entitled Element Master Panels, for an example of the Element Master Panel.
B	An Element Browse panel, showing all statements in the current level of the element, and the level at which each statement was inserted. See the section entitled Element Browse Panel, for an example of the Element Browse Panel.

Select This Option	To Display
C	An Element Changes panel, showing all inserts and deletions made to the element as of the current level. See the section entitled Element Changes Panel, for an example of the Element Changes Panel.
H	An Element History panel, showing all statements in all levels of the element, from the base level through the current level. The display shows the level at which each insertion/deletion occurred. See the section entitled Element History Panel, for an example of the Element Master Panel.

If the package has been executed, the Package Element Information panel will resemble the panel illustrated below:

```

DISPLAY ----- PACKAGE ELEMENT INFORMATION ----- ROW 1 OF 2
COMMAND ==>                                     SCROLL ==> PAGE
PACKAGE ID: DOCTEST2                            STATUS: EXECUTED
DESCRIPTION: GENNING EXISTING ELEMENTS
PACKAGE TYPE: STANDARD
          |----- EXECUTION INFORMATION -----|
          BEGIN                               END
  STMT   NUMBER ACTION ELEMENT   DATE TIME   DATE TIME ENDEVOR RC  PROC RC
  1     1  GENERATE COPY1    05FEB01 11:36 05FEB01 11:36   0000   0000
  2     2  GENERATE HEADER   05FEB01 11:36 05FEB01 11:37   0000   0000
***** BOTTOM OF DATA *****

```

Again, the PACKAGE ID, DESCRIPTION, PACKAGE TYPE, and current STATUS are listed. Each SCL statement is summarized into one line of information that provides the following details:

- STATEMENT NUMBER, as assigned on the Package Execution Reports (which are discussed in the Option 5: Execute the Package section, later in this chapter).
- ACTION that took place.
- ELEMENT name.
- EXECUTION INFORMATION, including the date and time execution began, the date and time execution ended, and the highest Endeavor return code and processing return code resulting from the action processing.

When you are done reviewing the package element information, press the END key to return to the Package Display panel.

2.2.6 Summary of Levels Panel

The Summary of Levels panel appears when you select **S**, Display Summary, from the Package Element Information Panel.

```

----- SUMMARY OF LEVELS ----- ROW 1 TO 5 OF 5
COMMAND ==>> SCROLL ==>> PAGE
      Environment: DEV      System: LGNTLCL      Subsystem: PROCESS
      Element:    C9224420  Type:    PROCESS      Stage:    1
----- SOURCE LEVEL INFORMATION -----
VV.LL  USER  DATE  TIME  STMTS  INSERTS  DELETES  SYNC
01.00  DA2DM47 02JUL01 08:18    48         0         0
01.01  DA2DM47 02JUL01 08:31    36         3        15
01.02  DA2DM47 02JUL01 09:08    36         1         1
01.03  DA2DM47 02JUL01 09:16    36         1         1
01.04  DA2DM47 02JUL01 12:05    37         4         3
***** BOTTOM OF DATA *****

```

The top part of this panel displays identification information about the element. The bottom part provides a summary of the element-level (source-level) history, listing each level of the element in the stage requested and information appropriate to that level.

To request additional information for one or more of the levels listed on the panel, enter an option value to the left of the level(s) about which you want information, and press ENTER. Valid values are:

- **B** -- Element Browse
- **C** -- Element Changes
- **H** -- Element History

Note: If you selected multiple elements for display, press END to view the next Summary of Levels panel.

2.2.6.1 Fields

The Summary of Levels panel fields are described next.

2.2.6.2 Identification Fields

These fields specify the element's Endeavor location. All fields are display-only.

Field	Description
Environment	Name of the current environment.
System	Name of the system under which the element is defined.
Subsystem	Name of the subsystem under which the element is defined.

Field	Description
Element	Name of the element for which the summary information is displayed.
Type	Name of the element type.
Stage	ID of the stage for which element information is shown.

2.2.6.3 Source Level Information Fields

These fields display summary information about all levels of this element. All fields except the SELECTION field are display-only.

Field	Description
Selection (no title)	Used to select an element level for additional information. Type the appropriate code in this column next to each element level for which you want additional information: <ul style="list-style-type: none"> ▪ B -- Element Browse ▪ C -- Element Changes ▪ H -- Element History <p>These options are described for the Display Elements panel earlier in this section.</p>
VV.LL	Version/level for the element at that stage (in <i>vv.ll</i> format).
User	Level user ID.
Date	Level date (in <i>ddmmmyy</i> format).
Time	Level time (in <i>hh:mm</i> format).
Stmts	Number of statements in this level.
Inserts	Number of statements inserted for the level.
Deletes	Number of statements deleted for the level.
Sync	Indicates whether this level was created through synchronization (S) or level consolidation (C).

2.2.7 Element Master Panels

Master Control File information for elements appears on two Element Master panels. The first of these two Element Master panels appears from the:

- Display Elements panel when you select option **M** on the Display Elements panel and uniquely qualify the element you want.
- Element Selection List panel when you request option **M** and DISPLAY LIST = **Y**.

- Confirmation panel when you select option **M** and DISPLAY LIST = **N**.
- Library Selection List panel when you type **M** next to an element level.

To switch between the two Element Master panels, press ENTER. To return to the previous panel, press END.

Note: If you have selected multiple elements for display, press END to view the next Element Master panel.

2.2.8 Element Master Panel (1 of 2)

The first of the Element Master panels is shown next.

```

----- ELEMENT MASTER -----
COMMAND ==> (PANEL 1 OF 2)
ELEMENT: PROCXREF ENV: DOC SYS: ADMIN SUB: STANDARD TYPE: PROCESS
PROC GRP: PROCESS STG: A VV.LL: 01.00 LAST ACTION: ADD
DESCRIPTION: ADDING A PROCESSOR SIGNOUT ID: ZSXLDG1
PKG ID (SOURCE): ADD PKG ID (OUTPUT): ADD
LOCKED FOR PKG: NEWPACKAGE
----- LAST ELEMENT ACTION -----
USERID: ZSXLDG1 DATE/TIME: 10JAN01 37:PR CCID:
COMMENT: ADDING A PROCESSOR ACTION:
NDVR RC: 0000 PROCESSOR: GPPROCSS (GEN) PROC RC: 0000
----- CURRENT SOURCE -----
USERID: ZSXLDG1 DATE/TIME: 10JAN01 15:37 CCID:
COMMENT: ADDING A PROCESSOR DELTA FMT: F
ADD/UPDATE FROM DSN: BST.TRD.SRCE(PROCXREF)
----- GENERATE -----
USERID: ZSXLDG1 DATE/TIME: 10JAN01 15:37 CCID:
COMMENT: ADDING A PROCESSOR DELTA FMT: F
COMPONENT LIST VV.LL: N/A
(Press ENTER for next panel)
    
```

2.2.9 Fields

The fields in the first Element Master panel are described next:

2.2.9.1 Identification Fields

These fields identify the element for which Master Control File information appears on these two panels.

Field	Description
Element	Name of the element.
Env	Environment in which the element is defined.

Field	Description															
Sys	System in which the element is defined.															
Sub	Subsystem in which the element is defined.															
Type	Type to which the element has been assigned.															
Proc Grp	Name of processor group for this element															
Stg	Stage in which this element resides.															
vv.ll	Version and level of this element.															
Last Action	Last action performed against this element.															
Description	Comment provided for the ADD action that created the base level of the element.															
Signout ID	User ID of the person to whom the element is signed out.															
Pkg ID (Source)	ID of package that last affected the source form of this element.															
Pkg ID (Output)	<p>ID of package that created the current generated (or output) form of this element.</p> <p>Backing out and backing in packages can affect the value that appears in this field. For example, if this element is part of two packages, PKG1 and PKG2, the following table shows the affect of four activities involving these packages on the PKG ID (SOURCE) and PKG ID (OUTPUT) fields.</p> <table border="1"> <thead> <tr> <th>Action</th> <th>PKG ID (SOURCE)</th> <th>PKG ID (OUTPUT)</th> </tr> </thead> <tbody> <tr> <td>Execute PKG1</td> <td>PKG1</td> <td>PKG1</td> </tr> <tr> <td>Execute PKG2</td> <td>PKG2</td> <td>PKG2</td> </tr> <tr> <td>Back out PKG2</td> <td>PKG2</td> <td>PKG1</td> </tr> <tr> <td>Back in PKG2</td> <td>PKG2</td> <td>PKG2</td> </tr> </tbody> </table> <p>Backing out PKG2 caused the output form of this element to revert to its state in PKG1. Subsequently backing in PKG2 then caused the output form of this element to revert to its state in PKG2.</p>	Action	PKG ID (SOURCE)	PKG ID (OUTPUT)	Execute PKG1	PKG1	PKG1	Execute PKG2	PKG2	PKG2	Back out PKG2	PKG2	PKG1	Back in PKG2	PKG2	PKG2
Action	PKG ID (SOURCE)	PKG ID (OUTPUT)														
Execute PKG1	PKG1	PKG1														
Execute PKG2	PKG2	PKG2														
Back out PKG2	PKG2	PKG1														
Back in PKG2	PKG2	PKG2														
Locked for Pkg	When the element locking feature has been enabled in the Endeavor Options Table (ENCOPTBL), this field displays the package which has secured (locked) the element.															

2.2.9.2 Last Element Action Fields

These fields provide information concerning the last action performed against the element.

Field	Description
Userid	User ID of person who requested the action.
Date/Time	Date and time of the action.
CCID	CCID specified for the action.
Comment	Comment specified for the action.
Action	Name of the Endeavor action that was performed.
NDVR RC	Return code from action processing. Possible values are: <ul style="list-style-type: none">■ 00--When the action executed successfully.■ 04--When a warning message is issued before a processor is invoked. This can occur, for example, when you specify <code>OVERRIDE SIGNOUT</code> on an action, or add a member with no source changes.■ 08--When regression percentage exceeds the limit specified on a type definition, and the default severity of <i>C</i> is in effect.■ 12--When the processor return code is greater than the <code>MAXRC</code> for any step in a processor, or when there is an error in action processing before or after invoking a processor.■ 16--When an abend occurs.
Processor	Name of processor invoked by the action followed by the processor type - "MOVE" or "GEN" in parentheses.

Field	Description
PROC RC	<p>Highest return code from the last execution of the named processor.</p> <p>The message <code>"*FAILED*"</code> appears here if the return code for any step in a processor exceeds the MAXRC for the processor. The MAXRC keyword is described in the <i>Extended Processors Guide</i>.</p> <p>The message <code>"*PROC'D?*"</code> appears here if the element has not been generated after being:</p> <ul style="list-style-type: none"> ■ Restored or transferred from an archive data set. ■ Added or updated. <p>When this message appears and the last action is RESTORE or TRANSFER, generating the element assures that the processor information taken from the archive data set is synchronized with current processor outputs.</p> <p>For example, if you deleted the element after it was last archived, the processor output was deleted as well. However, the processor information remained in the archive data set for the element and was restored or transferred with the other element information.</p> <p>If an element has the <code>"*FAILED*"</code> or <code>"*PROC'D?*"</code> message here, the element cannot be moved, and can only be transferred by specifying IGNORE GENERATE FAILED through option 2 on the Batch Options Menu.</p>

2.2.9.3 Current Source Fields

These fields provide information about the current source for the element.

The DELTA FMT field indicates whether the element changes are stored in forward (**F**) or reverse (**R**) delta format. The ADD/UPDATE FROM DSN field identifies the data set from which the element was added.

2.2.9.4 Generate Fields

These fields provide information about the last action run against this element that caused output to be generated.

The COMPONENT LIST VV.LL field identifies the latest version and level of the component list for this element.

2.2.10 Element Master Panel (2 of 2)

To view the second Element Master panel, press ENTER. To return to the previous panel, press END.

```

----- ELEMENT MASTER -----
COMMAND ==> (PANEL 2 OF 2)
ELEMENT: PROCXREF ENV: DOC SYS: ADMIN SUB: STANDARD TYPE: PROCESS
PROC GRP: PROCESS STG: A VV.LL: 01.00 LAST ACTON: ADD
SIGNOUT ID: ZSXLDG1

----- RETRIEVE -----
USERID: DATE/TIME: CCID:
COMMENT:
RETRIEVE TO DSN:

----- BASE -----
USERID: ZSXLDG1 DATE/TIME: 10JAN01 15:37
COMMENT: ADDING A PROCESSOR

----- FROM CA-ENDEAVOR LOCATION -----
USERID: DATE/TIME: ACTION:
ELEMENT: ENV: SYS: SUB: TYPE:
STG: VV.LL:

(Press ENTER for previous panel)

```

2.2.11 Fields

The fields in the second Element Master panel are described next:

2.2.11.1 Identification Fields

See the Identification Fields section for the first Element Master panel for descriptions of the ELEMENT, ENV, SYS, SUB, TYPE, PROC GRP, STG, VV.LL, LAST ACTION, and SIGNOUT ID fields.

2.2.11.2 Retrieve Fields

These fields provide information only when the last action performed against this element was RETRIEVE. Otherwise the fields will be empty.

The RETRIEVE TO DSN field identifies the target data set for the RETRIEVE action.

2.2.11.3 Base Fields

These fields provide information about the base level of this element. They show the user ID of the person who created the base level, the date and time that the base level was created, and the comment that was entered for the ADD action that created the base level.

2.2.11.4 From Endeavor Location Fields

Information displays in these fields when this element has been moved or transferred from another Endeavor location. They show the user ID of the person who requested the MOVE or TRANSFER action, the date and time that the action was performed, and the name of the action (MOVE or TRANSFER).

See the Identification Fields section for the first Element Master panel for descriptions of the ELEMENT, ENV, SYS, SUB, TYPE, STG, and VV.LL fields.

2.2.12 Element Browse Panel

The Element Browse panel displays when you select **B**, Browse Element, from the Package Element Information Panel.

```

BROWSE -- ZSXJMA1.C1#1TMPL.LIST ----- LINE 00000000 COL 001 080
COMMAND ===>                                SCROLL ===> CSR
***** TOP OF DATA *****
*****
**
** ELEMENT BROWSE                                27MAY01 10:53 **
**
** ENVIRONMENT: DEMO          SYSTEM: FINANCE    SUBSYSTEM: ACCTREC **
** ELEMENT:      C1DEMOCB     TYPE: COPYBOOK   STAGE:      QA      **
**
*****
***** SOURCE LEVEL INFORMATION *****
-----
VV.LL SYNC USER   DATE   TIME  STMTS CCID      COMMENT
-----
01.00   ZSXJMA1  16MAR01 18:48    3 C1DEMO
01.01   ZSXJMA1  05MAY01 10:15    5 JAB      DEMO STUFF
GENERATED ZSXJMA1  05MAY01 10:15    5 JAB      DEMO STUFF
RETRIEVED ZSXJMA1  05MAY01 10:11          DEMO RETRIEVAL
%+01      01  SAMPLE-COPYBOOK-RECORD-MODIFIED.
%+01      01  SAMPLE-COPYBOOK-RECORD-MODIFIED.

```

The Element Browse panel displays all the statements in the element level and identifies the level at which each statement was inserted. By default, this panel displays the current level. To browse previous levels, go to the Summary of Levels panel, type **B** next to each level you want to browse, and press ENTER.

Note: If you have selected multiple elements to browse, press END to view the next Element Browse panel.

2.2.12.1 Fields

The Element Browse panel fields are described below:

2.2.12.2 Panel Title and Element Identification Fields

This area displays the panel title, "Element Browse," with the current date and time shown to the right (*ddmmmyy hh:mm*). The following fields identify the element whose source information is displayed. All fields are display-only.

Field	Description
Environment	Name of the environment in which the element is defined.
System	Name of the system under which the element is defined.
Subsystem	Name of the subsystem under which the element is defined.
Element	Name of the element.
Type	Element type.
Stage	ID of the stage in which the element resides.

2.2.12.3 Source Level Information

This area summarizes each element level, up to the level requested. If you are browsing the current level of the element, this area provides information about the last time the element was processed by the generate or move processor, and/or retrieved. All fields are display-only.

Field	Description
VV.LL	Number that identifies the level of the element described on this line (in <i>vv.ll</i> format).
Sync	Indicates whether this level was created through synchronization (S) or level consolidation (C)
User	Level user ID.
Date	Level date (in <i>ddmmmyy</i> format).
Time	Level time (in <i>hh:mm</i> format).
Stmts	Number of statements in this level.
CCID	Level change control ID.
Comment	Level comment.

Field	Description
Generated	<p>Information about the last run of the generate processor for any level of the element. This data includes: the ID of the user who requested the associated action, date and time of the Generate action, number of statements processed, and CCID and comments associated with the action, if any.</p> <p>If the generate processor has not been run for the element, this line reads THIS ELEMENT HAS NOT BEEN PROCESSED.</p> <p>If the element has been restored (or transferred to Endeavor from an archive data set), but has not yet been generated, this line reads PROCESS?? (instead of GENERATED). This indicates that the status of the generate processor information taken from the archive data set during the restore (or transfer) may be out of sync with the current processor output, if any. For example, assuming you deleted the element at the time it was last archived, the processor output was deleted as well. The processor information in the archive data set for the element remained, however, and was restored/transferred along with the other information for the element.</p>
Retrieved	<p>Information describing the last time any level of the element was retrieved. This data includes: the ID of the user responsible, date and time of the RETRIEVE action, and any comments associated with the processing.</p> <p>If an element has been moved, signed in (using the SIGNIN action), restored, or transferred to Endeavor from an archive data set since the last RETRIEVE, any information related to the last RETRIEVE is blanked out and is not reflected here.</p>

2.2.12.4 Element Statements

This area lists each statement in the element as of the level requested. For each statement, it identifies the level at which the statement was inserted (and deleted, as appropriate). A percent sign (%) marks those statements that were inserted as of the level displayed. This is useful in searching for these statements (using the ISPF FIND command, for example). All fields are display-only.

Field	Description
Level (no title) columns 1-7	Level at which the statement shown to the right was inserted into the element (+//). For statements inserted as of this level, a percent sign (%) precedes the level number.
Text (no title) columns 9-n	Text of the statement.

2.2.13 Element Changes Panel

The Element Changes panel displays when you select **C**, Display Changes, from the Package Element Information Panel.

```

BROWSE -- ZSXJMA1.C1#1TMPL.LIST ----- LINE 00000000 COL 001 080
COMMAND ==>                               SCROLL ==> CSR
***** TOP OF DATA *****
*****
**
** ELEMENT CHANGES                               27MAY01 10:53 **
**
** ENVIRONMENT: DEMO          SYSTEM: FINANCE    SUBSYSTEM: ACCTREC **
** ELEMENT: C1DEMOCB        TYPE: COPYBOOK    STAGE: QA      **
**
*****
----- SOURCE LEVEL INFORMATION -----
VV.LL SYNC USER   DATE   TIME  STMTS CCID      COMMENT
-----
01.00   ZSXJMA1 16MAR01 18:48    3 C1DEMO
01.01   ZSXJMA1 05MAY01 10:15    5 JAB      DEMO STUFF
GENERATED ZSXJMA1 05MAY01 10:15    5 JAB      DEMO STUFF
RETRIEVED ZSXJMA1 05MAY01 10:11    5 JAB      DEMO RETRIEVAL
+01      01 SAMPLE-COPYBOOK-RECORD-MODIFIED.
    
```

The Element Changes panel displays all inserts and deletions made to the element between the specified level and its immediate predecessor. By default, this panel displays the current level. To view the changes from previous levels, go to the Summary of Levels panel, type **C** next to each level you want to browse, and press **ENTER**.

Note: If you have selected multiple elements for display, press **END** to view the next Element Changes panel.

2.2.13.1 Fields

The Element Changes panel fields are described next:

2.2.13.2 Panel Title and Element Identification

This area displays the panel title, "Element Changes," with the current date and time shown to the right (*ddmmmyy hh:mm*). The fields that follow identify the element whose change history is displayed. All fields are display-only.

Field	Description
Environment	Name of the environment in which the element is defined.
System	Name of the system under which the element is defined.
Subsystem	Name of the subsystem under which the element is defined.

Field	Description
Element	Name of the element.
Type	Element type.
Stage	ID of the stage in which the element resides.

2.2.13.3 Source Level Information

This area summarizes each element level, up to the level requested. If you are browsing the current level of the element, this area provides information about the last time the element was processed by the generate or move processor, and/or retrieved. All fields are display-only.

Field	Description
VV.LL	Number that identifies the element level described on this line (in <i>vv.ll</i> format).
Sync	Indicates whether this level was created through synchronization (S) or level consolidation (C).
User	Level user ID.
Date	Level date (in <i>ddmmmyy</i> format).
Time	Level time (in <i>hh:mm</i> format).
Stmts	Number of statements in this level.
CCID	Level change control ID.
Comment	Level comment.

Field	Description
Generated	<p>Information to describe the last time the generate processor was run for any level of the element. This data includes: the ID of the user who requested the associated action, date and time of the GENERATE action, number of statements processed, and CCID and comments associated with the action, if any.</p> <p>If the generate processor has not been run for the element, this line reads "THIS ELEMENT HAS NOT BEEN PROCESSED."</p> <p>If the element has been restored (or transferred to Endeavor from an archive data set), but has not yet been generated, this prompt reads "PROCESS??" (instead of "GENERATED"). This indicates that the status of the generate processor information taken from the archive data set during the restore (or transfer) may be out of sync with the current processor output, if any. For example, assuming you deleted the element at the time it was last archived, the processor output was deleted as well. The processor information in the archive data set for the element remained, however, and was restored/transferred along with the other information for the element.</p>
Retrieved	<p>Information to describe the last time any level of the element was retrieved. This data includes: the ID of the user responsible, date and time of the RETRIEVE action, and any comments associated with the processing.</p> <p>If an element has been moved, signed in (using the Signin action), restored, or transferred to Endeavor from an archive data set since the last RETRIEVE, any information related to the last RETRIEVE is blanked out and is not reflected here.</p>

2.2.13.4 Element Statements

This area lists each statement in the element that changed as of the requested level. For statements that were deleted, this area indicates the level at which the previous form of the statement was inserted. All fields are display-only.

Field	Description
Level (no title) columns 1-7	Level at which the statement to the right was inserted into the element (+ <i>ll</i>). If the statement was deleted as of the level being displayed, a second number displays (+ <i>ll</i> - <i>ll</i>). Either the add (+ <i>ll</i>) or the delete (- <i>ll</i>) number references the level displayed.

Field	Description
Text (no title) columns 9-n	Text of the statement.

2.2.14 Element History Panel

The Element History panel displays when you select **H**, Display History, from the Package Element Information panel.

```

BROWSE -- ZSXJMA1.C1#1TMPL.LIST ----- LINE 00000000 COL 001 080
COMMAND ===>                                SCROLL ===> CSR
***** TOP OF DATA *****
*****
**
** ELEMENT HISTORY                                27MAY01 10:54 **
**
** ENVIRONMENT: DEMO          SYSTEM: FINANCE    SUBSYSTEM: ACCTREC **
** ELEMENT:      C1DEMOCB     TYPE: COPYBOOK   STAGE:      QA      **
**
*****
----- SOURCE LEVEL INFORMATION -----
VV.LL SYNC USER   DATE   TIME  STMTS CCID      COMMENT
-----
01.00      ZSXJMA1 16MAR01 18:48    3 C1DEMO
01.01      ZSXJMA1 05MAY01 10:15    5 JAB      DEMO STUFF
GENERATED  ZSXJMA1 05MAY01 10:15    5 JAB      DEMO STUFF
RETRIEVED  ZSXJMA1 05MAY01 10:11
%+01          01 SAMPLE-COPYBOOK-RECORD-MODIFIED.
%+01          03 SAMPLE-COPYBOOK-FIELD1-MODIFIED PIC X(80).
%+01          03 SAMPLE-COPYBOOK-FIELD2-MODIFIED PIC X(80).

```

The Element History panel displays all statements that ever existed in the element, from the base level through the level requested. For each statement, the display identifies the level at which the statement was first inserted and the level at which it was deleted. By default, this panel displays the current level. To view the history of previous levels, go to the Summary of Levels panel, type **H** next to each level you want to view, and press ENTER.

Note: If you have selected multiple elements for display, press END to view the next Element History panel.

2.2.14.1 Fields

The Element History panel fields are described below:

2.2.14.2 Panel Title and Element Identification

This area displays the panel title with the current date and time shown to the right (*ddmmmyy hh:mm*). The fields that follow identify the element for which history information is displayed. All fields are display-only.

Field	Description
Environment	Name of the environment in which the element resides.
System	Name of the system to which the element is defined.
Subsystem	Name of the subsystem to which the element is defined.
Element	Name of the element.
Type	Element type.
Stage	ID of the stage in which the element resides.

2.2.14.3 Source Level Information

This area summarizes each element level, up to the level requested. If you are browsing the current level of the element, this area provides information about the last time the element was processed by the generate or move processor, and/or retrieved. All fields are display-only.

Field	Description
VV.LL	Number that identifies the element level described on this line (in <i>vv.ll</i> format).
Sync	Indicates whether this level was created through synchronization (S) or level consolidation (C).
User	Level user ID.
Date	Level date (in <i>ddmmmyy</i> format).
Time	Level time (in <i>hh:mm</i> format).
Stmts	Number of statements in this level.
CCID	Level change control ID.
Comment	Level comment.

Field	Description
Generated	<p>Information about the last run of the generate processor for any level of the element. This data includes: the ID of the user who requested the associated action, date and time of the GENERATE action, number of statements processed, and CCID and comments associated with the action, if any.</p> <p>If the generate processor has not been run for the element, this line reads "THIS ELEMENT HAS NOT BEEN PROCESSED."</p> <p>If the element has been restored (or transferred to Endeavor from an archive data set), but has not yet been generated, this line reads "PROCESS??" (instead of "GENERATED"). This indicates that the status of the generate processor information taken from the archive data set during the restore (or transfer) may be out of sync with the current processor output, if any. For example, assuming you deleted the element at the time it was last archived, the processor output was deleted as well. The processor information in the archive data set for the element remained, however, and was restored/transferred along with the other information for the element.</p>
Retrieved	<p>Information to describe the last time any level of the element was retrieved. This data includes: the ID of the user responsible, date and time of the RETRIEVE action, and any comments associated with the processing.</p> <p>If an element has been moved, signed in (using the Signin action), restored, or transferred to Endeavor from an archive data set since the last RETRIEVE, any information related to the last RETRIEVE is blanked out and is not reflected here.</p>

2.2.14.4 Element Statements

This area lists each statement that was ever a part of the element (up through the level being displayed), with an indication of the level at which the statement was inserted (and deleted, as appropriate). A percent sign (%) marks each statement that was inserted or deleted after the base level. This is useful in searching for these statements (using the ISPF FIND command, for example). All fields are display-only.

Field	Description
Level (no title) columns 1-7	<p>Level at which the statement shown to the right was inserted (+<i>ll</i>). If the statement was deleted subsequently (at or before the level as of which the history is displayed), a second number displays (+<i>ll-ll</i>). For statements inserted or deleted after the base version, "%" precedes the level number at which the statement was inserted/deleted.</p>

Field	Description
Text (no title)	Text of the statement
Columns 9-n	

2.2.15 Display SCL

When you enter an **S** in the OPTION field on the Package Display Panel, you will see the actions listed in standard SCL format.

```

DISPLAY - PACKAGE ID: DOCTEST2 ----- LINE 00000000 COL 001 080
COMMAND ==>                               SCROLL ==> CSR
DESCRIPTION: GENNING EXISTING ELEMENTS
***** TOP OF DATA *****
GENERATE ELEMENT 'COPY1'
  FROM ENVIRONMENT 'DOC' SYSTEM 'FINANCE' SUBSYSTEM 'AR'
  TYPE 'COPYBOOK' STAGE B
  OPTIONS CCID 'DEMO1' COMMENTS 'GENNING FOR TEST'
  OVERRIDE SIGNOUT
.
GENERATE ELEMENT 'HEADER'
  FROM ENVIRONMENT 'DOC' SYSTEM 'FINANCE' SUBSYSTEM 'AR'
  TYPE 'COPYBOOK' STAGE B
  OPTIONS CCID 'DEMO1' COMMENTS 'GENNING FOR TEST'
  OVERRIDE SIGNOUT
.
***** BOTTOM OF DATA *****
    
```

Press the END key to return to the Package Display panel.

2.2.15.1 Display Approvers

When you enter an **A** in the OPTION field on the Package Display Panel, the Package Approver Groups panel appears.

```

DISPLAY ----- PACKAGE APPROVER GROUPS ----- ROW 1 OF 1
COMMAND ==>                               SCROLL ==> PAGE
  S - Select Approver Group

PACKAGE ID:  QA38APPROV1                STATUS: IN-APPROVAL
DESCRIPTION: TEST EXTERNAL APPROVERS - ENDPRF1
PACKAGE TYPE: STANDARD

* indicates externally defined approvers

ENVIRONMENT  APPROVER  APPROVAL  NUMBER OF  NUMBER  NUMBER
              GROUP    STATUS    APPROVERS APPROVED  DENIED
QA           * ENDPRF1  3         0         0         0
QA           DBAGROUP  2         6         1         0
***** BOTTOM OF DATA *****
    
```

This panel displays the following information about the package.

Field	Description
Package ID	Name of the package.
Status	Current package status.
Description	Description of the package.
Package type	Package type: standard or emergency.
Environment	Environment to which the approver group is defined.
Approver group	Name(s) of approver group(s) associated with the package. An asterisk(*) next to the approver group name denotes an external approver group. Actual approver information is not available for external approver groups.
Approval status	Status of the package. No value appears in this field until the final approver—as defined by the quorum and required/optional criteria—has reviewed and approved or denied the package.
Quorum	Minimum number of approvals required for the approver group.
Number of approvers	Number of approvers in the group.
Number approved	The number of approvers in the group who have already reviewed and approved the package.
Number denied	The number of approvers in the group who have already reviewed and denied the package. If any approver denies a package, that package has an approval status of denied.

2.2.16 Displaying Approver Group Information

If you want to know more about a particular approver group, you can select that group from the Package Approver Groups panel. To do this, tab to the appropriate approver group and type an **S** next to the name. When you press ENTER, the Approver Group Display panel appears.

```

DISPLAY ----- APPROVER GROUP DISPLAY ----- ROW 1 OF 6
COMMAND ==>                                     SCROLL ==> PAGE
PACKAGE ID: DOCTEST2                               STATUS: COMMITTED
DESCRIPTION: GENNING EXISTING ELEMENTS
PACKAGE TYPE: STANDARD
FROM ENVIRONMENT: DOC
APPROVER GROUP: QAGROUP
QUORUM: 1          NUMBER APPROVED: 1          NUMBER DENIED: 0
                APPROVAL
APPROVER  STATUS   DATE   TIME          APPROVAL REQ'D
ZSXLGB1  APPROVED  05FEB01 11:36
ZSXSAM1
ZSXPGM1
ZSXLDG1
ZSXGMG1
ZSXREL2
***** BOTTOM OF DATA *****
    
```

The Approver Group Display panel provides information about an individual approver group. The top part of this panel displays package and approver group information from the Package Approver Groups panel. The lower part of the panel displays information about individual approvers.

Field	Description
Approver	The approver's TSO user ID.
Approval status	Displays the decision of this approver. If the approver has not made a decision, the STATUS FIELD is blank.
Date	The date of the approver's decision.
Time	The time of the approver's decision.
Approval req'd	Indicates whether this approver has been designated as a required approver. If so, REQUIRED appears at the end of the line. Otherwise, this field is blank.

Press the END key to return to the Package Approver Groups panel. You can either select another approver group for display or press the END key again to return to the Package Display panel.

2.2.17 Display Backout Information

When you enter a **B** in the OPTION field of the Package Display Panel you will see the backout information for the package.

```

DISPLAY ----- PACKAGE BACKOUT INFORMATION ----- ROW 1 OF 18
COMMAND ==>>                                     SCROLL ==>> PAGE
PACKAGE ID:      DEMO4
DESCRIPTION:     EXAMPLE SET
PACKAGE TYPE:    STANDARD                          STATUS: EXECUTED
Member          Date   Time  Data Set Name
D4COPY1         02FEB01 12:06 BST.QATEST.COPYLIB2
D4COPY2         02FEB01 12:06 BST.QATEST.COPYLIB2
D4HEADER1       02FEB01 12:06 BST.QATEST.COPYLIB2
D4HEADER2       02FEB01 12:06 BST.QATEST.COPYLIB2
D4PROG1         02FEB01 12:07 BST.QATEST.COPYLIB2
D4PROG2         02FEB01 12:07 BST.QATEST.COPYLIB2
D4PROG3         02FEB01 12:07 BST.QATEST.COPYLIB2
D4XMPL         02FEB01 12:07 BST.QATEST.COPYLIB2

```

This panel details each member that was backed out, the date and time of the backout, and the data set that contains the member. As with the other options, the PACKAGE ID, DESCRIPTION, PACKAGE TYPE, and STATUS are also presented on this display.

Press the END key to return to the Package Display panel.

2.2.18 Display Cast Report

When you enter an **R** in the OPTION field on the Package Display Panel, the contents of the Package Cast Report appear. You may also view the report online using either the DISPLAY or REVIEW options on the Package Options Menu. An example of a Package Cast Report is shown below.

2.2 Option 1: Display Package Information

```
03:56:29 ENBP012I Beginning execution of the CAST action
03:56:29 ENMP090I USER01 initiating cast of 'PKG04160201P'

STATEMENT #1
MOVE ELEMENT 'COPYBK03'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COPY'
STAGE 'Q'
.

STATEMENT #2
MOVE ELEMENT 'COPYBK08'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COPY'
STAGE 'Q'
.

STATEMENT #3
MOVE ELEMENT 'FINARP01'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COBOL'
STAGE 'Q'
.

STATEMENT #4
MOVE ELEMENT 'FINARP02'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COBOL'
STAGE 'Q'
.

STATEMENT #5
EOF STATEMENT GENERATED
03:56:30 C1Y0016I REQUEST CARDS SUCCESSFULLY PARSED

03:56:30 PKMR400I BEGINNING ACTION VALIDATION AND SEARCH FOR APPLICABLE APPROVER GROUPS
03:56:36 PKMR401I ACTION VALIDATION COMPLETED WITHOUT ERRORS
03:56:36 PKMR402I NO APPROVER GROUP(S) FOUND APPLICABLE FOR PACKAGE
03:56:36 C1G0000I ELEMENT COPYBK03
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP01
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP01
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP02
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP02
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P

03:56:37 PKMR791I COMPONENT VALIDATION STARTED
03:56:43 FPLV001E INPUT COMPONENT VALIDATION ERROR HAS OCCURRED FOR
03:56:43 C1G0000I ELEMENT FINARP01
03:56:43 PKMR801I OF ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COBOL STG: 2

03:56:43 FPLV002E NO MCF RECORD FOUND FOR
03:56:43 C1G0000I INPUT COMPONENT COPYBK02
03:56:43 C1G0000I FROM DATA SET BST.SMPLTEST.COPYLIB
```

Package Cast Report Continued

```

03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2
03:56:43 FPVL003E  FOOTPRINT MISMATCH FOR
03:56:43 C1G0000I  INPUT COMPONENT COPYBK03
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2
03:56:43 PKMR805I  FP DATE/TIME IN COMPONENT LIST  : 04APR02  07:42
03:56:43 PKMR807I  GENERATE PROCESSOR DATE/TIME   : 04APR02  07:44
03:56:43 PKMR808I  LAST PROCESSOR DATE/TIME      : 04APR02  07:44

03:56:43 FPVL004E  INPUT COMPONENT WAS FOUND IN A STAGE PRIOR TO THIS ELEMENT'S ENV/STG LOCATION
03:56:43 C1G0000I  INPUT COMPONENT COPYBK06
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2

03:56:43 FPVL014E  PROCESSOR FAILED FLAG IS SET. INPUT COMPONENT MUST BE RE-GENERATED
03:56:43 C1G0000I  INPUT COMPONENT COPYBK14
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 1

03:56:43 PKMR798E  COMMENTED SCL MOVE ACTIONS ADDED TO PACKAGE
03:56:43 PKMR799I  COMPONENT VALIDATION COMPLETED : HIGHEST RC = 12

03:56:43 ENMP302I  PACKAGE INSPECT:  ELEMENT AND MEMBER VALIDATION STARTED
03:56:43 ENMP303I  ELEMENT AND MEMBER VALIDATION SUCCESSFULLY COMPLETED
03:56:43 ENMP305I  PACKAGE INSPECT:  ELEMENT MOVE/TRANSFER SYNC CHECK STARTED
03:56:43 ENMP306I  ELEMENT MOVE/TRANSFER SYNC CHECK SUCCESSFULLY COMPLETED
03:56:43 ENMP308I  PACKAGE INSPECT:  ELEMENT CCID/COMMENTS CHECK STARTED
03:56:43 ENMP309I  CCID/COMMENTS CHECK SUCCESSFULLY COMPLETED

03:56:44 PKMR408I  CAST ERRORS DETECTED. REVIEW THE CAST REPORT FOR DETAILS
03:56:46 ENMP092I  Error message(s) issued during cast of 'PKG04160201P'
03:56:46 ENBP023I  The CAST action has completed for package ID 'PKG04160201P'. Return Code is 12

```

The messages that follow the action statements provide a trace of the cast activities, and note errors that occur. When errors occur in component validation, as in the highlighted messages above, informational messages identify the component that failed validation, and the associated footprint information.

For more information refer to the *Error Codes and Messages Guide* for descriptive FPVL message information.

2.2.19 Display Package Notes

When you enter an N in the OPTION field of the Package Display Panel the Package Note Text panel appears.

2.2 Option 1: Display Package Information

```
----- Package Note Text -----  
Command ==>  
1. THIS PACKAGE IMPLEMENTS THE NEW PAYROLL SYSTEM.  
2. THE SCL FOR THE PACKAGE WAS IMPORTED FROM DATASET  
3. PAY.PACKAGE.SCL(ADDSCLO1)  
4. THIS PACKAGE IS ASSUMED TO HAVE APPROVERS  
5. ASSOCIATED WITH IT _____  
6. _____  
7. _____  
8. _____  
_____  
_____  
_____
```

This panel displays any user supplied notes associated with a package. This is a display-only panel.

When you have finished displaying the notes press the END key to return to the Package Display panel.

2.3 Option 2: Create/Modify Packages

2.3.1 Overview

To create or modify a package:

1. Type **2** in the OPTION field on the Package Options Menu. To create a package, you must type a name in the PACKAGE ID field. To modify a package, you can type a full name, leave the PACKAGE ID field blank, or type a name mask. Press ENTER.
2. If the Create/Modify Package panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to modify, then press ENTER to display the Create/Modify Package panel.
3. Type or modify package information as necessary. Field descriptions are in the following section, The Create/Modify Package Panel. Press ENTER to save the new or modified package information.
4. Build the package itself using the options on the Create/Modify Package panel. These options are described later in this section.
5. Press the END key until you reach the panel you need to perform the next package processing step.

2.3.2 The Create/Modify Package Panel

The Create/Modify Package panel allows you to create (build), edit, import, copy, or add notes to a package. The fields contained on this panel are described next.

```

MODIFY ----- CREATE/MODIFY PACKAGE -----
OPTION ==>
  B - Build Package Actions          I - Import SCL
  E - Edit Package                   C - Copy Package
  N - Add Notes to Package
PACKAGE ID: DOCTEST1                 STATUS: IN-EDIT
DESCRIPTION ==> EXAMPLE SET
PACKAGE TYPE ==> STANDARD
SHARABLE PACKAGE ==> N (Y/N)         APPEND TO PACKAGE ==> N (Y/N)
ENABLE BACKOUT ==> Y (Y/N)
EXECUTION WINDOW FROM ==> 02FEB01 00:00 TO ==> 31DEC01 00:00
INPUT PACKAGE ID ==>
NOTES EXIST FOR PACKAGE
FROM ISPF LIBRARY:
  PROJECT ==> BST
  GROUP   ==> SUPPORT
  TYPE    ==> SRCLIB
  MEMBER  ==>
OTHER PARTITIONED OR SEQUENTIAL DATA SET:
  DATA SET NAME ==>

```

2.3.2.1 Fields You Can Enter or Change

You can edit any of the following fields on the Create/Modify Package panel. Note that default values will appear for existing packages; you can override these values.

Field	Description
Option	Enter the letter of the option indicating what you want to do: <ul style="list-style-type: none">▪ Select option B, BUILD PACKAGE, to create a package using the online panels within package processing.▪ Select option E, EDIT PACKAGE, to edit the contents of the package, using the standard ISPF edit function.▪ Select option I, IMPORT PACKAGE, to import SCL from command sequences built outside of Endeavor or created through Endeavor batch panels and selection lists.▪ Select option C, COPY PACKAGE, to copy the contents of one package into another.▪ Select option N, ADD NOTES, to add or modify notes you may want to associate with the package.▪ These options are discussed in detail later in this section.
Description	You must enter a description when you create a package. If the package already exists, the current description appears in this field.
Package Type	Indicate the type of package: standard (default) or emergency.
Sharable Package	Indicate whether this package can be edited by more than one person when in In-edit status. <ul style="list-style-type: none">▪ Y -- The package is sharable, and can be edited by other than the package creator.▪ N -- Default. The package can be edited only by its creator.
Enable Backout	Indicate whether the backout/backin facility will be available for this package: <ul style="list-style-type: none">▪ Y -- Default. Enable the backout/backin facility.▪ N -- Do not enable the backout/backin facility.

Field	Description
Append to Package	<p>Indicate whether you want to append imported or copied data to the contents of this package. If you do not append the data, the contents of the package will be overwritten with the new information.</p> <ul style="list-style-type: none"> ▪ Y -- Append new data to the existing package ▪ N -- Default. Overwrite the existing contents of the package.
Execution Window From/To	<p>Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).</p> <p>Execution window default values are determined as follows:</p> <ul style="list-style-type: none"> ▪ FROM -- Defaults to the current date and time; that is, the date and time you accessed the Create/Modify Package panel. ▪ TO -- Defaults to the date December 31, 2079 (31DEC79) and the time 00:00.
Input Package ID	<p>Indicate the name of the package from which you are copying data.</p> <p>This field is required for option C, COPY PACKAGE; it is ignored for the other options.</p>
From ISPF Library	<p>Indicate the data set (library) containing the SCL you want to import.</p> <p>This field (or the next field) is required for option I, IMPORT PACKAGE; it is ignored for the other options.</p>
Other Partitioned or Sequential Data Set	<p>Indicate the data set name (and member name, if the data set is a library) of the data set containing the SCL you want to import.</p> <p>This field (or the preceding field) is required for option I, IMPORT PACKAGE; it is ignored for the other options.</p>

2.3.2.2 Display-Only Fields

The following fields appear on the Create/Modify Package panel for your information only; none of these fields can be changed.

Field	Description
Package ID	The package name.

Field	Description
Status	The status of the package. The status for any of the four options on the Create/Modify panel will always be In-edit. A package is initially set to this status and will be returned to this status whenever it is reset.
Notes Exist for Package	This field appears on the Create/Modify Package panel to indicate that there are user supplied notes associated with the package. If there are no notes associated with the package, this field is blank.

2.3.2.3 When You Press Enter

When you have entered all required information, press ENTER. The panel that displays depends on the option you selected.

2.3.2.4 Build Package Option

When you select option **B**, BUILD PACKAGE, from the Create/Modify Package panel, the SCL Generation panel appears.

```

----- SCL GENERATION -----
OPTION ==>
 1 DISPLAY      - Display an element
 2 ADD/UPDATE   - Add or update an element into stage 1
 3 RETRIEVE     - Retrieve or copy an element
 4 GENERATE     - Execute the Gen Processor for this element
 5 MOVE         - Move an element from stage 1 to stage 2
 6 DELETE       - Delete an element
 7 PRINT ELEMENT - Print elements, changes and detail change history
 8 SIGNIN       - Explicitly sign-in an element
 9 TRANSFER     - Transfer elements between two ENDEVOR locations
10 PRINT MEMBER - Print a compressed listing or member
11 LIST ELEMENT - Create List actions for ENDEVOR elements
12 LIST MEMBER  - Create List actions for external members
13 ARCHIVE      - Archive elements
REQUEST DATA SET: PACKAGE - DOCTEST1
APPEND:         N
    
```

Use this panel to select the action(s) with which you will build the package. Note that the package data set information defined on the Create/Modify Package panel appears at the bottom of this panel in the REQUEST DATA SET and APPEND fields.

To request the action you want, type the number that corresponds to that action in the OPTION field.

Refer to the *User Guide* for information about actions and creating action requests.

When you finish building the package, press the END key to return to the Create/Modify Package panel.

2.3.2.5 Edit Package Option

When you select option **E**, EDIT PACKAGE, from the Create/Modify Package panel, an ISPF edit panel appears.

```

EDIT - PACKAGE ID: DOCTEST1 ----- COLUMNS 001 072
COMMAND ==>                               SCROLL ==> CSR
DESCRIPTION: EXAMPLE SET
***** TOP OF DATA *****
ADD ELEMENT 'LGBAL10'
FROM DSNAME 'BST.NDVRC1.SRCLIB'
TO ENVIRONMENT 'DOC' SYSTEM 'FINANCE' SUBSYSTEM 'AR'
TYPE 'ASMIPGMR'
OPTIONS CCID 'ZSXLGB1' COMMENTS 'ADD NEW ELEMENTS'
.
ADD ELEMENT 'LGBBDWK'
FROM DSNAME 'BST.NDVRC1.SRCLIB'
TO ENVIRONMENT 'DOC' SYSTEM 'FINANCE' SUBSYSTEM 'AR'
TYPE 'ASMIPGMR'
OPTIONS CCID 'ZSXLGB1' COMMENTS 'ADD NEW ELEMENTS'
.
***** BOTTOM OF DATA *****

```

Use this panel to edit the SCL contained in the package. When you have finished editing, press the END key. Endeavor validates the SCL and:

- Returns you to the Create/Modify panel if there are no errors.
- Displays a Package Edit Validation panel if there are errors.

```

EDIT ----- PACKAGE EDIT VALIDATION -----
OPTION ==>
      E - EDIT  Edit SCL to correct errors
      S - SAVE  Save SCL with errors
      Q - QUIT  Quit Edit session without saving changes
      PACKAGE ID:
      PACKAGE TYPE:
      DESCRIPTION:
      STATUS:
      *** Errors have been found in package SCL ***

```

Use the Package Edit Validation panel to continue editing the SCL, to save the SCL, or to exit without saving the changes.

2.3.2.6 Import SCL Option

Using the IMPORT option, you can create or update a package from SCL statements contained in an external data set. When you select option **I**, IMPORT SCL, from the Create/Modify Package panel and press ENTER, the SCL is immediately imported.

If you specified the external data set is to be imported from an ISPF library, leaving the MEMBER field blank will produce a list of the available external members. If

you specified an OTHER PARTITIONED OR SEQUENTIAL DATA SET, using a mask (*) for the member name will also produce a list.

If you indicated **N** for the APPEND option on the Create/Modify Package panel, the imported data will overwrite the contents of the package. If you indicated **Y** for this option, the imported data will be appended to the package.

After you press ENTER, an ISPF edit panel is returned. This panel lists the SCL syntax contained in the external (or partitioned or sequential) data set indicated on the Create/Modify Package panel.

You can edit the imported data as necessary. When you are done, press the END key.

The system automatically verifies the SCL syntax at this point. If no errors exist, the Create/Modify Package panel returns and you can continue your work.

If syntax errors do exist, they are displayed immediately. Press the END key; the ISPF Edit panel returns, allowing you to correct the errors. Press the END key again to return to the Create/Modify Package panel.

2.3.2.7 Copy Package Option

Using the COPY option, you can create or update a package from SCL statements contained in another package. When you select option **C**, COPY PACKAGE, from the Create/Modify Package panel and press ENTER, the syntax is immediately copied.

If you indicated **N** for the APPEND option on the Create/Modify Package panel, the copied data overwrites the contents of the package. If you indicated **Y** for this option, the copied data is appended to the package.

After you press ENTER, an ISPF edit panel returns. This panel lists the SCL syntax contained in the input package indicated on the Create/Modify Package panel.

You can edit the copied data as necessary. When you are done, press the END key.

The system automatically verifies the SCL syntax at this point. If no errors exist, the Create/Modify Package panel returns and you can continue your work.

If syntax errors do exist, they are displayed immediately. Press the END key; the ISPF edit panel returns, allowing you to correct the errors. Press the END key again to return to the Create/Modify Package panel.

2.3.2.8 Add Notes Option

When you select option **N** from the Create/Modify Package panel the Package Note Text panel appears.

```
----- Package Note Text -----  
Command ==>  
  1. THIS PACKAGE IMPLEMENTS THE NEW PAYROLL SYSTEM.  
  2. THE SCL FOR THE PACKAGE WAS IMPORTED FROM DATASET  
  3. PAY.PACKAGE.SCL(ADDSCLO1)  
  4. THIS PACKAGE IS ASSUMED TO HAVE APPROVERS  
  5. ASSOCIATED WITH IT _____  
  6. _____  
  7. _____  
  8. _____  
Press ENTER to process the Package Notes. When all the note  
text has been entered, press ENTER and then enter the END  
command.  
To cancel the Package Notes, enter the END command.
```

Use this panel to enter or modify any text you want to associate with the package. You may enter or modify 8 text lines of up to 60 characters each. You can modify the text by deleting, inserting, and overtyping. You can use cursor control keys to move within the text and the PA2 key to refresh the screen. When you have finished entering the text, press ENTER. When you press ENTER, any changes you have made to the text replaces previously entered text. Press the END command to cancel text updates or to return to the previous panel after you have completed entering text.

2.4 Option 3: Cast Packages

2.4.1 Overview

To cast a package:

1. Type **3** in the **OPTION** field on the Package Options Menu. Type a package name in the **PACKAGE ID** field to go directly to a Cast Package panel. Leave the **PACKAGE ID** field blank or type a name mask to go to a Package Selection List. Modify the **STATUS** fields if necessary to tailor the selection list. Press **ENTER**.
2. If the Cast Package panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to cast, then press **ENTER** to display the Cast Package panel.
3. From the Cast Package panel you can:
 - Cast the package. If you do this, proceed to Step 6.
 - View the package SCL. If you do this, proceed to Step 4.
 - Add or modify note text you want to associate with the package. If you do this, proceed to Step 5.
4. Type **S** in the **OPTION** field, then press **ENTER** to access the Display SCL panel. Review the SCL, then press the **END** key to return to the Cast Package panel. The **DISPLAY SCL** option is discussed fully in the Option 1: Display Package Information section, earlier in this chapter.
5. Type **N** in the **OPTION** field, then press **ENTER** to access the Package Note Text panel. From the Package Note Text panel you can enter or modify 8 text lines of up to 60 characters each. When you have finished entering the text, press the **END** key to return to the Cast Package Package panel. For an example of the Package Note Text panel see Add Notes Option.
6. If the SCL requires no modifications, cast the package by typing **C** in the **OPTION** field. Press **ENTER**.
7. Press the **END** key until you reach the panel you need to perform the next package processing step.

2.4.1.1 The Cast Package Panel

```

CAST ----- CAST PACKAGE -----
OPTION ==>
  C - Cast Package                S - Display SCL
  N - Add Notes to Package
PACKAGE ID: DOCTEST1             STATUS: IN-EDIT
DESCRIPTION: EXAMPLE SET
PACKAGE TYPE: STANDARD
SHARABLE PACKAGE: N
VALIDATE COMPONENTS ==> Y (Y,N or W)
ENABLE BACKOUT ==> Y (Y/N)
NOTES EXIST FOR PACKAGE
EXECUTION WINDOW FROM ==> 02FEB01 00:00 TO ==> 31DEC01 00:00
                USER ID DATE TIME
CREATED:        ZSXLGB1 02FEB01 09:23
LAST UPDATED:

```

2.4.1.2 Fields You Can Enter or Change

The table below lists fields that you can enter or change.

Field	Description
Option	<p>Indicate the option you want to use:</p> <ul style="list-style-type: none"> ▪ C -- To cast the package. ▪ S -- To review the package SCL. ▪ N -- To add note text you want to associate with the package. See Add Notes Option for information on adding note text from the Cast Package panel.
Validate Components	<p>Indicate whether Endeavor should validate package components when casting the package.</p> <ul style="list-style-type: none"> ▪ Y -- Validate components, and do not allow the cast if validation fails. ▪ N -- Do not validate components. ▪ W -- Validate components, but do not fail the cast if there are errors. <p>Note: You can only specify N or W if the validation option PKGCVAl in the C1DEFLLTS table is set to 0.</p>
Enable Backout	<p>Indicate whether the backout/backin facility is available for this package:</p> <ul style="list-style-type: none"> ▪ Y -- The backout/backin facility can be used. ▪ N -- The backout/backin facility cannot be used with this package

Field	Description
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format). Execution window values default to: <ul style="list-style-type: none">▪ FROM -- The package creation date and time.▪ TO -- The date December 31, 2079 (31DEC79) and the time 00:00

2.4.1.3 Display-Only Fields

Field	Description
Package ID	The package name.
Status	The current status of this package.
Description	The package description.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person (usually the creator of the package) when in In-edit status: Y (yes) or N (no).
Package Events	Two events may have occurred prior to the package being cast. <ul style="list-style-type: none">▪ Created -- Indicates when the package was created, and by whom.▪ Last Updated -- Indicates when the package was last modified, and by whom.
Notes Exist for Package	This field appears on the Cast Package panel to indicate that there are user supplied notes associated with the package. If there are no notes associated with the package, this field is blank.

2.4.2 Information About Casting Packages

Casting a package is the first step in the package review process. When you cast a package that requires approval (a package that is related to an approver group and has a quorum size greater than 0), its status changes to In-approval and you can no longer edit it. When you cast a package that does not require approval, the status changes to Approved. A package that has been cast can be approved (or denied) and, once approved, can be executed.

When you cast a package, Endeavor:

- Determines approvers

- Validates package components (optional)
- Checks action security
- Checks component integrity and checks for locking conflicts
- Locks the elements included in the package (optional)
- Notifies approvers (optional). Please see the *Exits Guide* for more information on XIT7MAIL.

2.4.2.1 Determining Approvers

Endevor determines whether approval is required for the package, and by which approver groups, based on the approver group relationships previously defined by the Endevor Administrator. See Approver Groups for more information on defining and relating approver groups.

If no approver groups are related to the inventory area(s) specified in an action, approval is not required for that action. If none of the actions in the package affect inventory areas associated with approver groups, that package does not require approval and is immediately given a status of Approved.

If an approver group(s) is related to the inventory area(s) associated with an action, then that action, and therefore the entire package, requires approval by that approver group before it can be executed. The status of a package in this situation changes from In-edit to In-approval.

When Endevor determines the approver groups for a particular package, it checks either the source inventory area or target inventory area, depending on the action. The table on the next page lists the inventory areas searched, by action.

Note: When generating with copyback, the source location (where the action is requested) and the target (where the action is executed) are the same.

When This Action Is In a Package	Endevor Searches For Approver Groups At
Add	Target
Restore	Target
Update	Target
Generate with copyback	Target
Generate without copyback	Source
Move	Target
Delete	Source
Signin	Source
Transfer with delete	Source and Target

When This Action Is In a Package	Endevor Searches For Approver Groups At
Transfer without delete	Target
Archive with delete	Source

Note: Actions that do not change elements do not require approval. When a package is cast, Endevor checks only those actions to which approval applies. Actions for which approval does not apply include Display, Retrieve, Print Element/Member, List Element/Member, Copy, and Archive (without the DELETE option).

2.4.2.2 Validating Components

The component validation feature requires that Automated Configuration Manager (ACM) is installed.

The component validation feature ensures that an element cannot be moved:

- Without its corresponding input components (copybooks, macros, etc.)
- If the element has not been assembled, compiled or linked with the current version of its components.

Thus, if the parent program were compiled, component validation would prevent promotion of the parent program without the promotion of the updated copybook. The new copybook would need to be promoted along with or ahead of the parent program.

Without component validation, it is possible to modify a copybook, compile and link a program, and move only the program and its corresponding load module. If the copybook has been deleted or modified since the element was last generated, it becomes virtually impossible to recreate an identical executable form of the element.

You enable component validation by including the PKGCVAL= parameter in the C1DEFLT5 Table. Acceptable values for this parameter are:

- PKGCVAL=Y -- Endevor always performs component validation when casting a package.
- PKGCVAL=O -- Allows the person casting a package to specify on the Cast panel whether or not validation is to be performed.

Validation options at cast time are:

- **Y** -- Perform normal validation.
- **N** -- Do not validate package components.
- **W** -- Validate components, but don't fail the cast.

If component validation is active, when you cast a package, Endevor first looks at the source location of the Move action for any components that have not been included in the package. If it finds any missing components, Endevor fails the cast and appends

commented MOVE SCL for the omitted components to the package. If there are no omitted components Endeavor continues component validation by searching the environment map for each input component in the component list, starting at the source location of the move. When Endeavor finds the first occurrence of a component, it compares the footprint of that component with the footprint in the component list. If the footprints are the same, the cast is successful, if any footprints are different, Endeavor fails the cast.

Note: If you change system or subsystem across your map, this first found logic might not find a component. If this happens, Endeavor reads the footprint in the component list, and performs an explicit check for the component starting at the location specified in the footprint then along the component's map route. If the footprints are the same, the cast is successful, if the footprint is different, or the component is not found, Endeavor fails the cast and issues the appropriate error message. The component validation process compares the single timestamp found in the component list against one or more of the following timestamps in the component's element master control file record:

- Current Source (timestamp the current source level was created)
- Last processor (timestamp the last processor (move or generate) was executed)
- Generate (timestamp the generate processor was last executed)

The following tests are done to determine which timestamp(s) will be tested:

- For input components that have been loaded by the LOAD utility or elements that were included by a CONRELE step, only the last level timestamp is tested.
- If the input component was included from the BASE library (reverse unencrypted base/delta), then the current source timestamp is tested.

For all other cases Endeavor will test either the last processor date or the last generate date, or both. Component validation errors occur for the following reasons:

- If the last processor executed against an input component failed.
- If the generate processor was not executed the last time the input component source was updated.
- If the input component being checked was included from the BASE library and the footprint timestamp does not match the input component's element master current source timestamp.
- If a move and/or generate processor exists for this component (it may have been basicgen) and the last generate or the last processor timestamps do not match the footprint in the component list.
- If an element is added and the "BYPASS GENERATE" option is specified, a validation error message will be issued indicating the element must be generated. This occurs even if the move and generate processors are *NOPROC*.

When a cast fails for any of these reasons, you should review the package and do one of the following:

- Generate the element to pick up the latest version of a component.

- Cast the package without validation (if allowed).
- Cancel the package if a component has been deleted.

If Endeavor does not find a component after searching the element's and the component's map routes, Endeavor issues an error message indicating the element contains one or more components that could not be validated.

2.4.2.3 Validations for CAST and INSPECT

The following validations will be performed during Package CAST.

- CCID/COMMENT validation—Validates if a CCID/COMMENT is required and present and if a correct CCID was specified.
- Checksum of Input Member (*Inspect only)
- Component Validation—For details see the section earlier in this document titled 2.4.2.2, “Validating Components” on page 2-46.
- Execution Window—Validates if the PKG execution window is still open (end date/time not in the past), if not cast will fail. If the window start date/time is in the future issues a warning message.
- Generate Status—Validates, where appropriate, if the element's last generate processor was successful.
- JUMP validation—Validates if elements do not jump over existing elements without specification of OPTION JUMP.
- Element Locking—Validates if elements in a package are not locked for other packages.
- Security check—If PKGCSEC=Y is set in C1DEFLT, a security check is performed to determine if the person performing the cast is authorized to perform the actions contained in the package.
- SIGNIN/SIGNOUT validation—Validates if the element has the correct SIGNOUT status for the action.
- Source location validation—Elements referenced in PKG-SCL must reside at the source location of the action
- Status of Package—IN-EDIT, IN-APPR, APPR, IN-EXEC, EXEC-FAILED
- SYNC Validation—Validates potential SYNC problems and if OPTION SYNC is required and set.
- Syntax check—Endeavor will perform standard SCL syntax validation.

Note: Cast must issue error messages as they advance and not stop after an E-Level.

2.4.2.4 The Package Cast Report

The Cast Report is stored with the package. The report may be viewed online using either the DISPLAY or REVIEW options on the Package Options Menu, or by entering an **R** in the OPTION field on the Package Display Panel. An example of a Package Cast report is shown below.

2.4 Option 3: Cast Packages

```
03:56:29 ENBP012I Beginning execution of the CAST action
03:56:29 ENMP090I USER01 initiating cast of 'PKG04160201P'

STATEMENT #1
MOVE ELEMENT 'COPYBK03'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COPY'
STAGE 'Q'
.

STATEMENT #2
MOVE ELEMENT 'COPYBK08'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COPY'
STAGE 'Q'
.

STATEMENT #3
MOVE ELEMENT 'FINARP01'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COBOL'
STAGE 'Q'
.

STATEMENT #4
MOVE ELEMENT 'FINARP02'
FROM ENVIRONMENT 'SMPLTEST'
SYSTEM 'FINANCE'
SUBSYSTEM 'ACCTREC'
TYPE 'COBOL'
STAGE 'Q'
.

STATEMENT #5
EOF STATEMENT GENERATED
03:56:30 C1Y0016I REQUEST CARDS SUCCESSFULLY PARSED

03:56:30 PKMR400I BEGINNING ACTION VALIDATION AND SEARCH FOR APPLICABLE APPROVER GROUPS
03:56:36 PKMR401I ACTION VALIDATION COMPLETED WITHOUT ERRORS
03:56:36 PKMR402I NO APPROVER GROUP(S) FOUND APPLICABLE FOR PACKAGE
03:56:36 C1G0000I ELEMENT COPYBK03
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT COPYBK08
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP01
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP01
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP02
03:56:36 C1G0506I ENV: SMPLTEST SYS: FINANCE SBS: ACCTREC STGID: Q TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P
03:56:36 C1G0000I ELEMENT FINARP02
03:56:36 C1G0506I ENV: SMPLPROD SYS: FINANCE SBS: ACCTREC STGID: P TYPE: COPY
03:56:36 C1G0501I ELEMENT RESERVED FOR PACKAGE PKG04160201P

03:56:37 PKMR791I COMPONENT VALIDATION STARTED
03:56:43 FPLV001E INPUT COMPONENT VALIDATION ERROR HAS OCCURRED FOR
03:56:43 C1G0000I ELEMENT FINARP01
03:56:43 PKMR801I OF ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COBOL STG: 2

03:56:43 FPLV002E NO MCF RECORD FOUND FOR
03:56:43 C1G0000I INPUT COMPONENT COPYBK02
03:56:43 C1G0000I FROM DATA SET BST.SMPLTEST.COPYLIB
```

Package Cast Report Continued

```

03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2
03:56:43 FPVL003E  FOOTPRINT MISMATCH FOR
03:56:43 C1G0000I  INPUT COMPONENT COPYBK03
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2
03:56:43 PKMR805I  FP DATE/TIME IN COMPONENT LIST   : 04APR02  07:42
03:56:43 PKMR807I  GENERATE PROCESSOR DATE/TIME    : 04APR02  07:44
03:56:43 PKMR808I  LAST PROCESSOR DATE/TIME       : 04APR02  07:44

03:56:43 FPVL004E  INPUT COMPONENT WAS FOUND IN A STAGE PRIOR TO THIS ELEMENT'S ENV/STG LOCATION
03:56:43 C1G0000I  INPUT COMPONENT COPYBK06
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 2

03:56:43 FPVL014E  PROCESSOR FAILED FLAG IS SET. INPUT COMPONENT MUST BE RE-GENERATED
03:56:43 C1G0000I  INPUT COMPONENT COPYBK14
03:56:43 C1G0000I  FROM DATA SET BST.SMPLTEST.COPYLIB
03:56:43 PKMR802I  FP ENV: SMPLTEST SYS: FINANCE SUBSYS: ACCTREC TYPE: COPY STG: 1

03:56:43 PKMR798E  COMMENTED SCL MOVE ACTIONS ADDED TO PACKAGE
03:56:43 PKMR799I  COMPONENT VALIDATION COMPLETED : HIGHEST RC = 12

03:56:43 ENMP302I  PACKAGE INSPECT:  ELEMENT AND MEMBER VALIDATION STARTED
03:56:43 ENMP303I  ELEMENT AND MEMBER VALIDATION SUCCESSFULLY COMPLETED
03:56:43 ENMP305I  PACKAGE INSPECT:  ELEMENT MOVE/TRANSFER SYNC CHECK STARTED
03:56:43 ENMP306I  ELEMENT MOVE/TRANSFER SYNC CHECK SUCCESSFULLY COMPLETED
03:56:43 ENMP308I  PACKAGE INSPECT:  ELEMENT CCID/COMMENTS CHECK STARTED
03:56:43 ENMP309I  CCID/COMMENTS CHECK SUCCESSFULLY COMPLETED

03:56:44 PKMR408I  CAST ERRORS DETECTED. REVIEW THE CAST REPORT FOR DETAILS
03:56:46 ENMP092I  Error message(s) issued during cast of 'PKG04160201P'
03:56:46 ENBP023I  The CAST action has completed for package ID 'PKG04160201P'. Return Code is 12

```

The messages that follow the action statements provide a trace of the cast activities, and note errors that occur. When errors occur in component validation, as in the highlighted messages above, informational messages identify the component that failed validation, and the associated footprint information.

The NO FOOTPRINT MATCH ANYWHERE message means that the member footprint information either does not correlate to any Endeavor elements or contains no generate date and time information. To resolve this problem, generate the affected element (DPROG2 here) to bring in the most current components.

Note: The element may need to be generated at both the source and target locations of the Move.

2.4.2.5 Action Security Check

The Endeavor C1DEFLTS Table contains a flag, **PKGSEC**, that indicates whether actions should be checked at package cast time, to determine whether the person casting the package has the authority to perform all actions contained in that package. If PKGSEC is set to **Y**, Endeavor checks each action. If the person is not authorized to perform all actions, he/she cannot cast the package. If PKGSEC is set to **N**, no action security check takes place and the package can be cast.

2.4.2.6 Integrity (Control) Check

After the package is cast, it contains either a copy of the footprint of the source element or a checksum value for source members from an external data set. (Before actions are executed, Endeavor compares this footprint or checksum value with the values stored in the package at execution time. If any differences exist at that time, the package is not executed.)

2.5 Element Locking for Packages

Element locking for packages is an optional Endeavor feature that locks elements in a package when they are the object of the following actions.

Endeavor Locks Elements for:	Endeavor does not Lock Elements for:
Add/Update	Display
Generate	Print Element
Generate w/copyback	Print Member
Delete	List Element
Move	List Member
Signin	Archive, bypass delete
Transfer	Copy
Archive, delete behind	
Restore	
Retrieve w/so	
Retrieve, copy only	

Locking (reserving) an element has the following effects:

- Endeavor will not allow a second package to be cast if it contains elements that have been reserved by an active package.
- Endeavor will stop any of the actions that lock an element when those actions are requested outside of an active package against elements locked for that package.

Endeavor locks elements when you cast the package. The elements remain locked while the package is in any of the following "active" states:

- Cast
- In-Approval
- Approved
- Denied
- In-Execution

Endeavor releases locks on elements for packages in the following states: In-Edit, Executed, Backed Out, Backed In, Committed.

Emergency packages override locks on active packages.

2.5.1 Implementing Element Locking

You implement element locking for packages by assembling the Endeavor customization table (ENCOPTBL) with one of three values for the PKG_ELEMENT_LOCK option:

LOCK=(ON,Y) Enables locking, and locks both the source location and the target location of an action.

LOCK=(ON,N) Enables locking, and locks only the source location of an action.

LOCK=OFF Locking is not enabled.

The default is not to enable locking.

This can be accomplished by editing and running member BC1JOPTF found in iprfx.igual.JCLLIB.

2.5.2 Viewing the Element Lock

When locking is enabled, a new field, the LOCKED FOR PKG: field, appears on the element master display. This field contains the name of the package that has reserved the element.

```

----- ELEMENT MASTER -----
COMMAND ==>                                     (PANEL 1 OF 2)

ELEMENT: $AREDS   ENV: DEV   SYS: NDVR400  SUB: BASE   TYPE: ASMMAC
PROC GRP: *NOPROC* STG: 1    VV.LL: 01.03   LAST ACTION: ADD
DESCRIPTION: RELEASE X.X                               SIGNOUT ID: MCCPE01
PKG ID (SOURCE): ELEMENTLOCK   PKG ID (OUTPUT): ELEMENTLOCK
LOCKED FOR PKG: PROMOTE_LOCK

----- LAST ELEMENT ACTION -----
USERID: MCCPE01   DATE/TIME: 11JAN01 10:03   CCID: ELMLOCK
COMMENT: SOURCE CHANGES REQUIRED FOR ELEMENT LOCK   ACTION: ADD
NDVR RC: 0004    PROCESSOR: *NOPROC* (GEN)   PROC RC:

----- CURRENT SOURCE -----
USERID: MCCPE01   DATE/TIME: 11JAN01 10:03   CCID: ELMLOCK
COMMENT: SOURCE CHANGES REQUIRED FOR ELEMENT LOCK DELTA FMT: R
ADD/UPDATE FROM DSN: BST.MCCPE01.MACLIB($AREDS)

----- GENERATE -----
USERID: MCCPE01   DATE/TIME: 11JAN01 10:03   CCID: ELMLOCK
COMMENT: SOURCE CHANGES REQUIRED FOR ELEMENT LOCK
COMPONENT LIST VV.LL: N/A                               DELTA FMT:
                                                         (Press ENTER for next panel)

```

2.5.3 Description of Locking

When a package is cast, Endeavor checks the location of each element referenced by the package to determine if another package has already reserved the element at that location. If any of the elements are already reserved, the cast is terminated and messages identify the package(s) that already have the element reserved.

Elements are locked to prevent external source change. If the source is changed before the package is cast then the attempt to cast the package may fail. For example, if you are issuing a RETRIEVE, and the source has been changed it can cause the process to fail before you are able to complete the retrieval process.

When an action is executed outside of a package, Endeavor checks to determine if the element has been locked by a package. If the element has been locked, the action is terminated and messages identify the package(s) that already have the element reserved.

Note: During the cast process, Endeavor element action enqueues are issued for each element. If the element is in use by another user or if an UNLOAD is being executed for the same environment/system, the cast is terminated.

2.5.3.1 Releasing Locks

The element lock is released as soon as the package action has completed successfully. To ensure elements are not incorrectly marked as reserved due to abnormal terminations, and so on, the package status is verified to ensure that the lock is valid. If the package is not found or is not in a state between "CAST" and "in-execution," the element lock is removed.

2.5.3.2 Emergency Packages Override Locks

In the case where an emergency package is being cast and an element lock conflict is detected, caution messages are issued, the cast return code is set to 8, and the lock is overridden.

2.5.3.3 Multiple actions in Packages

When multiple actions within a package reference the same element at the same inventory location, the element is locked and caution messages are issued. The cast completes successfully with a return code of 8.

2.5.3.4 Locking Reserves Element Names at Target

When you cast a package containing a move or transfer action, and the element being moved or transferred does not exist at the target location, Endeavor locks the element at the source location and also reserves the element at the target. This prevents a user from adding or moving an element of the same name into the target location outside of the package, or modifying the element at the target.

2.5.4 Examples of Locking

Scenario	Locking Behavior
Cast package PKG1 to move element ELM1, where ELM1 exists at both locations, and LOCK=(ON,Y).	ELM1 is locked at both locations. PKG1 appears in the ELM1 master display at both the source and the target of the move.
Cast package PKG1 to move element ELM1, where ELM1 exists only at the source location, and LOCK=(ON,Y).	ELM1 is locked at the source. PKG1 appears in the ELM1 master display at the source. The name ELM1 is also reserved at the target of the move. This prevents other users from adding or moving a different element ELM1 into the target location as long as PKG1 is active.
Cast package PKG1 to move element ELM1. Then cast emergency package PKG2, also to move element.	Even though ELM1 is locked for PKG1, the cast of PKG2 is successful because it is an emergency package. The master display for ELM1 now shows a lock for PKG2. The Cast Report for PKG2 notes that PKG2 has overridden PKG1.

2.5.4.1 Locking Elements at Cast Time

When you cast a package, Endeavor checks the:

- Location of each element referenced by the package to determine if another package has already "locked" the element at that location. In the case of actions such as move and transfer, Endeavor also checks the target of the action for a lock.
 - If the element has not been locked, Endeavor locks the element by writing the name of the package to the master record for the element at the source and target of the action.
 - If the element has already been reserved by another package, the cast fails with messages that identify the package that has reserved the element.

For example, if you cast package PKG1 to delete element ELM1 from Stage 2, and then try to cast another package PKG2 to move ELM1 to Stage 4, the cast of PKG2 fails with a message telling you element ELM1 is reserved by package PKG1.

- Package type. If you are casting an emergency package, Endeavor overrides any existing locks, replacing them with a lock for the emergency package. So, in the example above, if package PKG2 is defined as an emergency package, the cast would be successful and the cast report would note that package PKG2 had overridden the lock from package PKG1.
- Number of actions that reference a given element. If Endeavor detects multiple actions referencing the same element in a package, the element is locked and caution messages are issued. The cast succeeds with a return code of 8.

- In-use status of the elements. During the cast process, Endeavor element action enqueues are issued for each element. If the element is in use by another user or if an UNLOAD is being executed for the same environment/system, the cast fails.

2.6 Option 4: Review Packages

2.6.1 Overview

To review a package:

1. Type **4** in the **OPTION** field on the Package Options Menu. Type a package name in the **PACKAGE ID** field to go directly to a Review Package panel. Leave the **PACKAGE ID** field blank or type a name mask to go to a Package Selection List. Press **ENTER**.
2. If the Review Package panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to cast, then press **ENTER** to display the Review Package panel.
3. From the Review Package panel, you can:
 - Display a summary of the package by leaving the **OPTION** field blank, then pressing **ENTER** to display the Package Element Information panel with a summary of the SCL statements contained within the package. From the Package Element Information panel you can.
 - View the package summary information, then press the **END** key to return to the Review Package panel.
 - Request a more detailed package display by selecting one of the options on the Package Element Information Panel. See Display Action Summary, earlier in this chapter, for information on using the Package Information Panel.
 - Display approver group information for the package by typing **L** in the **OPTION** field, then pressing **ENTER** to display the Display Approver Groups panel. View the approver group information, then press the **END** key to return to the Review Package panel.
 - Enter notes you want to associate with the package by typing **N** in the **OPTION** field, then pressing **ENTER** to access Package Note Text panel. From the Package Note Text panel you can enter or modify up to eight text lines of up to 60 characters each. When you have finished entering the text press the **END** key to return to the Review Package panel.
 - Approve the package by typing **A** in the **OPTION** field, then pressing **ENTER**. See When You Approve a Package in this section for more information.
 - Deny the package by typing **D** in the **OPTION** field, then pressing **ENTER**. See When You Deny a Package, later in this section, for more information.

2.6.1.1 When You Approve a Package

When you type **A** in the OPTION field on the Review Package panel and press ENTER, Endeavor returns the Package Options Menu with the following message in the upper right corner:

PACKAGE APPROVED

Note: This message indicates that *you* have approved the package. To complete the approval process, all requisite approvers (required and optional, meeting the quorum requirements) must approve the package.

At this time, another package can be reviewed or, if all requisite approvers have approved this package, it may be executed.

2.6.1.2 When You Deny a Package

When you type **D** in the OPTION field on the Review Package panel and press ENTER, Endeavor returns the Package Options Menu with the following message in the upper right corner:

PACKAGE DENIED

The package status changes to denied. Two options are now available to you:

- Select the UTILITIES option and reset the package to In-edit, to make any modifications required. The Reset utility is discussed in Option 9: Utilities, later in this chapter. If you do this, you must cast the package again before it can be reviewed.
Note: Resetting the package releases all element locks in the package.
- Access the Review Package panel again, without correcting the package, to change your denial to an approval.

2.6.2 The Review Package Panel

The Review Package panel allows you, as an approver, to review and subsequently approve or deny a package. You can also display the package contents, the approver groups associated with the package, and add note text you want to associate with the package.

Note: Once the final approver—per the quorum size requirement and the required/optional approver designation—has approved the package, the Review Package panel is no longer available for this package.

```

REVIEW ----- REVIEW PACKAGE -----
OPTION ==>
  blank - Display Action Summary      D - Deny Package
  A - Approve Package                 L - Display Approver Groups
  N - Add Notes to Package
PACKAGE ID: DOCTEST1                 STATUS: IN-APPROVAL
DESCRIPTION: EXAMPLE SET
PACKAGE TYPE: STANDARD
SHARABLE PACKAGE: N
NOTES EXIST FOR PACKAGE
EXECUTION WINDOW FROM: 02FEB01 00:00   TO: 31DEC79 00:00
                          User Id Date Time
CREATED:      ZSXLGB1 02FEB01 09:23
LAST UPDATED: ZSXLGB1 02FEB01 10:46
CAST:        ZSXLGB1 02FEB01 11:00
DENIED:
    
```

2.6.2.1 Fields You Can Enter or Change

You can enter information only in the OPTION field on the Review Package panel. Indicate the options that you want to use:

- Leave the OPTION field **blank** to review the package contents in summary form. See the Display Action Summary, earlier in this chapter, for information on this option.
- Select **A** to immediately approve the package.
- Select **D** to immediately deny the package.
- Select **L** to display approver group information.
- Select **N** to add or modify note text you want to associate with the package.

2.6.2.2 Display-Only Fields

Field	Description
Package ID	The package name.
Status	The current status of this package. The package status on the Review Package panel will be either In-approval or denied.
Description	The package description.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person (usually the creator of the package) when in In-edit status: Y (yes) or N (no).
Notes Exist for Package	This field appears on the Review Package panel to indicate that there are user-supplied notes associated with the package. If there are no notes, this field is blank.

Field	Description
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).
Package Events	<p>Four package events appear on the Review Package panel; these are the events that might have occurred prior to the package being approved.</p> <ul style="list-style-type: none"> ■ Created -- Indicates when the package was created, and by whom ■ Last updated -- Indicates when the package was last modified, and by whom
Package Events (continued)	<ul style="list-style-type: none"> ■ Cast -- Indicates when the package was cast, and by whom ■ Denied -- Indicates that the package was denied, and when. The date and time of the denial remains until the package is: <ul style="list-style-type: none"> – Approved by the appropriate number of—and all required—approvers. In this situation, the package is no longer available for review. – Denied again, by you or another approver. In this situation, the denied date is updated. – Reset by you or another approver. In this situation, the package status returns to In-edit, and the denied package event flag is cleared. The Reset utility is discussed in the Option 9: Utilities section, later in this chapter.

2.7 Option 5: Execute Packages

2.7.1 Overview

To execute a package, you must have the authority to execute the package and also have the authority to perform the actions contained in the package.

To execute a package:

1. Type **5** in the OPTION field on the Package Options Menu. Type a package name in the PACKAGE ID field to go directly to the Execute/Submit Package panel. Leave the PACKAGE ID field blank or use a name mask to go to the Package Selection List. Press ENTER.

The Package Selection List shows only those packages available for your user ID, with a status of Approved, Executed, or Exec-failed, that meet the PACKAGE ID field criteria.

2. If the Execute/Submit Package panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to execute, then press ENTER to display the Execute/Submit Package panel.
3. From the Execute/Submit Package panel, you can
 - Execute the package by typing **E** in the OPTION field, then pressing ENTER. See Executing Packages in Foreground, later in this section, for more information.
 - Submit the package for subsequent execution by typing **S** in the OPTION field, then pressing ENTER. See Executing Packages in Batch, later in this section, for more information.

2.7.2 Before the Package Is Executed

Before executing a package, Endeavor:

- Validates the package.
- Makes sure that you have authority to perform the package actions.
- Makes sure that the execution request is within the execution window.
- Makes sure that no element changes have occurred since the package was cast.

If any pre-execution validation errors have occurred, Endeavor does not execute the package. If the package does fail during execution it is checkpointed. However, in re-executing the package the restart procedure attempts to execute those actions that failed in the previous execution.

Note: In the event that a package has been cancelled and restarted, the shipment of this package may yield incorrect results.

2.7.2.1 Before Issuing the Restart Procedure

Before you begin the restart procedure it is very important to check the backout package panel. In this situation a duplicate or an incorrect backout can occur and interrupt proper processing.

Note: If circumstances arise during processing and duplicate or incorrect backout members do occur, please contact technical support to make the appropriate changes using adequate and accurate correction procedures.

2.7.3 Package Execution and Locking

When you execute a package, Endeavor releases the locks it has placed on each element in the package after the action against the element has completed. This means that if a package executes successfully, all the locks are released. If one or more action in the package fails, the locks remain on those elements referenced in the failed actions.

2.7.4 The Execute/Submit Package Panel

```

EXECUTE ----- EXECUTE/SUBMIT PACKAGE -----
OPTION ==>
  E - Execute Package                S - Submit Package
PACKAGE ID: DOCTEST1                STATUS: APPROVED
DESCRIPTION: EXAMPLE SET
PACKAGE TYPE: STANDARD
SHARABLE PACKAGE: N
EXECUTION WINDOW FROM ==> 02FEB01 00:00 TO ==> 31DEC01 00:00
      USER ID  DATE    TIME
CREATED:   ZSXLGB1 02FEB01 09:23
LAST UPDATED: ZSXLGB1 02FEB01 10:46
CAST:      ZSXLGB1 02FEB01 11:00
APPROVED:   02FEB01 15:29
EXECUTED:                                     ENDEVOR RC:

```

2.7.4.1 Fields You Can Enter or Change

You can enter or change the values in any of the following fields on the Execute/Submit Package panel.

Field	Description
Option	<p>Select the option indicating how you want to execute the package:</p> <ul style="list-style-type: none"> ▪ E -- Execute the package online ▪ S -- Submit the package for execution at a later date <p>These options are discussed in more detail at the end of this section.</p>

Field	Description
Execution Window From/To	<p>Indicates the timeframe within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format). The execution window default values are determined as follows:</p> <ul style="list-style-type: none">▪ From -- Defaults to the date and time you created the package.▪ To -- Defaults to the date December 31, 2079 (31DEC79) and the time 00:00. <p>Note: You can change this field only if the execution window has been missed; that is, if the current date and time is later than the date and time in the TO portion of the EXECUTION WINDOW field.</p>

2.7.4.2 Display-Only Fields

Field	Description
Package ID	The package name.
Status	<p>The current status of this package:</p> <ul style="list-style-type: none">▪ Approved -- The package has not yet been executed▪ In-execution -- The package is being executed.▪ Executed -- The package has been executed.▪ Exec failed -- The package has failed execution
Description	The package description.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person (usually the creator of the package) when in in-edit status: Y (yes) or N (no).

Field	Description
Package Events	<p>Five package events appear on the Execute/Submit Package panel:</p> <ul style="list-style-type: none"> ▪ Created -- Indicates when the package was created, and by whom ▪ Last updated -- Indicates when the package was last modified, and by whom. ▪ Approved -- Indicates when the package was approved ▪ Executed -- Indicates when the package was executed, and by whom. Information appears in this field only when package execution has completed—whether or not the execution was successful.
ENDEVOR RC	Indicates the highest Endeavor return code received during package execution.

2.7.4.3 When You Press Enter

Upon completion of the package execution, the execution log will be displayed. Press the END key to exit the log display.

2.7.5 Executing Packages in Foreground

To execute a package online, type **E** in the OPTION field on the Execute/Submit Packages panel, then press ENTER. A message appears in the upper right corner of the panel indicating whether the package executed successfully or whether there were execution errors.

The status of the package changes to Executed, if execution was successful, or to Exec failed, if there were execution errors. The User ID, date, and time of the execution are noted in the EXECUTION field.

When the package has finished executing, press ENTER to display the first page of the Endeavor Package Execution Report (page one of the Syntax Request Report). The Syntax Request Report is followed by the Execution Report, which is followed by the Action Summary Report. Press the END key at any time to return to the Package Options Menu. The Package Execution Report is similar to the Batch Execution Report and is discussed in the *User Guide*.

Press the END key at any time to return to the Package Options Menu.

2.7.6 Executing Packages in Batch

To submit a package for batch execution, type **S** in the **OPTION** field on the **Execute/Submit Packages** panel, then press **ENTER** to display the **Submit Package** panel.

```

----- Submit Package -----
Command ==>

Complete the Submit action information below and select an action:
  1 1 Submit package      2 Cancel the Submit action
   @N Display Package Notes

Package ID..... PGMASMPGM1
Description..... move 1

JOB Card data set name:
Project.. ENDEVOR
Group.... PGM
Type..... CNTL
Member... JOBCARD

Other partitioned or sequential JOB Card data set:
Data set name.. _____

Submit options
JCL procedure name... ENDEVOR      Submit to CA-7... Y (Y/N)
                                   CA-7 Dependent JOB... CICSWRGN

```

From the **Submit Package** panel, you can:

- Type **S**, then press **ENTER** to submit the package as is.
- Type **E**, then press **ENTER** to include additional JCL with the job.

2.7.6.1 Including Additional JCL

When you type **E** in the **OPTION** field and press **ENTER**, Endeavor displays the **JCL to Be Included with Batch Job** panel.

2.7.7 Batch Package Submission Utility

The batch package submission facility, C1BM6000 has been replaced by Batch Package Facility (ENBP1000) SUBMIT PACKAGE action. Users of C1BM6000 **must migrate** to ENBP1000. For more information on the ENBP1000 action see the *SCL Reference Guide*.

2.8 Option 8: Commit Packages

2.8.1 Overview

Committing a package is the last stage in the package life cycle. When package outputs are acceptable in their current state, you can commit the package.

Note: Committing a package removes all backout/backin data records in the package file. It will also delete all the backout members from any source output libraries and processor output libraries created by the package. Refer to Backout/Backin and Package Dependencies, later in this book, titled "Shipping Package Outputs" for information about the backout/backin, package shipment.

Package commitment takes into consideration dependencies between packages, that is elements in common. Once a particular package is committed, its dependent packages (if any) can no longer be backed out or backed in. Assume you execute a package, PKG1, containing elements COPYA, COPYB, and COPYC on Monday. On Tuesday, you execute a package, PKG2, containing elements COPYD, COPYE, and, again, COPYC. On Thursday you decide to commit PKG2. PKG1 is dependent on PKG2 because PKG2's execution has affected element COPYC. Therefore, you cannot backout PKG1 once PKG2 is committed.

To commit a package:

1. Type **8** in the OPTION field on the Package Options Menu. Type a package name in the PACKAGE ID field to go directly to the Commit Package panel. Leave the PACKAGE ID field blank or type a name mask to go to a Package Selection List. Press ENTER. The Package Selection List shows only those packages available for your user ID, with a status of Executed, that meet the PACKAGE ID field criteria.
2. If the Commit Package panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to commit, then press ENTER to display the Commit Package panel.
3. Type **C** in the OPTION field of the Commit Package panel. Press ENTER to commit the package.

2.8.2 The Commit Package Panel

```

COMMIT ----- COMMIT PACKAGE -----
OPTION ==>
  C - Commit Package
PACKAGE ID: DOCTEST2                STATUS: EXECUTED
DESCRIPTION: GENNING EXISTING ELEMENTS
PACKAGE TYPE: STANDARD
SHARABLE PACKAGE: N
EXECUTION WINDOW FROM: 05FEB01 00:00   TO: 31DEC79 00:00
                USER ID  DATE    TIME
CREATED:        ZSXLGB1 05FEB01 11:21
LAST UPDATED:  ZSXLGB1 05FEB01 11:33
CAST:          ZSXLGB1 05FEB01 11:35
APPROVED:      05FEB01 11:36
EXECUTED:      ZSXLGB1 05FEB01 11:36   ENDEVOR RC: 0000
BACKED OUT:    ZSXLGB1 05FEB01 11:42
BACKED IN:     ZSXLGB1 05FEB01 11:45
    
```

All fields on the Commit Package panel except the OPTION field are display-only.

Field	Description
Option	Type C in this field to commit a package.
Package ID	The package name.
Status	The status of the package, which is always executed on the Commit Package panel.
Description	The package description.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person: Y (yes) or N (no).
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).

Field	Description
Package Events	<p>Provides information about the following package events:</p> <ul style="list-style-type: none">▪ Created -- Indicates when the package was created, and by whom.▪ Last updated -- Indicates when the package was last modified, and by whom.▪ Cast -- Indicates when the package was cast, and by whom▪ Approved -- Indicates when the package was approved.▪ Executed -- Indicates when the package was executed, and by whom. Information appears in this field only when package execution has completed--whether or not the execution was successful.▪ Backed out -- Indicates when the package was last backed out, and by whom▪ Backed in -- Indicates when the package was last backed in, and by whom.
ENDEVOR RC	<p>Appears next to the PACKAGE EVENTS: EXECUTED field. Indicates the highest Endeavor return code received during package processing.</p>

2.9 Option 9: Utilities

2.9.1 Overview

Use option **9**, utilities, to:

- Reset packages
- Export packages
- Delete packages

You can use these utilities at any time during your work session.

To use the package utilities:

1. Type **9** in the **OPTION** field on the Package Options Menu. Type a package name in the **PACKAGE ID** field to go directly to a Package Utilities panel. Leave the **PACKAGE ID** field blank or type a name mask to go to a Package Selection List. Modify the status fields if necessary to tailor the selection list. Press **ENTER**.
2. If the Package Utilities panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to cast, then press **ENTER** to display the Package Utilities panel.
3. From the Package Utilities panel, you can:
 - a. Display a summary of the package by typing **D** in the **OPTION** field, then pressing **ENTER**. See Option 1: Display Package Information, earlier in this chapter, for more information.
 - b. Export the package SCL to an external data set by typing **E** in the **OPTION** field, then pressing **ENTER**. See Exporting Packages, later in this chapter, for more information.
 - c. Reset the package by typing **R** in the **OPTION** field, then pressing **ENTER**. See Resetting Packages, later in this chapter, for more information.
 - d. Delete the package by typing **#** in the **OPTION** field, then pressing **ENTER**. See Deleting Packages, later in this chapter, for more information.

Note: Deleting a package can prevent collection of dependent packages.

2.9.2 The Package Utilities Panel

```

UTILITY ----- PACKAGE UTILITIES -----
OPTION ==>
  D - Display Package           R - Reset Package
  E - Export Package           # - Delete Package
PACKAGE ID: DOCTEST2          STATUS: COMMITTED
DESCRIPTION: GENNING EXISTING ELEMENTS
PACKAGE TYPE: STANDARD
TO ISPF LIBRARY:
  PROJECT ==> BST              REPLACE MEMBER ==> (Y/N)
  GROUP   ==> SUPPORT
  TYPE    ==> SRCLIB
  MEMBER  ==>
OTHER PARTITIONED OR SEQUENTIAL DATA SET:
  DATA SET NAME ==>

```

2.9.2.1 Fields You Can Enter or Change

The TO ISPF LIBRARY, OTHER PARTITIONED OR SEQUENTIAL DATA SET, and REPLACE MEMBER fields are explained in Exporting Packages, later in this chapter.

Field	Description
Option	<p>Indicate the option you want to use:</p> <ul style="list-style-type: none"> ■ Select D to display package information. ■ Select R to reset the package. ■ Select E to export the package's SCL to an external data set. ■ Select # to delete the package. ■ These options are discussed later in this section.

2.9.2.2 Display-Only Fields

Field	Description
Package ID	The package name.
Status	The current status of the package.
Description	The package description.
Package Type	The type of package: standard or emergency.

When you have entered the appropriate information, press ENTER. The next panel to appear depends on the option you selected.

2.9.2.3 Displaying Packages

When you select option **D**, DISPLAY, from the Package Utilities panel, the Package Display panel returns for the package. See Option 1: Display Package Information, earlier in this chapter, for more information.

2.9.2.4 Resetting Packages

One of the advantages of working with a package is that it is reusable; you need not redefine the package contents every time you want to use it. When you reset a package, you are starting the package processing procedure over. The RESET option returns the package to an In-edit status, allowing you to correct or change the package as necessary. Resetting a package removes the locks from all elements referenced in the package. All package event information is removed, with the exception of when the package was created and by whom. You can reset a package at any time during package processing, from any option.

Package dependencies are ignored when you reset a package that has been executed. Therefore, be sure to examine your executed packages carefully before you reset them. If you reset an executed package which has dependencies you could affect the integrity of the data in the dependent packages. Resetting an executed status deletes all backout members associated with it causing packages and their dependent packages to become unshippable.

To reset a package, type **R** in the OPTION field on the Package Utilities panel and press ENTER. The Package Utilities panel returns, with a message indicating that the package has been reset.

2.9.2.5 Exporting Packages

With the EXPORT option, you can copy the package's SCL into an external data set. The package itself is still available within Endeavor.

To export a package, type **E** in the OPTION field of the Package Utilities panel. You must also indicate to where you want to export the package. Fill in the remaining fields on the Package Utilities panel, as follows.

Field	Description
To ISPF Library	Indicates the data set (library) to which you want to export the package.
Other Partitioned or Sequential Data Set	Indicates the data set name (and member name, if the data set is a library) of the data set to which you want to export the package. Use this field as an alternative to defining an external data set.

Field	Description
Replace Member	<p>Indicates whether you want to replace a member with the same name with the exported data.</p> <ul style="list-style-type: none"> ■ Y -- Replace an existing member ■ N -- Do not replace the member if it exists. If you select N and the indicated member currently resides in the external data set, Endeavor does not export the member.

Press ENTER. The Package Utilities panel returns with an appropriate message.

2.9.2.6 Deleting Packages

At some point, you may decide that you no longer need or want a particular package in your files. You can delete the package directly from the Package Utilities panel.

Package dependencies are ignored when you delete a package. Therefore, be sure to examine your packages carefully before you delete them. If you delete a package that has dependencies, you could affect the integrity of the data in the dependent packages.

Important! Exercise caution when you delete a package, as the package is no longer available—in any form—when it is deleted. Use of the DELETE command can cause dependent packages to become unshippable.

To delete a package, type # in the OPTION field of the Package Utilities panel and press ENTER. The Package Utilities panel returns immediately. The package is deleted and can no longer be accessed.

2.10 Option 7: Backing Out/Backing In Package Outputs

2.10.1 Overview

Should you discover a problem once you have executed the package, or if the execution failed, you can undo the effects of the execution using the BACKOUT option. For example, assume your package executed successfully, but its execution caused problems elsewhere in the system. You can undo the execution and return the outputs of the package to the state they were in prior to being executed.

Should you decide that you want to return the outputs to the executed state, you can "undo the undo" using the BACKIN option.

Use option 7, BACKOUT, on the Package Options Menu to backout and backin a package. BACKOUT returns all the outputs produced by the execution of the package to their prior state. BACKIN reinstates the outputs.

When you perform the package BACKOUT option, you must use the BSTCOPY utility rather than the IEBCOPY utility. BSTCOPY is discussed in more detail in the *Extended Processors Guide*.

Note: Package backout deals with Endeavor output libraries, not base and delta libraries. If reverse delta format is being used, the base library member will not be backed out. Please also take note that any outputs that are written to Endeavor libraries, such as listings, will not be backed out either. will *not* be backed out.

2.10.2 Why Backout Does Not Affect Source

Package backout is designed to restore load modules and other executables to their pre-package execution state. Backout does not restore the source to its previous image, because the "bad" source is the audit trail of the change. This audit trail should not be disrupted for any reason, because it allows you to view change history and changes only online, facilitating problem resolution.

Endeavor "knows" that the executables have been backed out even if the source isn't, by flagging the element in the MCF. Endeavor warns users who subsequently attempt to retrieve the backed out element that they are working with a backed out copy.

Note: If you want to restore the prior level of source, you can do so online by selecting the **S** option (Summary of Levels) from the Retrieve Elements panel. The prior level of source, after retrieval, can then be added back into Endeavor, creating a new change level and preserving the audit trail of the bad change.

2.10.3 Backout/Backin and Package Dependencies

As with package commit, package backout and backin takes into consideration dependencies between packages. Assume you execute a package, PKG1, containing elements COPYA, COPYB, COPYC, and COPYF. You then execute a package, PKG2, containing element COPYF, as well as elements COPYD, COPYE. Next, you decide that you need to backout PKG1. Because PKG2's execution has affected element COPYF, which is common to both packages, you must backout PKG2 first. Otherwise, the element will not be returned to its appropriate pre-execution state.

2.10.3.1 Procedure

1. Type **7** in the OPTION field on the Package Options Menu. Type a package name in the PACKAGE ID field to go directly to a Package Backout panel. Leave the PACKAGE ID field blank or type a name mask to go to a Package Selection List. Press ENTER.

The Package Selection List shows only those packages available for your user ID, with a status of Executed, In-execution, or Exec-failed, that meet the PACKAGE ID field criteria.

2. If the Package Backout panel displays, go to Step 3. If a Package Selection List displays, select the package you wish to cast, then press ENTER to display the Package Backout panel.
3. From the Package Backout panel, you can:
 - Back out the package by typing **BP** in the OPTION field, then pressing ENTER.
 - If the backout is successful, the Package Options Menu is returned immediately.
 - If the backout is not successful, the Package Backout Report appears, indicating why the backout failed. You can review the report online or in batch.
 - Back in the package by typing **BI** in the OPTION field, then pressing ENTER.
 - If the backin is successful, the Package Options Menu returns immediately. The next time the Backout Package panel is accessed, the BACKED IN field contains user ID, date, and time information.
 - If the backin is not successful the Package Backin Report is returned, indicating why the backin failed. You can review the report online or in batch.
 - Display package backout information by typing **B** in the OPTION field, then pressing ENTER
 - The DISPLAY BACKOUT INFORMATION option is discussed fully in Option 1: Display Package Information, earlier in this chapter.

2.10.4 The Backout Package Panel

```

BACKOUT ----- BACKOUT PACKAGE -----
OPTION ==>
  BP - Backout Package           B - Display Backout Information
  BI - Backin Package
PACKAGE ID: DOCTEST2           STATUS: EXECUTED
DESCRIPTION: GENNING EXISTING ELEMENTS
PACKAGE TYPE: STANDARD
SHARABLE PACKAGE: N
EXECUTION WINDOW FROM: 05FEB01 00:00   TO: 31DEC01 00:00
                        USER ID DATE   TIME
CREATED:      ZSXLGB1 05FEB01 11:21
LAST UPDATED: ZSXLGB1 05FEB01 11:33
CAST:         ZSXLGB1 05FEB01 11:35
APPROVED:     05FEB01 11:36
EXECUTED:     ZSXLGB1 05FEB01 11:36 ENDEVOR RC: 0000
BACKED OUT:
BACKED IN:
    
```

All fields with the exception of the OPTION field on the Backout Package panel are display-only.

Field	Description
Option	<p>Indicate the option you want to use:</p> <ul style="list-style-type: none"> ▪ Select BP to backout the package ▪ Select BI to backin the package. ▪ Select B to display backout information. <p>These options are discussed in more detail at the end of this section.</p>
Package ID	The package name.
Status	The status can be Executed, In-execution, or Exec-failed.
Description	The package description.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person (usually the creator of the package) when in in-edit status: Y (yes) or N (no).
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).

Field	Description
Package Events	<p>Provides information about the following package events:</p> <ul style="list-style-type: none">▪ Created -- Indicates when the package was created, and by whom.▪ Last updated -- Indicates when the package was last modified, and by whom.▪ Cast -- Indicates when the package was cast, and by whom▪ Approved -- Indicates when the package was approved.▪ Executed -- Indicates when the package was executed, and by whom. Information appears in this field only when package execution has completed—whether or not the execution was successful.▪ Backed out -- Indicates when the package was last backed out, and by whom.▪ Backed in -- Indicates when the package was last backed in, and by whom.
ENDEVOR RC	Indicates the highest Endeavor return code received during package processing. (Appears next to the PACKAGE EVENT: EXECUTED field.)

2.10.5 Backout and Backin Execution Logs

When you backout or backin a package, Endeavor produces a log of the processing performed. This report is written to the *userid.C1TEMPrn.MSGS* file, as with any foreground execution report. An example of a backout report is shown below.

```

COPYRIGHT (C)COMPUTER ASSOCIATES, INC., 2002                30APR01 10:55:39        PAGE 1
E N D E V O R P A C K A G E   B A C K - O U T   R E P O R T   R E L E A S E   X . X X   S E R I A L   X X X X X X
10:55:39 PKMR600I BEGINNING VERIFICATION FOR BACK-OUT OF PACKAGE DOCUMENTATION
10:55:41 PKMR610I BST.QA36.LISTS2(DPROG1) WILL BE RECOVERED AS OF PACKAGE (N/A)
10:55:42 PKMR610I BST.QA36.OBJLIB2(DPROG1) WILL BE RECOVERED AS OF PACKAGE (N/A)
10:55:43 PKMR610I BST.QA36.SRCOUT2(DPROG1) WILL BE RECOVERED AS OF PACKAGE (N/A)
10:55:43 PKMR610I BST.QA36.LISTS2(DPROG2) WILL BE RECOVERED AS OF PACKAGE GRW22
10:55:44 PKMR610I BST.QA36.OBJLIB2(DPROG2) WILL BE RECOVERED AS OF PACKAGE GRW22
10:55:44 PKMR610I BST.QA36.SRCOUT2(DPROG2) WILL BE RECOVERED AS OF PACKAGE GRW22
10:55:44 PKMR610I BST.QA36.LISTS2(DPROG3) WILL BE RECOVERED AS OF PACKAGE GRW2
10:55:45 PKMR610I BST.QA36.OBJLIB2(DPROG3) WILL BE RECOVERED AS OF PACKAGE GRW2
10:55:45 PKMR610I BST.QA36.SRCOUT2(DPROG3) WILL BE RECOVERED AS OF PACKAGE GRW2
10:55:45 PKMR611I BST.QA36.LISTS2(DPROG4) WILL BE DELETED
10:55:45 PKMR611I BST.QA36.OBJLIB2(DPROG4) WILL BE DELETED
10:55:45 PKMR611I BST.QA36.SRCOUT2(DPROG4) WILL BE DELETED
10:55:45 PKMR690I PACKAGE BACK-OUT VERIFICATION COMPLETED WITHOUT ERRORS
10:55:45 PKMR700I BEGINNING BACK-OUT OF PACKAGE DOCUMENTATION
10:55:46 PKMR710I BST.QA36.LISTS2(DPROG1) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:55:49 PKMR710I BST.QA36.OBJLIB2(DPROG1) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:55:50 PKMR710I BST.QA36.SRCOUT2(DPROG1) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:55:52 PKMR710I BST.QA36.LISTS2(DPROG2) HAS BEEN RECOVERED AS OF PACKAGE GRW22
10:55:54 PKMR710I BST.QA36.OBJLIB2(DPROG2) HAS BEEN RECOVERED AS OF PACKAGE GRW22
10:55:56 PKMR710I BST.QA36.SRCOUT2(DPROG2) HAS BEEN RECOVERED AS OF PACKAGE GRW22
10:55:58 PKMR710I BST.QA36.LISTS2(DPROG3) HAS BEEN RECOVERED AS OF PACKAGE GRW2
10:56:00 PKMR710I BST.QA36.OBJLIB2(DPROG3) HAS BEEN RECOVERED AS OF PACKAGE GRW2
10:56:01 PKMR710I BST.QA36.SRCOUT2(DPROG3) HAS BEEN RECOVERED AS OF PACKAGE GRW2
10:56:04 PKMR710I BST.QA36.LISTS2(DPROG4) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:56:05 PKMR710I BST.QA36.OBJLIB2(DPROG4) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:56:06 PKMR710I BST.QA36.SRCOUT2(DPROG4) HAS BEEN RECOVERED AS OF PACKAGE (N/A)
10:56:07 PKMR790I PACKAGE BACK-OUT COMPLETED WITHOUT ERRORS

```

The validation section of this report tells you which outputs will be backed out, and their status after backout is complete. Outputs can be:

- **Recovered as of package (N/A)**, meaning that the outputs were not associated with any package before the backed out package was executed.
- **Recovered as of package *package ID***, meaning that the outputs were associated with the named package before the backed out package was executed.
- **Deleted**, meaning that the outputs did not exist before the backed out package was executed.

The backout section of the report tells you which outputs were backed out and their status when the backout was completed.

The Backin execution log has a similar format.

Chapter 3. Performing Package Processing in Batch

3.1 Batch Package Facility

Endevor's Batch Package Facility allows you to perform package processing in batch. This process involves placing package action SCL in an SCL data set and specifying when to submit this SCL for processing.

In addition, the Endevor Batch Package Facility:

- Supports all foreground package actions. Refer to Chapter 2, "Processing Packages in Foreground," for information on foreground package processing.
- Provides the additional package actions:
 - SUBMIT
 - ARCHIVE
 - INSPECT
- Has the same package status requirements as those used in foreground. Refer to Chapter 2, "Processing Packages in Foreground," for information on package status requirements.
- Supports before- and after-package exits.
- Invokes the GENPKID exit, if installed, to generate a new package ID. See *Exits Guide* for information on package exits.
- The SUBMIT action allows you to schedule package execution using the CA-7 scheduling application. For information on implementing the CA-7 interface please see Chapter 6, "CA-7 Interface for Package Execution" on page 6-1

To generate and submit package action SCL for processing in batch, you must do the following:

- Specify SCL data set information.
- Create a selection list of packages.
- Specify the package actions to be performed on selected packages.
- Specify additional package action information if it is required for the action you chose to perform.
- Specify when to submit the package action SCL for batch processing.

The sections that follow describe how to perform each of the above tasks.

3.2 Specify SCL Data Set Information

You specify SCL data set information on the Batch Package panel. This panel allows you to either build the SCL necessary to perform package processing in batch, or edit, browse, or submit existing SCL.

Perform the following steps to specify the SCL data set information.

1. Access the Batch Package panel by typing **6** (Batch Packages) in the **OPTION** field on the Primary Options Menu and pressing **ENTER**. The Batch Package panel appears:

```

----- Batch Package -----
Command ==>
Enter the SCL data set name and select an action:
_ 1. Build SCL                2. Edit SCL                3. Browse SCL
                               5. Build Additional JCL  6. Submit JCL

SCL data set name:
Project.. _____
Group.... _____
Type..... _____
Member... _____
Other sequential or partitioned data set:
Data set name.. _____
SCL processing options:
Append to existing SCL.. _ (Y/N)
Include additional JCL.. _ (Y/N)
JCL JOB statements
_____
_____
_____

```

2. Select an action by typing the number of the action you want to use in the ...SELECT AN ACTION field. The table below describes the valid actions:

Action	Used To
1. Build SCL	Create the SCL necessary to perform package processing in batch.
2. Edit SCL	Edit batch package SCL using the standard ISPF/PDF edit facility.
3. Browse SCL	Review batch package SCL using the standard ISPF/PDF browse facility.
5. Build Additional JCL	Build additional JCL statements to be submitted with the execution JCL.
6. Submit JCL	Submit a JCL job stream that executes one or more package in batch. Before submitting the job, you can use action 5 to specify additional DD statements to be included with the job.

3. Enter the name of the SCL data set that contains the package action SCL or that you want to contain the package action SCL in the SCL DATA SET NAME fields or the SEQUENTIAL OR PARTITIONED DATA SET field. Use standard ISPF data set specifications. You can specify either a partitioned data set or a sequential file. The record length of the data set can be either fixed (exactly 80) or variable (at least 84).
4. Specify SCL Processing Options in the SCL PROCESSING OPTION fields:
 - a. APPEND TO EXISTING SCL--Type **Y** in this field if you wish to append new SCL to existing SCL in the specified data set. Type **N** in this field if you want to replace the data that currently exists in that data set.
 - b. INCLUDE ADDITIONAL JCL--Type **Y** in this field if you wish to include additional JCL to be submitted with the execution JCL. Use action **5**, BUILD ADDITIONAL JCL, to specify the additional DD statements to be included. Type **N** in this field if you do not want to include additional DD statements.
5. If you are ready to submit the package action SCL for processing specify the JCL job statement in the JCL JOB STATEMENTS field to execute the package actions, using action **6**, Submit JCL. Otherwise continue with Step 6.
6. Press ENTER. The panel that appears depends upon the action you specified in Step 2 above.

If You Select	Then
1. Build SCL	The Package Specification panel appears. To use this panel, refer to the section entitled Building a Package Selection List.
2. Edit SCL	The ISPF edit panel appears displaying the data set you specified in Step 3. Use this panel to edit batch package SCL.
3. Browse SCL	The ISPF browse panel appears displaying the data set you specified in Step 3. Use this panel to review the batch package SCL.
5. Build Additional JCL	The Batch Package Additional JCL panel appears. Use this to specify additional JCL statements to be submitted with the execution JCL.
6. Submit JCL	The package action SCL is submitted using the JCL job statement specified in the JCL JOB STATEMENT field

3.3 Create a Selection List of Packages

The Package Specification Panel, shown below, appears when you select action **1**, Build SCL, from the Batch Package panel.

```

----- Package Specification Panel -----
Command ==>
Enter a Package identifier below and select an action:
_ 0 Display List      1 Define
Package ID.. _____
List Packages with the following status:
In-edit..... - (Y/N)
In-approval... - (Y/N)
Denied..... - (Y/N)
Approved..... - (Y/N)
In-execution... - (Y/N)
Executed..... - (Y/N)
Committed..... - (Y/N)
Additional selection criteria:
Where older than ___ days

```

This panel lets you:

- Build a package selection list from which you select the package actions to be performed on one or more packages.
- Define (create) a new package or update an existing package.

Both tasks are described below.

3.3.1 Building a Package Selection List

To build a list of packages:

1. Select DISPLAY LIST by typing **0** in the .SELECT AN ACTION field.
2. Provide a package ID in the PACKAGE ID field. You can:
 - Enter a specific package ID to apply an action to a specific package.
 - Generate a selection list by leaving this blank or by specifying a wildcard in this field. Endeavor builds a list of packages that match the wildcard.
3. To limit your selection list of packages to those with a specific status, type **Y** in the appropriate status field(s). If you do not wish to include packages of a specific status type in your selection list, tab to that field(s) and type **N**.
4. To limit your selection list to packages that were created a specific number of days ago, specify the number of days (up to 999) in the ADDITIONAL SELECTION CRITERIA field.
5. Press ENTER, the Package Selection List appears. You can then apply actions to one or more of the packages in this list.

You can specify one or any combination of the fields on this panel when building a package selection list.

For instructions on applying actions to packages in the selection list, refer to the Specify Actions to Perform on Selected Packages section.

3.3.2 Defining or Updating a Package

To define a new package or update an existing package, perform the following:

1. Select DEFINE by typing **1** in the AN ACTION field.
2. Type the fully-qualified ID of the package you wish to create or update in the PACKAGE ID field. If you have the GENPKGID exit enabled at your site, you can leave this field blank. When this field is left blank, Endeavor automatically generates a new package ID when you press ENTER. For more information about the GENPKGID exit, see *Exits Guide*.
3. Press ENTER. The panel that appears next depends on whether you are creating a new package or updating an existing one. The Create a New Package panel appears when creating a new package. For instructions on using the Create a New Package panel, see Create a New Package Panel. The Modify an Existing Package panel appears when updating a package. For instructions on using the Modify an Existing Package panel, see the section entitled Modify an Existing Package Panel.

3.4 Specify Actions to Perform on Selected Packages

The Package Selection List panel shown below appears when you select DISPLAY LIST from the Package Specifications Panel.

```

----- Package Selection List -----
Command ==>
Actions:
  DE Define      CA Cast        AP Approve     DN Deny
  IN Inspect     EX Execute     BO Backout     BI Backin
  CO Commit      RE Reset       DL Delete      EP Export
  SU Submit      AR Archive
Display:
PS Package Summary
Package ID      Status      Description
-----
DE MJFDELETE1   IN-EDIT     DELETE ELEMENTS
CA MJFDELETE3   IN-EDIT     DELETE ELEMENTS
RE MJFPACK1     IN-EDIT     MJF TEST PACKAGE
MJFPACK1A      IN-EDIT     MJF TEST PACKAGE
MJFPACK10      IN-EDIT     TEST
MJFPACK2       IN-EDIT     TEST PACKAGE
MJFPACK3       IN-EDIT     TEST PACKAGE
MJFPACK4       IN-EDIT     MJFPACK3
MJFPACK5       IN-EDIT     TEST
MJFPACK6       IN-EDIT     TEST
MJFPACK7       IN-EDIT     TEST
MJFPACK8       IN-EDIT     TEST
MJFPKG1        IN-EDIT     TEST MJF PACKAGE

```

This panel lets you apply actions to one or more of the packages in the list. Specify the actions you wish to perform on the package by typing the two-letter action code beside the appropriate package ID and pressing ENTER. If additional information is required in order to process a particular action, a second panel appears so you can enter the appropriate information for that action. The Additional Information panels are described in the Specify Additional Package Action Information section.

Note: The Package Selection List contains all packages that meet the criteria specified on the Package Specification Panel. You may not, however, be authorized to perform all actions against every package in the list for the following reasons:

- The package is in the wrong state for the action selected.
- The package is non-sharable and you are not the owner of the package.
- The package has one or more approvers associated with it of which you are not a member.

If no additional information is required for the specified action the word "written" appears next to the package ID to indicate that the package action SCL has been written to the SCL data set. To exit the Package Selection List enter the END command. The Batch Package panel appears again.

3.4.1 Package Actions

The following table lists and defines the batch package actions that you can specify, along with the required status of the package to which that action is applied. The table also indicates the panel that appears if additional information is required to process that action.

Action	Description	Required Status	Additional Information Panel
Define	Updates an existing package.	In-edit for an existing package.	Modify an Existing Package panel. See Submit Package Panel.
Cast	Casts a package, which freezes the data and prevents further changes at that time.	In-edit	Cast Package panel. See The Cast Package Panel.
Approve	Approves a package for execution.	In-approval.	Approve Package panel. See the section entitled The Approve Package Panel.
Deny	Denies execution of a package.	In-approval.	Deny Package panel. See the section entitled Deny Package Panel.
Execute	Executes a package.	Approved.	Execute Package panel. See the section entitled Execute Package Panel.
Backout	Backs out the change package to restore the executable and output modules to the state they were in prior to execution.	Executed, In-execution and Exec-failed.	None.
Backin	Backs a package in, reversing the BACKOUT PACKAGE action.	Executed.	None.

Action	Description	Required Status	Additional Information Panel
Commit	Commits a package removing all backout/backin data, but retaining package event information.	Executed.	None.
Reset	Resets a package to a status of In-edit.	Any status.	None.
Delete	Deletes an entire package from Endeavor.	Any status.	None.
Export	Writes the SCL associated with a package to an external data set.	Any status.	Export Package panel. See the section entitled Export Package Panel.
Submit	Submits a JCL job stream to execute one or more packages.	Approved or Exec-failed.	Submit Package panel. See the section entitled Submit Package Panel.
Archive	Off-loads a package definition to an external data set. The ARCHIVE action can, optionally, delete the package after it is successfully written to an external data set.	<ul style="list-style-type: none"> ▪ Execute if backout is not enabled. ▪ Committed if backout is enabled. 	Archive Package panel. See The Archive Package Panel.

3.4 Specify Actions to Perform on Selected Packages

Action	Description	Required Status	Additional Information Panel
Inspect	The Inspect action checks each element for security, signout, and synchronization conflicts and source changes and reports on the changes in element status that might effect the successful execution of the package. For a list of validations for INSPECT, please see the sections titled 2.4.2.2, “Validating Components” on page 2-46 and 2.4.2.3, “Validations for CAST and INSPECT” on page 2-48 earlier in this document.	In-approval, Approved, In-execution, or Exec-failed.	None.
Package Summary	Displays information about a package.	Any status.	Package Summary panel. See Package Summary Panel.

3.5 Specify Additional Package Action Information

3.5.1 Overview

Endeavor requires additional information for certain package actions specified on the Package Selection List panel. An additional panel appears for the following actions so that you can enter the required information.

- APPROVE
- ARCHIVE
- CAST
- DEFINE
- DENY
- EXECUTE
- EXPORT
- SUBMIT

This section describes each of the panels that appear.

3.5.2 The Approve Package Panel

The Approve Package panel appears when you specify the APPROVE (AP) action on the Package Selection panel. You can use this panel to:

- Approve a package for execution.
- Cancel the APPROVE action.
- Enter notes you may want to associate with the package.

```

----- Approve Package -----
Command ==>
Complete the package information below and select an action:
  - 1 Approve package      2 Cancel the Approve action
  - N Enter Package Notes
Package ID.....
Description.....
Package Type.....
Sharable Package.....
Enable Backout.....
Execution window from..      to
Created by user      on date      at time
SCL last updated by user      on date      at time
Cast by user      on date      at time

```

To approve a package:

1. Select APPROVE PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Press ENTER.

To cancel the APPROVE action:

1. Select CANCEL THE APPROVE ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To enter notes:

1. Select ENTER PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Enter Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to the Enter Package Note Text Panel section.

3.5.2.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are approving.
Description	The package description specified when the package was created.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: <ul style="list-style-type: none">▪ Y -- The package is sharable, and can be edited by anyone.▪ N -- The package can be edited only by its creator.
Field	Description
Enable Backout	Indicates whether the backout/backin facility has been enabled for this package: <ul style="list-style-type: none">▪ Y -- The backout/backin facility can be used.▪ N -- The backout/backin facility cannot be used with this package.

Field	Description
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).
Package Event Information	This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked: <ul style="list-style-type: none"> ▪ Created by -- Indicates when the package was first built. ▪ Last updated by -- Indicates when the package SCL was last modified. ▪ Cast by -- Indicates when the package was cast.

3.5.3 The Archive Package Panel

The Archive Package panel appears when you specify the ARCHIVE (AR) action on the Package Selection panel. You can use this panel to:

- Archive a package definition to an external data set. The ARCHIVE action can, optionally, delete the package after it is successfully written to an external data set.
- Cancel the ARCHIVE action.
- Display any notes associated with the package.

```

----- Archive Package -----
Command ==>
Complete the Archive action information below and select an action:
  - 1 Archive package          2 Cancel the Archive action
  - N Display package Notes
Package ID.....
Description.....
Archive to data set name:
  Project.. _____
  Group...  _____
  Type..... _____
  Member... _____
Other partitioned of sequential data set:
  Data set name.. _____
Archive options
  Delete after Archive.. _ (Y/N)
  Replace Member..... _ (Y/N)

```

To archive a package:

1. Select ARCHIVE PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Enter the name of the data set to which the package definition is to be archived in the ARCHIVE TO DATA SET NAME fields or the OTHER PARTITIONED OR SEQUENTIAL DATA SET field. Use standard ISPF data set specifications. The

data set you specify can be a partitioned or a sequential file with variable length records of at least 4096 bytes. The data set blocksize must be at least 4100.

3. Specify your desired archive options in the ARCHIVE OPTIONS fields:
 - a. DELETE AFTER ARCHIVE--Type **Y** in this field if you wish to delete the package after the package definition is successfully archived . Type **N** in this field if you do not want to delete the package after it is archived.
 - b. REPLACE MEMBER--Type **Y** in this field if you wish to replace an existing like-named member. You can only replace a member if a member name is specified in the ARCHIVE TO DATA SET NAME fields. Type **N** in this field if you do not want to replace the member.
 - c. Press ENTER.

To cancel the ARCHIVE action:

1. Select CANCEL THE ARCHIVE ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To display notes:

1. Select DISPLAY PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Display Package Note Text panel appears. For instructions on using the Display Package Note Text panel, refer to the Display Package Note Text Panel section.

3.5.3.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are archiving.
Description	The package description, as defined when the package was created.

3.5.4 The Cast Package Panel

The Cast Package panel appears when you specify the CAST (CA) action on the Package Selection panel. You can use this panel to:

- Cast a package.
- Cancel the CAST action.
- Enter notes you may want to associate with the package.

```

----- Cast Package -----
Command ==>
Complete the package information below and select an action:
  - 1 Cast Package      2 Cancel the Cast action
  - N Enter Package Notes
Package ID.....
Description.....
Package Type.....
Sharable Package.....
Validate Components... - (Y/N/W)
Enable Backout..... - (Y/N)
Execution window from.. ___ to ___ ___
Created by user      on date ___ at time ___
SCL last updated by user      on date ___ at time ___

```

To cast a package:

1. Select CAST PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Specify whether Endeavor should validate package components when casting the package in the VALIDATE COMPONENTS field.
 - **Y** -- Validate components, and do not allow the cast if validation fails.
 - **N** -- Do not validate components
 - **W** -- Validate components, but do not fail the cast if there are errors. You can only specify this field if your site allows you to specify, through C1DEFLT5, whether component validation is to be performed. For additional information on component validation see Validating Components.
3. Specify whether the backout/backin facility is available for this package in the ENABLE BACKOUT field:
 - **Y** -- The backout/backin facility can be used.
 - **N** -- The backout/backin facility cannot be used with this package.
4. Specify the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format) in the EXECUTION WINDOW FROM/TO field. The initial values are taken from the package definition.
5. Press ENTER.

To cancel the CAST action:

1. Select CANCEL THE CAST ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To enter notes:

1. Select ENTER PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Enter Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to Enter Package Note Text Panel.

3.5.4.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are casting.
Description	The package description specified when the package was created.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: Y -- The package is sharable, and can be edited by anyone. N -- The package can be edited only by its creator.
Package Event Information	This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked: Created by -- Indicates when the package was first built. SCL Last Updated by -- Indicates when the package was last modified.

3.5.5 Create a New Package Panel

The Create a New Package panel appears when you select action **1**, Define, on the Package Specification Panel to create a new package.

Important: You can define a new package using the Define Package panel by copying the contents of an existing package or by importing the SCL from an existing data set. The Batch Package Facility does not provide a mechanism to build the action SCL that makes up a package. You can do this either by:

- Using option **5**, PACKAGES, on the Primary Options Menu. See Option 2: Create/Modify Packages for instructions on creating packages.
- Using option **3**, BATCH, on the Primary Options Menu. See the *User Guide* for instructions on creating action requests.
- Entering the SCL using the ISPF/PDF editor. Refer to the *SCL Reference Guide* for SCL information.

You can use this panel to:

- Define a new package.
- Cancel the DEFINE action.
- Enter notes you may want to associate with the package.

```

----- Create a New Package -----
Command ==>
Complete the package information below and select an action:
  - 1 Define Package      2 Cancel the Define Action
  - N Enter Package Notes
Package ID.....
Description..... _____
Package Type..... _____ (Standard/Emergency)
Sharable Package..... - (Y/N)
Enable Backout..... - (Y/N)
Append to Package..... - (Y/N)
Execution window from.. _____ to _____
Package to be copied... _____
SCL import data set name
  Project.. _____
  Group...  _____
  Type..... _____
  Member... _____
Other SCL partitioned or sequential data set:
  Data set name.. _____

```

To define a new package:

1. Select DEFINE PACKAGE by typing 1 in the ...SELECT AN ACTION field.
2. Specify the appropriate information in the following fields.

Field	Information
Description	Provide a package description. You can enter up to a 50-character description. If the text contains imbedded spaces enclose it in single quotation marks.
Package Type	Specify the type of package: standard or emergency.
Sharable Package	Specify whether this package can be edited by more than one person when in In-edit status. <ul style="list-style-type: none"> ■ Y -- The package is sharable, and can be edited by other than the package creator. ■ N -- The package can be edited only by its creator.
Enable Backout	Specify whether the backout/backin facility is available for this package: <ul style="list-style-type: none"> ■ Y -- The backout/backin facility can be used ■ N -- The backout/backin facility cannot be used with this package.

Field	Information
Append To Package	Specify whether you want to append imported or copied data to the contents of this package. If you do not append the data, the contents of the package will be overwritten with the new information. This field is valid only if the SCL IMPORT DATA SET NAME fields or the PACKAGE TO BE COPIED field are specified. <ul style="list-style-type: none"> ▪ Y -- Append new data to the existing package ▪ N -- Overwrite the existing contents of the package
Execution Window From/to	Specify the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).
Package To Be Copied	Enter a package ID in this field if you want the DEFINE action to copy SCL from an existing package into the package you are creating. The package ID you specify must be a fully qualified, existing package.
SCL Import Data Set Name	Specify an existing data set name or DD statement if you would like the DEFINE action to import the SCL from the data set specified into the package you are creating. Use standard ISPF data set specifications.
Other SCL Partitioned or Sequential Data Set	Specify the data set name of the data set containing the SCL you want to import into the package you are creating. You can specify either a partitioned data set or a sequential file. The record length of the data set can be either fixed (exactly 80) or variable (at least 84).

1. Press ENTER.

To cancel the DEFINE action:

1. Select CANCEL THE DEFINE ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To enter notes:

1. Select ENTER PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Enter Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to the Enter Package Note Text Panel section.

3.5.5.1 Field Descriptions

The following field appears on the Create a New Package panel and is display-only:

Field	Description
Package ID	Identifies the name of the package you are creating.

3.5.6 Deny Package Panel

The Deny Package panel appears when you specify the DENY (DN) action on the Package Selection panel. You can use this panel to:

- Deny execution of a package.
- Cancel the DENY action.
- Enter notes you may want to associate with the package

```

----- Deny Package -----
Command ==>
Complete the package information below and select an action:
  - 1 Deny package          2 Cancel the Deny action
  - N Enter Package Notes
Package ID.....
Description.....
Package Type.....
Sharable Package.....
Enable Backout.....
Execution window from..      to
Created by user      on date      at time
SCL last updated by user      on date      at time
Cast by user      on date      at time

```

To deny a package:

1. Select DENY PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Press ENTER.

To cancel the DENY action:

1. Select CANCEL THE DENY ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To enter notes:

1. Select ENTER PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Enter Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to the Enter Package Note Text Panel section.

3.5.6.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are denying.
Description	The package description, as defined when the package was created.
Package Type	The type of package: standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: <ul style="list-style-type: none"> ▪ Y -- The package is sharable, and can be edited by anyone. ▪ N -- The package can be edited only by its creator
Enable Backout	Indicates whether the backout/backin facility has been enabled for this package: <ul style="list-style-type: none"> ▪ Y -- The backout/backin facility can be used ▪ N -- The backout/backin facility cannot be used with this package
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in <i>hh:mm</i> format).
Package Event Information	This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked: <ul style="list-style-type: none"> ▪ Created by -- Indicates when the package was first built. ▪ SCL last updated by -- Indicates when the package was last modified. ▪ Cast by -- Indicates when the package was cast.

3.5.7 Execute Package Panel

The Execute Package panel appears when you specify the EXECUTE (EX) action on the Package Selection panel. You can use this panel to:

- Execute a package.
- Cancel the EXECUTE action.
- Display notes associated with the package

```

----- Execute Package -----
Command ==>
Complete the package information below and select an action:
  - 1 Execute package          2 Cancel the Execute action
  - N Display Package Notes
Package ID.....
Description.....
Package Type.....
Sharable Package.....
Enable Backout.....
Execution window from.. _____ to _____
Created by user      on date _____ at time _____
SCL last updated by user on date _____ at time _____
Cast by user        on date _____ at time _____
Approved on date    at time _____

```

To execute a package:

1. Select EXECUTE PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Specify the time frame within which the package can be executed, by date (in ddmmyy format) and time (in hh:mm format in the EXECUTION WINDOW FROM/TO field. The values in this field are taken from the package definition and can be changed *only* if the existing execution window is closed.
3. Press ENTER.

To cancel the EXECUTE action:

1. Select CANCEL THE EXECUTE ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To display notes:

1. Select DISPLAY PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Display Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to the Display Package Note Text Panel section.

3.5.7.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are executing.
Description	The package description specified when the package was created.
Package Type	The type of package: standard or emergency.

Field	Description
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: <ul style="list-style-type: none">▪ Y -- The package is sharable, and can be edited by anyone▪ N -- The package can be edited only by its creator.
Enable Backout	Indicates whether the backout/backin facility has been enabled for this package: <ul style="list-style-type: none">▪ Y -- The backout/backin facility can be used.▪ N -- The backout/backin facility cannot be used with this package.
Package Event Information	This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked: <ul style="list-style-type: none">▪ Created by -- Indicates when the package was first built.▪ SCL last updated by -- Indicates when the package SCL was last modified.▪ Cast by -- Indicates when the package was cast.▪ Approved on -- Indicates when the package was approved.

3.5.8 Export Package Panel

The Export Package panel appears when you specify the EXPORT (EP) action on the Package Selection panel. You can use this panel to:

- Export the SCL associated with a package to an external data set.
- Cancel the EXPORT action.
- Display notes associated with a package.

```

----- Export Package -----
Command ==>
Complete the Export data set information below and select an action:
  _ 1 Export package          2 Cancel the Export action
  _ N Display Package Notes
Package ID.....
Description.....
Created by user      on date      at time
SCL last updated by user on date      at time
Export to data set name:
  Project.. _____
  Group.... _____
  Type..... _____
  Member... _____
Other partitioned of sequential data set:
  Data set name.. _____
Export options
  Replace member.. _ (Y/N)

```

To export a package:

1. Select EXPORT PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Specify the location of the external data set to which the SCL will be written in the EXPORT TO DATA SET NAME fields. Use standard ISPF data set specifications. You can specify either a partitioned data set or a sequential file. The record length of the data set can be either fixed (exactly 80) or variable (at least 84).
3. Type **Y** in the EXPORT OPTIONS REPLACE MEMBER field if you want Endeavor to replace an existing like-named member when exporting the SCL to the external data set. You can only replace a member if a member name is specified in the EXPORT TO DATA SET NAME fields. Type **N** in this field if you do not want to replace an existing like-named member.
4. Press ENTER.

To cancel the EXPORT action:

1. Select CANCEL THE EXPORT ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To display notes:

1. Select DISPLAY PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Display Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to the section entitled Enter Package Note Text Panel.

3.5.8.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are exporting.
Description	The package description specified when the package was created.
Package Event Information	<p>This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked:</p> <ul style="list-style-type: none"> ▪ Created by -- Indicates when the package was first built. ▪ SCL last updated by -- Indicates when the package SCL was last modified.

3.5.9 Modify an Existing Package Panel

The Modify an Existing Package panel appears when you specify an existing package on the Package Specification Panel or when you specify the DEFINE (DE) action on the Package Selection List to update an existing package.

You can use this panel to:

- Update an existing package.
- Cancel the DEFINE action.
- Enter notes you may want to associate with the package.

```

----- Modify an Existing Package -----
Command ==>
Complete the package information below and select an action:
  1 Define Package      2 Cancel the Define Action
  N Enter Package Notes
Package ID.....
Description.....
Package Type..... (Standard/Emergency)
Sharable Package..... (Y/N)
Enable Backout..... (Y/N)
Append to Package..... (Y/N)
Execution window from.. ___ to ___
Package to be copied...
SCL import data set name
Project.. ___
Group.... ___
Type..... ___
Member... ___
Other SCL partitioned or sequential data set:
Data set name.. _____

```

To update a package:

1. Select DEFINE PACKAGE by typing 1 in the ...SELECT AN ACTION field.
2. Modify the appropriate information in the following fields.

Field	Information
Description	Provide a package description. The current package description of the package you are updating appears in this field. You can enter or modify an up to 50-character description. If the text contains imbedded spaces enclose it in single quotation marks.
Package Type	Specify the type of package: standard or emergency.
Sharable Package	Specify whether this package can be edited by more than one person when in In-edit status. <ul style="list-style-type: none"> ▪ Y -- The package is sharable, and can be edited by someone other than the package creator ▪ N -- The package can be edited only by its creator.
Enable Backout	Specify whether the backout/backin facility is available for this package: <ul style="list-style-type: none"> ▪ Y -- The backout/backin facility can be used ▪ N -- The backout/backin facility cannot be used with this package
Append to Package	Specify whether you want to append imported or copied data to the contents of this package. If you do not append the data, the contents of the package will be overwritten with the new information. This field is valid only if the SCL IMPORT DATA SET NAME fields or the PACKAGE TO BE COPIED field are specified. <ul style="list-style-type: none"> ▪ Y -- Append new data to the existing package. ▪ N -- Overwrite the existing contents of the package.
Execution Window From/To	Specify the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).
Package to Be Copied	Enter a package ID in this field if you want the DEFINE action to copy SCL from an existing package into the package you are updating. The package ID you specify must be a fully qualified, existing package.
SCL Import Data Set Name	Specify an existing data set name or DD statement if you would like the DEFINE action to copy the SCL from the data set specified into the package you are updating. Use standard ISPF data set specifications.

Field	Information
Other SCL Partitioned or Sequential Data Set	Specify the data set name of the data set containing the SCL you want to import into the package you are updating. You can specify either a partitioned data set or a sequential file. The record length of the data set can be either fixed (exactly 80) or variable (at least 84).

1. Press ENTER.

To cancel the DEFINE action:

1. Select CANCEL THE DEFINE ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

To enter notes:

1. Select ENTER PACKAGE NOTES by typing **N** in the ...SELECT AN ACTION field.
2. Press ENTER. The Enter Package Note Text panel appears. For instructions on using the Enter Package Note Text panel, refer to Enter Package Note Text Panel.

3.5.9.1 Field Descriptions

The following field appears on the Modify an Existing Package panel and is display-only:

Field	Description
Package ID	Identifies the name of the package you are updating.

3.5.10 Package Summary Panel

The Package Summary panel appears when you specify PACKAGE SUMMARY (PS) on the Package Selection panel. You can use this panel to display and review information about a package, exit the Package Summary panel, or display notes associated with a package.

To exit the Package Summary panel use the END command or:

1. Select END SUMMARY DISPLAY by typing **1** in the...SELECT AN OPTION... field.
2. Press ENTER.

To display any notes associated with a package:

1. Select DISPLAY PACKAGE NOTES by typing N in the ... SELECT AN OPTION... field.
2. Press ENTER. The Display Package Note Text panel appears. For instructions on using the Display Package Note Text panel, refer to the section entitled Display Package Note Text Panel.

```

----- Package Summary -----
Command ==>
Select an option to continue or use the END command to exit:
_ 1 End Summary Display  N Display Package Notes
Package ID.....
Description.....
Package State.....
Package Type.....
Sharable Package.....
Enable Backout.....
Execution window from..      to
Created by user      on date      at time
SCL last updated by user  on date      at time
Cast by user        on date      at time
Approved or denied on date  at time
Executed by userid    on date      at time
Backed Out by user    on date      at time
Backed In by user     on date      at time
Committed by user     on date      at time

```

3.5.10.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package.
Description	The package description specified when the package was created.
Package State	Indicates the current status of the package.
Package Type	The type of package standard or emergency.
Sharable Package	Indicates whether this package can be edited by more than one person when in In-edit status: <ul style="list-style-type: none"> ■ Y -- The package is sharable, and can be edited by anyone. ■ N--The package can be edited only by its creator
Enable Backout	Indicates whether the backout/backin facility has been enabled for this package: <ul style="list-style-type: none"> ■ Y -- The backout/backin facility can be used. ■ N -- The backout/backin facility cannot be used with this package.

Field	Description
Execution Window From/To	Indicates the time frame within which the package can be executed, by date (in ddmmmyy format) and time (in hh:mm format).
Package Event Information	<p>This section displays an audit trail of package "events". Each event is logged by user ID, date, and time. The following events are tracked:</p> <ul style="list-style-type: none">▪ Created by -- Indicates when the package was first built.▪ SCL last updated by -- Indicates when the package SCL was last modified.▪ Cast by -- Indicates when the package was cast.▪ Approved or denied on -- Indicates when the package was approved or denied.▪ Executed by -- Indicates when the package was last executed.▪ Backed out by -- Indicates when the package was last backed out.▪ Backed in by -- Indicates when the package was last backed in.▪ Committed by -- Indicates when the package was last committed.

3.5.11 Submit Package Panel

The Submit Package panel appears when you specify the SUBMIT (SU) action on the Package Selection panel. You can use this panel to:

- Submit a JCL job stream to execute a package.
- Cancel the SUBMIT action.

A sample JCL job stream for submitting a package can be found in iprfx.igual.JCLLIB, member name PACKAGE. Use this as a model for your own Submit procedure.

```

----- Submit Package -----
Command ==>
Complete the Submit action information below and select an action:
_ 1 Submit package      2 Cancel the Submit action
Package ID.....
Description.....
JOB Card data set name:
Project.. _____
Group...  _____
Type....  _____
Member... _____
Other partitioned or sequential JOB Card data set:
Data set name.. _____
Submit options
JCL procedure name... _____

```

To submit a package:

1. Select SUBMIT PACKAGE by typing **1** in the ...SELECT AN ACTION field.
2. Specify the location of the data set containing the JCL jobcard in the JOB CARD DATA SET NAME fields or the OTHER PARTITIONED OR SEQUENTIAL JOB CARD DATA SET field. Use standard ISPF data set specifications. You can specify either a partitioned data set or a sequential file. The record length of the data set can be either fixed (exactly 80) or variable (at least 84).
3. Specify the 1- to 8-character JCL procedure name to be invoked in the SUBMIT OPTIONS JCL PROCEDURE NAME field. A sample of a procedure is in the iprfx.igual.JCLLIB member package.
4. Press ENTER.

To cancel the SUBMIT action:

1. Select CANCEL THE SUBMIT ACTION by typing **2** in the ...SELECT AN ACTION field.
2. Press ENTER.

3.5.11.1 Field Descriptions

The following fields appear on this panel and are display-only.

Field	Description
Package ID	Identifies the name of the package you are exporting.
Description	The package description specified when the package was created.

3.5.12 Enter Package Note Text Panel

The Enter Package Note Text panel appears when you select **N** on the Approve Package, Cast Package, Create a New Package, Deny Package, and Modify an Existing Package panels. Use this panel to enter text you want to associate with the package. You may enter or modify eight text lines of up to 60 characters each. Modify the text by deleting, inserting, and overtyping. Use cursor control keys to move within the text and the PA2 key to refresh the screen.

When you finish typing the text, press ENTER then the END command to save your changes, otherwise press the END command to cancel text updates and return to the previous panel.

```
----- Enter Package Note Text -----
Command ==>
.....1.....2.....3.....4.....5.....6
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
Press ENTER to process the Package Notes. When all the note
text has been entered, press ENTER and then enter the END
command.
To cancel the Package Notes, enter the END command.
```

3.5.13 Display Package Note Text Panel

The Display Package Note Text panel appears when you select **N** on the Archive Package, Execute Package, Export Package, and Package Summary panels. Use this panel to review any notes associated with a package. When you have finished reviewing the package notes use the END command to return to the previous panel.

```
----- Display Package Note Text -----
Command ==>
1.
2.
3.
4.
5.
6.
7.
8.
Enter the END command to return to the previous panel
```

3.6 Submitting SCL for Processing

The package actions you selected on the Package Selection List panel are placed in the SCL data set you specified on the Batch Package panel. They are not processed until you submit them.

To submit the package actions for batch processing:

1. Select action **6**, on the Batch Package panel.
2. Provide at least one JCL JOB statement in JCL JOB STATEMENT field.
3. Press ENTER.

3.7 The Batch Package Execution Report

3.7.1 Overview

As the Batch Package Facility is processing, Endeavor writes a report to the CIMSGS1 DD statement. The report is divided into the following three sections:

- The Statement Summary Report
- The Action Execution Report
- The Action Summary Report

3.7.2 The Statement Summary Report

When you submit your batch package actions, Endeavor validates the SCL syntax and assigns a statement number to each SCL statement. The Statement Summary Report lists your control statements and error messages, if any are detected. If no errors are detected, processing continues and the Action Execution and Action Summary Reports are produced. If errors do exist, processing is terminated. Refer to the *Error Codes and Messages Guide* for an explanation of any messages received.

An example of the Statement Summary Report is shown below.

```

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC.,2002 21APR01 10:33:57      PAGE 1
Batch Package Facility Control Statement Summary Report      RELEASE X.XX  SERIAL XXXXXX
10:33:59  ENBP900I  Control statement parsing is beginning
10:33:59  ENBP923I  Statement number 1
                DEFINE PACKAGE PAYROLLPKG01
                DESCRIPTION 'PACKAGE TO IMPLEMENT THE NEW PAYROLL SYSTEM'
                IMPORT SCL FROM DSNAME 'BST.PAYROLL.SCL' MEMBER 'ADDSCLO1'
                OPTIONS EXECUTION WINDOW FROM 01JAN00 00:01 TO 31DEC79 23:59
                BACKOUT IS ENABLED
                SHARABLE PACKAGE
                STANDARD PACKAGE
                NOTES=('THIS PACKAGE IS WILL IMPLEMENT THE NEW PAYROLL',
                    'SYSTEM. THE SCL FOR THE PACKAGE WAS IMPORTED',
                    'FROM DATASET BST.PAYROLL.SCL(ADDSCLO1)',
                    'THIS PACKAGE IS ASSUMED TO HAVE APPROVERS',
                    'ASSOCIATED WITH IT.')
10:33:59  ENBP923I  Statement number 2
                DEFINE PACKAGE PAYROLLPKG02
                DESCRIPTION 'PACKAGE TO IMPLEMENT THE NEW PAYROLL SYSTEM'
                IMPORT SCL FROM DSNAME 'BST.PAYROLL.SCL' MEMBER 'ADDSCLO2'
                OPTIONS EXECUTION WINDOW FROM 01JAN00 00:01 TO 31DEC79 23:59
                BACKOUT IS NOT ENABLED
                NONSHARABLE PACKAGE
                NOTES=('THIS PACKAGE IS WILL IMPLEMENT THE NEW PAYROLL',
                    'SYSTEM. THE SCL FOR THE PACKAGE WAS IMPORTED',
                    'FROM DATASET BST.PAYROLL.SCL(ADDSCLO2)',
                    'THIS PACKAGE IS ASSUMED TO HAVE APPROVERS',
                    'ASSOCIATED WITH IT.')
10:33:59  ENBP901I  Control statement parsing has completed with no errors

```

3.7.3 The Action Execution Report

The Action Execution Report contains the messages generated by each action during its processing.

```

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002                21APR01 10:33:59      PAGE 2
Batch Package Facility Action Execution Report                 RELEASE X.XX  SERIAL XXXXXX
10:33:59  ENBP011I Statement number 1, Package Number 1
      DEFINE PACKAGE 'PAYROLLPKG01'
      IMPORT SCL FROM DSNAME 'BST.PAYROLL.SCL'
      MEMBER 'ADDSCL01'
      DESCRIPTION 'PACKAGE TO IMPLEMENT THE NEW PAYROLL SYSTEM'
      OPTIONS STANDARD PACKAGE
      SHARABLE PACKAGE
      BACKOUT IS ENABLED
      EXECUTION WINDOW FROM 01JAN01 00:01:00 TO 31DEC01 23:59:00
      NOTES = ('THIS PACKAGE IS WILL IMPLEMENT THE NEW PAYROLL',
              'SYSTEM. THE SCL FOR THE PACKAGE WAS IMPORTED',
              'FROM DATASET BST.PAYROLL.SCL(ADDSCL01)',
              'THIS PACKAGE IS ASSUMED TO HAVE APPROVERS',
              'ASSOCIATED WITH IT.')

10:34:03  ENBP012I Beginning execution of the DEFINE action
10:34:03  ENMP090I DA1MF45 initiating creation of 'PAYROLLPKG01'
10:34:08  C1Y0015I STARTING PARSE OF REQUEST CARDS
      STMT #1
      ADD ELEMENT 'PAYPGM01'
      TO ENVIRONMENT 'PROD'
      SYSTEM 'HR'
      SUBSYSTEM 'PAYROLL'
      TYPE 'COBOLPGM'
      FROM DSNAME 'BST.PAYROLL.SOURCE'
      OPTIONS CCID 'PAYROLL'
      COMMENTS 'ADD CHANGES TO THE PAYROLL SYSTEM'
      DELETE INPUT SOURCE
      .
      STMT #2
      ADD ELEMENT 'PAYPGM02'
      TO ENVIRONMENT 'PROD'
      SYSTEM 'HR'
      SUBSYSTEM 'PAYROLL'
      TYPE 'COBOLPGM'
      FROM DSNAME 'BST.PAYROLL.SOURCE'
      OPTIONS CCID 'PAYROLL'
      COMMENTS 'ADD CHANGES TO THE PAYROLL SYSTEM'
      DELETE INPUT SOURCE.
      STMT #3
      ADD ELEMENT 'PAYPGM03'
      TO ENVIRONMENT 'PROD'
      SYSTEM 'HR'
      SUBSYSTEM 'PAYROLL'
      TYPE 'COBOLPGM'
      FROM DSNAME 'BST.PAYROLL.SOURCE'
      OPTIONS CCID 'PAYROLL'
      COMMENTS 'ADD CHANGES TO THE PAYROLL SYSTEM'
      DELETE INPUT SOURCE
      .

```

3.7.4 The Action Summary Report

The Action Summary report summarizes the actions performed by the Batch Package Facility. The report contains one line for each package processed by each action. The report line identifies the action, the package ID, and the action return code.

An example of the Action Summary report is shown below.

3.7 The Batch Package Execution Report

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002				21APR00 10:34:30	PAGE 3
Batch Package Facility Action Summary Report				RELEASE X.XX	SERIAL XXXXXX
Action Name	Statement Number	Package Number	Package Name	Return Code	Execution Return Code
-----	-----	-----	-----	-----	-----
DEFINE	1	1	PAYROLLPKG01	0	
DEFINE	2	1	PAYROLLPKG02	0	
10:34:30 ENBP010I Processing is complete. Highest return code is 0					

Chapter 4. Approver Groups

4.1 Approver Groups: Basic Concepts

Approver groups are used in conjunction with package processing. A package is similar to a request data set in that it contains one or more Endeavor actions which are to be performed. However, a package may require approval before it can be executed. Approval is "electronic sign-off" for the package. Packages can be approved or denied by people who have been identified as approvers. An approver group is simply a particular subset of those people.

Note: The C1DEFLTS parameter APRVFLG can be set to 'no' to turn off the package processing requirement.

Approver groups can be defined externally or internally to Endeavor. When a group is defined internally, all approver user IDs are stored in the master control file along with the approver group definition. When a group is defined externally, the approver group definition is stored in the master control file and the approver user IDs are stored in the external security product in use at your site. If you want to define a user ID as required to approve packages, you must use an internal approver group.

When using external approver groups, the Endeavor approver group name must be the same name as the group defined to the external security product.

Note: See the next section on setting up External Approver Groups for details on setting up external approver groups under ACF2, RACF and CA-Top Secret.

When creating approver groups you can specify:

- A quorum size. This is the minimum of approvers from the group who must approve a package before it can be executed.
- Required approvers. For example, if you want the project leader for a development group to approve all changes to the software with which the group is working, you can designate the project leader as a required approver.

Note: Since external groups don't have any approvers defined locally to Endeavor, required approvers are not applicable for these groups.

Any required approvers in an approver group must approve a package before it can be executed. Even if the quorum requirements are met, if a required approver has not yet approved a package, it cannot be executed.

There are two kinds of approver groups: standard and emergency. Standard approver groups can only approve standard packages. Emergency approver groups can only approve emergency packages.

When an approver group is related to a particular inventory area, then the group must approve packages containing actions that affect elements in that inventory area. An inventory area consists of a logical classification (system, subsystem, and type) within a Endeavor location (environment and stage).

Multiple approver groups can be associated with one inventory area. A single approver group can be associated with many inventory areas.

Note: Once an approver group has been related to an inventory area, all processing for that inventory area must be performed using packages. To exempt certain actions from this restriction see options O00315/A - O00315/B in the appendix "Endevor Optional Feature Table", in the section titled "ENCOPTBL" in the *Installation Guide*.

Approver Group Definition and Approver Group Relationships are explained in detail in the remainder of this chapter.

4.2 Setting Up External Approver Groups

4.2.1 RACF and External Approver Groups

In the case that the Endeavor group matches the name of an existing RACF group, you will not need to do anything more. All users that are currently connected to that RACF group will be approvers. If the Endeavor approver group name does not match an existing RACF group, you will need to have the RACF Administrator create a new group, using the ADDGROUP command. You will then need to provide a list of users which will be associated with the group. Your RACF Administrator will need to CONNECT those users to the new group. If a user is to be connected to more than one access group be sure the RACF system option GRPLIST is activated. GRPLIST activates a list-of-groups access checking. A user's access authority is based upon the authority of all groups to which the user is connected.

Note: See your site RACf administrator for more information.

4.2.2 Top Secret and External Approver Groups

If you are using Top Secret for your external security package, to set up external approver groups, you must define an IBMGROUP, and permit users and/or profiles to it. Please note that the name of the IBMGROUP must match the name of the Endeavor Approver Group. In the following example the IBMGROUP is 'External' and it associates the QA Profile group of users to that IBMGROUP.

The following is an example of the IBMGROUP in Top Secret:

```
TSS ADD IBMGROUP(EXTERNAL) <=== must match Endeavor approver group name
TSS PERMIT (QA) IBMGROUP(EXTERNAL)
```

```
      ^           ^
      PROFILE     Associates the QA profile group of
                   users to the IBMGROUP External
```

4.2.3 ACF2 for External Approver Groups

ACF2 is available with release 3.9 and above.

To create an external approver group under ACF2, you must set up resource class ENDAPR and write rules to allow access to the ENDAPR resources(approver groups) by the users that belong to the groups.

Below are sample ACF2 commands that will define the ENDAPR resource class to ACF2. Substitute your values for lowercase items:

```
SET CONTROL(GS0)
INSERT CLASMAP.endapr RESOURCE(ENDAPR) RSRCTYPE(end) ENTITYLN(16)
```

For improved performance, it is suggested that the ENDAPR resource class be made resident by adding it to the INFODIR record. If masked rule keys are used, this is required.

CHANGE INFODIR TYPES(R-Resd)

To activate these records, issue the following console command:

F ACF2, REFRESH(ALL)

If the ENDAPR resource class was made resident, any modifications to the resource rules will not be active until the following console command is issued:

F ACF2, REBUILD(end)

The following sample rules would create 2 approver groups:

- endgrp1
- endgrp2.

In this example, user1,user2 and user3 would belong to endgrp1; all users would belong to endgrp2.

```
$KEY(endgrp1) TYPE(end)
  UID(user1) ALLOW
  UID(user2) ALLOW
  UID(user3) ALLOW
$KEY(endgrp2) TYPE(end)
  UID(*) ALLOW
```

You must use the appropriate UID string for your site and the UID string in the rule can be masked. If your site has any questions, contact your local CA-ACF2 Support.

4.2.4 Locking and Approver Groups

The element locking feature of Endeavor provides additional protection for inventory in addition to that provided by approver groups and approver group relationships. Consider the following two examples.

Example 1

John defines package PKG1 with two Add actions. Add #1 is to an inventory area protected by an approver group, while Add #2 is to an area with no associated approver group. John casts and approves PKG1.

Pedro then modifies the external files referenced in the two Add actions, and submits SCL to Add the elements, without including the SCL in a package.

When Locking=OFF:

- The first Add statement in Pedro's SCL fails because an approver group protects the target inventory and the Add statement is not part of a package. The second Add statement completes successfully because no approver group protects the target inventory, and locking is off.
- John then executes package PKG1, and both Add actions fail with PKMR515E and PKMR516E messages informing John of an integrity error because the file has been modified since he cast package PKG1.

When Locking=(Y,Y):

- Both Add statements in Pedro's SCL fail because the element names at the target inventory locations have been locked by the cast of package PKG1.
- When John then executes package PKG1, both Add actions fail with PKMR515E and PKMR516E messages.

In this example, PKG1 fails execution whether locking is ON or OFF. Locking, however, does prevent the changed file in Add #2 from being added to Endeavor.

Example 2

A site has a four-stage development life cycle, with a map that moves from STG1→STG2→STG4. An approver group protects STG4. Mary defines package PKG2 to move element ELM1 from STG2→STG4.

After Mary casts and approves PKG2, Jane retrieves element ELM1, modifies it, adds it back to Endeavor, and tries to move it back into STG2.

With Locking=OFF:

- The move back into STG2 is successful. Jane then submits SCL to move ELM1 to STG4 but does not include the SCL in a package. Jane's SCL fails because the STG4 inventory is protected by an approver group.
- Mary then executes package PKG2, and this move also fails with a PKMR512E message informing Mary of an element level mismatch.

With Locking=(Y,Y):

- Jane's move back into STG2 fails because the element names at both the source and target inventory locations have been locked by the cast of package PKG2.
- Mary then executes package PKG2, and this move succeeds because element ELM1 at STG2 has been protected from modification by locking.

4.3 Defining Approver Groups

4.3.1 Overview

Use option **9**, Approver Group, from the Environment Options Menu to maintain the approver groups defined to a particular environment. When you select option **9**, Endeavor returns the Approver Group Request panel.

4.3.2 Approver Group Request Panel

Use the Approver Group Request panel to:

- Display the current definition of a specified approver group.
- Display a selection list of current approver groups.
- Delete an approver group.
- Create an approver group.
- Update the definition of an approver group.

```

----- APPROVER GROUP REQUEST -----
OPTION  ==>
blank - Display Approver Group definition
# - Delete Approver Group definition
C - Create Approver Group definition
U - Update Approver Group definition
ENVIRONMENT  ==> DOC
APPROVER GROUP  ==>

```

To display the current definition of a particular approver group:

1. Enter the name of the approver group you want to display in the APPROVER GROUP field.
2. Verify that the approver group you want to display is defined to the current environment in the ENVIRONMENT field. If the approver group you want to display is defined to a different environment fill in the correct environment name.
3. Press ENTER. The Approver Group Definition panel displays.
4. When you have finished viewing the approver group definition, press the END key to return to the Approver Group Request panel.

To display a selection list of approver groups:

1. Leave the APPROVER GROUP field blank.
2. Press ENTER. The Approver Group Selection List panel displays. See the section entitled Approver Group Selection List for instructions on using this panel.

To delete an approver group definition:

1. Enter the name of the approver group you want to delete in the APPROVER GROUP field or leave the field blank to obtain a list of available approver groups.
2. Type a # in the OPTION field.
3. Press ENTER.
 - The Approver Group Definition panel displays if you have specified an approver group in the APPROVER GROUP field. If the Approver Group Definition panel displays, proceed to Step 5.
 - The Approver Group Selection List panel displays if you have left the APPROVER GROUP field blank. If the Approver Group Selection List panel displays, proceed to Step 4.
4. From the Approver Group Selection List panel type # to the left of the name of the approver group you want to delete and press ENTER. The Approver Group Definition panel displays.
5. Review the information on the Approver Group Definition panel to verify that you want to delete it.
6. Press ENTER to complete processing.

To create an approver group definition:

1. Enter the name of the approver group you want to create in the APPROVER GROUP field. If this is to be an external approver group, the name of the group must match an existing profile in your security product.
Note: If you're using CA-Top Secret, the IBMGROUP resource definition must be used.
2. Type a C in the OPTION field.
3. Press ENTER. The Approver Group Definition panel displays.
4. Specify the appropriate approver group information on the Approver Group Definition panel. See the section entitled Approver Group Definition Panel for instructions on using this panel.
5. Press ENTER to complete processing.

To update an approver group definition:

1. Enter the name of the approver group you want to update in the APPROVER GROUP field.
2. Type a U in the OPTION field.
3. Press ENTER. The Approver Group Definition panel displays.
4. Modify or change the appropriate approver group information on the Approver Group Definition panel. See the section entitled Approver Group Definition Panel for instructions on using this panel.
5. Press ENTER to complete processing.

4.3.2.1 Field Descriptions

The following fields appear on the Approver Group Request panel.

Field	Description
Blank	Use this field to display the current definition of a specified approver group.
#	Use this field to delete an approver group.
C	Use this field to create an approver group.
U	Use this field to update the definition of an approver group.
Environment	Name of the environment in which the approver group you want is defined. The current environment is displayed initially. Fill in a new name and press ENTER if the approver group is in a different environment.
Approver Group	The name of the approver group you want to use. To update or delete an approver group, fill in the full name and press enter to directly access the Approver Group Definition panel. If you leave the approver group name blank or use a name mask, Endeavor returns an Approver Group Selection List showing the approver groups currently defined.

4.3.3 Approver Group Selection List

The Approver Group Selection List panel displays when you use a name mask or do not specify an approver group on the Approver Group Request panel. You can use this panel to:

- Display an approver group definition.
- Delete an approver group definition.
- Update an approver group definition.

```

----- APPROVER GROUP SELECTION LIST ----- ROW 1 OF 6
COMMAND ==>                                     SCROLL ==> CSR
ENVIRONMENT: DEMO
APPROVER GROUP   APPROVER GROUP TITLE
ACCOUNTING      ALL ACCOUNTING SYSTEMS: G/L, A/P, A/R
CC BRD          CHANGE CONTROL BOARD
DOCGRP          PUBLICATIONS/MARKETING
EDP AUDIT       INTERNAL EDP AUDIT
EMERGENCY FIX   SECOND AND THIRD SHIFT SUPERVISORS
MANUFACTURE     ALL MANUFACTURING SYSTEMS: INVENTORY, SHOP
PERSONNEL       ALL PERSONNEL SYSTEMS: BENEFITS, PAYROLL
***** BOTTOM OF DATA *****

```

To display an approver group definition:

1. Type an **S** to the left of the name of the approver group you want to display.
2. Press ENTER. The Approver Group Definition panel displays. Use this panel to view information about the approver group. When you have finished viewing the approver group definition, press the END key to return to the Approver Group Selection panel.

To delete an approver group definition:

1. Type # next to the left of the name of the approver group you want to delete.
2. Press ENTER. The Approver Group Definition panel displays.
3. Review the information on the Approver Group Definition panel to verify that you want to delete this approver group.
4. Press ENTER to complete processing.

To Update an approver group definition:

1. Type a **U** next to the name of the approver group you want to delete.
2. Press ENTER.
3. Modify or change the appropriate approver group information on Approver Group Definition panel. See the section entitled Approver Group Definition Panel for instructions on using this panel.
4. Press ENTER to complete processing.

Note: If you select more than one approver group, processing occurs in the order in which the names are listed.

4.3.3.1 Field Descriptions

The following fields appear on the Approver Group Selection List panel.

Field	Description
Environment	Display-only. The name of the current environment.
Selection (no title)	Field used to select an approver group for display (S), deletion (#), or update (U). Type the appropriate character in this column, to the left of the approver group name(s) you want to process.
Approver Group	Display-only. The names of the approver groups.
Approver Group Title	Display-only. A descriptive title for the approver group.

4.3.4 Approver Group Definition Panel

The Approver Group Definition panel displays after you select the approver group that you want to display, create, update, or delete on the Approver Group Request panel or the Approver Group Selection List panel. Use this panel to:

- Complete the deletion of an approver group definition.
- Complete the creation of an approver group definition.
- Complete the update of an approver group definition.

Note: The current processing option displays in the upper left corner. You can cancel any requests by pressing the END key.

```

CREATE ----- APPROVER GROUP DEFINITION -----
COMMAND ==>
APPROVER GROUP: DOCGRP                ENVIRONMENT: DEMO
TITLE      ==> PUBLICATIONS/MARKETING
QUORUM SIZE ==> 00004
APPROVER   REQ'D (Y/N)    APPROVER   REQ'D (Y/N)
==> ZSXLGB1 ==> Y        ==> ZSXPGM1 ==> Y
==> ZSXSXV1 ==> N        ==> ZSXREL1 ==> N
==> ZSXBAPKG1 ==> N      ==> ZSXPTB1 ==> N
==>
==>
==>
==>
==>
==>
==>

```

To complete the deletion of an approver group definition:

1. Review the approver group information that appears on the Approver Group Definition panel to verify that you want to delete it.
2. Press ENTER to complete processing.

To complete the creation of an approver group definition:

1. Specify the appropriate approver group information on the Approver Group Definition panel. The fields you can enter are described in the section that follows.
2. Press ENTER to complete processing.

To complete the update of an approver group definition:

1. Modify or change the appropriate fields on the Approver Group Definition panel (fields are described in the section that follows).
2. Press ENTER to complete processing.

4.3.4.1 Field Descriptions

The following fields appear on the Approver Group Definition panel.

Field	Description
Approver Group	Display-only. The name of the approver group displayed, or to be created, updated, or deleted.
Environment	Display-only. The name of the current environment.
Title	A 1- to 50-character description for the approver group.
Quorum Size	The minimum number of people in this group who must approve packages. For locally defined groups, acceptable values are 0 - 16 . For externally defined groups, acceptable values 0 - 32760 .
Approver	The user IDs of the approvers in this group. There can be up to 16 approvers in a group. For locally defined approver groups, the user IDs of the approvers in this group. There can be up to 16 approvers in a local group. For externally defined approver groups, leave all of the approver fields blank. This tells Endeavor to look externally for the user IDs that are part of this group.
Req'd (Y/N)	Indicates whether this approver is required to approve the package: Y (yes) or N (no). Note: This field is not valid for external approver groups.

4.4 Defining Approver Group Relationships

4.4.1 Overview

Use option **A** from the Environment Options Menu to create or maintain approver group relationships. When you request option **A** from the Environment Options Menu, Endeavor returns the Approver Group Relation Request panel.

4.4.2 Approver Group Relation Request Panel

Use the Approver Group Relation Request panel to:

- Display a list of all relationships.
- Display the relationship between certain inventory areas and an approver group.
- Delete a relationship between inventory areas and approver groups. When you delete a relationship, neither the approver group nor the inventory area is deleted; only the relationship between the two is deleted.
- Create a relationship between an inventory and an approver group.
- Change the approver group for an inventory area.

```

----- APPROVER GROUP RELATION REQUEST -----
OPTION  ==>
blank - Display relationships between inventory areas and Approver Groups
# - Delete relationship between an inventory area and an Approver Group
C - Relate an inventory area (system, stage, etc.) to an Approver Group
U - Change the Approver Group for an inventory area
ENVIRONMENT  ==> DEMO
APPROVER TYPE  ==> standard      (EMERGENCY/STANDARD)

SYSTEM        ==>                (* denotes all systems)
SUBSYSTEM     ==>                (* denotes all subsystems)
TYPE          ==>                (* denotes all types)
STAGE NUMBER  ==>                (* denotes all stages)

```

To display a list of all relationships:

1. Specify an environment in the ENVIRONMENT field.
2. Indicate whether the approver group type is standard or emergency in the APPROVER TYPE field. You must enter the entire word when indicating the approver type.
3. Leave all remaining fields blank.
4. Press ENTER. The Approver Group Relationship List panel displays.
5. When you have finished viewing the list of relationships press the END key to return to the Approver Group Relation Request panel.

To display the relationship between certain inventory areas and an approver group:

1. Specify an environment in the ENVIRONMENT field.
2. Indicate whether the approver group type is standard or emergency in the APPROVER TYPE field. You must enter the entire word when indicating the approver type.
3. Enter the appropriate information in the INVENTORY AREA fields (fields are discussed in the following section). You can enter one of three values in these fields:
 - A full name. Enter a full name (number) in one or more fields, to indicate a specific system, subsystem, type, and/or stage number
 - Blanks. Leave one or more fields blank to build a list of approver group relationships for the inventory areas matching the criteria entered.
 - An asterisk (*). Use an asterisk to relate an approver group to all systems, subsystems, types or stages in an environment.

For example, if an approver group has been related to an inventory area with a system name of ABC and a stage number of 2, and with an asterisk as the subsystem and the type, then the approver group relationship applies to all elements in system ABC and Stage 2—regardless of subsystem and type.

4. Press ENTER. The Approver Group Relationship panel displays with all inventory areas matching the criteria you indicated and the approver groups related to these areas.
5. When you have finished viewing the Approver Group Relationship panel press the END key to return to the Approver Group Relation Request panel.

To delete a relationship between inventory areas and approver groups:

1. Specify an environment in the ENVIRONMENT field.
2. Indicate whether the approver group type is standard or emergency in the APPROVER TYPE field.
3. Specify the inventory to which the approver group is related in the INVENTORY AREA fields. You can obtain a list of all relationships by leaving these fields blank.
4. Type a # in the OPTION field.
5. Press ENTER. If the Approver Group Relationship List panel displays proceed to Step 6. If the Approver Group Relationship panel displays proceed to Step 7.
6. From the Approver Group Relationship List panel type a # to the left of the name of the inventory area for which you want to delete a relationship and press ENTER. The Approver Group Relationship panel displays.
7. Review the information on the Approver Group Relationship panel to verify that you want to delete this relationship.
8. Press ENTER to complete processing.

To create a relationship between an inventory and an approver group:

1. Specify an environment in the ENVIRONMENT field.
2. Indicate whether the approver group type is standard or emergency in the APPROVER TYPE field. You must enter the entire word when indicating the approver type.
3. Specify the inventory to which the approver group is related in the INVENTORY AREA fields. You must enter either a full name or an asterisk in each of these fields. Fields are described in the following section.
4. Type a C in the OPTION field.
5. Press ENTER. The Approver Group Relationship panel displays.
6. Enter the name of the approver group for which you want to build a relationship in the APPROVER GROUP field.
7. Press ENTER to complete processing.

To change the approver group for an inventory area:

1. Specify an environment in the ENVIRONMENT field.
2. Indicate whether the approver group type is standard or emergency in the APPROVER TYPE field. You must enter the entire word when indicating the approver type.
3. Specify the inventory to which the approver group is related in the INVENTORY AREA fields. You can obtain a list of all relationships by leaving these fields blank. Fields are described in the following section.
4. Type a U in the OPTION field.
5. Press ENTER. If the Approver Group Relationship List panel displays proceed to step 6. If the Approver Group Relationship panel displays proceed to step 7.
6. From the Approver Group Relationship List panel type a U to the left of the name of the inventory area for which you want to change a relationship and press ENTER. The Approver Group Relationship panel displays.
7. On the Approver Group Relationship panel enter the name of the approver group you want to relate to this inventory in the APPROVER GROUP field.
8. Press ENTER to complete processing.

4.4.2.1 Field Descriptions

The following fields appear on the Approver Group Relation Request panel.

Field	Description
Blank	Use this field to display a list of relationships. To display all relationships, leave all fields, except ENVIRONMENT and APPROVER TYPE, blank. To restrict the display to certain portions of the inventory, enter additional information on the panel.
#	Specify this option to delete a relationship. When you delete a relationship, neither the approver group nor the inventory area is deleted; only the relationship between the two is deleted.
C	Specify this option to create a relationship. When you create a relationship, the approver group and inventory area involved must have been previously established within Endeavor. You are creating only the relationship.
U	Specify this option to update a relationship. This option allows you to change the approver group for a given area of the inventory.
Environment	Displays the name of the environment that contains the inventory area and the approver group to which the inventory area is (to be) related. If you want to change the environment, fill in the appropriate name and press ENTER.
Approver Type	Indicates the approver type for this approver group: standard or emergency. An approver group designated as standard can be used to approve standard packages only. Similarly, an approver group designated as emergency can be used only to approve emergency packages. You must enter the entire word when indicating approver type; that is, you cannot abbreviate the entry.
System	Name of the system to which this approver group relationship applies.
Subsystem	Name of the subsystem to which this approver group relationship applies.
Type	The element type to which this approver group relationship applies.

Field	Description
Stage Number	The stage number to which this approver group relationship applies.

4.4.3 Approver Group Relationship List

The Approver Group Relationship List panel displays all inventory areas matching the criteria you indicate on the Approver Group Relation Request panel, and the approver groups related to these areas. Use this panel to:

- Display a relationship between inventory areas and approver groups.
- Delete a relationship between inventory areas and approver groups. When you delete a relationship, neither the approver group nor the inventory area is deleted; only the relationship between the two is deleted.
- Change the approver group for an inventory area.

```

----- APPROVER GROUP RELATIONSHIP LIST ----- ROW 1 OF 10
COMMAND ==> SCROLL ==> CSR
ENVIRONMENT: DEMO
APPROVER TYPE: STANDARD
SYSTEM  SUBSYSTEM  TYPE      STAGE  APPROVER GROUP
*       OSB        *         2      ACCOUNTING SYS
*       PAY        *         2      ACCOUNTING SYS
ACCOUNTG *         *         2      ACCOUNTING SYS
ACCOUNTG *         *         2      DOCGRP
ACCOUNTG *         *         2      EDP AUDIT
MANUFACT *         *         2      MANUFACTURE SYS
MANUFACT *         *         2      EDP AUDIT
MANUFACT *         *         2      CHANGE CNTRL BRD
PERSONEL *         *         2      CHANGE CNTRL BRD
PERSONEL *         *         2      EDP AUDIT
PERSONEL *         *         2      PERSONNEL SYS
***** BOTTOM OF DATA *****

```

To display a relationship between an inventory area and an approver group:

1. Type an **S** to the left of the name of the inventory area for which you want to display a relationship.
2. Press ENTER. The Approver Group Relationship panel displays.
3. When you have finished viewing the approver group relationship press ENTER to return to the Approver Group Relationship List panel.

To delete an approver group relationship:

1. Type a **#** to the left of the name of the inventory area for which you want to delete a relationship.
2. Press ENTER. The Approver Group Relationship panel displays.
3. Review the information on the Approver Group Relationship panel to verify that you want to delete this relationship.

4. Press ENTER to complete processing.

To change the approver group for an inventory area:

1. Type a **U** to the left of the name of the inventory area for which you want to change a relationship.
2. Press ENTER. The Approver Group Relationship panel displays.
3. Enter the name of the approver group you want to relate to this inventory in the APPROVER GROUP field.
4. Press ENTER to complete processing.

4.4.3.1 Field Descriptions

The following fields appear on the Approver Group Relationship List panel.

Field	Description
Environment	The current environment.
Approver Type	This field indicates whether this approver group type is emergency or standard.
System	The system to which the approver group is related.
Subsystem	The subsystem to which the approver group is related.
Type	The type to which the approver group is related.
Stage Number	The number of the stage to which the approver group is related.
Approver Group	The approver group related to the inventory area. Note that a given inventory area may be related to several approver groups.

4.4.4 Approver Group Relationship Panel

The Approver Group Relationship panel displays after you select the approver group relationship you want to display, create, change, or delete on the Approver Group Relation Request panel or the Approver Group Relationship List panel. Use this panel to:

- Complete the deletion of a relationship between an inventory area and an approver group. When you delete a relationship, neither the approver group nor the inventory area is deleted; only the relationship between the two is deleted.
- Complete the creation of a relationship between an inventory and an approver group.

- Complete the change of an approver group for an inventory area.

Note: You cancel a request by pressing the END key.

```

CREATE ----- APPROVER GROUP RELATIONSHIP -----
COMMAND ==>
ENVIRONMENT:          DEMO
APPROVER GROUP ==> docgrp
APPROVER TYPE:        STANDARD
INVENTORY AREA TO WHICH APPROVER GROUP IS RELATED:
SYSTEM:               ACCOUNTG
SUBSYSTEM:            *
TYPE:                 *
STAGE NUMBER:         2

```

To complete the deletion of a relationship between an inventory area and an approver group:

1. Review the relationship information that appears on the Approver Group Relationship panel to verify that you want to delete it.
2. Press ENTER to complete processing.

To complete the creation of a relationship between an inventory and an approver group:

1. Enter the name of the approver group for which you want to build a relationship in the APPROVER GROUP field.
2. Press ENTER to complete processing.

To complete the change of an approver group for an inventory area:

1. Enter the name of the approver group you want to relate to this inventory in the APPROVER GROUP field.
2. Press ENTER to complete processing.

4.4.4.1 Field Descriptions

The following fields appear on the Approver Group Relationship panel. All fields but the APPROVER GROUP field are display-only.

Field	Descriptions
Environment	This is the name of the current environment.
Approver Type	This is the type of approver group you specified: emergency or standard.
Approver Group	Name of the approver group to be related to this particular inventory area. Change the name of the approver group accordingly.

Field	Descriptions
System	This is the name of the system in the inventory area to which the approver group is related.
Subsystem	This is the name of the subsystem in the inventory area to which the approver group is related.
Type	This is the name of the element type in the inventory area to which the approver group is related.
Stage Number	This is the stage number in the inventory area to which the approver group is related.

Chapter 5. Shipping Package Outputs

5.1 Package Shipment

The package shipment utility (program C1BMX000) uses data transmission programs to transmit package outputs (source, object, listing, or load modules), or package backout members from a host site to another site. It is designed for users who develop software at a central (host) site and want to transmit source, object, or executable code to other (remote) sites.

To use the package shipment utility:

- Packages must be created with the PACKAGE BACKOUT option enabled.
- Packages must have been executed, but not committed.
- One of these data transmission packages must be available:
 - XCOM (Computer Associates)
 - Bulk Data Transfer (IBM), Version 2, or via NJE/NJI
 - NetView File Transfer Program (IBM)
 - CONNECT:Direct (Sterling Commerce)
- Packages can also be shipped between CPUs that share DASD. This transmission method is referred to as Local.
- Remote destinations must be defined.

When you request a package shipment, Endeavor submits a job stream at the host site. This job:

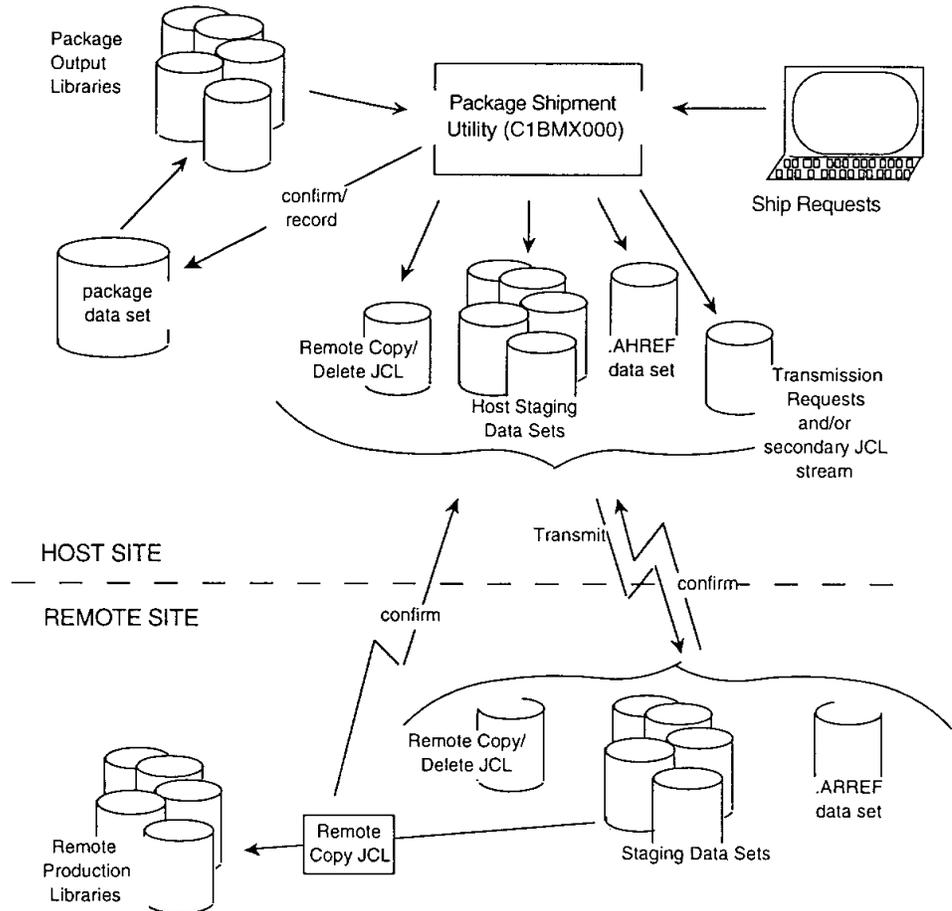
1. Builds:
 - Staging data sets at the host site.
 - A job stream to copy package outputs from staging data sets to remote production data sets.
 - A file with correspondences between production and staging data sets at the host and the remote site
 - Data transmission commands to transfer all the above to the remote site. (Not applicable for Local transmission.)
2. The shipment utility then populates the host staging data sets with package outputs.
3. Transmits the host staging data sets and other files to the remote site. (Not applicable for Local transmission.)
4. Confirms the transmission.
5. Deletes the staging data sets at the host site (optional).

When the job stream built in Step 1 executes at the remote site, it:

1. Copies the package outputs from the remote staging data sets to production libraries.
 For Local transmission, outputs are copied from the host staging data sets to the production libraries.
2. Deletes, in the production libraries, all package members that were also deleted on the host.
3. Transmits confirmation to the host site.
4. (Optional) Deletes the staging data sets at the remote site. (Not applicable for Local transmission.)

The diagram below illustrates this basic process.

Note: Remote staging data sets are not built for Local transmission. The host staging data sets must exist on shared DASD, and will be copied directly into the remote production libraries.



5.2 Transmission Method Considerations

5.2.1 Overview

Depending upon the transmission method you use, a certain amount of information exchange and preparatory work may be necessary to transmit package outputs. This section describes the preparatory work for the following data transmission packages:

- XCOM
- Bulk Data transfer (BDT) via NJE/NJI
- Bulk Data transfer (BDT), Version 2
- Local file transfer
- NetView File Transfer Program (FTP)
- CONNECT:Direct

5.2.2 XCOM

To define an XCOM destination to Endeavor, you must supply a remote NODENAME on the Destination Definition panel (see Establishing Destinations, later in this chapter). This nodename is the LUNAME of the remote XCOM system.

XCOM runs a batch job that copies data sets to a remote site and runs the job there. Sample JCL relating to XCOM is shown in the section see Tailoring Host Package Shipment JCL, later in this chapter. You need to modify the sample JCL with site-specific information. In addition, the EXEC PARM may require additional XCOM parameters.

The NDVRSHIP jobstep (in skeleton C1BMXJOB) creates a PDS (prfx.XCOMCMD.FILE) containing a member named CONTROL. The member contains:

- A SEND TYPE=FILE command for each file to be transmitted.
- A SEND TYPE=JOB command for each destination receiving a shipment to execute the remote copy/delete job.
- A SEND TYPE=JOB command to delete the host staging data sets.

You can find the JCL and the control cards for the staging data set deletion in prfx.XCOMCMD.FILE as member "destid.D". The jobstep that executes XCOM (in skeleton C1BMXCOM) uses the CONTROL member as SYSIN to execute the shipment. After all transmissions are complete prfx.XCOMCMD.FILE is deleted. The XCOM Transfer Control facility (XTC) dependently synchronizes the file transmissions and job executions.

Endevor distributes model XCOM control statements in the Endevor source library as members whose names start with #PSXCOM. In general you do not need to modify these models.

You can find additional information about XCOM in the *XCOM User's Manual* (Version 2.2). XCOM is a product of Computer Associates.

5.2.3 Bulk Data Transfer (BDT) via NJE/NJI

To define a BDT via NJE/NJI destination to Endevor, you must supply remote job information on the Destination Definition panel (see Establishing Destinations). This information includes:

- A valid JOB statement destination.
- A JES route card. The route card can be a "/*ROUTE XEQ nodename" (JES2), "/*ROUTE XEQ nodename" (JES3), or an equivalent. For information about routing and running jobs at the remote destination, contact your JES system programmer.

Endevor distributes model JCL in the Endevor source library as members whose names start with #PSBDT1. In general, you do not need to modify these models.

5.2.4 Bulk Data Transfer (BDT), Version 2

To define a BDT Version 2 destination to Endevor, you must supply a remote NODENAME on the Destination Definition panel (see Establishing Destinations, later in this chapter. Contact your BDT system programmer for the names of the nodes in your network.

BDT runs a batch job that copies data sets to a remote site and runs the job there. Sample JCL relating to BDT is shown in the section Tailoring Host Package Shipment JCL, later in this chapter. You need to modify the sample JCL with site-specific information about BDT.

Each data set you wish to transmit issues a NETREL for the remote copy/delete job. Each NETREL in turn decrements a NETHOLD equal to the number of data sets you wish to transmit. When all data sets have been transmitted, the NETHOLD is satisfied and the remote copy/delete job is released.

Endevor distributes model BDT control statements in the Endevor source library as members whose names start with #PSBDT2. In general you do not want to modify these models.

You can find more information about BDT in the IBM documentation.

5.2.5 Local File Transfers

Local shipments require that the host staging data sets be allocated on DASD which is shared between the host and remote sites. The remote production data sets can be on unshared DASD. Allocation of the shared DASD can be controlled using the UNIT and/or VOLSER fields on the Destination Definition panel. For information on the Destination Definition panel see Establishing Destinations.

5.2.6 NetView FTP

NetView FTP runs a batch job that submits transactions that copy data sets to a remote site. Endeavor distributes FTP commands in the Endeavor source library as members whose names start with #PSNFTP. You need to modify the sample JCL with site-specific information. In general, you do not need to modify the commands.

For additional information about NetView FTP, refer to the appropriate IBM publications.

5.2.7 CONNECT:Direct

CONNECT:Direct runs a batch job that copies data sets from a host site to a remote destination and runs the job there. Endeavor provides sample JCL relating to CONNECT:Direct. You need to modify this sample JCL with site-specific information about CONNECT:Direct. For a description of the sample JCL see Tailoring Host Package Shipment JCL.

The NDVRSHIP jobstep (in skeleton C1BMXJOB) creates an CONNECT:Direct Process File containing a single process for each CONNECT:Direct destination. The member name of each process is "destid.P". The member contains:

- A COPY command for each file you wish to transmit.
- A RUN JOB command to execute the remote copy/delete job.
- A RUN JOB command to delete the host staging data sets for that destination.

You can find the JCL and control cards for the staging data set deletion in the process file as member(s) "destid.D". A single member "SUBMIT" contains a CONNECT:Direct SUBMIT command for each of the process members. The jobstep associated with C1BMXNDM uses the "SUBMIT" member to execute the shipment. The Process File is deleted after all processes have been submitted.

Endeavor distributes model CONNECT:Direct control statements in the Endeavor source library as members whose names start with #PSNWDM. In general you do not want to modify these models. For a description of the models, see Creating Model Transmission Control Statements, later in this chapter.

You can find additional information about CONNECT:Direct in the Product Overview. The Batch Interface is documented in the CONNECT:Direct User's Guide. Syntax for

CONNECT:Direct commands can be found in the CONNECT:Direct Command Reference. CONNECT:Direct is a product of Sterling Commerce.

5.3 Tailoring Host Package Shipment JCL

5.3.1 Overview

Endevor provides skeletal JCL for each step of the host execution of the ship utility. Before using the ship utility, you must modify this skeletal JCL so that it conforms to your site conventions.

These skeletons are members in `iprfx.igual.ISPSLIB` on the installation tape.

5.3.2 Host Job Statement (C1BMXHJC)

You can modify this JCL skeleton so that it provides job statement information about the host site.

When tailoring this JCL skeleton, keep in mind that:

- The `&C1BJCn` statements expands into the JOB STATEMENT INFORMATION currently displayed on the Package Shipment panel (option **6** on the Package Options Menu). You can also replace these statements, along with their `)SEL` and `)ENDSEL` bookends with a hard-coded job statement.
- You must be able to submit this job statement on both the host and the remote systems. To accomplish this, substitute a site-specific JES Node Name value for `HOSTNAME` on the `ROUTE` statement. This causes jobs you submit at either site to be routed to the host for execution.
- You can append additional JES control statements and/or JCL as needed.
- To pass security checks it may be necessary for you to include a user ID and password on the job statement. You can do this by including these keywords in one of the `&C1BJCn` statements. For example:

```
&C1BJC2,USERID=userid,PASSWORD=password
```

The C1BMXHJC skeleton is shown below.

```
)SEL &C1BJC1  $\neg$ = &Z
&C1BJC1
)ENDSEL
)SEL &C1BJC2  $\neg$ = &Z
&C1BJC2
)ENDSEL
)SEL &C1BJC3  $\neg$ = &Z
&C1BJC3
)ENDSEL
)SEL &C1BJC4  $\neg$ = &Z
&C1BJC4
)ENDSEL
/*ROUTE XEQ hostname
```

This skeleton is embedded in C1BMXJOB and C1BMXRRCN. See the next section for the C1BMXJOB skeleton.

5.3.3 Host Job Step 1: Shipment Staging (C1BMXJOB)

Step 1 executes the package shipment staging utility. When tailoring this skeleton:

- Remove the transmission package DD statements that do not apply (for example, if BDT is not used, remove C1BMXBDC, C1BMXBDR, and C1BMXBDM).
- Modify the remaining "MODELCTL" data sets using site-specific prefixes and names. The prefix/qualifier of the Endeavor libraries is "iprfx.igual".

Note: The C1BMXJOB job parm contains a reference to system variable of &ZPREFIX, which corresponds to a user's TSO Profile Prefix. If users at your site typically set their profile to NOPREFIX, for example, "TSO PROFILE NOPrefix", you should change this parameter to &ZUSER or other high-level qualifier. Some of the ship JCL models use this parameter as the first node of a certain data sets allocated during the ship process.

```

)CM PACKAGE SHIPMENT BATCH JCL - STAGING STEP - ISPSLIB(C1BMXJOB)
)CM
)CM THIS SKELETON IS USED TO GENERATE "PACKAGE SHIPMENT" JCL. IT IS THE
)CM FIRST STEP OF A JOBSTREAM WHICH POPULATES STAGING DATASETS IN PREPARATION
)CM FOR TRANSMISSION VIA FILE TRANSMISSION SOFTWARE.
)CM
)CM ISPSLIB(C1BMXHJC) - JOBCARD FOR THE HOST SITE. THIS SKELETON IS IMBEDDED
)CM IN C1BMXJOB AND XRCN.
)CM ISPSLIB(C1BMXJOB) - ** YOU ARE HERE **
)CM ISPSLIB(C1BMXLIB) - STEPLIB : CONLIB : SYSUDUMP : MESSAGE LOG
)CM THIS SKELETON IS IMBEDDED IN XJOB, XHCN, AND XRCN
)CM ISPSLIB(C1BMXRRCN) - REMOTE CONFIRMATION EXECUTION JCL
)CM ISPSLIB(C1BMXIN) - SYSIN ( SHIP PKG <PKG-ID> TO DEST <DEST-ID> ETC. )
)CM
)CM ISPSLIB(C1BMXCOM) - STEP TO TRANSFER VIA XCOM
)CM ISPSLIB(C1BMXLOC) - STEP TO TRANSFER LOCALLY USING IEBCOPY
)CM ISPSLIB(C1BMXBD1) - STEP TO TRANSMIT VIA BULK DATA TRANSFER (JES)
)CM ISPSLIB(C1BMXBDT) - STEP TO TRANSMIT VIA BULK DATA TRANSFER (VER 2)
)CM ISPSLIB(C1BMXFTP) - STEP TO TRANSMIT VIA NETVIEW FTP
)CM ISPSLIB(C1BMXNDM) - STEP TO TRANSMIT VIA CONNECT:Direct
)CM
)CM ISPSLIB(C1BMXHCN) - JCL TO CONFIRM TRANSMISSION VIA ABOVE 4 METHODS
)CM
)CM ISPSLIB(C1BMXE0J) - EPILOG STEP(S) - CLEANUP
)CM
)CM
)CM * * * * *
)CM
)CM THE FOLLOWING IS A GUIDE TO THE SKELETAL IMBEDDING:
)CM
)CM C1BMXJOB
)CM C1BMXHJC
)CM C1BMXLIB

```

5.3 Tailoring Host Package Shipment JCL

```

)CM      C1BMXHJC      DATA FOR DD=C1BMXHJC
)CM      C1BMXHCN      DATA FOR DD=C1BMXHCN
)CM              C1BMXHJC
)CM      C1BMXRRCN      DATA FOR DD=C1BMXRRCN
)CM              C1BMXHJC
)CM              C1BMXLIB
)CM      C1BMXIN
)CM C1BMXLOC
)CM C1BMXCOM
)CM C1BMXHCN
)CM      C1BMXLIB
)CM C1BMXBD1
)CM C1BMXBDT
)CM C1BMXHCN
)CM      C1BMXLIB
)CM C1BMXHCN
)CM      C1BMXLIB
)CM C1BMXFTP
)CM C1BMXNDM
)CM C1BMXHCN
)CM      C1BMXLIB
)CM C1BMXE0J
)CM
)CM * * * * *
)CM
)CM TAILORING INSTRUCTIONS:
)CM
)CM 1. REMOVE THE TRANSMISSION PACKAGE DD STATEMENTS THAT DO NOT
)CM APPLY (E.G., IF BDT IS NOT USED, REMOVE C1BMXBDC AND C1BMXBDM).
)CM
)CM 2. MODIFY THE MODEL CONTROL CARD DATASET NAME(S) USING SITE
)CM SPECIFIC PREFIXES.
)CM
)CM "iprfx.igual" IS THE PREFIX/QUALIFIER OF THE ENDEVOR MODEL
)CM CONTROL CARD LIBRARY.
)CM
)CM * * * * *
)CM
)IM C1BMXHJC
//* ===== ISPSLIB(C1BMXJOB) *
//* ===== *
//* ===== *
//* ===== *
//* ===== *
//NDVRSHIP EXEC PGM=NDVRC1,DYNAMNBR=1500,REGION=4096K,
//      PARM='&VNBCPARM SHIP &ZPREFIX '
//*
)IM C1BMXLIB
//*
//* *-----* C1BMXJOB (CONT.) *
//*
//C1BMXDET DD SYSOUT=*      ** SHIPMENT DETAIL REPORT *****
//C1BMXSUM DD SYSOUT=*      ** SHIPMENT SUMMARY REPORT *****

```

```

//C1BMXSYN DD SYSOUT=*      ** INPUT LISTING AND SYNTAX ERROR REPORT **
//*
//* *****
//* * XCOM COMMAND DATASET
//* * XCOM MODEL CONTROL CARD DATASET
//* *****
//*
//C1BMXXCC DD DSN=&&&&XXCC,DISP=(NEW,PASS),SPACE=(TRK,(2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//C1BMXXCM DD DISP=SHR,
//          DSN=iprfix.iqual.SOURCE
//*
//*
//* *****
//* * LOCAL TRANSFER COPY/RUN COMMAND DATASETS
//* * LOCAL MODEL CONTROL CARD DATASET
//* *****
//*
//C1BMXLCC DD DSN=&&&&XLCC,DISP=(NEW,PASS),SPACE=(TRK,(2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//C1BMXLCM DD DISP=SHR,
//          DSN=iprfix.iqual.SOURCE
//*
//* *****
//* * BULK DATA TRANSFER U_S_I_N_G_J_E_S - GENERATED JCL DATASET
//* * BULK DATA TRANSFER MODEL JCL DATASET
//* *****
//*
//C1BMXB1C DD DSN=&&&&XB1C,DISP=(NEW,PASS),SPACE=(TRK,(2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//C1BMXB1M DD DISP=SHR,
//          DSN=iprfix.iqual.SOURCE
//*
//*
//* *****
//* * BULK DATA TRANSFER V_E_R_S_I_O_N_2 COPY/RUN COMMAND DATASETS
//* * BULK DATA TRANSFER MODEL CONTROL CARD DATASET
//* *****
//*
//C1BMXBDC DD DSN=&&&&XBDC,DISP=(NEW,PASS),SPACE=(TRK,(2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//C1BMXBDM DD DISP=SHR,
//          DSN=iprfix.iqual.SOURCE                                     C9223300
//*
//* *****
//* * NETVIEW FTP "ADD TO TRANSMISSION QUEUE" DATASET AND INTERNAL RDR
//* * NETVIEW FTP MODEL CONTROL CARD DATASET
//* *****
//*

```



```

##
//*
//* *-----* C1BMXJOB (CONT.) *
//*
//C1BMXHCN DD DATA,DLM=##
)IM C1BMXHCN OPT
##
//*
//* *-----* C1BMXJOB (CONT.) *
//*
//C1BMXRCN DD DATA,DLM=##
)IM C1BMXRCN OPT
##
//*
//* *-----* C1BMXJOB (CONT.) *
//*
//C1BMXLIB DD DATA,DLM=##
)IM C1BMXLIB OPT
##
//*
//* *-----* C1BMXJOB (CONT.) *
//*
//* *****
//* * SHIP PACKAGE PKG-ID TO DESTINATION DEST-ID ( OPTION BACKOUT ) .
//* *****
//*
//* THE FOLLOWING DD STATEMENT MUST BE THE *LAST* CARD IN THIS MEMBER.
//* ISPSLIB MEMBER C1BMXIN IS INCLUDED AFTER IT AS THE INSTREAM DATA.
//*
//C1BMXIN DD * *-----* ISPSLIB(C1BMXIN) *

```

5.3.3.1 C1BMXLIB

This skeleton contains the STEPLIB and CONLIB definitions to run the package shipment jobs at the host site. It also contains a DD statement for the message log and a sysudump card. This skeleton is embedded in the following skeletons:

- C1BMXJOB--Package shipment utility execution.
- C1BMXHCN--Confirm transmission of staging data sets.
- C1BMXRCN--Confirm remote IEBCOPY of remote staging data sets to remote production data sets.

To tailor this skeleton modify the AUTHLIB and CONLIB DD statements using a site-specific prefix, qualifier, and name. The prefix/qualifier of Endeavor libraries is iprfx.igual. If your AUTLIBS or CONLIBS are in the linklist these two DD statements can be commented out.

```

)CM *-----*
)CM *
)CM * (C) 2002 COMPUTER ASSOCIATES INTERNATIONAL, INC.
)CM *
)CM * NAME: C1BMXLIB

```

```

)CM *
)CM *PACKAGE SHIPMENT BATCH JCL - STEPLIB/CONLIB - ISPSLIB(C1BMXLIB) *
)CM *
)CM *THIS SKELETON CONTAINS THE STEPLIB AND CONLIB DEFINITIONS TO RUN *
)CM *ENDEAVOR PACKAGE SHIPMENT JOB STEPS AT THE HOST SITE. *
)CM *-----*
//* *****
//* * STEPLIB, CONLIB, MESSAGE LOG AND ABEND DATASETS
//* *****
//STEPLIB DD DISP=SHR,DSN=UPRFX.UQUAL.AUTHLIB
// DD DISP=SHR,DSN=iprfx.iqual.AUTHLIB
//CONLIB DD DISP=SHR,DSN=iprfx.iqual.CONLIB
//*
//SYSABEND DD SYSOUT=* *** DUMP TO SYSOUT *****
//C1BMXLOG DD SYSOUT=* *** MESSAGES, ERRORS, RETURN CODES *****

```

5.3.3.2 C1BMXRCN

Use this skeleton to confirm the copying of the staging data sets to production data sets at the remote site. It is included in the C1BMXJOB skeleton.

The shipment staging utility reads this skeleton and uses it to build the part of the remote job that copies staging data sets into their respective production data sets. There are two IEBGENER steps which write JCL to the internal reader. Only one of these steps executes, based on condition codes. The job stream that is entered into the internal reader executes at the host and updates the shipment record.

No tailoring is necessary for this skeleton. However, you can modify it to give more specific information about the results of the copy process. See Shipment Tracking and Confirmation for more details.

```

)CM PACKAGE SHIPMENT BATCH JCL - CONFIRMATION - ISPSLIB(C1BMXRCN)
)CM
)CM THIS SKELETON IS USED TO CONFIRM THE EXECUTION OF THE IEBCOPY JOB AT
)CM THE REMOTE SITE (COPY STAGING DATASETS TO PRODUCTION SATASETS). IT
)CM IS INCLUDED IN SKELETON ISPSLIB(C1BMXJOB).
)CM
)CM THIS SKELETON IS READ BY THE SHIPMENT STAGING UTILITY AND IS USED
)CM TO BUILD PART OF THE REMOTE JOB WHICH COPIES STAGING DATASETS INTO
)CM THEIR RESPECTIVE PRODUCTION DATASETS. THERE ARE TWO IEBGENER STEPS
)CM WHICH WRITE JCL TO THE INTERNAL READER. BASED ON CONDITION CODES,
)CM ONLY ONE OF THE GENER STEPS WILL EXECUTE. THE JOB STREAM WHICH IS
)CM GENERATED INTO THE INTERNAL READER WILL EXECUTE AT THE HOST AND CAUSE
)CM THE SHIPMENT RECORD TO BE UPDATED.
)CM
)CM * * * * *
)CM
)CM NO TAILORING IS NECESSARY FOR THIS SKELETON. HOWEVER, IT CAN BE
)CM MODIFIED TO GIVE MORE SPECIFIC INFORMATION ABOUT THE RESULTS OF
)CM THE COPYING PROCESS (CF. ADMINISTRATORS GUIDE - "SHIPMENT
)CM TRACKING AND CONFIRMATION").
)CM

```

```

)CM * * * * *
)CM
)CM
//* -----* ISPLIB(C1BMXRCN) *
//*
//* =====*
//* * INSTREAM DATASET CONTAINING REMOTE CONFIRMATION JCL
//* =====*
//*
//CONFCOPY EXEC PGM=IEBGENER          EXECUTED AT THE REMOTE SITE
//SYSUT1 DD DATA,DLM=$$             JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//  PARM='C1BMX000 $CURR_DT $CURR_TM CONF RCPY EX **** $DEST_ID'
//*
//C1BMXDTM DD *
$CURR_DT$CURR_TM
//*
)IM C1BMXLIB
//* -----* C1BMXRCN (CONT.) *
$$
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//*
//CONFABND EXEC PGM=IEBGENER,COND=ONLY EXECUTED AT THE REMOTE SITE
//SYSUT1 DD DATA,DLM=$$             JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//  PARM='C1BMX000 $CURR_DT $CURR_TM CONF RCPY AB **** $DEST_ID'
//*
//C1BMXDTM DD *
$CURR_DT$CURR_TM
//*
)IM C1BMXLIB
//* -----* C1BMXRCN (CONT.) *
$$
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY

```

5.3.4 Host Job Step 2: Transmission Scheduling

Depending upon the transmission method you use, Step 2 either executes the transmission utility directly (XCOM, BDT Ver 2, and NDM), submits a job to execute the transmission utility (BDT via NJE/NJI and Netview FTP), or submits a job to copy the host staging data sets to the remote production data sets (LOCAL). The skeletons making up Step 2 may contain site-specific data set names for Endeavor and for the data transmission package you use.

5.3.4.1 C1BMXCOM JCL for XCOM

This skeleton contains four steps. The &&XXCC data set built by the package shipment utility contains IEBUPDTE SYSIN used in the two IEBUPDTE steps to populate the prfx.XCOMCMD.FILE as described in Transmission Method Considerations. XCOM is executed in the third step. The fourth step deletes the member "CONTROL" from the prfx.XCOMCMD.FILE data set.

To tailor this skeleton:

1. Modify the STEPLIB, XCOMGLOB, XCOMREST, and XCOMCNTL dsnames using a site-specific prefix, qualifier, and name. The prefix/qualifier of the XCOM libraries is iprfx.XCOM. Contact your in-house XCOM administrator to find out this information.
2. Examine the PARM and add the optional PARM(s), if desired.

```

)CM PACKAGE SHIPMENT BATCH JCL - XCOM - ISPSLIB(C1BMXBD1)
)CM
)CM THIS SKELETON CONTAINS XCOM JCL. THE &&XXCC DATASET WAS BUILT
)CM BY THE PACKAGE SHIPMENT UTILITY AND CONTAINS COMMANDS TO TRANSFER
)CM THE STAGING DATASETS TO THE REMOTE SITE(S).
)CM
)CM * * * * *
)CM
)CM TAILORING INSTRUCTIONS:
)CM
)CM 1. MODIFY THE "STEPLIB", "XCOMGLOB", "XCOMREST", AND "XCOMCNTL"
)CM DSNAMES USING SITE SPECIFIC PREFIX, QUALIFIER, AND NAME.
)CM
)CM "IPRFX.XCOM" IS THE PREFIX/QUALIFIER OF THE XCOM
)CM LIBRARIES.
)CM
)CM 2. EXAMINE THE PARM AND ADD IN THE OPTIONAL PARM(S), IF DESIRED.
)CM
)CM * * * * *
)CM
//* =====* ISPSLIB(C1BMXCOM) *
//* =====*
//* =====*
//* =====*
//* =====*
//COMMANDI EXEC PGM=IEBUPDTE,PARM=NEW,COND=(12,LE,NDVRSHIP)
//SYSPRINT DD DUMMY
//SYSUT2 DD DISP=(NEW,CATLG),UNIT=TDISK,
// DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..XCOMCMD.FILE,
// SPACE=(CYL,(1,1,25)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=15440)
//SYSUT1 DD DUMMY
//SYSIN DD DISP=SHR,
// DSN=iprfx.iqual.SOURCE(#PS#XCOM)
//* =====*
//COMMANDP EXEC PGM=IEBUPDTE,PARM=MOD,COND=(12,LE,NDVRSHIP)

```

```

//SYSPRINT DD DUMMY
//SYSUT1 DD DISP=SHR,
//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..XCOMCMD.FILE
//SYSUT2 DD DISP=SHR,
//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..XCOMCMD.FILE
//SYSIN DD DSN=&&&XXCC,DISP=(OLD,PASS)
//* =====*
//&VNBXSTP EXEC PGM=XCOMJOB,COND=(12,LE,NDVRSHIP),
//          PARM=('TYPE=SCHEDULE')
//STEPLIB DD DISP=SHR,
//          DSN=IPRFX.XCOM.LOAD
//XCOMGLOB DD DISP=SHR,
//          DSN=IPRFX.XCOM.GLOBAL
//XCOMREST DD DISP=SHR,
//          DSN=IPRFX.XCOM.RESTART
//XCOMCNTL DD DISP=SHR,
//          DSN=IPRFX.XCOM.XCOMCNTL
//SYSIN01 DD DISP=SHR,
//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..XCOMCMD.FILE(CONTROL)
//* =====*
//CONTROL EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DELETE &ZPREFIX..D&VNB6DATE..T&VNB6TIME..XCOMCMD.FILE(CONTROL) NONVSAM

```

5.3.4.2 C1BMXBD1 JCL for Bulk Data Transfer using NJE/NJI

Because the JCL generated for BDT via NJE/NJI varies depending upon the number of data sets you are transmitting, the actual job stream is built by the package shipment utility and written to an internal reader in this job step. The tailoring of this job stream is discussed in Creating Model Transmission Control Statements, later in this chapter.

```

//* =====* ISPLIB(C1BMXBD1) *
//* =====*
//&VNBXSTP EXEC PGM=IEBGENER,COND=(12,LE,NDVRSHIP)
//SYSUT1 DD DSN=&&&XB1C,DISP=(OLD,PASS)
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY

```

5.3.4.3 C1BMXBDT JCL for Bulk Data Transfer, Version 2

Use this skeleton to transmit staging data sets and run jobs using Bulk Data Transfer, Version 2.

No tailoring is necessary for this skeleton.

```

//* =====* ISPLIB(C1BMXBDT) *
//* =====*
//* =====*
//* =====*
//* =====*
//&VNBXSTP EXEC PGM=BDTBATCH,REGION=2048K,COND=(12,LE,NDVRSHIP)

```

```
//SYSPRINT DD SYSOUT=*
//SYSIN DD DSN=&&&&XBDC,DISP=(OLD,PASS)
```

5.3.4.4 C1BMXNDM JCL for CONNECT:Direct

This skeleton contains four steps. The &&XNWC data set built by the package shipment utility contains IEBUPDTE SYSIN used in the two IEBUPDTE steps to populate the &ZPREFIX.PROCESS.FILE as described in Transmission Method Considerations. CONNECT:Direct is executed in the third step. The fourth step deletes the member "SUBMIT" from the &ZPREFIX.PROCESS.FILE data set.

To tailor this skeleton:

1. Modify LINKLIB, NETMEP, and MSG dsnames with site-specific names. The prefix/qualifier of the CONNECT:Direct libraries is iprfx.ndm.
2. Modify the SIGNON statement using site-specific signon data. You may add additional keywords and CONNECT:Direct control statements other than signon. Refer to the CONNECT:Direct documentation for more information.
3. If you do not need a SIGNON statement, delete the SIGNON and //SYSIN DD * statements and code //SYSIN on the &&&XNWC DD statement.

Note: &ZPREFIX is the TSO profile prefix assigned by each user. If most of your user's profiles are set to NOPREFIX, the C1BMXJOB job parm contains a reference to system variable of &ZPREFIX, which corresponds to a user's TSO Profile Prefix. If users at your site typically set their profile to NOPREFIX, for example, "TSO PROFILE NOPrefix", you should change this parameter to &ZUSER or other high-level qualifier. Some of the ship JCL models use this parameter as the first node of a certain data sets allocated during the ship process.

```
//* ***** ISPSLIB(C1BMXNDM) *
//* *****
//* *****
//* *****
//* *****
//PROCESSI EXEC PGM=IEBUPDTE,PARM=NEW,COND=(12,LE,NDVRSHIP)
//SYSPRINT DD DUMMY
//SYSUT2 DD DISP=(NEW,CATLG),UNIT=tdisk,
// DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE,
// SPACE=(CYL,(1,1,25)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=15440)
//SYSUT1 DD DUMMY
//SYSIN DD DISP=SHR,
// DSN=iprfx.iqual.SOURCE(#PS#NDM)
//* *****
//PROCESSP EXEC PGM=IEBUPDTE,PARM=MOD,COND=(12,LE,NDVRSHIP)
//SYSPRINT DD DUMMY
//SYSUT1 DD DISP=OLD,
// DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE
//SYSUT2 DD DISP=OLD,
```

```

//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE
//SYSIN    DD DSN=&&&&XNWC,DISP=(OLD,PASS)
//* =====*
//&VNBXSTP EXEC PGM=DMBATCH,REGION=2048K,COND=(12,LE,NDVRSHIP)
//STEPLIB DD DISP=SHR,          NDM LOAD MODULES
//          DSN=iprfx.$CD.LINKLIB
//DMNETMAP DD DISP=SHR,          NDM NETWORK MAP
//          DSN=iprfx.$CD.NETMAP
//DMMSGFIL DD DISP=SHR,          NDM MESSAGE DATASET
//          DSN=iprfx.$CD.MSG
//DMPUBLIB DD DISP=SHR,
//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE
//SYSPRINT DD SYSOUT=*          *****
//NDMCMNDS DD SYSOUT=*          *      ****      REPORTS      ****      *
//DMPRINT  DD SYSOUT=*          *****
//SYSUDUMP DD SYSOUT=*
//SYSIN    DD *
          SIGNON USERID=NDM_USER_ID NODE=NDM_HOST_NODE_NAME
//          DD DISP=SHR,
//          DSN=&ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE(SUBMIT)
//* =====*
//SUBMITD  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
          DELETE &ZPREFIX..D&VNB6DATE..T&VNB6TIME..PROCESS.FILE(SUBMIT) NONVSAM

```

5.3.4.5 C1BMXLOC JCL for Local Transmission

Use this skeleton to transfer host staging data sets that exist on shared DASD to production data sets which may or may not exist on shared DASD. The job executes a submit command for the remote copy/delete job using batch TSO.

No tailoring is necessary for this skeleton.

```

)CM PACKAGE SHIPMENT BATCH JCL - LOCAL TRANSFERS - ISPSLIB(C1BMXLOC)
)CM
)CM THIS SKELETON IS USED TO TRANSFER HOST STAGING DATASETS WHICH EXIST
)CM ON SHARED DASD TO PRODUCTION DATASETS WHICH MAY OR MAY NOT EXIST ON
)CM SHARED DASD. THE JOB EXECUTES TSO IN BATCH AND THE INPUT (SYSTSIN)
)CM CONTAINS A SUBMIT COMMAND TO RUN AHJOB.
)CM
)CM * * * * *
)CM
)CM TAILORING INSTRUCTIONS:
)CM
)CM MODIFY THE INTRDR SPECIFICATIONS IF NECESSARY
)CM
)CM * * * * *
)CM
//* =====* ISPSLIB(C1BMXLOC) *
//* =====*
//* =====*
//* =====*

```

```

/* *===== *
/*
//&VNBXSTP EXEC PGM=IKJEFT01,COND=(12,LE,NDVRSHP)
//SYSTSIN DD DSN=&&&&XLCC,DISP=(OLD,PASS)
//SYSTSPRT DD SYSOUT=*
//SYSOUT DD SYSOUT=*

```

5.3.4.6 C1BMXFTP JCL for NetView File Transfer Program

Because the Netview FTP JCL varies depending upon the number of data sets you are transmitting, the actual job stream is built by the package shipment utility and written to an internal reader in this job step. The tailoring of this job stream is discussed in Creating Model Transmission Control Statements.

```

/* *===== ISPSLIB(C1BMXFTP) *
/* *===== *
/*
//&VNBXSTP EXEC PGM=IEBGENER,COND=(12,LE,NDVRSHP)
//SYSUT1 DD DSN=&&&&&XFTC,DISP=(OLD,PASS)
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY

```

5.3.5 Host Job Step 3: Confirmation JCL

For transmission methods which actually execute in Step 2 (XCOM, BDT Ver 2, CONNECT:Direct, and Local), Step 3 confirms the host execution of the preceding file transmission step. It does this by executing one step if the transmission step executes, and a different step if the transmission step abends.

There is no third job step for BDT via NJE/NJI and Netview FTP. However, this skeleton is read by the first job step (DD name C1BMXHCHN) and becomes part of the JCL stream which is written to the internal reader in the second job step.

Two skeletal JCL modules are involved in Step 3.

5.3.5.1 C1BMXHCHN

To tailor this skeleton, insure that the condition code on the CONFEXEC step matches the condition code in the preceding file transmission step. This skeleton can be modified to give more specific information about the results of the file transmission step. See Shipment Tracking and Confirmation, later in this chapter, for details.

```

)CM PACKAGE SHIPMENT BATCH JCL - STAGING STEP - ISPSLIB(C1BMXHCHN)
)CM
)CM THIS SKELETON CONFIRMS THE EXECUTION OF A FILE TRANSMISSION
)CM STEP AT THE HOST END.
)CM
)CM * * * * *
)CM
)CM TAILORING INSTRUCTIONS:
)CM

```

```

)CM  INSURE THAT THE CONDITION CODE ON THE "CONFEXEC" STEP MATCHES THE
)CM  CONDITION CODE IN THE PRECEDING FILE TRANSMISSION STEP.  THIS
)CM  SKELETON CAN BE MODIFIED TO GIVE MORE SPECIFIC INFORMATION ABOUT
)CM  THE RESULTS OF THE FILE TRANSMISSION STEP (CF. ADMINISTRATORS
)CM  GUIDE - SHIPMENT TRACKING AND CONFIRMATION).
)CM
)CM
//* *-----* ISPSLIB(C1BMXHCN) *
//* *-----* *
//* *-----* *
//* *-----* *
//* *-----* *
//*
//CONFEXEC EXEC PGM=NDVRC1,REGION=4096K,
//  PARM='C1BMX000 $CURR_DT $CURR_TM CONF HXMT EX **** &VNBCDEST'
//*
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//*
)IM C1BMXLIB OPT
//* *-----* C1BMXHCN (CONT.) *
//* *-----* *
//* *-----* *
//* *-----* *
//* *-----* *
//*
//CONFABND EXEC PGM=NDVRC1,REGION=4096K,COND=ONLY,
//  PARM='&VNBCPARAM,CONF,HXMT,AB,****,*****'
//*
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=TDISK
//*
)IM C1BMXLIB OPT

```

5.3.5.2 C1BMXLIB

The C1BMXLIB module is embedded twice in this skeleton. See the discussion of C1BMXLIB, earlier in this section, for details.

5.3.6 Host Job Step 4: End of Job

The C1BMXEJOJ skeleton provides support to any "end of job" processing requirements. It is a single JCL comment card that you can modify as required. The skeleton is included as the last job step of the primary JCL stream for all transmission methods. It is not included in secondary JCL streams (BDT via NJE/NJI or NetView FTP).

5.4 Tailoring Remote Package Shipment JCL

5.4.1 Overview

Endevor provides skeletal JCL, and model members to generate the remote Copy/Delete job of a shipment. Before using the ship utility, you must modify this skeletal JCL so that it conforms to your site conventions.

These skeletons are members in `iprfx.igual.ISPSLIB` on the installation tape. The model members are found in `iprfx.igual.SOURCE`.

5.4.2 Remote Job Stream (C1DEFLT)

The generation of the Remote Copy/Delete job stream is controlled by the C1DEFLT specification for RJCLROOT keyword. There are three choices for the generation of a job stream for a remote site:

- RJCLROOT - Not specified
- RJCLROOT=FCPY
- RJCLROOT=ICPY

5.4.3 Remote job: RJCLROOT=Not specified

If RJCLROOT is not specified, the three-step job stream is programmatically generated.

Remote Job Step 1: IEBCOPY JCL

This JCL copies staging data sets to their production counterparts. This job step member is read/written at the host site by the shipment staging utility and is executed at the remote site. The member is C1BMXCOP and is distributed in `iprfx.igual.ISPSLIB`.

Note: This is not an ISPF skeleton. All skeleton control statements (close parenthesis in column 1) are ignored.

Keep in mind the following:

- The utility-generated copy control cards are in IEBCOPY format. COPY and COPYMOD commands are used. No SELECT MEMBER statements are generated.
- The utility generates a `//SYSIN * DD` statement.

```

)CM PACKAGE SHIPMENT BATCH JCL - REMOTE SITE JCL      ISPSLIB(C1BMXCOP)
)CM
)CM JCL TO COPY REMOTE STAGING DATASETS TO THEIR PRODUCTION COUNTERPARTS.
)CM THIS JOBSTEP MEMBER IS READ/Written AT THE HOST SITE BY THE SHIP-
)CM MENT STAGING UTILITY AND IS EXECUTED AT THE REMOTE SITE.
)CM
)CM THIS IS N-O-T AN ISPF SKELETON. ALL SKELETON CONTROL STATEMENTS
)CM (CLOSE PARENTHESIS IN COLUMN 1) WILL BE IGNORED.
)CM
)CM * * * * *
)CM
)CM TAILORING INSTRUCTIONS:
)CM
)CM THE UTILITY-GENERATED COPY CONTROL CARDS WILL BE IN IEBCOPY FORMAT.
)CM COPY AND COPYMOD COMMANDS ARE USED. THERE ARE NO SELECT MEMBER
)CM STATEMENTS GENERATED.
)CM
)CM THE UTILITY WILL GENERATE A "//SYSIN DD *" STATEMENT.
)CM
)CM * * * * *
)CM
)CM *-----* C1BMXRJC(C1BMXCOP)
)CM * REMOTE SITE JOBSTEP TO COPY MEMBERS WHICH WERE
)CM * MODIFIED BY THE EXECUTION OF THE PACKAGE
)CM *-----*
)CM //COPY EXEC PGM=IEBCOPY
)CM //SYSUT3 DD UNIT=TDISK,SPACE=(TRK,(5,5))
)CM //SYSUT4 DD UNIT=TDISK,SPACE=(TRK,(5,5))
)CM //SYSPRINT DD SYSOUT=*

```

Remote Job Step 2: IDCAMS JCL

This JCL deletes production members and remote staging data sets at the remote site. This member is read/written at the host site by the shipment staging utility and is executed at the remote site. The member is C1BMXDEL and is distributed in iprfx.igual.ISPSLIB.

Note: This is not an ISPF skeleton. All skeleton control statements (close parenthesis in column 1) are ignored.

```

)CM *-----* C1BMXRJC(C1BMXDEL)
)CM * REMOTE SITE JOBSTEP TO DELETE MEMBERS WHICH
)CM * WERE DELETED BY THE EXECUTION OF THE PACKAGE
)CM *-----*
)CM //DELETE EXEC PGM=IDCAMS
)CM //SYSPRINT DD SYSOUT=*
)CM //SYSIN DD *

```

Remote Job Step 3: Remote confirmation

Remote confirmation steps are discussed in Host Job Step 1: Shipment Staging (C1BMXJOB), in the C1BMXRRCN subsection.

5.4.4 Remote Job: RJCLROOT=FCPY

If RJCLROOT is equal (=) to FCPY, the job stream is generated through the set of model members beginning with the character string #RJFCPY. The distribution version consists of three steps.

Remote Job Step 1: Execute IEBCOPY (intercepted to execute FASTCOPY)

To copy members to and delete members from remote data sets.

Remote Job Step 2: Execute IDCAMS to delete staging datasets

Remote Job Step 3: Remote confirmation

Remote confirmation steps are discussed in Host Job Step 1: Shipment Staging (C1BMXJOB).

Remote Job: RJCLROOT=ICPY

If RJCLROOT is equal (=) to ICPY, the job stream is generated through the set of model members in iprfx.iqual.SOURCE beginning with the character string #RJICPY. The distributed version generates the same job stream that is generated when RJCLROOT is omitted. The job stream consists of three steps:

Remote Job Step 1: Execute IEBCOPY to copy members to remote data sets

Remote Job Step 2: Execute IDCAMS to delete members and staging data sets

Remote Job Step 3: Remote confirmation

Remote confirmation steps are discussed in Host Job Step 1: Shipment Staging (C1BMXJOB).

5.5 Establishing Destinations

5.5.1 Overview

You must define at least one destination for each remote site to which you plan to ship package outputs. Endeavor stores destination information in the package data set.

This section provides the procedures for creating, modifying, displaying, and deleting destinations and a panel reference section that describes the information needed to create destinations.

5.5.2 Working with Destinations

To work with destinations, first select option **D** (DESTINATIONS) on the Environment Options Menu, then press ENTER to display the Destination Options Menu. The procedures that follow explain how to create, modify, display, or delete destinations from this panel. Panel examples and field descriptions follow the procedures.

5.5.2.1 Creating Destinations

To create a destination:

1. Type **2** in the OPTION field and a destination name in the DESTINATION field on the Destination Options panel. Press ENTER to display a Create/Modify Destination panel.
2. Type all required and any desired optional information on the Create Destination panel. Press ENTER to create the destination.
3. Press the END key until you reach the panel you need to perform your next action.

5.5.2.2 Modifying Destinations

To modify a destination:

1. Type **2** in the OPTION field on the Destination Options panel. You can leave the DESTINATION field blank or provide a name mask to see a Destination Selection List. Or, you can type a fully qualified destination name to go directly to a Modify Destination panel. Press ENTER.
2. If a Modify Destination panel displays, proceed to Step 3. If a Destination Selection List displays, select a destination, then press ENTER.
3. Change information as necessary on the Modify Destination panel, then press ENTER to modify the destination.
4. Press END key until you reach a panel from which you can initiate your next action.

5.5.2.3 Displaying Destinations

To display a destination:

1. Type **1** in the **OPTION** field on the Destination Options panel. You can leave the **DESTINATION** field blank or provide a name mask to see a Destination Selection List. Or, you can type a fully qualified destination name to go directly to a Display Destination panel. Press **ENTER**.
2. If a Display Destination panel appears, proceed to Step 3. If a Destination Selection List displays, select a destination. Then press **ENTER** to see the Display Destination panel.
3. View the destination information.
4. Press **END** key until you reach a panel from which you can initiate your next action.

5.5.2.4 Deleting Destinations

To delete a destination:

1. Type **3** in the **OPTION** field on the Destination Options panel, as well as a destination name or mask in the **DESTINATION** field. Press **ENTER**.
2. If a Destination Selection List appears, view a selected destination by typing **S** next to the destination name. then press **ENTER** to display a Delete Destination panel. Otherwise proceed to Step 3.
3. Delete the destination by typing **#** in the **OPTION** field, then pressing **ENTER**. This deletes both the destination and any associated mapping rules. Press **END** key to return to the Destination Options Menu. You can view the mapping rules associated with the destination by typing **D** in the **OPTION** field on the Delete Destination panel, then pressing enter.
4. Press **END** key to return to the Delete Destination panel.

Note: To delete multiple destinations, select the destinations you want to delete on a Destination Selection List. When you press enter, a Delete Destination panel appears for the first selected destination. After you delete that destination, press **END** key. The Delete Destination panel remains displayed, with the name of the second selected destination in the **DESTINATION ID** field. Repeat the delete procedure for this and subsequent selected destinations.

5.5.3 Destination Options Menu

```
DESTINATION ----- DESTINATION OPTIONS MENU -----
OPTION ==>
1 DISPLAY - Display Destination Information
2 BUILD  - Create/Modify a Destination
3 DELETE - Delete a Destination
DESTINATION ==>
```

5.5.3.1 Field Descriptions

Field	Description
Option	Type one of the following numbers in the OPTION field: <ul style="list-style-type: none"> ▪ 1--To display destination information. ▪ 2--To create or modify a destination ▪ 3--To delete a destination
Destination	Type the name of the destination with which you want to work.

The option you select on this panel determines the options available to you on subsequent panels.

If you leave the DESTINATION field blank or type a destination name that includes a name mask, Endeavor displays a Destination Selection List when you press ENTER.

5.5.4 Destination Selection List

```

DISPLAY ----- DESTINATION SELECTION LIST ----- ROW 1 OF 4
OPTION ==>                                           SCROLL ==> PAGE
--- TRANSMISSION ---
DEST-ID      METHOD      NODENAME      DESCRIPTION
BOSTONAP    NETWORK_DM  NDM28         Boston accts payable
BOSTONGL    BDT         BOS3BULK      Boston general ledger
*****
***** BOTTOM OF DATA *****

```

All fields but the SELECTION field are display-only.

Field	Description
Selection (no title)	Select the destination you want to process by typing an S to the left of the name of the destination.
Dest-ID	Destination name.
Transmission Method	Transmission utility associated with the named destination.
Transmission Nodename	Identifies the site to which packages are shipped.
Description	Description of the named destination.

5.5.5 Create/Modify Definition Panel

```

MODIFY ----- CREATE/MODIFY DESTINATION -----
OPTION ==>
blank - Update Destination          D - Display DSN Mapping Rules for Update
C - Create DSN Mapping Rule        T - Test DSN Mapping Rules
DESTINATION: JOHNDST      DESCRIPTION ==>
SHIP COMPLEMENTARY DATASETS (N/Y) ==>
TRANSMISSION METHOD ==>          REMOTE NODENAME ==>
STAGING DATASET INFO:          FOR HOST SITE          FOR REMOTE SITE
DSN PREFIX                    ==> NAIJM44.NDVR          ==> NAIJM44.NDVR
DISPOSITION                    ==> DELETE              ==> DELETE
UNIT                            ==> SYSDA              ==> SYSDA
VOLUME SERIAL                  ==>                    ==>
REMOTE JOB STATEMENT INFORMATION:
==> //JOBNAME JOB (ACCOUNT),'NAME'
==> /**
==> /**
==> /**
UPDATED: 11APR01 11:01 BY DA1ME10      CREATED: 06MAR01 11:22 BY DA1ME10

```

5.5.5.1 Destination Name and Description Fields

The DESTINATION and DESCRIPTION fields provide this information

- Destination -- Can be 1 to 7 characters. The first character must be alphabetic. Remaining characters can be alphabetic or national.
- Description -- Can be 1 to 40 characters and is treated as a comment.

5.5.5.2 Ship Complementary Data Sets Shipment Field

When package outputs are shipped to a destination, a second set of staging data sets can be requested. Called complementary data sets, they contain a backout of the shipment. For example, if a shipment contains the output of package A, then the complementary data sets contain the backout for package A. Conversely, if a shipment contains the backout for package B, then the complementary data sets contain the outputs for package B.

Use the SHIP COMPLEMENTARY DATASETS field to tell Endeavor whether to ship complementary data sets. Acceptable values are:

- **N** -- Default. Do not ship complementary data sets.
- **Y** -- Ship complementary data sets.

5.5.5.3 Transmission Method Field

The TRANSMISSION METHOD field identifies the transmission utility for this destination. Acceptable values are:

- **XCOM** -- XCOM (CA)
- **B** -- Bulk Data Transfer, Version 2 (IBM)
- **BDTN** -- Bulk Data Transfer via NJE/NJI (IBM)

- **L** -- Local
- **NVF** -- NetView File Transfer Program (IBM)
- **NWD** -- CONNECT:Direct (Sterling Commerce)

5.5.5.4 Remote Nodename Field

The REMOTE NODENAME field identifies the site to which package outputs are to be shipped. The name must be valid for, and defined, to the chosen data transmission program. Refer to Transmission Method Considerations, earlier in this chapter for more information.

Nodename has no meaning for BDT via NJE/NJI and for local transmissions.

5.5.5.5 Staging Data Set Information Field

The user must provide a prefix for the staging data sets that Endeavor builds in the first step of the ship utility. This prefix can be 1 to 14 characters, and can be different for the host and the remote sites. The prefix appears in the DSN PREFIX field, and defaults to *TSOuserid.NDVR*.

Acceptable values for the other staging data set fields are:

Field	Description
Disposition	<p>Delete or keep. When DISPOSITION=DELETE, Endeavor includes a step in the host and/or remote JCL streams to delete the staging data sets after they have been processed.</p> <p>Acceptable values are:</p> <ul style="list-style-type: none"> ▪ B -- Bulk Data Transfer, Version 2 (IBM) ▪ D -- Default. Delete staging data sets ▪ K -- Keep staging data sets <p>All staging data sets are initially cataloged. Keep/Delete refers to the final disposition of:</p>
Disposition (continued)	<ul style="list-style-type: none"> ▪ Host staging data sets after they have been transmitted. ▪ Remote staging data sets once they have been copied to their production counterparts.
Unit	<p>Default is SYSDA. This is the unit designation to be used when allocating staging data sets.</p>
Volume Serial	<p>Optional. No default value. This is the VOLSER to be used when allocating staging data sets.</p>

5.5.5.6 Remote Job Statement Information Fields

These fields provide the job card for the remote JCL execution. A ROUTE XEQ card or equivalent should be included if the transmission method is either BDT via NJE/NJI or local.

5.5.5.7 Created and Updated Fields

The UPDATED and CREATED fields show the date and time when the destination was created and last updated, and the user ID associated with each activity.

5.5.6 Display Destination Panel

```

DISPLAY ----- DISPLAY DESTINATION -----
OPTION ==>
  D - Display DSN Mapping Rules
DESTINATION: BRBLOCA      DESCRIPTION: TEST
                        SHIP COMPLEMENTARY DATASETS (N/Y): N
TRANSMISSION METHOD: LOCAL      REMOTE NODENAME: X
STAGING DATASET INFO:   FOR HOST SITE      FOR REMOTE SITE
  DSN PREFIX             CA1BB39.NDVR
  DISPOSITION            KEEP
  UNIT                   SYSDA
  VOLUME SERIAL
REMOTE JOB STATEMENT INFORMATION:
//CA1BB39J JOB (ACCOUNT),BERNIEB,CLASS=V,MSGCLASS=X
//*
//*
//*
UPDATED: 18JUN01 17:26 BY CA1BB39      CREATED: 18JUN00 17:26 BY CA1BB39
    
```

5.5.6.1 Field Descriptions

Field	Description
Option	You can type D in the option field to display the data set mapping rule associated with this destination
Destination	Identifies 1 to 7 character name of the destination you are displaying.
Description	Contains the 1 to 40 character description of the named destination.

Field	Description
Ship Complementary Datasets	<p>Complementary data sets contain a backout of the shipment. For example, if a shipment contains the output of package A, then the complementary data sets contain the backout for package A. Conversely, if a shipment contains the backout for package B, then the complementary data sets contain the outputs for package B.</p> <p>The SHIP COMPLEMENTARY DATASETS field tells Endeavor whether to ship complementary data sets. Possible values are:</p> <ul style="list-style-type: none"> ▪ N -- Default. Do not ship complementary data sets. ▪ Y -- Ship complementary data sets
Transmission Method	<p>The TRANSMISSION METHOD field identifies the transmission utility for this destination. Possible values are:</p> <ul style="list-style-type: none"> ▪ XCOM -- XCOM (CA) ▪ B -- Bulk Data Transfer, Version 2 (IBM) ▪ BDTN -- Bulk Data Transfer via NJE/NJI (IBM) ▪ L -- Local ▪ NVF -- NetView File Transfer Program (IBM) ▪ NWD -- CONNECT:Direct (Sterling Commerce)
Remote Nodename	<p>The REMOTE NODENAME field identifies the site to which package outputs are to be shipped.</p>
Staging Dataset Info	<p>The STAGING DATASET INFO field identifies the staging data sets that Endeavor builds in the first step of the ship utility. The prefix appears in the DSN PREFIX field.</p> <p>Values for the other staging data set fields are:</p> <ul style="list-style-type: none"> ▪ Disposition-- Delete or keep. All staging data sets are initially cataloged. Keep/Delete refers to the final disposition of: host staging data sets after they have been transmitted and the remote staging data sets once they have been copied to their production counterparts. When DISPOSITION=DELETE, Endeavor includes a step in the host and/or remote JCL streams to delete the staging data sets after they have been processed. Acceptable values are: ▪ Unit -- This is the unit designation to be used when allocating staging data sets. ▪ Volume Serial -- This is the VOLSER to be used when allocating staging data sets.

Field	Description
Remote Job Statement Information	These fields provide the job card for the remote JCL execution.
Created	Shows the date and time when the destination was created and by whom.
Updated	Shows the date and time when the destination was last updated and by whom.

5.5.7 Delete Destination Panel

```

DELETE ----- DELETE DESTINATION -----
OPTION ==>
  D - Display DSN Mapping Rules
  # - Delete Destination and its DSN Mapping Rules
DESTINATION: BRBLOCB      DESCRIPTION: TEST
                        SHIP COMPLEMENTARY DATASETS (N/Y): N
TRANSMISSION METHOD: LOCAL      REMOTE NODENAME: X
STAGING DATASET INFO:      FOR HOST SITE      FOR REMOTE SITE
  DSN PREFIX                CA1BB39.NDVR
  DISPOSITION                KEEP
  UNIT                       SYSDA
  VOLUME SERIAL
REMOTE JOB STATEMENT INFORMATION:
//CA1BB39K JOB (ACCOUNT),BERNIEB,CLASS=V,MSGCLASS=X
//*
//*
//*
UPDATED: 18JUN01 18:19 BY CA2BB39      CREATED: 18JUN01 18:19 BY CA2BB39

```

5.5.7.1 Field Descriptions

Field	Description
Option	Type one of the following numbers in the OPTION field: <ul style="list-style-type: none"> ■ D -- To display the data set mapping rule associated with this destination ■ # -- To delete the destination
Destination	Identifies a 1- to 7-character name of the destination you are deleting.
Description	Contains the 1- to 40-character description of the named destination.
Ship Complementary Datasets	Complementary data sets contain a backout of the shipment. For example, if a shipment contains the output of package A, then the complementary data sets contain the backout for package A. Conversely, if a shipment contains the backout for package B, then the complementary data sets contain the outputs for package B. The SHIP COMPLEMENTARY DATASETS field tells Endeavor whether to ship complementary data sets. Possible values are: <ul style="list-style-type: none"> ■ N -- Default. Do not ship complementary data sets. ■ Y -- Ship complementary data sets

Field	Description
Transmission Method	<p>The TRANSMISSION METHOD field identifies the transmission utility for this destination. Possible values are:</p> <ul style="list-style-type: none"> ▪ XCOM -- XCOM (CA) ▪ B -- Bulk Data Transfer, Version 2 (IBM) ▪ BDTN -- Bulk Data Transfer via NJE/NJI (IBM) ▪ L -- Local ▪ NVF -- NetView File Transfer Program (IBM) ▪ NWD -- CONNECT:Direct (Sterling Commerce)
Remote Nodename	<p>The REMOTE NODENAME field identifies the site to which package outputs are to be shipped.</p>
Staging Dataset Info	<p>The STAGING DATASET INFO field identifies the staging data sets that Endeavor builds in the first step of the ship utility. The prefix appears in the DSN PREFIX field.</p> <p>Values for the other staging data set fields are:</p> <ul style="list-style-type: none"> ▪ Disposition -- Delete or keep. All staging data sets are initially cataloged. Keep/Delete refers to the final disposition of: host staging data sets after they have been transmitted and the remote staging data sets once they have been copied to their production counterparts. When DISPOSITION=DELETE, Endeavor includes a step in the host and/or remote JCL streams to delete the staging data sets after they have been processed. Acceptable values are ▪ Unit -- This is the unit designation to be used when allocating staging data sets. ▪ Volume Serial -- This is the VOLSER to be used when allocating staging data sets
Remote Job Statement Information	<p>These fields provide the job card for the remote JCL execution.</p>
Created	<p>Shows the date and time when the destination was created and by whom.</p>
Updated	<p>Shows the date and time when the destination was last updated and by whom.</p>

5.6 Establishing Data Set Mapping Rules

5.6.1 Overview

In addition to providing information about the staging data sets that Endeavor builds for each ship request, you must also map production data sets at the host to corresponding production data sets at the remote site. Endeavor facilitates this by allowing you to create data set mapping rules.

5.6.2 About Mapping Rules

A data set mapping rule is a relationship between a 1- to 44-character host data set name or mask and a 1- to 44-character remote data set name or mask.

This data set name (mask) Might map to this data set name (mask)

```
HOST.*.LOADLIB        REMOTE.*.LOADLIB
HOST.*.*.*            REMOTE.*.*.*
```

When setting up data set mapping rules, make sure that the HOST DATA SET NAME fields in the mapping rules have the same number of qualifiers as the input production data set names. The REMOTE DATA SET NAME fields in the mapping rules can have any number of qualifiers. When the number of qualifiers is not the same, Endeavor aligns both data set names to the right, then builds a new data set name. For example, given this mapping rule:

```
TESTAP.*.*            PROD.AP.*.*
```

Endeavor would align the two masks:

```
PROD    AP.*.*
         TESTAP.*.*
```

then build production data sets at the remote site using the mask. Using the above rule, TESTAP.PROGRAM.LOADLIB would become PROD.AP.PROGRAM.LOADLIB. If, however, TESTAP.*.* maps to PROD.* then TESTAP.PROGRAM.LOADLIB would map to PROD.LOADLIB.

An exception to the alignment rule occurs when both the host mask and the remote mask contain no wildcards. In this case the remote mask becomes the remote DSN.

When executing a shipment request, Endeavor compares each input data set to its list of data set mapping rules until it finds the most specific match. For example, TESTAP.PROGRAM.LOADLIB matches the following three host masks. The first mask is the most specific and is the one that would be used.

```
TESTAP.    *. LOADLIB
TESTAP.    *. *
*.           *. LOADLIB
```

If the remote mask is null, data sets matching the host mask are excluded from the package shipment. This becomes useful, for example, when only load modules are to be shipped. In this instance, rules can be set up to prevent the shipment of source, listings, object modules, etc.

The Shipment Activity Report created at run time lists the remote data set name for each host data set, along with the mapping rule used to generate it. A DSN cross reference data set is also shipped to the remote site.

5.6.3 Working with DSN Mapping Rules

You access DSN Mapping Rules panels from Destination panels.

```

MODIFY ----- CREATE/MODIFY DESTINATION -----
OPTION ==>
blank - Update Destination          D - Display DSN Mapping Rules for Update
C - Create DSN Mapping Rule      T - Test DSN Mapping Rules
DESTINATION: JOHNDST      DESCRIPTION ==>
SHIP COMPLEMENTARY DATASETS (N/Y) ==>
TRANSMISSION METHOD ==>          REMOTE NODENAME ==>
STAGING DATASET INFO:      FOR HOST SITE          FOR REMOTE SITE
DSN PREFIX                ==> NA1JM44.NDVR          ==> NA1JM44.NDVR
DISPOSITION                ==> DELETE              ==> DELETE
UNIT                      ==> SYSDA                ==> SYSDA
VOLUME SERIAL              ==>                    ==>
REMOTE JOB STATEMENT INFORMATION:
==> //JOBNAME JOB (ACCOUNT),'NAME'
==> /**
==> /**
==> /**
UPDATED: 11APR01 11:01 BY DA1ME10      CREATED: 06MAR01 11:22 BY DA1ME10
    
```

5.6.3.1 Options

Use This Option	To
C	Create data set mapping rules.
D	Display a mapping rule selection list to select a mapping rule for update.
T	Test existing mapping rules.

The option you select on the Destination panel determines the options available on subsequent panels.

The procedures that follow explain how to create, modify, display, test, or delete data set mapping rules. Panel examples and field descriptions follow the procedures.

5.6.3.2 Creating DSN Mapping Rules

To create a DSN mapping rule:

1. Type **C** in the OPTION field on the Create/Modify Destination panel, then press ENTER to display a DSN Mapping panel.
2. Type information as necessary on the DSN Mapping panel, then press ENTER to create the mapping rule.
3. Test the rule. This is optional. See the Test DSN Mapping Rules Panel section that follows.
4. Press END key until you reach the panel you need to perform your next action

5.6.3.3 Modifying/Displaying/Deleting DSN Mapping Rules

To modify, display, or delete a DSN mapping rule:

1. Type **D** in the OPTION field on a Create or Modify Destination panel, then press ENTER to display a DSN Mapping Selection List.
2. Select the rule(s) you want to process by typing **S** on the same line as the rule.
3. Press ENTER to display a DSN Mapping Rule panel in either display or modify mode.
4. View, modify, or delete the rule.
5. Press END key until you reach the panel you need to perform your next action.

5.6.3.4 Testing DSN Mapping Rules

To test a DSN mapping rule:

1. Type **T** in the OPTION field on a Destination panel, then press ENTER to display a Test DSN Mapping Rules panel.
2. Type the host data set name in the HOST DSN field, then press ENTER.
Endevor displays:
 - The mapped remote data set name in the REMOTE DSN field.
 - The rule used to produce the remote data set name in the HOST DATASET NAME and REMOTE DATASET NAME fields.
3. Press END key until you reach a panel from which you can initiate your next action.

5.6.4 DSN Mapping Selection List

The DSN Mapping Selection List is ordered from the most specific to the least specific rule. If you change the host DSN mask while modifying a rule, the rule is marked *RE-KEYED. This may mean that the rule has changed its relative position in the list. Redisplay the list to find the new position of the rule.

```

DISPLAY ----- DSN MAPPING SELECTION LIST ----- ROW 1 OF 102
OPTION ==>                                           SCROLL ==> PAGE
DESTINATION: BOSTON1
MAP/EXCL .----- HOST DATASET NAME ----- .  UPDATED
EXCLUDED HOST.XDVRC1S1.LISTINGS                XXMARXX
MAPPED   HOST*.LKEDLIB                          XXMARXX
MAPPED   HOST*.LOADLIB                         XXMARXX
MAPPED   HOST*.*.*                             XXMARXX
MAPPED   HOST*.*                               XXMARXX
MAPPED   REMOTE*.XDVRC1S1.*                    XXMARXX
MAPPED   REMOTE*.XDVR*.*                       XXMARXX
MAPPED   SYS1.COBLIB                           XXMARXX
MAPPED   SYS1.MACLIB                           XXMARXX
MAPPED   SYS1

```

5.6.4.1 Field Descriptions

Field	Description
Destination	Display-only. Name of the current destination.
Selection (no title)	Select the rule(s) you wish to process by typing S on the same line as the rule.
Map/Excl	Display-only. Indicates whether the host data set name or mask to the right is mapped to a remote data set. You will see one of two values: MAPPED or EXCLUDED .
Host dataset name	Display-only. The host data set name or mask for a mapping rule.
Updated	Date when the rule associated with the named host data set was last updated.

5.6.5 DSN Mapping Rule Panel

```

MODIFY ----- MODIFY DSN MAPPING RULE -----
OPTION ==>
  blank - Modify Rule          # - Delete Rule
DESTINATION: DESTLVS
MAPPING RULE DESCRIPTION ==> LVS RULE DESCRIPTION
To EXCLUDE datasets from being transmitted: Leave REMOTE DSN Blank
HOST DATASET NAME ==> CA1LV95.QA*.*
  maps to
REMOTE DATASET NAME ==> CA1LV95.QA*.*
Approx Host Members/Cyl ==> 16
MAPPING RULE DSNs PRIOR TO MODIFICATION:
  HOST: CA1LV95.QA*.*
  REMOTE: CA1LV95.QA*.*
UPDATED: 19AUG01 09:17 BY CA1LV95  CREATED: 19AUG01 09:17 BY CA1LV95

```

The mode in which this panel displays (Create, Display, or Modify) depends on the option you select on the Destination panel. The exact fields that display on this panel depend on the panel mode.

Field	Description
Destination	Display-only. Identifies the destination associated with these data sets.
Mapping rule description	1- to 40-character name for this data set map.
Host dataset name	1- to 44-character data set name.
Remote dataset name	1- to 44-character data set name. If you do not want the package outputs of a data set to be transmitted, do not type a value in the REMOTE data set field.
Approx Host Members/Cyl	Use this field to enter an approximation of the number of members that one cylinder might contain for data sets that map to this rule. You can enter in increments of .01 for values from .01 thru .99 and increments of 1 for values from 1 thru 999. If you omit this field or enter a 0 the field defaults to 16. When packages are staged for shipment, Endeavor divides the actual number of members being staged by this value and allocates the result +1 cylinder of primary and secondary space for the staging data sets. If you normally ship large members you want this value to be a small number.

Field	Description
Mapping rule DSNs prior to modification	Appears only in Modify mode. Header for the following two fields. <ul style="list-style-type: none"> Host--Host data set name or mask for the displayed rule. Remote--Remote data set name or mask for the displayed rule
Updated/By	Date and time of last update to this rule, and the ID of the user who last updated it.
Created/By	Date and time when this rule was created, and the ID of the user who created it.

5.6.6 Test DSN Mapping Rules Panel

```

TEST ----- TEST DSN MAPPING RULES -----
COMMAND ==>
DESTINATION: DESTLVS
  Enter a host dataset name. The DSN Mapping Rules for this destination
  will be searched and the corresponding remote DSN will be generated.
  HOST DSN ==>
  REMOTE DSN:
  The following rule was used to generate the remote DSN:
  MAPPING RULE DESCRIPTION:
  HOST DATASET NAME:
    maps to
  REMOTE DATASET NAME:
  Approx Host Members/Cyl:
  UPDATED:                BY                CREATED:                BY

```

All fields on the panel, except HOST DSN, are display-only.

Field	Description
Destination	Name of the current destination.
Host DSN	Name of the host data set for which you want to test a mapping rule.
Remote DSN	This field displays the remote data set name produced by the rule associated by Endeavor with the data set in the HOST DSN field.
Host dataset name	Host data set name or mask for the rule used to map the data sets at the top of the panel.
Remote dataset name	Remote data set name or mask for the rule used to map the data sets at the top of the panel.

Field	Description
Approx Host Members/Cyl	<p>This field contains an approximation of the number of members that one cylinder might contain for data sets that map to this rule. The default is 16.</p> <p>When packages are staged for shipment, Endeavor divides the actual number of members being staged by this value and allocates the result +1 cylinder of primary and secondary space for the staging data sets.</p>
Updated/By	Date and time of last update to this rule, and the ID of the user who last updated it.
Created/By	Date and time when this rule was created, and the ID of the user who created it.

5.7 Creating Model Transmission Control Statements

5.7.1 Overview

To afford a measure of flexibility in transmitting data sets to different destinations, you can populate a PDS with members containing model transmission control statements. The number and nature of these model members depends upon the transmission package you use.

5.7.2 XCOM Control Statements

Endevor distributes the XCOM control statements models in the Endevor source library as a set of members whose names begin with "#PSXCOM." Those ending in a numeral direct the building of XCOM commands that schedule the transmission of data sets and the running of jobs. Those ending in a letter contain the XCOM command models. You may need to modify these command models with site-specific data or features.

When a remote site needs a different set of commands, make a copy of the #PSXCOMx member, naming it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x", #PSXCOMx, #PSNDVRx.

Refer to the *XCOM User's Manual* for information about XCOM commands.

5.7.2.1 #PSXCOME - Execute the Remote Copy/Delete Job

This member contains the XCOM commands to execute the remote copy/delete job and delete the host staging data sets. To prevent automatic execution at all remote sites, place an @EOF as the first statement of this member. To prevent this from happening at a particular site, create a member "destid.E" with an @EOF as the first statement.

```
@REM
TYPE=SEND
XTCNET=T&SHIPTIME
XTCJOB=J&D4.AR
HOLDCOUNT=&FILECOUNT
FILETYPE=JOB
FILEOPT=CREATE
LU=&NODENAME
UNIT=&RUNIT
LFILE=&AHJOBDSN
@REM
@IF HDISP=DELETE
*
NEWXFER
TYPE=SEND
```

```

XTCNET=T&SHIPTIME
XTCJOB=J&D4.DEL
HOLDCOUNT=&FILECOUNT
FILETYPE=JOB
FILEOPT=CREATE
LU=&NODENAME
UNIT=&RUNIT
LFILE=&SHIPPER..&SHIPTIME..XCOMCMD.FILE(&DESTID.D)
@ENDIF

```

5.7.2.2 #PSXCOMP - Transmit a Partitioned Data Set

```

*
NEWXFER
TYPE=SEND
XTCNET=T&SHIPTIME
XTCGOODDECR=J&D4.AR,J&D4.DEL
FILETYPE=FILE
FILEOPT=CREATE
LU=&NODENAME
UNIT=&RUNIT
@IF &RVOLSER
VOL=&RVOLSER
@ENDIF
LFILE=&FDSN(*)
FILE=&TDSN(*)

```

5.7.2.3 #PSXCOMS - Transmit Sequential Data Sets

```

*
NEWXFER
TYPE=SEND
XTCNET=T&SHIPTIME
XTCGOODDECR=J&D4.AR,J&D4.DEL
FILETYPE=FILE
FILEOPT=CREATE
LU=&NODENAME
UNIT=&RUNIT
@IF &RVOLSER
VOL=&RVOLSER
@ENDIF
LFILE=&AHREFDSN
FILE=&ARREFDSN
@IF &CHJOBDSN
*
NEWXFER
XTCNET=T&SHIPTIME
XTCGOODDECR=J&D4.AR,J&D4.DEL
LFILE=&CHJOBDSN
FILE=&CRJOBDSN
@ENDIF
*

```

```

NEWXFER
XTCNET=T&SHIPTIME
XTCGOODDECR=J&D4.AR,J&D4.DEL
LFILE=&AHJOBDSN
FILE=&ARJOBDSN
***** BOTTOM OF DATA *****

```

5.7.2.4 #PSXCOMT - Test and Delete XCOM Command File

This member contains cleanup steps to delete prfx.XCOMCMD.FILE when all destinations have been processed. It becomes the last two jobsteps in prfx.XCOMCMD.FILE(destid.D).

```

@REM
//TFIL&D4 EXEC PGM=ENUMTPDS
//PDS      DD DISP=SHR,
//          DSN=&SHIPPER..T&SHIPTIME..XCOMCMD.FILE
&HLIBS
//DFIL&D4 EXEC PGM=IEFBR14,COND=(1,NE,TFIL&D4)
//PDS      DD DISP=(OLD,DELETE,DELETE),
//          DSN=&SHIPPER..T&SHIPTIME..XCOMCMD.FILE

```

5.7.3 Bulk Data Transfer (BDT) Using NJE/NJI

Endevor distributes the BDT via NJE/NJI control statements in the Endevor source library as a set of members whose names begin with "#PSBDT1". Those ending in a numeral and the member suffixed with a "C" direct the building of a BDT job that does the following:

1. Unloads the partitioned staging data sets to temporary sequential data sets.
2. Executes BDTXMIT to transmit the remote site BDTRECV job.
3. Optionally deletes host staging data sets via the JCL DISP parameter.
4. Executes the transmission confirmation job step.

The remote site BDTRECV job does of the following.

1. Executes BDTRECV to receive the data sets.
2. Restages the staging data sets into partitioned data sets.
3. Submits the job to copy members into the production data sets.

Those #PSBDT1 members ending in a letter contain JCL segments which may have to be modified with site-specific data. BDT via NJE/NJI also uses a set of members whose names begin with #PSNDVR. In cases where the needs of a remote site differ, make a copy of the #PSBDT1x or #PSNDVRx member, name it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x," #PSBDT1x, #PSNDVRx.

The following may have to be modified.

5.7.3.1 #PSBDT1E - Execute the Remote Copy/Delete Job

This job step is transmitted to the remote site and is executed there after the data sets are received (as sequential files) and restaged into partitioned data sets. To prevent automatic execution at all remote sites, place an @EOF as the first statement of this member. To prevent this from happening at a particular site, create a member "destid.E" with an @EOF as the first statement.

```
//JCLR&D4 DD DATA,DLM=$$
//SUBMIT EXEC PGM=IKJEFT01
//SYSOUT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
SUBMIT '&ARJOBDSN'
/*
$$
```

5.7.3.2 #PSBDT1J - Host Job Step JCL (EXEC PGM=BDTXMIT)

This job step is executed at the host site after the partitioned staging data sets have been unloaded into sequential data sets.

```
//HOSTXMIT EXEC PGM=BDTXMIT
//SYSPRINT DD SYSOUT=*
//INTRDR DD SYSOUT=(A,INTRDR)
```

5.7.3.3 #PSBDT1W - Remote Job Step JCL (EXEC PGM=BDTRECVC)

This job step is executed at the remote site.

```
//REMOTRCV EXEC PGM=BDTRECVC
//SYSPRINT DD SYSOUT=*
//STEPLIB DD DISP=SHR,DSN=iprfx.BDT.LOADLIB
```

5.7.3.4 #PSNDVRH - Host IEBCOPY JCL

This job step is executed at the host site and unloads the partitioned staging data sets into temporary sequential data sets prior to transmission.

```
//JSHC&D4 EXEC PGM=IEBCOPY,REGION=2048K
//SYSPRINT DD SYSOUT=*
//SYSUT3 DD UNIT=SYSDA,SPACE=(TRK,5)
//SYSUT4 DD UNIT=SYSDA,SPACE=(TRK,5)
//SYSIN DD DDNAME=SYSUTIN
```

5.7.3.5 #PSNDVRR - Remote IEBCOPY JCL

This job step is executed at the remote site and restages the received sequential data sets into temporary partitioned data sets.

```
@REM
@INCLUDE=H
```

This control statement is set up to use the same JCL as that executed on the host. If different JCL is required, replace the @INCLUDE=H statement with the appropriate JCL.

5.7.4 Bulk Data Transfer (BDT), Version 2, Control Statements

Endevor distributes the BDT Version 2 control statement in the Endevor source library as a set of members whose names begin with "#PSBDT2". Those ending in a numeral direct the building of BDT commands that schedule the transmission of data sets and the running of jobs. Those ending in a letter contain the BDT command models. You may have to modify these command models with site-specific data or features.

When a remote site needs a different set of commands, make a copy of the #PSBDT2x member, naming it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x", #PSBDT2x, #PSNDVVRx.

Refer to the *BDT Version 2 File-to-File Transaction Guide* for information about BDT commands.

5.7.4.1 #PSBDT2E - Execute the Remote Copy/Delete Job

This member contains the BDT Version 2 command to execute the remote copy/delete job. To prevent automatic execution at all remote sites, place an @EOF as the first statement of this member. To prevent this from happening at a particular site, create a member "destid.E" with an @EOF as the first statement.

```
@REM *
Q JOBNAME(J&D4.AR)
  NETID(T&SHIPTIME)
  NETHOLD(&FILECOUNT)
  FROM DATASET(' &AHJOBDSN ')
    DAP(SEQ)
    SHR
    DISP=(&HDISP,KEEP)
  TO INTRDR
    BLKSIZE(1330)
    LOC(&NODENAME)
/EOT
```

5.7.4.2 Transmit a Partitioned Data Set

```
@REM *
Q JOBNAME(J&F4.P)
  NETID(T&SHIPTIME)
  NETREL(J&D4.AR)
  FROM DATASET(' &FDSN ')
    DAP(PDS)
    SHR
    DISP=(&HDISP,KEEP)
```

```

      TO DATASET ('&TDSN')
        LOCATION(&NODENAME)
        NEW
        DIR(&DIRBLKS)
        DCBDS ('&RDSN')
        SPACE(&PRISPACE,&SECSPACE)
        CYLINDERS
        RELEASE
        UNIT(&RUNIT)
    /EOT

```

5.7.4.3 Transmit Sequential Data Sets

```

@REM *
@IF &CHJOBDSN
  Q JOBNAME(J&D4.CH)
  NETID(T&SHIPTIME)
  NETREL(J&D4.AR)
  FROM DATASET ('&CHJOBDSN')
    DAP(SEQ)
    SHR
    DISP=(&HDISP,KEEP)
  TO DATASET ('&CRJOBDSN')
    LOCATION(&NODENAME)
    NEW
    DSORG(PS)
    RECFM(FB)
    LRECL(80)
    BLKSIZE(3120)
    SPACE(1,1)
    CYLINDERS
    UNIT(&RUNIT)
/EOT
@ENDIF
  Q JOBNAME(J&D4.AH)
  NETID(T&SHIPTIME)
  NETREL(J&D4.AR)
  FROM DATASET ('&AHJOBDSN')
    DAP(SEQ)
    SHR
    DISP=(&HDISP,KEEP)
  TO DATASET ('&ARJOBDSN')
    LOCATION(&NODENAME)
    NEW
    DSORG(PS)
    RECFM(FB)
    LRECL(80)
    BLKSIZE(3120)
    SPACE(1,1)
    CYLINDERS
    UNIT(&RUNIT)
/EOT
  Q JOBNAME(J&D4.AHR)

```

```
NETID(T&SHIPTIME)
NETREL(J&D4.AR)
FROM DATASET ('&AHREFDSN')
    DAP(SEQ)
    SHR
    DISP=(&HDISP,KEEP)
TO DATASET ('&ARREFDSN')
    LOCATION(&NODENAME)
    NEW
    DSORG(PS)
    RECFM(FB)
    LRECL(80)
    BLKSIZE(3120)
    SPACE(1,1)
    CYLINDERS
    UNIT(&RUNIT)
/EOT
```

5.7.5 Local File Transfers

Local file transfers are accomplished by submitting JCL to copy the host staging data sets directly to the remote production data sets.

Endevor distributes Local control statements in the Endevor source library as a member whose names begin with "#PSLOCL." In cases where the needs of a remote site differ, make a copy of the #PSLOCLx member, naming it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x," #PSLOCLx, #PSNDVVRx.

5.7.5.1 #PSLOCLE - Submit the Remote Copy/Delete Job

This job step submits the copy/delete job for execution via TSO. To prevent automatic submission, place an @EOF as the first statement of this member. To prevent this from happening for a particular site, create a member "destid.E" with an @EOF as the first statement.

```
@REM
SUBMIT '&AHJOBDSN'
```

5.7.6 NetView File Transfer Program

Endevor distributes the NetView FTP control statements in the Endevor source library as a set of members whose names begin with "#PSNFTP." Those ending in a numeral direct the building of FTP job which does the following:

1. Executes FTP to transmit a data set to the remote site (multiple job steps).
2. Submits the job to copy members into the production data sets.
3. Deletes the host staging data sets (optional, based on the Destination Definition).

#PSNFTP members ending in a letter contain the FTP JCL and command models and may have to be modified with site-specific data or features desired by the user. NetView FTP also uses a set of members whose names begin with #PSNDVR. In cases where the needs of a remote site differ, make a copy of the #PSNFTPx member, name it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x," #PSNFTPx, #PSNDVRx.

Refer to the appropriate NetView FTP Manual for information about FTP commands.

Note: In the job stream described above, the SUBMIT step cannot execute before the actual transmission of the data sets. This can be accomplished in one of two ways. The transmit commands can specify WAIT=YES, or the SUBMIT command of the second step can specify HOLD and be manually released.

5.7.6.1 #PSNFTPE - Execute the Remote Copy/Delete Job

This job step submits the copy/delete job for execution via TSO. To prevent automatic submission, place an @EOF as the first statement of this member. To prevent this from happening for a particular site, create a member "destid.E" with an @EOF as the first statement.

```
//*****
//*  SUBMIT DATASET FOR EXECUTION VIA TSO AT THE REMOTE SITE
//*****
//SUBMIT  EXEC PGM=IKJEFT01,COND=(0,LT)
//SYSOUT  DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
          SUBMIT '&AHJOBDSN'
/*
```

5.7.6.2 #PSNFTPJ - NetView FTP Job Step JCL

This job step is executed at the host site to transmit a data set.

```
//* *****
//* * JOB STEP JCL TO TRANSMIT A DATASET USING NETVIEW FTP
//* *****
//XFTP&F4 EXEC PGM=DVGIFBI,COND=(0,LT)
//STEPLIB DD DISP=SHR,
//          DSN=IQUAL.NVFTP.LOAD
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//DVGLOG DD SYSOUT=*
//SYSIN DD *
```

5.7.6.3 #PSNFTPP - "Transmit Partitioned Data Set" Commands

This member contains the FTP command which transmits a partitioned data set to the remote site. The WAIT=YES is necessary to prevent the premature execution of the "SUBMIT COPY/DELETE" step generated by #PSNFTPE (see note in opening paragraph).

```
FUNCTION=ADD XMODE=TO RMTNODE=&NODENAME -
            SFILEORG=PO RFILEORG=PO -
            SFILEID='&FDSN' -
            RFILEID='&TDSN' -
            RSTATOPT=MUSTNOTEXIST -
            RSPCUNIT=CYL -
            RSPCPRI=&PRISPACE RSPCSEC=&SECSpace -
            RDIRBLK=&DIRBLKS -
            WAIT=YES WAITTIME=10 -
            RVOLSER=&RVOLSER -
            RUNIT=&UNIT
```

5.7.6.4 #PSNFTPS - "Transmit Sequential Data Set" Commands

This member contains the FTP command which will transmit a sequential data set to the remote site. The data set name to be transmitted is located in member #PSNFTP6. The WAIT=YES is necessary to prevent the premature execution of the "submit copy/delete" step generated by #PSNFTPE (see note in opening paragraph).

```
@REM
FUNCTION=ADD XMODE=TO RMTNODE=&NODENAME -
            SFILEORG=PS RFILEORG=PS -
            RSTATOPT=MUSTNOTEXIST -
            RRECFM=FB RLRECL=80 RBLKLEN=0 -
            RSPCUNIT=TRK RSPCPRI=10 RSPCSEC=10 -
            RUNIT=&UNIT -
            WAIT=YES WAITTIME=10 -
            RVOLSER=&RVOLSER
```

5.7.6.5 #PSNDVRD - Delete Staging Data Set JCL (IDCAMS)

This job step deletes the host staging data sets if "DELETE" was specified as the Host Staging Data set Disposition (see Establishing Destinations, earlier in this chapter).

```
//JSHD&D4 EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
```

5.7.7 CONNECT:Direct Control Statements

Endevor distributes CONNECT:Direct control statement models in the Endevor source library as a set of members whose names begin with "#PSNWDM". Those ending in a numeral direct the building of CONNECT:Direct commands which schedule the transmission of data sets and the running of jobs. Those ending in a letter contain the

CONNECT:Direct command models and may have to be modified with site-specific data or features desired by the user.

When a remote site needs a different set of commands, make a copy of the #PSNWDMx member, name it "destid.x" and make the changes. Only the members suffixed by an alpha character can be prefixed with user members, not members suffixed by a numeric character. The search order for members is "destid.x", #PSNWDMx, #PSNDVRx.

Refer to the *CONNECT:Direct Command Reference* for information about CONNECT:Direct commands.

5.7.7.1 #PSNWDMB CONNECT:Direct Submit Statement

```
@REM *
      SUBMIT PROC=&DESTID.P
```

5.7.7.2 #PSNWDMC - Process Statement

```
@REM *
&DESTID.P PROCESS SNODE=&NODENAME
```

5.7.7.3 #PSNWDME - Execute the Remote Copy/Delete Job

This member contains the CONNECT:Direct command to execute the remote copy/delete job. To prevent automatic execution at all remote sites, place an @EOF as the first statement of this member. To prevent this from happening at a particular site, create a member "destid.E" with an @EOF as the first statement.

```
@REM *
STEPNWDM RUN JOB (SNODE DSN=&ARJOBDSN)
```

5.7.7.4 #PSNWDMF - Transmit a Partitioned Data Set

```
@REM *
STEP&F4 COPY FROM (PNODE DISP=SHR -
                  DSN=&FDSN) -
                TO   (DISP=(NEW,CATLG) -
                  UNIT=&RUNIT -
                @IF &RVOLSER
                  VOL=SER=&RVOLSER -
                @ENDIF
                  DSN=&TDSN)
```

5.7.7.5 #PSNWDMS - Transmit Sequential Data Sets

```

@REM *
STEPAJOB COPY FROM (PNODE DISP=SHR -
                  DSN=&AHJOBDSN) -
                TO  (DISP=(NEW,CATLG) -
                  UNIT=&RUNIT -

@IF &RVOLSER
                  VOL=SER=&RVOLSER -

@ENDIF
                  DSN=&ARJOBDSN)

@IF &CHJOBDSN
STEPJOB COPY FROM (PNODE DISP=SHR -
                  DSN=&CHJOBDSN) -
                TO  (DISP=(NEW,CATLG) -
                  UNIT=&RUNIT -

@INCLUDE=J
                  DSN=&CRJOBDSN)

@ENDIF
STEPAREF COPY FROM (PNODE DISP=SHR -
                  DSN=&AHREFDSN) -
                TO  (DISP=(NEW,CATLG) -
                  UNIT=&RUNIT -

@IF &RVOLSER
                  VOL=SER=&RVOLSER -

@ENDIF
                  DSN=&ARREFDSN)

```

5.7.7.6 #PSNWDMT - Transmit Sequential Data Sets

This member contains cleanup steps to delete prfx.PROCESS.FILE when all destinations have been processed. It becomes the last two jobsteps in prfx.PROCESS.FILE(destid.D).

```

@REM
//TFIL&D4 EXEC PGM=ENUMTPDS
//PDS      DD  DISP=SHR,
//          DSN=&SHIPPER..D&SHIPDATE..T&SHIPTIME..PROCESS.FILE
&HLIBS
//DFIL&D4 EXEC PGM=IEFBR14,COND=(1,NE,TFIL&D4)
//PDS      DD  DISP=(OLD,DELETE,DELETE),
//          DSN=&SHIPPER..D&SHIPDATE..T&SHIPTIME..PROCESS.FILE

```

5.8 Building, Tracking and Confirming Shipments

5.8.1 Overview

The first step in shipping a package is to build a shipment request. You can build ship requests either in foreground or in batch. This section describes how to build shipments in foreground. Appendix A, "Package Shipment SCL," describes the SCL for coding batch ship requests.

When you press ENTER after building a shipment, Endeavor places that shipment in a request queue. You can:

- Display the queue, reset it (deleting all shipment requests), or submit it. See Using the Request Queue, later in this chapter, for more information.
- Ship the packages in the queue by submitting the queue. See Host Package Shipment Job Steps, later in this chapter, for more information.

You build ship requests in foreground from the Package Shipment panel. To access the Package Shipment panel, type **6** (SHIP) in the OPTION field on the Package Options Menu; press ENTER. Endeavor displays the Package Shipment panel. On the Package Shipment panel enter the appropriate information and type **1** (BUILD SHIPMENT REQUEST); press ENTER. Endeavor displays a Package Selection List and/or a Destination Selection List, then a Confirm Shipment panel. You place a shipment in the shipment queue from the Confirm Shipment panel.

The procedures below explain how to build requests to ship:

- One package to one destination
- One package to multiple destinations
- Multiple packages to one destination

Field descriptions for the Package Shipment panel, Package Selection List, Destination Selection List and Confirm Shipment panels follow the procedures.

5.8.2 One Package to One Destination

1. Type **1** in the OPTION field on the Package Shipment panel, along with all required and any optional information you desire. Press ENTER.
2. If the Confirm Shipment panel displays, proceed to Step 3. Otherwise select the package and/or destination from the selection lists that appear. When you press ENTER on the last selection list, the Confirm Shipment panel displays.
3. Review the information on the Confirm Shipment panel and:
 - Press END key to return to the previous panel, or
 - Type **SH** and press ENTER to place the ship request in the request queue.

4. Press END key until you return to the panel you need to perform your next action.

5.8.3 One Package to Multiple Destinations

To ship one package to multiple destinations perform the following steps:

1. Type **1** in the OPTION field on the Package Shipment panel, as well as all required and any optional information you want. Press ENTER.
2. If the Confirm Shipment panel displays, proceed to Step 3. Otherwise select the package and/or destinations from the selection lists that appear. When you press ENTER on the last selection list, the Confirm Shipment panel displays.
3. Review the information on the Confirm Shipment panel, then type **SH** and press ENTER to place the ship request in the request queue. When you press ENTER, the DESTINATION field changes to display the next destination you have selected.
4. Repeat Step 3 until the Destination Selection List appears when you press ENTER. This indicates that you have placed shipments for all selected destinations in the shipment queue.
5. You can now:
 - Select another destination, then press ENTER to display the Confirm Shipment panel. Proceed from Step 3.
 - Press END key until you return to the panel you need to perform your next action.

5.8.4 Multiple Packages to One Destination

To ship multiple packages to one destination perform the following steps:

1. Type **1** in the OPTION field on the Package Shipment panel, as well as all required and any optional information you desire. Press ENTER.
2. If the Confirm Shipment panel displays, proceed to Step 3. Otherwise select the packages and/or destination from the selection lists that appear. When you press ENTER on the last selection list, the Confirm Shipment panel displays.
3. Review the information on the Confirm Shipment panel, then type **SH** and press ENTER to place the ship request in the request queue and return to the Destination Selection List. The name of the first selected package displays in the WHICH field on this panel.
4. Press END key on the Destination Selection List to display the second selected package. Then select a destination for this package and press ENTER to display the Confirm Shipment panel. Repeat Step 3.
5. Repeat Steps 3 and 4 until either the Package Selection List or Package Shipment panel appears when you press END key. This indicates that you have placed shipments for all selected packages in the shipment queue.
6. You can now:

- Continue building shipments.
- Press END key until you return to the panel you need to perform your next action.

5.8.5 Package Shipment Panel

```

SHIP ----- PACKAGE SHIPMENT -----
OPTION ==>
 1 - BUILD SHIPMENT REQUEST      - Build and Queue A SHIP Action
 2 - DISPLAY SHIPMENT QUEUE      - Display Shipment Action Queue
 3 - SUBMIT SHIPMENT QUEUE       - Submit Shipment Action Queue
 4 - RESET SHIPMENT QUEUE        - Delete Shipment Action Queue
 5 - DISPLAY SHIPMENT STATUS      - Display the Status of a Shipment
PACKAGE ID ==>
DESTINATION ==>
PKG/BACKOUT ==>                P - PACKAGE      B - BACKOUT
STATUS DATE RANGE: From ==>    To ==>
STATUS SORT ORDER: Shipment Date ==>  Dest-Id ==>  Pkg-Id ==>
HOST JOB STATEMENT INFORMATION:
==> //JOBNAME JOB (ACCOUNT),'NAME'
==> //*
==> //*
==> //*

```

You can provide the following information when building a package ship request:

Field	Description
Package ID	Required. The 1- to 16-character ID of the package you want to ship.
Destination	Required. The 1- to 7-character name of the destination which is to receive the package (or backouts).
Pkg/Backout	Default is P , package. Indicates whether you want to ship package outputs or backout members. Acceptable values are: <ul style="list-style-type: none"> ▪ P--Ship package outputs. ▪ B--Ship backout members.
Status Date Range	Optional. Allows you to specify a range of dates to be covered by the shipment status list. Date format is <i>mmdyy</i> .
Status Sort Order	Required. You can sort the shipment status list by shipment date, by destination ID, and/or by package ID. You must specify the order in which these sorts are performed. Acceptable values are: <ul style="list-style-type: none"> ▪ 1--Perform this sort first. ▪ 2--Perform this sort second. ▪ 3--Perform this sort last.

5.8.6 Package Selection List

```

SHIP ----- PACKAGE SELECTION LIST ----- ROW 1 OF 25
COMMAND ==> SCROLL ==> PAGE
  S - Select Package
  PACKAGE          STATUS      DESCRIPTION
C9041110          EXECUTED  TEST C9041110 PTF
NEWPKG            EXECUTED  TEST COMMENT
SHIP99            EXECUTED  TEST MOVE
TGLPKG            EXECUTED  TEST TEST
XPM01             EXECUTED  MULTI MODULE PACKAGE - NO BACKOUTS
XP001AA           EXECUTED  PKG SHIPMENT TEST - LEVEL A - ADD/GE
XP002AA           EXECUTED  PKG SHIPMENT TEST - LEVEL A - ADD/GE
XP002BD           EXECUTED  PKG SHIPMENT TEST - LEVEL B - DELETE
XP003AA           EXECUTED  PKG SHIPMENT TEST - LEVEL A - ADD/GE
XP003BR           EXECUTED  PKG SHIPMENT TEST - LEVEL B - REPL X
XP005AA           EXECUTED  PKG SHIPMENT TEST - LEVEL A - ADD/GE
XP005BD@          EXECUTED  PKG SHIP TEST - LEVL B - DELETE XP00
XP006AA           EXECUTED  PKG SHIP TEST - LVL A - ADD/GEN XP00
XP006BR@          EXECUTED  PKG SHIP TEST - LVL B - REPL XP006 -
XP011AA@          EXECUTED  PKG SHIP TEST - LVL A - ADD/GEN XP01
    
```

This panel allows you to select a package for shipment (**S**) and/or to display a package before selecting it (**D**). For each package, the panel displays:

Field	Description
Package	The 1- to 16-character package ID
Status	The status of the package. The status must be executed in order to ship the package.
Description	The 1- to 40-character package description.

5.8.7 Destination Selection List

```

SHIP ----- DESTINATION SELECTION LIST ----- ROW 1 OF 4
OPTION ==> SCROLL ==> PAGE
  S - Select Destination to Receive: JSWP
      .--- TRANSMISSION ---.
  DEST-ID      METHOD      NODENAME      DESCRIPTION
  BOSTON1      NETWORK_DM  NDM28          NEW RECORD FORMAT (MOD)
  BOSTON2      NETVIEW_DM  BOS2NVDM       BOSTON AGAIN (MOD)
  BOSTON3      BDT         BOS3BULK       BOSTON ONE MORE TIME
  JERKH20      BDT         BULKH20        DELETION TEST
***** BOTTOM OF DATA *****
    
```

This panel allows you to select a destination (**S**) for a package. The package to be shipped displays in the S - SELECT DESTINATION TO RECEIVE: field. For each destination, the panel displays:

Field	Description
Dest-ID	The destination name.
Method	The data transmission utility used for this destination.
Nodename	The data transmission utility node name of the destination.
Description	The description of the destination

Press END key from this panel to:

- Display the next selected package in the S - SELECT DESTINATION TO RECEIVE: field, if multiple packages were selected and not all have been placed in the shipment queue.
- Return to the Package Selection List or Package Shipment panel if there are no more selected packages.

5.8.8 Confirm Shipment Panel

```

SHIP ----- CONFIRM SHIPMENT -----
OPTION ==>
SH - SHIP

                PACKAGE: XPM01
                DESTINATION: BOSTON2
PKG/BACKOUT ==> PACKAGE

```

Endevor displays a confirmation panel for each package/destination pair. This panel allows you to review your choice of outputs (package or backout) for the shipment, and change them if you desire.

From this panel you can review shipment information, then:

- Press END key to return to the immediately prior panel.
- Change the value in the PKG/BACKOUT field. Acceptable values are:
 - PACKAGE--Shipment contains package outputs.
 - BACKOUT--Shipment contains package backout members.

This field allows you to change shipment contents before placing the shipment in the queue.

- Type **SH** in the OPTION field, then press ENTER. This places the shipment displayed on the panel in the shipment queue.

When you type **SH** in the OPTION field and press ENTER, one of the following occurs:

- The next selected destination appears in the DESTINATION field, if you selected multiple destinations for this package and not all package/destination pairs have been placed in the shipment queue.

- The Destination Selection panel appears, if you selected multiple packages and not all packages have been placed in the shipment queue.

5.8.9 Shipment Tracking and Confirmation

A record of shipment is created when the shipment staging utility has finished creating all the host staging data sets. At this time the package and destination are recorded along with the shipment staging return code. These can be viewed by using option 5, DISPLAY SHIPMENT STATUS, of the Package Shipment panel.

Two other points in the process of shipping are tracked: the execution of the data transmission utility and the execution of the remote COPY/DELETE/CONFIRM job. These points are tracked by executing the shipment confirmation utility as a conditional job step after the execution of the data transmission utility (at the host site) and after the execution of the IEBCOPY/IDCAMS job (at the remote site).

5.8.9.1 The Confirmation Step(s)

There are two ISPF Skeletal JCL members which deal with shipment confirmation. C1BMXHCN handles confirmation of the data transmission job step which executes at the host site. C1BMXRCN handles confirmation of the IEBCOPY/IDCAMS job which executes at the remote site. Left unmodified, these steps would leave a generic record of the data transmission or COPY/DELETE. The record of shipment would be marked either EXEC'D or ABEND under the "HOST TRANS" or "REMOTE MOVE" columns of the Package Shipment Status panel.

If a more precise record of these events is required, the number of conditional confirmation steps can be increased and the shipment confirmation utility parameter can be changed to report different things.

The confirmation parameter is made up of a symbolic prefix (resolved by ISPF facilities), a root, and a symbolic suffix (resolved by the shipment staging utility)

```
//STEPNAME EXEC PGM=NDVRC1,PARM='&VNBCPARAM,CONF,pppp,op,code,*****',  
//              COND=(see_example)
```

Where:

- *Pppp* -- Is the point of confirmation. This is a four-character string which can have the following values
 - HXMT -- Host transmission confirmation.
 - RCPY -- Remote COPY/DELETE confirmation.
- *Op* -- Is the algebraic operator associated with the return code of the step being confirmed. The valid operators are:
 - EQ--Equal.
 - GE--Greater than or equal.
 - LE--Less than or equal.

- **GT**--Greater than.
- **LT**--Less than.

There are also two generic non-algebraic operators:

- **EX**--The job executed (return code not available).
 - **AB**--The job abended (abend code not available).
- **Code**--Is the code to be reported. Usually this would be a four-digit number which bears a relationship to the step being confirmed.

5.8.9.2 Recording Specific Codes—C1BMXHCN

Here is a sample of how C1BMXHCN could be modified to report the following return codes: RC=00, RC=04, RC=08, RC>=12, ABEND.

```
//CONFGE12 EXEC PGM=NDVRC1,REGION=4096K,COND=(12,GT,&VNBXSTP),
//  PARM='&VNBCPARM,CONF,HXMT,GE,0012,*****'
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=tdisk
//*
)IM C1BMXLIB OPT
//*
//*
//CONFEQ08 EXEC PGM=NDVRC1,REGION=4096K,COND=(08,NE,&VNBXSTP),
//  PARM='&VNBCPARM,CONF,HXMT,EQ,0008,*****'
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=tdisk
//*
)IM C1BMXLIB OPT
//*
//*
//CONFEQ04 EXEC PGM=NDVRC1,REGION=4096K,COND=(04,NE,&VNBXSTP),
//  PARM='&VNBCPARM,CONF,HXMT,EQ,0004,*****'
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=tdisk
//*
)IM C1BMXLIB OPT
//*
//*
//CONFEQ00 EXEC PGM=NDVRC1,REGION=4096K,COND=(00,NE,&VNBXSTP),
//  PARM='&VNBCPARM,CONF,HXMT,EQ,0000,*****'
//C1BMXDTM DD DSN=&&&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=tdisk
//*
)IM C1BMXLIB OPT
//*
//*
//CONFABND EXEC PGM=NDVRC1,REGION=4096K,COND=ONLY,
```

```

//  PARM='&VNBCPARAM,CONF,HXMT,AB,****,*****'
//C1BMXDTM DD DSN=***&&XDTM,DISP=(MOD,PASS),SPACE=(TRK,(1,0)),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=3120,DSORG=PS),
//          UNIT=tdisk
//*
)IM C1BMXLIB OPT
/*

```

5.8.9.3 Recording Specific Codes—C1BMXRCN

Here is a sample of how C1BMXRCN could be modified to report the following return codes: RC=00, RC=04, RC=08, RC>=12, ABEND. Note that the COND= parameter is on the IEBGENER execute card, not on the NDVRC1 execute card. \$DEST_ID is resolved by the shipment staging utility.

```

//CONFGT12 EXEC PGM=IEBGENER,COND=(12,GT)
//SYSUT1  DD DATA,DLM=$$          JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//          PARM='&VNBCPARAM,CONF,RCPY,GE,0012,$DEST_ID'
)IM C1BMXLIB
$$
//SYSUT2  DD SYSOUT=(INTRDR,A)
//SYSPRINT DD SYSOUT=*
//SYSIN   DD DUMMY
/*
/* *-----*
/*
//CONFEQ08 EXEC PGM=IEBGENER,COND=(08,NE)
//SYSUT1  DD DATA,DLM=$$          JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//          PARM='&VNBCPARAM,CONF,RCPY,EQ,0008,$DEST_ID'
)IM C1BMXLIB
$$
//SYSUT2  DD SYSOUT=(INTRDR,A)
//SYSPRINT DD SYSOUT=*
//SYSIN   DD DUMMY
/*
/* *-----*
/*
//CONFEQ04 EXEC PGM=IEBGENER,COND=(04,NE)
//SYSUT1  DD DATA,DLM=$$          JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//          PARM='&VNBCPARAM,CONF,RCPY,EQ,0004,$DEST_ID'
)IM C1BMXLIB
$$
//SYSUT2  DD SYSOUT=(INTRDR,A)
//SYSPRINT DD SYSOUT=*
//SYSIN   DD DUMMY
/*
/* *-----*

```

```

/**
//CONFEQ00 EXEC PGM=IEBGENER,COND=(00,NE)
//SYSUT1 DD DATA,DLM=$$                JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//          PARM='&VNBCPARAM,CONF,RCPY,EQ,0000,$DEST_ID'
)IM C1BMXLIB
$$
//SYSUT2 DD SYSOUT=(INTRDR,A)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
/**
/** *-----*
/**
//CONFABND EXEC PGM=IEBGENER,COND=ONLY EXECUTED AT THE REMOTE SITE
//SYSUT1 DD DATA,DLM=$$                JOB SHIPPED BACK TO HOST
)IM C1BMXHJC
//CONFCOPY EXEC PGM=NDVRC1,
//          PARM='&VNBCPARAM,CONF,RCPY,AB,****,$DEST_ID'
)IM C1BMXLIB
$$
//SYSUT2 DD SYSOUT=(INTRDR,A)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY

```

5.8.10 Using the Request Queue

Endevor stores ship requests in a queue until they are executed. The queue is active only for the current Endevor session.

Endevor displays the queue on the Queued Shipment List.

```

QDISPLAY ----- QUEUED SHIPMENT LIST ----- ROW 1 OF 3
COMMAND ==>                                SCROLL ==> PAGE
SHIP PACKAGE 'SHIP99          ' TO DESTINATION BOSTON1 .
SHIP PACKAGE 'SHIP99          ' TO DESTINATION BOSTON3 .
SHIP PACKAGE 'TGLPKG          ' TO DESTINATION BOSBDT .
***** BOTTOM OF DATA *****

```

You can:

- Display the Queued Shipment List by typing **2** in the OPTION field on the Package Shipment panel and pressing ENTER.
- Reset the Queued Shipment List by typing **4** in the OPTION field on the Package Shipment panel and pressing ENTER. This deletes all shipments from the queue.
- Submit the request queue by typing **3** in the OPTION field on the Package Shipment panel and pressing ENTER. When you submit a shipment request, Endevor automatically resets the queue.

5.8.11 Displaying Shipment Status

Once you have submitted the request queue, Endeavor displays the status of the shipments on the Package Shipment Status panel. You access the Package Shipment Status panel by typing **5** in the OPTION field on the Package Shipment panel, then pressing ENTER.

```

DISPLAY ----- PACKAGE SHIPMENT STATUS ----- ROW 1 OF 17
OPTION ==> SCROLL ==> PAGE
SHIPMENT
SUBMITTED DEST-ID PACKAGE NAME PKG -- HOST -- .-- REMOTE --.
XXJANXX 01:02 BOSTON1 XPM01 PKG YES RC=00 EXEC'D EXEC'D PKGSHIPA
XXJANXX 01:02 BOSTON1 XPM01 PKG YES RC=00 EXEC'D EXEC'D PKGSHIPB
XXMARXX 16:19 BOSTON3 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPC
XXMARXX 11:40 BOSTON1 XP011AA@ PKG YES RC=00 EXEC'D EXEC'D PKGSHIPD
XXMARXX 12:06 BOSTON1 XP013AD PKG YES RC=00 EXEC'D EXEC'D PKGSHIPE
XXMARXX 12:25 BOSTON1 XP021AD PKG YES RC=00 EXEC'D EXEC'D PKGSHIPF
XXMARXX 16:12 BOSTON1 XP002AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPG
XXMARXX 16:56 BOSTON1 XP005BD@ PKG YES RC=00 EXEC'D EXEC'D PKGSHIPH
XXMARXX 16:59 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPI
XXMARXX 17:04 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPJ
XXMARXX 17:13 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPK
XXMARXX 17:22 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPL
XXMARXX 11:14 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPM
XXMARXX 13:55 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPN
XXMARXX 14:20 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPO
XXMARXX 14:30 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPP
XXMARXX 14:35 BOSTON1 XP001AA PKG YES RC=00 EXEC'D EXEC'D PKGSHIPQ

```

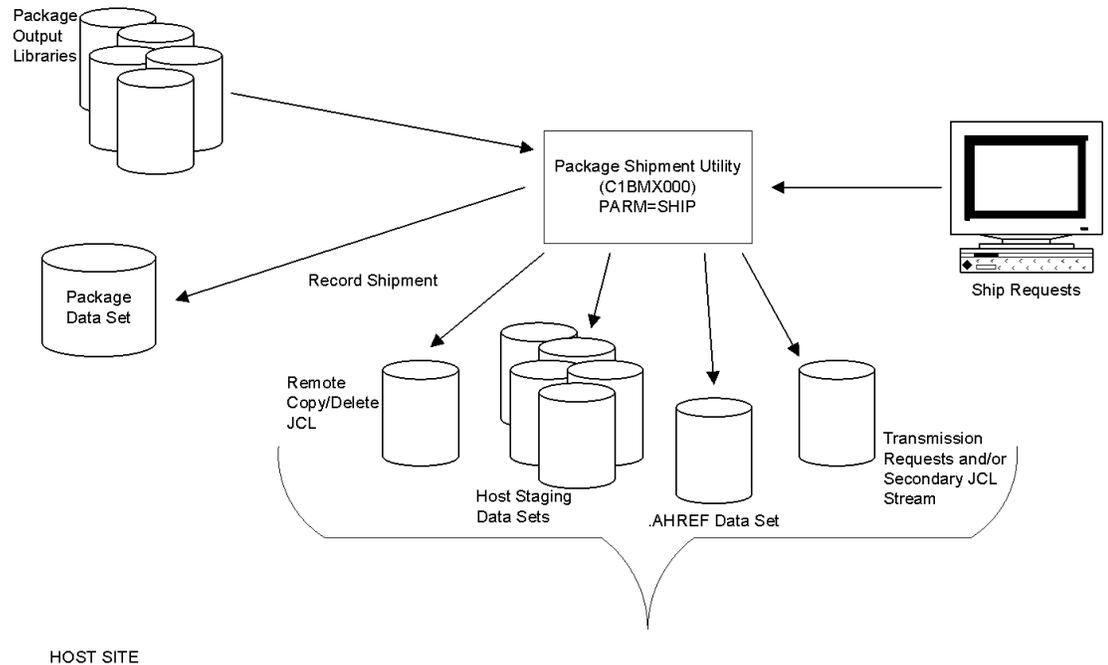
The Package Shipment Status panel displays the following information.

Field	Description
Shipment Submitted	The date and time the shipment was submitted.
Dest-ID	The destination ID of the shipment.
Package Name	The name of the package shipped.
PKG/BKO	Indicates whether package outputs or backout members were shipped. <ul style="list-style-type: none"> ▪ PKG -- Package outputs were shipped. ▪ BKO -- Backout members were shipped.
CMP	Indicates whether complementary files were shipped.
Host Stage	Return code from the host staging run.
Host Trans	Status from the transmission step: EXEC'D or ABEND.
Remote Move	Status from the remote staging data set copy to production.
Remote Jobname	Jobname of the remote copy/delete job stream.

5.9 Host Package Shipment Job Steps

When you submit the shipment queue, Endeavor builds and submits a JCL stream to ship the packages. The remainder of this section describes the steps in this shipment JCL.

5.9.1 Step 1: Building and Staging the Shipment



Endevor uses the C1BMXJOB and C1BMXLIB skeletal JCL to build this step. When it executes this step, the ship utility builds a shipment consisting of:

- A staging data set for each library involved in the package execution.
- JCL for execution at the remote site, consisting of an IEBCOPY step, an IDCAMS (delete) step, and confirmation steps.
- Data transmission utility commands and/or JCL to transmit the data sets and execute the remote copy/delete job. (Not applicable for local transmissions.)
- A file of correspondences between host and remote production and staging data sets.
- Complementary files and JCL, if necessary.

The ship utility then populates the staging data sets, records the shipment, and passes the entire shipment to Step 2.

5.9.1.1 Staging Data Sets

A staging data set prefix is defined for each destination. This allows the staging data sets to be catalogued. The ship utility generates the remainder of the data set name. The format is:

prefix.Dymmdd.Thhmmss.destination.suffix

Where	Is
<i>prefix</i>	The user-defined prefix for the host or remote site on the Create/Modify Definition panel, or the default value <i>TSOuserid.NDVR</i> .
<i>Dymmdd</i>	The date the shipment queue was submitted.
<i>Thhmmss</i>	The time the shipment queue was submitted.
<i>destination</i>	The destination name.
<i>suffix</i>	The kind of shipment member. Possible suffixes are: <ul style="list-style-type: none"> ■ AxJOB -- Identifies a host (AHJOB) or remote (ARJOB) copy/delete/confirm job stream. ■ CxJOB -- Identifies a host (CHJOB) or remote (CRJOB) copy/delete/confirm job stream for complementary data sets ■ .AxREF -- Identifies a host (AHREF) or remote (ARREF) data set name cross-reference file ■ .AHnnn -- Identifies a host shipment data set, where <i>nnn</i> is a sequential number. ■ .CHnnn -- Identifies a host complementary data set, where <i>nnn</i> is a sequential number. ■ .ARnnn -- Identifies a remote shipment data set, where <i>nnn</i> is a sequential number. ■ .CRnnn -- Identifies a remote complementary data set, where <i>nnn</i> is a sequential number.

Examples of staging data set names include:

- *userid.NDVR.D01130.T142532.BOSTON.AH034*
- *userid.NDVR.D01130.T143515.CHICAGO.CRJOB*
- *userid.NDVR.D01130.T145216.BOSTON.ARREF*

5.9.1.2 JCL for Remote Execution

The data set name of the JCL for remote execution has the suffix **.AHJOB**. The JCL consists of up to four job steps, as follows:

1. Copying package outputs from remote staging data sets to production data sets, using IEBCOPY.
2. Deleting members from the production data sets that were also deleted on the host.
3. Confirming the copy/delete procedure.
4. Optional. Deleting the staging data sets.

If the ship utility also builds complementary data sets, it also builds JCL for those data sets giving them a data set name suffix of .CHJOB.

5.9.1.3 Execution Commands for Remote JCL

You can execute the remote JCL automatically or at the discretion of the remote site (manually). The choice is made by tailoring the "E" model transmission control members (#PSXCOME, #PSBDT1E, #PSLOCLE, #PSNFTPE, #PSNWDME, or #PSBAT2E). See Creating Model Transmission Control Statements, earlier in this chapter, for more information.

Note: Complementary data set JCL (.CHJOB) can only be executed manually.

5.9.1.4 File of Data Set Correspondences

The data set name for the following data set correspondences has the suffix .AHREF. For every data set involved in the package execution, this file specifies both production names and staging names at the host and remote sites.

An example follows:

```
SHIPMENT DATASETS
  HOST LIBRARY:    BST.XDVRC1S1.LISTINGS
  HOST STAGING:   DA1ME10.D10322.T164235.BOSTON1.AH003
  REMOTE STAGING: DA1ME10.D10322.T164235.BOSTON1.AR003
  REMOTE LIBRARY: BST.XDVRC1S1.LISTINGS
*
SHIPMENT DATASETS
  HOST LIBRARY:    BST.XDVRC1S1.LKEDLIB
  HOST STAGING:   DA1ME10.D10322.T164235.BOSTON1.AH004
  REMOTE STAGING: DA1ME10.D10322.T164235.BOSTON1.AR004
  REMOTE LIBRARY: BST.XDVRC1S1.LKEDLIB
*
SHIPMENT DATASETS
  HOST LIBRARY:    BST.XDVRC1S1.LKEDLIST
  HOST STAGING:   DA1ME10.D10322.T164235.BOSTON1.AH006
  REMOTE STAGING: DA1ME10.D10322.T164235.BOSTON1.AR006
  REMOTE LIBRARY: BST.XDVRC1S1.LKEDLIST
*
SHIPMENT DATASETS
  HOST LIBRARY:    BST.XDVRC1S1.LOADLIB
  HOST STAGING:   DA1ME10.D10322.T164235.BOSTON1.AH005
  REMOTE STAGING: DA1ME10.D10322.T164235.BOSTON1.AR005
  REMOTE LIBRARY: BST.XDVRC1S1.LOADLIB
*
SHIPMENT DATASETS
  HOST LIBRARY:    BST.XDVRC1S1.OBJLIB
  HOST STAGING:   DA1ME10.D10322.T164235.BOSTON1.AH002
  REMOTE STAGING: DA1ME10.D10322.T164235.BOSTON1.AR002
  REMOTE LIBRARY: BST.XDVRC1S1.OBJLIB
```

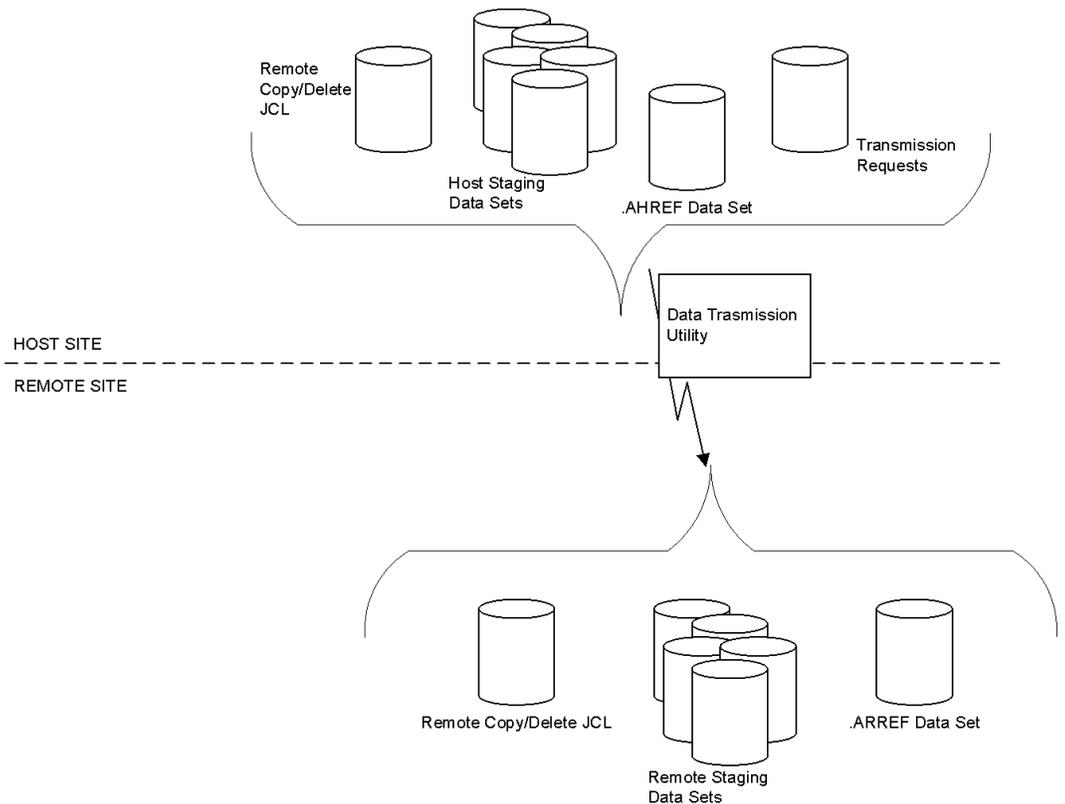
5.9.1.5 Contents of a Shipment

By the end of Step 1, the ship utility has built a shipment consisting of:

- Package outputs (.AHnnn)
- Remote JCL (.AHJOB)
- Data set cross-reference file (.AHREF)

If complementary data sets have been requested, the shipment also contains the remote JCL for the complementary files (.CHJOB).

5.9.2 Step 2: Transmitting the Shipment



Endevor uses one of the skeletal JCL members C1BMXCOM, C1BMXBD1, C1BMXBDT, C1BMXLOC, C1BMXFTP, or C1BMXNDM to build this job step.

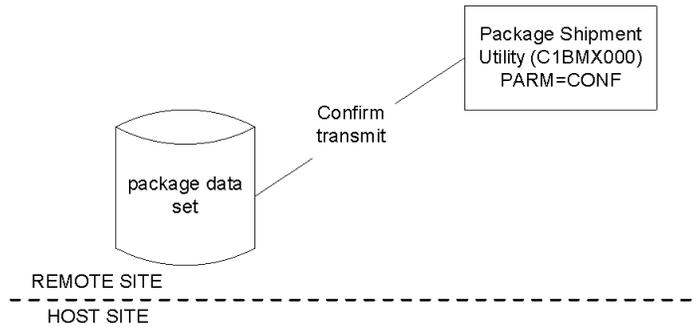
XCOM (C1BMXCOM), BDT Version 2 (C1BMXBDT), and Network DM (C1BMXNDM) execute in this step. The transmission program:

1. Reads its control cards (generated in Step 1).
2. Transmits the host staging data sets to the remote sites where it builds remote staging data sets.
3. Executes the remote copy/delete JCL (.AxJOB) if the skeletal JCL (BDT and CONNECT:Direct) or model transmission control member (XCOM) are set up for automatic execution.

BDT via NJE/NJI (C1BMXBD1) and NetView FTP (C1BMXFTP) are executed in a secondary job stream built in Step 1. This step consists of writing that job stream to an internal reader. The first step of the secondary job stream performs the same functions as listed above.

Local transfers (C1BMXLOC) do not execute a physical transmission. The copy/delete JCL is submitted for execution if the model transmission control member is set up for automatic execution.

5.9.3 Step 3: Confirming the Transmission



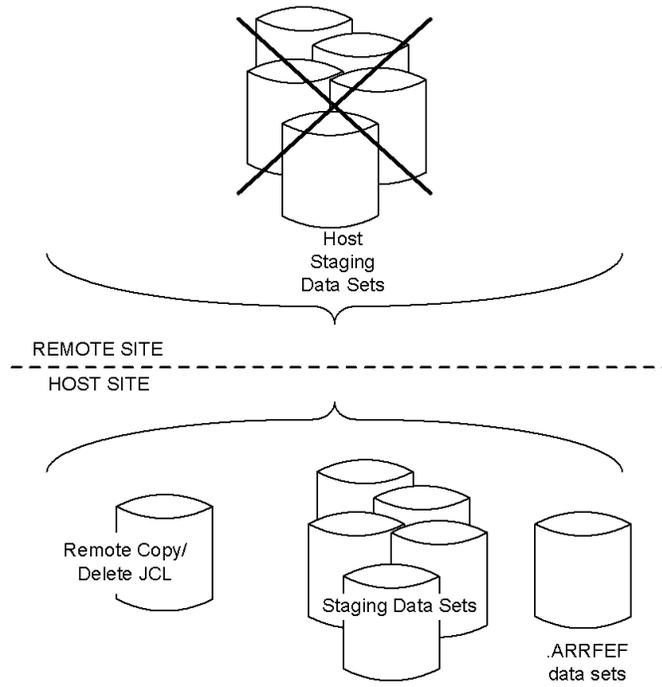
Endevor uses the skeletal JCL members C1BMXHCN and C1BMXLIB to build this job step. During this step, the ship utility records confirmation of the transmission to the remote site.

Note: There is an after-confirm exit that can be used, in conjunction with the notification utility, to notify users of the completion of the shipment.

5.9.4 Step 4: Deleting the Staging Data Sets

If the DISPOSITION field for the host staging data set names has the value DELETE, the ship utility deletes the host staging data sets. Endevor uses the C1BMXEND skeletal JCL to build this job step.

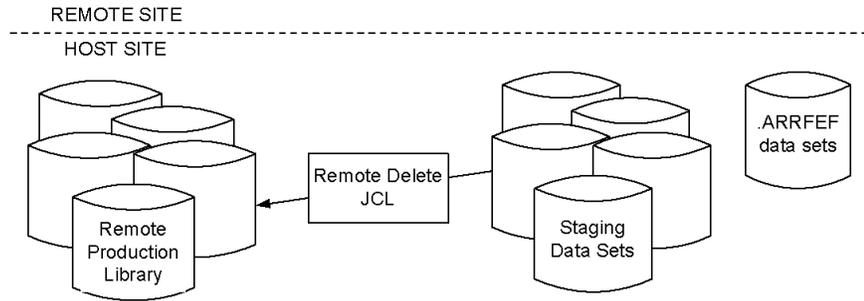
5.9 Host Package Shipment Job Steps



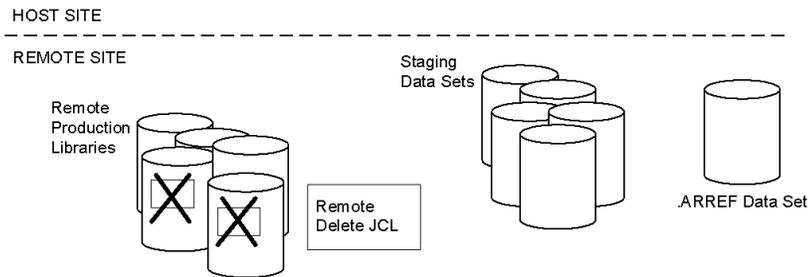
5.10 Remote Copy/Delete Job Steps

Remote JCL is transmitted in a data set with the suffix .AHJOB. If the shipment includes complementary data sets, the remote JCL for these data sets has the suffix .CHJOB. Remote JCL consists of up to four job steps:

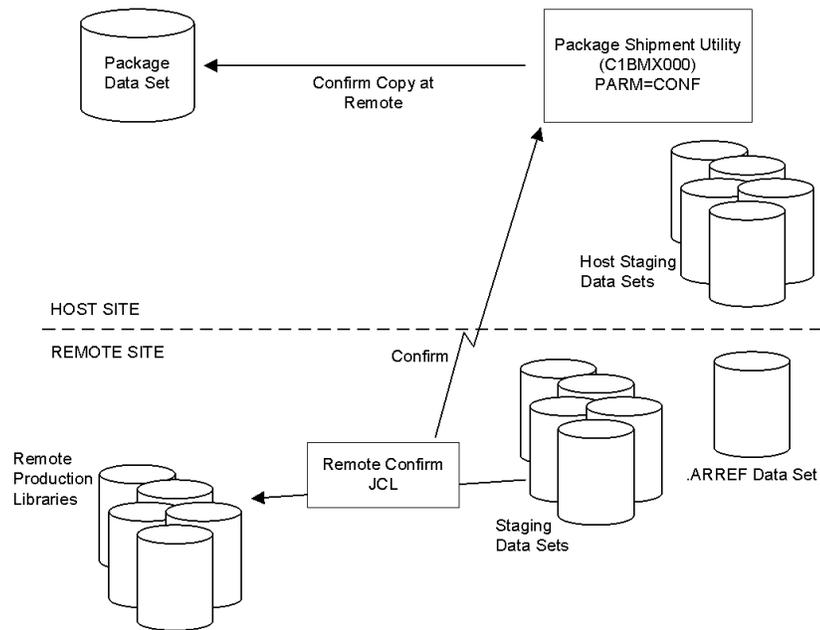
1. Copying package outputs from staging data sets to production data sets, using IEBCOPY.



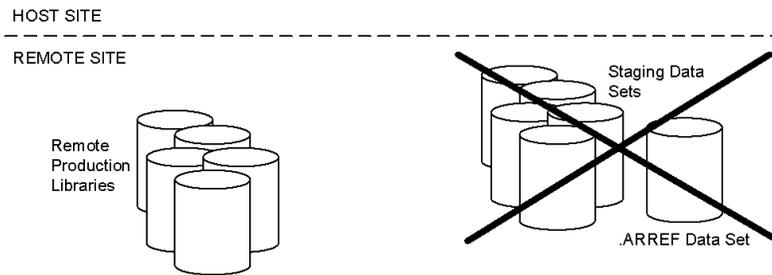
2. Deleting members from the production data sets that were also deleted on the host during package execution or backout.



3. Confirming the copy/delete procedure.



- Optional. Deleting the staging and cross reference data sets. This step is included only if the disposition of the staging data sets on the destination record used for the shipment is **delete**.



5.10.1 Sample Remote JCL

A sample of remote JCL follows.

```
//JOBNAME JOB (ACCOUNT), 'NAME'
//*
/* *-----* ISPSLIB(C1BMXCOP)
/* * REMOTE SITE JOBSTEP TO COPY MEMBERS WHICH WERE
/* * MODIFIED BY THE EXECUTION OF THE PACKAGE
/* *-----*
//COPY EXEC PGM=IEBCOPY
//SYSUT3 DD UNIT=SYSDA,SPACE=(TRK,(5,5))
//SYSUT4 DD UNIT=SYSDA,SPACE=(TRK,(5,5))
//SYSPRINT DD SYSOUT=*
//IAR001 DD DISP=SHR,DSN=TSOUSER.NDVR.D11119.T123747.DESTNDM.AR001
```

```

//OAR001 DD DISP=OLD,DSN=TEST.IMRENV1.SRCOUT1
//IAR002 DD DISP=SHR,DSN=TSOUSER.NDVR.D11119.T123747.DESTNDM.AR002
//OAR002 DD DISP=OLD,DSN=TEST.IMRENV1.OBJLIB1
//IAR003 DD DISP=SHR,DSN=TSOUSER.NDVR.D11119.T123747.DESTNDM.AR003
//OAR003 DD DISP=OLD,DSN=TEST.UTILS1.LISTINGS
//SYSIN DD *
COPY OUTDD=OAR002,INDD=((IAR002,R))
COPY OUTDD=OAR001,INDD=((IAR001,R))
COPY OUTDD=OAR003,INDD=((IAR003,R))
/* *-----* ISPSLIB(C1BMXDEL)
/* * REMOTE SITE JOBSTEP TO DELETE MEMBERS WHICH
/* * WERE DELETED BY THE EXECUTION OF THE PACKAGE
/* *-----*
//DELETE EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DELETE 'TSOUSER.NDVR.D11119.T123747.DESTNDM.AR002' NONVSAM
DELETE 'TSOUSER.NDVR.D11119.T123747.DESTNDM.AR001' NONVSAM
DELETE 'TSOUSER.NDVR.D11119.T123747.DESTNDM.AR003' NONVSAM
DELETE 'TSOUSER.NDVR.D11119.T123747.DESTNDM.ARJOB' NONVSAM
DELETE 'TSOUSER.NDVR.D11119.T123747.DESTNDM.ARREF' NONVSAM
//CONFCOPY EXEC PGM=IEBGENER EXECUTED AT THE REMOTE SITE
//SYSUT1 DD DATA,DLM=$$ JOB SHIPPED BACK TO HOST
//TSOUSERP JOB (1111),'WESTBORO',CLASS=A,
// MSGCLASS=X,NOTIFY=TSOUSER
/*ROUTE PRINT U101
/*ROUTE XEQ HOSTNODE
//CONFCOPY EXEC PGM=NDVRC1,
// PARM='C1BMX000,19911119,12374712,CONF,RCPY,EX,****,DESTNDM '
/*
/* *-----* ISPSLIB(C1BMXLIB) *
/*
/* *-----*
/* * STEPLIB, CONLIB, MESSAGE LOG AND ABEND
DATASETS
/* *-----*
/*
//STEPLIB DD DISP=SHR,DSN=TEST.AUTHLIB
//CONLIB DD DSN=TEST.NDVR36B.ZAPLOAD,DISP=SHR
// DD DSN=TEST.C19109.CONLIB,DISP=SHR
/*
//SYSABEND DD SYSOUT=*
//C1BMXLOG DD SYSOUT=* *** MESSAGES, ERRORS, RETURN CODES *****
/* *-----* C1BMXRCN (CONT.) *
$$
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
/*
//CONFABND EXEC PGM=IEBGENER,COND=ONLY EXECUTED AT THE REMOTE SITE
//SYSUT1 DD DATA,DLM=$$ JOB SHIPPED BACK TO HOST
//TSOUSERP JOB (1111),'WESTBORO',CLASS=A,
// MSGCLASS=X,NOTIFY=TSOUSER

```

```
/*ROUTE PRINT U101
/*ROUTE XEQ HOSTNODE
//CONFCOPY EXEC PGM=NDVRC1,
//  PARM='C1BMX000,19911119,12374712,CONF,RCPY,AB,****,DESTNDM '
//*
//* *-----* ISPSLIB(C1BMXLIB) *
//*
//* *-----*
//* * STEPLIB, CONLIB, MESSAGE LOG AND ABEND DATASETS
//* *-----*
//*
//STEPLIB DD DISP=SHR,DSN=TEST.AUTHLIB
//CONLIB DD DSN=TEST.NDVR36B.ZAPLOAD,DISP=SHR
//      DD DSN=TEST.C19109.CONLIB,DISP=SHR
//*
//SYSABEND DD SYSOUT=*
//C1BMXLOG DD SYSOUT=*      *** MESSAGES, ERRORS, RETURN CODES *****
//* *-----* C1BMXRCN (CONT.) *
$$
//SYSUT2 DD SYSOUT=(A,INTRDR)
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//* **** END OF JCL STREAM ****
```

5.11 Creating External Package Shipment Job Streams

5.11.1 Overview

You can capture the package shipment JCL that the Package Shipment panel builds and submits as part of a recurring data processing cycle.

To externalize the Package Shipment JCL for re-use you need to follow these:

1. Expand the Package Shipment JCL.
2. Move the Package Shipment JCL to a data set.
3. Formulate a method to specify which packages to ship to which destinations.

Note: If any Package Shipment skeletons change (ISPSLIB(C1BMX*)) or if the transmission method(s) to be used changes, then the external job stream must be re-constructed.

5.11.2 Step 1: Expand Package Shipment JCL

To expand the package shipment JCL:

1. Build a shipment request for a single package to single destination. (See One Package to One Destination for more information.)
2. On the Package Shipment panel code TYPRUN=COPY in the HOST JOB STATEMENT INFORMATION field. Insure that the MSGCLASS points to a HELD queue.
3. Submit the shipment queue by typing **3** in the OPTION field on the Package Shipment panel. TSO displays a IKJ56250I message. Copy the jobname and job number the message displays. If no message displays, use SDSF to obtain the job name and job number.
4. Return to the Package Shipment panel and remove the TYPRUN=COPY from the HOST JOB STATEMENT INFORMATION field and restore the MSGCLASS to its original state.

The Package Shipment JCL Stream, including all in-stream data, now resides on the JES queue.

5.11.3 Step 2: Move the Package Shipment JCL to a Data Set

To move the Package Shipment JCL to a data set:

1. Move the JES Queue to a sequential data set or to a member of a PDS. If the data set that is to contain the JCL stream does not exist, allocate it with a RECFM of "F" or "FB" and an LRECL of 80.

2. Issue the following command from the TSO READY prompt or the ISPF TSO Command Panel using the jobname and number from Step 1.

OUTPUT jobname (jobnumber) PRINT ('data set')

TSO displays "OUTPUT" to indicate that the JCL stream now resides in the specified data set. Press END.

3. Edit the JCL by:
 - a. Removing the TYPRUN=COPY from the JOB statement.
 - b. Adjusting any other job parameters you desire.
 - c. Removing the JES Statistics.
 - d. Insuring that the first statement in the file is the JOB statement and the last is expansion of the ISPSLIB(C1BMXEOJ) skeleton.

5.11.4 Step 3: Specifying Package and Destination Information at Run Time

Run time input to the Package Shipment Utility is read in through the C1BMXIN data set in the NDVRSHIP job step. The input is Package Shipment SCL (see Appendix A, "Package Shipment SCL," for more information). You can modify the C1BMXIN DD statement by:

- Leaving it as an in-stream data set and modifying the SCL that follows it prior to each run.
- Changing the C1BMXIN DD statement from an in-stream data set to a sequential data set or PDS member (RECFM=F or FB,LRECL=80) into which you can store the SCL until each run.
- Using SCL generators to precede the NDVRSHIP step and populate a temporary data set with SCL that will be passed through C1BMXIN.

The JCL stream is now ready to be submitted.

5.12 Package Shipment Reports

5.12.1 Overview

The package shipment utility produces four reports:

- Package Shipment Log
- Package Shipment Validation
- Package Shipment Activity
- Package Shipment Summary

5.12.2 Package Shipment Log

The Package Shipment Log contains a series of numbered messages which report the progress of the shipment staging process. The example given shows a flawless run.

```

COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002                                16APR01 17:42:09    PAGE    1
ENDEVOR          P A C K A G E   S H I P M E N T   L O G                RELEASE X.XX  SERIAL XXXXXX
17:42:09 C1BMX70I MODEL PARM: C1BMX000,YYYYMMDD,HHMSSHT,FUNC,>>--VARIABLE-DATA-->
17:42:09 C1BMX70I ACTUAL PARM: C1BMX000,$CURR_DT,$CURR_TM,SHIP,DAIME10
17:42:10 C1BMX76I PACKAGE data set IS BST.DEVEL.PACKAGE
17:42:10 C1BMX01I INPUT VERIFICATION COMPLETED
17:42:12 C1BMX04I PACKAGE STAGING COMPLETED
17:42:24 C1BMX98I &HJOB CARDS WAS CREATED - DDNAME=C1BMXHJC
17:42:24 C1BMX98I &HCONFJCL WAS CREATED - DDNAME=C1BMXHCN
17:42:24 C1BMX98I &RCONFJCL WAS CREATED - DDNAME=C1BMXRRCN
17:42:24 C1BMX98I &HDELJCL WAS CREATED - DDNAME=C1BMXDEL
17:42:24 C1BMX98I &HLIBS WAS CREATED - DDNAME=C1BMXLIB
17:42:25 C1BMX07I SHIPMENT STAGING COMPLETED
17:42:25 C1BMX00I END OF RUN - ENDEVOR RC 0000

```

5.12.3 Package Shipment Validation

The Package Shipment Validation Report lists the "SHIP" transactions which were read as input by the staging utility. If a syntax error is detected, a numbered message follows the transaction. Refer to Appendix A, "Package Shipment SCL," for syntax rules. The final action (marked "FINISHED") tallies the number of actions processed, the number of actions in error, and the number of shipments to be made.

```

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002                                03APR01 12:57:14    PAGE    1
ENDEVOR          P A C K A G E   S H I P M E N T   V A L I D A T I O N    RELEASE X.XX  SERIAL XXXXXX
ACTION # 1 -----
SHIP PACKAGE 'A 1 11 31      ' TO DESTINATION DESTBDT .
ACTION # 2 -----
SHIP PACKAGE 'A 11 12 13    ' TO DESTINATION DESTBDT .
ACTION # 3 -----
SHIP PACKAGE 'A 3 6 11      ' TO DESTINATION DESTBDT .
ACTION # 4 -----
FINISHED - ACTIONS=3          VALIDATION ERRORS          SHIPMENTS=3

```

5.12.4 Package Shipment Activity Report

This report lists the data sets/members which were staged for shipment. The report is broken down by HOST data set name.

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002		03APR01 12:57:19		PAGE 1
ENDEAVOR	P A C K A G E	S H I P M E N T	A C T I V I T Y	R E P O R T
		SHIPMENT OF MODULES FROM BST.IMRENV1.SRCOUT1 TO DESTBDT		RELEASE X.XX SERIAL XXXXXX
ACTION	MBR-NAME	OPTION	(PACKAGE NAME)	ASSOCIATED BACKOUT DATA AND PKG NAME COMMENTS, MESSAGES, ETC.
COPY	XP001	OUTPUT	(A 1 11 31)	
COPY	XP003	OUTPUT	(A 3 6 11)	FE4CB95D38783703
COPY	XP006	OUTPUT	(A 3 6 11)	FE4CB963EEBDD802
COPY	XP011	OUTPUT	(A 3 6 11)	FEA449548E38138D (A 11 12 13)
BYPASS	XP011	OUTPUT	(A 11 12 13)	FEA44953E73AA7E2 RC=4 - superseded BY "A 3 6 11
BYPASS	XP011	OUTPUT	(A 1 11 31)	RC=4 - superseded BY "A 3 6 11
COPY	XP012	OUTPUT	(A 11 12 13)	FE4CBCD4B0032D03
COPY	XP013	OUTPUT	(A 11 12 13)	FE4CBCDC762BDA01
COPY	XP031	OUTPUT	(A 1 11 31)	
0007 MEMBER(S) COPIED TO HOST STAGING DATASET				
0000 MEMBER(S) HAVE BEEN SCHEDULED FOR DELETION				
HOST LIBRARY DSN: BST.IMRENV1.SRCOUT1				
HOST STAGING DSN: DA1ME10.NDVR.D10903.T125703.DESTBDT.AH001				
REMOTE STAGING DSN: DA1ME10.NDVR.D10903.T125703.DESTBDT.AR001				
REMOTE LIBRARY DSN: BST.IMRENV1.SRCOUT1				
HOST DSNAME MAP:				
REMOTE DSNAME MAP:				

5.12.4.1 The Header Line

The header line shows three items of information.

- SHIPMENT OF MODULES or COMPLEMENTARY FILE; the former is the requested shipment and the latter is a backout of the shipment.
- The host data set name.
- The destination.

5.12.4.2 The Detail Lines

Detail lines follow the header. There is one detail line for each member in each package being shipped from the host data set to the destination mentioned in the header. If a member is in more than one package, it is listed multiple times. Each detail line contains the following information.

Detail Line	Description
Action	<p>Indicates how the shipment utility handles the member. Possible values are COPY, DELETE, and BYPASS.</p> <ul style="list-style-type: none">■ COPY -- Indicates that the member was copied to the host staging data set and will be shipped■ DELETE -- Indicates that an IDCAMS DELETE command will be shipped to the remote site■ BYPASS -- Indicates that the member is in multiple packages and this occurrence of the member is not being shipped
Mbr-Name	<p>The name of the HOST data set member.</p>
Option	<p>Indicates the shipment option. Possible values are OUTPUT and BACKOUT.</p> <ul style="list-style-type: none">■ OUTPUT -- Indicates that the member being shipped is part of the package output■ BACKOUT -- Indicates that the member being shipped is the backout of the package member
Package Name	<p>The name of the package in which this member is a participant.</p>
Associated Backout Data And Package Name	<p>This column can contain an encrypted member name and or the package with which it is associated. The encrypted name represents an actual backout or backin member and is for the use of Endeavor Technical Support. Members are never shipped under the encrypted name, but rather under the name found in the MBR-NAME column.</p>

Detail Line	Description
Comments, Messages, Etc.	<p>Contains a warning or error message for that detail line. It is prefixed by a return code.</p> <p>RC=04 SUPERCEDED BY <pkg-id></p> <p>The package member associated with this detail line will not be shipped because it was superseded by the application of another package.</p> <p>RC=12 OPTION SWITCH</p> <p>The requested member cannot be shipped because it participates in two or more packages within this shipment and the options "OUTPUT" or "BACKOUT" are not the same. Break this shipment up into multiple shipments to remove this conflict.</p> <p>RC=12 MEMBER NOT FOUND (ASSOCIATED MEMBER NOT FOUND)</p> <p>The package member (or associated member) was not found in the HOST data set. It was probably deleted manually. Package integrity is lost.</p>
Comments, Messages, Etc. (continued)	<p>RC=12 UNEXPECTED FORMAT COMBO (###)</p> <p>This situation can occur when the member has participated in multiple packages and one of the packages in the hierarchy was deleted or reset and reused. The ### is a decimal representation of an internal format code.</p> <p>RC=12 MCF DATA NOT FOUND</p> <p>The MCF record for this member's element was not found or user is not authorized to access its environment.</p> <p>RC=16 ERROR - FIND MEMBER ROUTINE (###)</p> <p>An I/O error occurred while checking for the presence of a member to be shipped. Check the Shipment Log Report for more information. Also, check the JES log for equipment or file problems. The ### is a return code.</p> <p>RC=16 ERROR WRITING TO SYSIN FILE (###)</p> <p>An I/O error occurred while writing a "SELECT MEMBER" card to the BSTCOPY SYSIN data set. Check the Shipment Log Report for more information. Also, check the JES log for equipment or file problems. The ### is a return code.</p>

5.12.4.3 The Trailer Lines

Following all the detail lines for a given data set are eight trailer lines.

- The first two show how many members were copied and how many will be deleted.
- The next four show the correspondence between output data set names and staging data set names at the host and remote site. If a DSNNAME Mapping Rule was set up to exclude transmission of this data set, the "HOST LIBRARY DSN:" line will be marked "* DATASET EXCLUDED FROM TRANSMISSION *."
- The final two lines show the DSNNAME Mapping Rule which was used to generate the "REMOTE LIBRARY DSN." If blank, the host data set name is used as the remote data set name.

5.12.5 Package Shipment Summary

The Package Shipment Summary is broken down by destination and shows the staging return code and the packages shipped to each destination.

```

1 COPYRIGHT (C) COMPUTER ASSOCIATES, INC., 2002          03APR01 12:57:34      PAGE 1
ENDEAVOR          P A C K A G E   S H I P M E N T   S U M M      A R Y      RELEASE X.XX  SERIAL XXXXXX
DESTINATION      HIGHEST R.C   PACKAGE NAME
=====          =====          =====
DESTBDT          0004                A 3 6 11
                  A 1 11 31
                  A 11 12 13
****  END OF REPORT  ****

```


Chapter 6. CA-7 Interface for Package Execution

CA-7 is a JOB scheduling product that can add significant value to Endeavor package processing by controlling the initiation of package execution. CA-7 enables you to define execution rules by class to CA-7 and schedule a package execution, dependent upon the completion of another CA-7 based job.

When accessing a package that has associated CA-7 information, Endeavor queries CA-7 to determine if the information is still applicable. If the CA-7 is no longer applicable (for example the job has been cancelled), Endeavor will remove it.

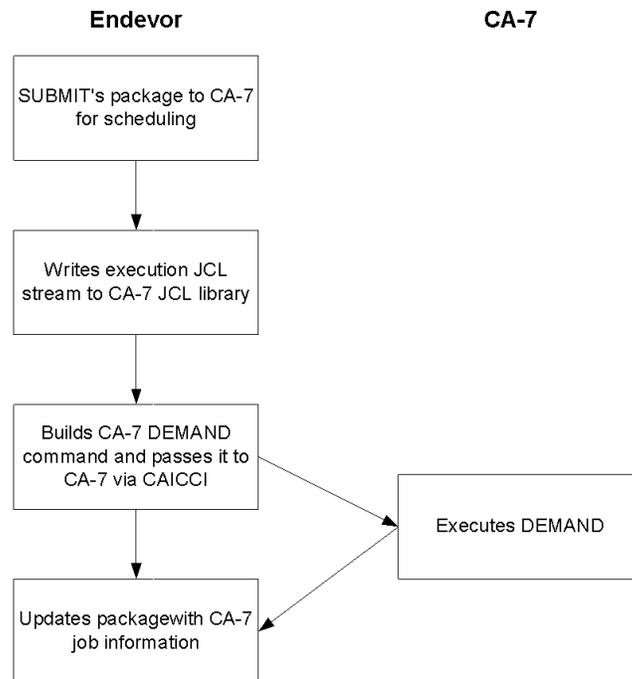
6.1 CA-7 Processing Flow

When Endeavor schedules the package with CA-7, it will build the package execution JCL stream based on the parameters specified on the SUBMIT action. The JCL stream will be written to the CA-7 JCL library that is specified in the C1DEFULTS table.

After the execution JCL has been written to the CA-7 JCL library, Endeavor will then build the CA-7 DEMAND command and pass it to CA-7 using the CA-7 CAICCI programming interface.

Upon successful completion of the CA-7 DEMAND command, Endeavor will update each package that will be executed by the JOB with the JOBNAME, CA-7 JOB number, in addition to the user date and time the JOB was scheduled. If someone cancels the scheduled execution JOB using CA-7, each package associated with that JOB must be reset and re-approved before it can be executed outside the scope of CA-7.

The following diagram summarizes Endeavor and CA-7 processing steps.



6.2 Implementing the CA-7 Interface

When utilizing the CA-7 interface the CA-7 load library must be available to Endeavor. Usually this is included in the LINKLIST library in your steplib concatenation of the Logon Proc, skeletons and JCLs.

To implement the CA-7 interface, you must first define the following C1DEFLT parameters to allow communication between CA-7 and Endeavor. The parameters are CA7CCINODE, CA7JCLDSN, CA7JCLID and CA7JCLLIB and are presented below:

```
BC1JDEFT changes: (C1DEFLT)
  C1DEFLT TYPE=MAIN,           X
  .
  .
  CA7CCINODE=,                CA-7 ADDR SPACE NODE (CAICCI)      X
  CA7JCLDSN=,                 CA-7 CA7JCLID/CA7JCLLIB DSNAME      X
  CA7JCLID=,                 CA-7 JCL DATASET INDEX NUMBER      X
  CA7JCLLIB=,                 CA-7 JCL SYMBOLIC INDEX            X
  .
  .
```

6.2.1 CA-7 Parameters

The CA7CCINODE parameter is used to communicate to CA-7. It defines the CAICCI node name where the CA-7 address space executables should be specified. If this parameter is not specified, local mode is assumed.

Parameter	Description
CA7CCINODE	The CA7CCINODE parameter is used to communicate with CA-7. It defines the CAICCI node name where the CA-7 address space executes. If this parameter is not specified, local mode is assumed.
CA7JCLDSN	Defines the data set name associated with CA7JCLID or CA7JCLLIB.
CA7JCLID and CA7JCLLIB	Defines the data set name associated with CA7JCLID or CA7JCLLIB. The CA7JCLID and CA7JCLLIB parameters are mutually-exclusive. At least one of these parameters must be specified to provide Endeavor with the CA-7 parameter information required by CA-7 to schedule JOB execution. The parameter values should be obtained from the CA-7 implementation. The data set name associated with CA7JCLID or CA7JCLLIB must be provided to Endeavor via the CA7JCLDSN C1DEFLT parameter.

6.2.2 Verifying the CA-7 Information

The Endeavor site information display panel displays the CA-7 implementation information.

```
----- Site Information from C1DEFLT5 -----  
Command ==>  
  
----- Package Processing Options -----  
Approval Required.... Y   Cast Security..... Y   Security.. APPROVER  
Foreground Execution.. Y   Component Validation.. 0  
High-level Index for Generated Remote Pkg Ship JCL...  
  
----- Control Data Set Names -----  
Element Catalog..... BST.PERM40QA.ELMCATL  
Package Control File..... BST.PERM40QA.PACKAGE  
Installation Macro Library. BST.QAP40S2.SOURCE  
CCID Validation Data Set...  
ACM Index Root Data Set.... BST.PERM40QA.ACMROOT  
ACM Index Xref Data Set.... BST.PERM40QA.ACMXREF  
  
----- CA-7 Interface Values -----  
CA-7 Region CCI Nodename... A44SENF  
JCL Data Set Index Number..  
JCL Data Set Index Symbol.. &ENDEVOR  
JCL Data Set Name..... APCDAL.ENDEVOR.JCLLIB  
  
                                     (Press Enter for Previous Panel)
```

6.3 Package Submit ISPF Panel

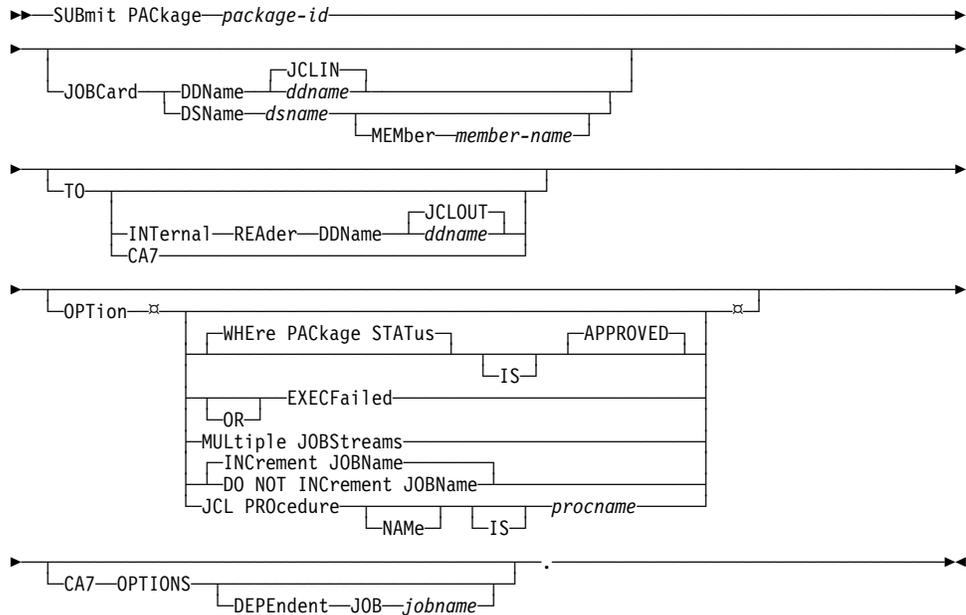
```
----- Submit Package -----
Command ==> Complete the Submit action information below and select an action:
1 1 Submit package                2 Cancel the Submit action
  @N Display Package Notes
  Package ID..... PGMASMPGM1
  Description..... move 1
JOB Card data set name:
Project.. ENDEVOR
Group... PGM
Type.... CNTL
Member... JOBCARD
Other partitioned or sequential JOB Card data set:
Data set name.. _____
Submit options
  JCL procedure name... ENDEVOR          Submit to CA-7... Y (Y/N)
                                         CA-7 Dependent JOB... CICSWRGN
```

Please see the *SCL Reference Guide* for the SUBMIT PACKAGE syntax with the CA-7 option.

6.4 Package SCL and CA-7

The Endeavor ISPF batch package panels can be used to build the package SCL for submission of a package(s) to CA-7 to be scheduled for execution. The package SCL can also be built independently of the Endeavor ISPF interface.

The implementation of the CA-7 scheduler interface is done using the batch package SUBMIT action.



6.5 Displays and Reports

6.5.1 Package Display Panel and CA-7

A check will be performed to ensure that a package scheduled for CA-7 execution is not executed outside the scope of CA-7. Endeavor will check for the presence of a "special" DDNAME in the package execution JCL, if it is present, then it will be assumed that a CA-7 JOB initiated the package execution.

```

DISPLAY ----- PACKAGE DISPLAY -----
OPTION ==>

    blank - Display Action Summary          B - Display Backout Information
    A - Display Approvers                   S - Display SCL
    R - Display Cast Report
    N - Display Package Notes
PACKAGE ID: PGM A                          STATUS: APPROVED
DESCRIPTION: CA-7-Scheduled package
PACKAGE TYPE: STANDARD                      ENTERPRISE PKG: N
SHARABLE PACKAGE: Y                       CA-7 SCHEDULED PKG EXEC JOB: MCCPE01C(0019)
BACKOUT ENABLED: N                        SUB DATE/DPND JOB: ****ANY TIME CICSWEST
EXECUTION WINDOW FROM: 15MAY02 00:00     TO: 31DEC79 00:00

      USER ID  DATE    TIME
CREATED:  MCCPE01 20AUG01 16:06
LAST UPDATED: MCCPE01 15MAY02 11:38
CAST:     MCCPE01 15MAY02 11:44
APPROVED/DENIED: 15MAY02 11:44
EXECUTED:
BACKED OUT:
BACKED IN:
COMMITTED:

                                ENDEVOR RC:

```

6.5.2 CA-7 Reports

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:44   PAGE 1
                                                    RELEASE 4.0   SERIAL B4000C

C1BR2000: INPUT PARAMETERS:

  REPORT 72 .
  ENVIRONMENT * .
  PACKAGE 'PGM A' .
  STATUS IN-ED IN-AP DE APPROVED EXE AB CO BA .
0C1BR2000: SELECTION SUMMARY:
  REPORT(S)           : 72
  EXTRACT(S)         :
  ENVIRONMENT         : *
  SYSTEM              : *****
  SUBSYSTEM          : *****
  TYPE                : *****
  STAGE               : *
  ELEMENT             : *****
  DAYS                : 00007
  PACKAGE             : PGM A
  APPROVER            : *****
  APPROVER GROUP      : *****
  STATUS              : IN-EDIT CAST DENIED APPROVED EXECUTED ABORT COMMITTED BACKEDOUT
  WINDOW AFTER DATE 01/01/84 BEFORE DATE 12/31/79
  CREATED AFTER DATE 01/01/84 BEFORE DATE 12/31/79
  EXECUTED AFTER DATE 01/01/84 BEFORE DATE 12/31/79
  CAST AFTER DATE 01/01/84 BEFORE DATE 12/31/79
  BACKEDOUT AFTER DATE 01/01/84 BEFORE DATE 12/31/79
    
```

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:48   PAGE 2
                                                    RELEASE 4.0   SERIAL B4000C

C1BR3000: EXTRACT PHASE SUMMARY
0REPORT TITLE                                RECORDS
-----
0CONRPT72: PACKAGE DETAIL WITH APPROVER, SCL          40
0TOTAL NUMBER OF RECORDS FOR REPORTS EXTRACTED      40
0SORT CONTROL PARAMETERS:
0  SORT FIELDS=(5,69,CH,A),SIZE=0000040,EQUALS
  RECORD TYPE=V,LENGTH=(2052,,0073)
0SORT COMPLETION CODE: 0000
    
```

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:49   PAGE 3
                                                    RELEASE 4.0   SERIAL B4000C

                                CONRPT72: PACKAGE DETAIL REPORT

  PACKAGE          STATUS      TYPE BACKOUT   LAST UPDATE   CAST   CAST   APP/DEN   EXECUTE   WINDOW_START   WINDOW_END
  NAME             DATE            DATE          DATE          DATE     USER    DATE     DATE     DATE     TIME     DATE     TIME
  PGM A            APPROVED      ST             15MAY02 MCCPE01  15MAY02 MCCPE01  15MAY02             15MAY02 00:00  31DEC79 00:00
  CA-7 SCHEDULED JOB: MCCPE01C(0019) ****ANY TIME                DEPENDENT JOB: CICSWEST

-----
                                USER NOTES SECTION
-----
                                THERE ARE NO USER NOTES ASSOCIATED WITH THE PACKAGE
    
```

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:49   PAGE   4
                                                    RELEASE 4.0   SERIAL B4000C

                CONRPT72: PACKAGE DETAIL REPORT

PACKAGE  NAME      STATUS      TYPE BACKOUT      LAST  UPDATE  CAST  CAST  APP/DEN  EXECUTE  WINDOW_START  WINDOW_END
NAME      STATUS      TYPE BACKOUT      UPDATED USER ID  DATE  USER  DATE      DATE      DATE  TIME      DATE  TIME
PGM A      APPROVED    ST           15MAY02 MCCPE01 15MAY02 MCCPE01 15MAY02           15MAY02 00:00 31DEC79 00:00
CA-7 SCHEDULED JOB: MCCPE01C(0019) ****ANY TIME           DEPENDENT JOB: CICSWEST
-----
                S C L   S E C T I O N
-----

1 RETRIEVE ELEMENT 'CIGSDATE'
  VERSION 01 LEVEL 05
  FROM ENVIRONMENT 'P40' SYSTEM 'NDVRB40' SUBSYSTEM 'BASE'
  TYPE 'ASMPGM' STAGE 2
  TO DSNAME 'BST.I40MVS.SRCLIB'
  OPTIONS CCID 'TEST' COMMENTS "TEST" NO SIGNOUT NOSEARCH
.
```

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:49   PAGE   5
                                                    RELEASE 4.0   SERIAL B4000C

                CONRPT72: PACKAGE DETAIL REPORT

PACKAGE  NAME      STATUS      TYPE BACKOUT      LAST  UPDATE  CAST  CAST  APP/DEN  EXECUTE  WINDOW_START  WINDOW_END
NAME      STATUS      TYPE BACKOUT      UPDATED USER ID  DATE  USER  DATE      DATE      DATE  TIME      DATE  TIME
PGM A      APPROVED    ST           15MAY02 MCCPE01 15MAY02 MCCPE01 15MAY02           15MAY02 00:00 31DEC79 00:00
CA-7 SCHEDULED JOB: MCCPE01C(0019) ****ANY TIME           DEPENDENT JOB: CICSWEST
-----
                A C T I O N   S U M M A R Y
-----

1 RETRIEVE P40      NDVRB40  BASE      CIGSDATE  ASMPGM   01.05 P40STG2
  BST.I40MVS.SRCLIB      CIGSDATE
  CCID: TEST              COMMENT: TEST
```

```

(C) 2002 Computer Associates International, Inc           Endeavor           05/15/02 11:47:49   PAGE   6
                                                    RELEASE 4.0   SERIAL B4000C

                CONRPT72: PACKAGE DETAIL REPORT

PACKAGE  NAME      STATUS      TYPE BACKOUT      LAST  UPDATE  CAST  CAST  APP/DEN  EXECUTE  WINDOW_START  WINDOW_END
NAME      STATUS      TYPE BACKOUT      UPDATED USER ID  DATE  USER  DATE      DATE      DATE  TIME      DATE  TIME
PGM A      APPROVED    ST           15MAY02 MCCPE01 15MAY02 MCCPE01 15MAY02           15MAY02 00:00 31DEC79 00:00
CA-7 SCHEDULED JOB: MCCPE01C(0019) ****ANY TIME           DEPENDENT JOB: CICSWEST
-----
                C A S T   S E C T I O N
-----
```

6.5 Displays and Reports

(C) 2002 Computer Associates International, Inc. 15MAY02 11:44:49 PAGE 1
E N D E V O R P A C K A G E C A S T R E P O R T RELEASE 4.0 SERIAL B4000C
S C L S T A T E M E N T S Y N T A X P A R S E

11:44:49 C1Y0015I STARTING PARSE OF REQUEST CARDS

STATEMENT #1
RETRIEVE ELEMENT 'C1GSDATE'
VERSION 01 LEVEL 05
FROM ENVIRONMENT 'P40' SYSTEM 'NDVRB40' SUBSYSTEM 'BASE'
TYPE 'ASMPGM' STAGE 2
TO DSNAME 'BST.I40MVS.SRCLIB'
OPTIONS CCID 'TEST' COMMENTS "TEST" NO SIGNOUT NOSEARCH
.

STATEMENT #2
EOF STATEMENT GENERATED
11:44:49 C1Y0016I REQUEST CARDS SUCCESSFULLY PARSED

11:44:49 PKMR400I BEGINNING ACTION VALIDATION AND SEARCH FOR APPLICABLE APPROVER GROUPS
11:44:50 PKMR401I ACTION VALIDATION COMPLETED WITHOUT ERRORS
11:44:50 PKMR402I NO APPROVER GROUP(S) FOUND APPLICABLE FOR PACKAGE

11:44:50 ENMP302I PACKAGE INSPECT: ELEMENT AND MEMBER VALIDATION STARTED
11:44:50 ENMP303I ELEMENT AND MEMBER VALIDATION SUCCESSFULLY COMPLETED
11:44:50 ENMP305I PACKAGE INSPECT: ELEMENT MOVE/TRANSFER SYNC CHECK STARTED
11:44:50 ENMP306I ELEMENT MOVE/TRANSFER SYNC CHECK SUCCESSFULLY COMPLETED
11:44:50 ENMP308I PACKAGE INSPECT: ELEMENT CCID/COMMENTS CHECK STARTED
11:44:50 ENMP309I CCID/COMMENTS CHECK SUCCESSFULLY COMPLETED

Appendix A. Package Shipment SCL

This appendix discusses SHIP, SET, and CLEAR statements.

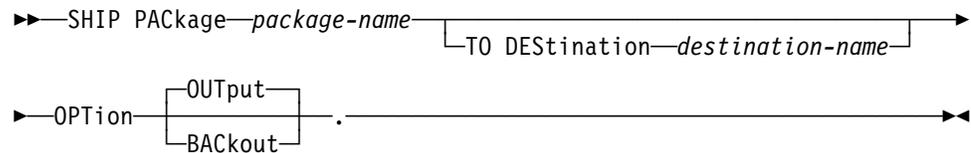
The Package Shipment Utility reads a set of SCL commands stored in the C1BMXIN (DD) data set. The SCL commands consist of three types of statements SHIP, SET, and CLEAR. This appendix describes each of these statements.

A.1 SHIP Statements

SHIP statements are the only statements that are executed. Use the SHIP statement to indicate the package you want to ship, the destination you want to ship to, and whether you want to ship output or backout members.

SHIP syntax is illustrated below:

A.2 Syntax



The rules listed below explain each clause of the **SHIP** statement. Required and optional fields are noted within the explanation of each clause.

SHIP PACKAGE *package-name*

Indicates the name of the package you want to ship, up to **16** characters in length. This clause is required.

TO DESTINATION *destination-name*

Indicates the name of the remote site, up to 8 characters in length, to which you want to ship the specified package. The destination name can be alphanumeric, but must begin with an alphabetic character.

This information is required. If you do not enter a destination here, a **SET DESTINATION** statement (described later in this section) with the appropriate information must have been previously coded.

OPTION OUTPUT/BACKOUT

Indicates whether you want to ship **output** members or **backout** members to the remote site:

- **OUTPUT** members are those members created by the execution of the package.
- **BACKOUT** members are those members needed to backout a package.

If you do not indicate an option here, the system looks for a **SET OPTION** statement (discussed in the next section). If no **SET OPTION** clause is found, the system defaults to the option **output**, and automatically ships output members to the remote site.

A.3 SET Statements

SET statements are global default statements, and establish values for subsequent SHIP statements. If a parameter is required (or used) but not coded, Endeavor looks for that information in a previous SET statement.

Note: If you code a SET statement but enter similar information in the SHIP clause, the value in the SHIP clause will override the SET statement value.

You can use two SET statements with the Package Shipment Utility:

SET DESTINATION *destination-name*

The SET DESTINATION clause applies to each subsequent SHIP statement that does not contain a destination. Because destination is required, you must have a SET statement (previously) coded if you omit the TO DESTINATION clause.

The destination name specified here will be used until the system encounters another SET DESTINATION statement or a CLEAR DESTINATION statement (explained later in this section), or processing ends.

SET OPTION OUTPUT/BACKOUT

The SET OPTION clause applies to each subsequent SHIP statement that does not specify an option. The option you indicate in the SET clause is used until the system encounters another SET OPTION statement or a CLEAR OPTIONS statement (explained later in this section), or processing ends.

Because the SHIP statement does not require an option, however, you need not code this statement at all. In this situation, the default option output will be applied.

A.4 CLEAR Statements

CLEAR statements clear the information that has been designated by a SET statement. The CLEAR statement must be in the same syntax as the SET statement to which it applies, and must follow that SET statement. The CLEAR statement remains in effect until a new, related SET statement is encountered, or until processing ends.

CLEAR statements apply only to SET statements; similar information entered in a SHIP statement is not affected by the CLEAR statement.

Two CLEAR statements can be used with the Package Shipment Utility:

CLEAR DESTINATION

The CLEAR DESTINATION statement clears the destination specified in a previous SET statement.

CLEAR OPTIONS

The CLEAR OPTIONS statement clears the option specified in a previous SET statement.

A.5 Notes

1. When executing the Package Shipment Utility, only a single option can be specified for a given package going to a given destination. That is, the following request would be treated as an error:

SHIP PACKAGE ABCD TO DESTINATION CHICAGO OPTION OUTPUT.

SHIP PACKAGE ABCD TO DESTINATION CHICAGO OPTION BACKOUT.

You can specify different options for different package/destination combinations, however. The next request is valid:

SHIP PACKAGE ABCD TO DESTINATION CHICAGO OPTION OUTPUT.

SHIP PACKAGE ABCD TO DESTINATION BOSTON OPTION BACKOUT.

1. On occasion, a module can be affected by the execution of two different packages. If you try to ship output members from one package and backout members from the other package to the same destination, you receive an error message. For example, assume a module has been affected by the execution of PKG01 and PKG02. A request similar to that shown below is invalid:

SHIP PACKAGE PKG01 TO DESTINATION BOSTON OPTION OUTPUT.

SHIP PACKAGE PKG02 TO DESTINATION BOSTON OPTION BACKOUT.

You can ship the two packages to the same destination if you use the same option, however. Therefore, either of the next requests would be acceptable:

SHIP PACKAGE PKG01 TO DESTINATION BOSTON OPTION OUTPUT.

SHIP PACKAGE PKG02 TO DESTINATION BOSTON OPTION OUTPUT.

or

SHIP PACKAGE PKG01 TO DESTINATION BOSTON OPTION BACKOUT.

SHIP PACKAGE PKG02 TO DESTINATION BOSTON OPTION BACKOUT.

Note: The sequence of the Package Shipment Utility requests is unimportant. The utility looks at the package execution dates.

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