SEE/Change

Change Management for the AS/400

Version 4.2

5

Development Manager

User and Reference Manual

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What is SEE/Change Development Manager ?

The Development Manager provides a controlled and structured environment for changing and creating new application parts. This environment incorporates all the necessary change management controls and facilities, such as:

- ! retrieving and locking application parts
- ! checking source and object integrity
- ! determining and retrieving cross-referencing and dependent parts
- ! specifying installation related processes.

For whom is SEE/Change Development Manager intended ?

The Development Manager is intended to be used primarily by analysts and programmers responsible for application maintenance and development.

What this manual assumes you already know

It is assumed you have a working knowledge of the AS/400 and are familiar with its operating system OS/400 and the programming facilities used in your organisation, in particular the following features:

- libraries
- library lists and current library
- using AS/400 programming utilities like SEU, SDA, RLU
- compiling source members
- message handling
- jobs and job logs

Please refer to the appropriate OS/400 manuals for further information about the above topics.

It is also assumed you have a general working knowledge of SEE/Change. A separate manual entitled *SEE/Change General Introduction* contains information common to all SEE/Change modules, including the following items you should be familiar with:

- common command keys
- using list panels and pull-down menus
- using entry panels, prompting and pop up windows
- using online help
- handling messages
- submitting batch jobs

Development Manager functions

Following are the main Development Manager functions:

- WRKCRDEV (Work with CR Development) enables you to access the Change Requests (CRs) you can work with. These include CRs that are under development and have been allocated to your user or group profile.
- WRKCROBJ (Work with CR Objects) enables you to change and develop new application parts under a CR. This is the main function of the Development Manager. You access this function through function WRKCRDEV.
- LSTCHGRQS (List Change Requests) enables you to print details of selected CRs.
- DSPOBJHST (Display Object History) enables you to view the change history of each application part.

Development Manager menus

```
SEEDEV SEE/Change Development Manager
Select one of the following:

1. Work with Change Request Development

50. Compare/Merge Source Manager

55. Work with Tasks

60. More Development Manager Options

61. User Defined Options

Selection or command

===>

F3=Exit F4=Prompt F9=Retrieve F12=Cancel

F13=User support F16=System main menu
```

Option **50.** Compare/Merge Source Manager is available if you use the *SEE/One Compare and Merge Manager* product in conjunction with SEE/Change. Refer to *SEE/One User and Reference Manual.*

Option 60. More Development Manager Options will take you to secondary menu SEEDEV2.

```
SEEDEV2 SEE/Change Development Manager
Select one of the following:

1. List Change Requests

2. Display Object History

50. Change Batch Submit Defaults

Selection or command

===>

F3=Exit F4=Prompt F9=Retrieve F12=Cancel

F13=User support F16=System main menu
```

Option **50. Change Batch Submit Defaults**. Refer to *SEE/Change General Introduction* for further information about submitting jobs to batch.

Investigation Requests and Change Requests

The change management cycle caters for all software maintenance and development activities. It begins with the raising of an Investigation Request (IR). The IR contains details of the problem and/or requirement. IRs are raised by end users or by personnel responsible for user liaison. The six-digit IR reference number is automatically generated by SEE/Change and is used throughout to identify the IR.

If software changes are required, one or more Change Requests (CRs) can be opened under the IR.

The CR entity enables work areas to be established, application parts to be registered and retrieved, source members to be compiled and objects to be modified. Up to 99 CRs can be opened under any one IR. The CR reference number is automatically generated by the system. This is an eight-digit number consisting of the IR number followed by a two-digit CR sequence number in the range 01 through 99. Each CR is associated with only one application. If software changes are required to be carried out for multiple applications under the same IR, multiple CRs must be opened, one for each application.

The CR is the basic operational unit of the change management cycle. All application parts registered under any one CR are handled as one unit.

When you create a CR, SEE/Change sets up control structures to manage access and status characteristics of the CR and its objects. At this point the CR is already a legitimate entity that can be managed by SEE/Change in certain ways. For example, it can be assigned to a particular developer. However, because it has not yet had any parts retrieved into it ('registered' under it), it cannot be promoted, or packaged into a release.

SEE/Change gives you the following options for creating (opening) a CR:

- ! You can create a new CR as the first one in a newly created IR, and optionally specify that the work library is created at the same time.
- ! You can create a new CR by copying an existing one (in that case, if the existing CR already has a work library, the new CR does not inherit the work library). Here also, you optionally specify that the work library is created at the same time.

If you did not create the work library when you created the CR, you can do so at some later stage and begin to register parts under it. Until the work library is created for the CR, you cannot register parts under the CR.

When you successfully retrieve an object into a CR, SEE/Change:

- 1. Duplicates the object (if it already exists) into the CR's work library
- 2. Sets controls in the CR to indicate that the part has been retrieved into a CR, and therefore cannot be retrieved into any other CRs, except for concurrent development.

Accessing the CRs you can work with

Each CR can be allocated, through the SEE/Change Change Manager, to a user or group profile. You can access only those CRs that have been allocated to your user or group profile.

Function WRKCRDEV enables you to access the CRs you can work with.

Each CR is assigned a status code. The status of the CR indicates its stage within the change management cycle. The following table shows the various CR status codes and their meaning:

Code	Description
*DEV	Under development
*TST	Ready for testing
*ERM	Errors detected while being promoted to the Module/Integration environment
*MDL	In the Module/Integration environment
*ERA	Errors detected while being promoted to the Acceptance/QA environment
*ACP	In the Acceptance/QA environment
*RDY	Ready for Release
*ERL	Errors detected while being promoted to the Live/Production environment
*LIV	In the Live/Production environment

You can access only those CRs that are in the status of *DEV or *TST. If the CR is in the status of *TST, it is automatically changed to *DEV when you select it to work with. After you have completed development work, you can change the CR status to *TST to indicate to the change control coordinator that the CR is ready for testing and can be promoted.

Data filtering

Access to CRs can be restricted through data filters. When you are enrolled in SEE/Change, a data filter can be associated with your enrolment record. If such a data filter is assigned, your access to information is restricted to the specifications contained in that data filter.

Assigned filter

When a filter is assigned to your enrolment record, the administrator also specifies whether you are allowed to override the assigned filter:

- If you are not allowed to override the assigned filter, you cannot switch to any other filter, but you can change your assigned filter to be more restrictive.
- If you are allowed to override the assigned filter, you can switch to any other filter, or change your assigned filter without any restrictions.

Filter specifications

While working with CRs, data filter specifications can contain:

- a list of applications you are restricted to
- a list of sites you are restricted to
- a list of IR categories you are restricted to
- a list of CR type codes you are restricted to

Changing the filter

If you are allowed to override your assigned filter, you can remove restrictions by blanking out one or more entries in any of the above lists. For example, if your current filter lists application codes DST and FIN, you are restricted to these two applications. If you blank out both these codes, you remove any restriction to do with applications, and you gain access to all applications.

All changes you make to your assigned filter are temporary, and are in effect while you are signed on. When you sign off the terminal and sign on again, your assigned filter reverts to its original specifications. If you want to permanently change your assigned filter, ask your SEE/Change administrator to make these changes to the original specifications. Refer to *Enrolling users* in *Configuration Manager User and Reference Manual*.

Using CASE tools

The CR environment, work library, and facilities are oriented primarily towards development using 3GL tools. If you use a CASE tool or a 4GL tool, the main development activities are performed within the CASE tool itself, and a specialised interface is employed to reflect in the SEE/Change repository the application changes you have made in the CASE environment, so that these can be promoted through the change management cycle.

When a CR is created, a CASE tool id can be specified. If it is specified as a value other than *NONE, development work should be conducted within the specified CASE tool. You can use action option **13=Wrk CASE** from function WRKCRDEV to access the CASE tool development environment.

For further details regarding the various specialised interfaces refer to the separate manual entitled *SEE/Change Interfaces*.

Managing development work in the CR work library

All application changes are performed in a CR work library. Regardless of the number of users accessing the CR, all development activities for the same CR take place in the same work library.

While using function WRKCROBJ, you can retrieve, create and maintain various application parts in the CR work library. When you retrieve an application part, or initiate a new one, the application part is registered under the CR and is shown in the list of CR parts.

WRKCROBJ also enables you to work with document library objects (DLOs) related to the CR. For more details, see page 5-90.

SEE/Change maintains a database library containing details of **registered** parts; this database library is distinct from the CR work libraries (of which there is one for each CR).

You can use standard OS/400 commands like MOVOBJ and CRTDUPOBJ to add to a CR library any other additional object or source members you may require. There is no restriction on the additional items you can put in a CR work library. However, only those application parts that have been registered under the CRs are promoted and distributed through the change management cycle. All other objects and members in the CR work library are ignored.

Creating the CR work library

When you access the available CRs through function WRKCRDEV, you are presented with a list of CRs you can work with.

You need not create the CR library when you create the CR. However, to be able to retrieve parts into the CR, the library must exist. The narrative ***NOLIB** against a CR in the main list panels indicates that the CR library has not been created.

You can select action option **31=Crt CR lib** to create the work library. The CR library name is constructed by concatenating a standard prefix with the CR number. The default value for the prefix is O#, but you can change it by specifying a different value for general parameter code @WRP, which controls the prefix for all CR work libraries in the system. Refer to *Maintaining general parameters* in *Configuration Manager User and Reference Manual*.

When the CR library is created, a number of objects are created within it. These include various work files used by SEE/Change, source files for each of the source types used by the application, job description CRJOBD and output queue CROUTQ.

Managing the CR library list

When you enter function WRKCROBJ:

- The interactive library list is set to the list stored under parameter INLLIBL of job description CRJOBD in the CR work library.
- The current library is set to the CR work library.
- The job's output queue is set to CROUTQ in the CR work library.

When you exit function WRKCROBJ, all the above items are re-instated to the original values that were in force before you entered this function.

You can change the value of parameter INLLIBL of job description CRJOBD to include any non-standard library you need.

Initially, CRJOBD is constructed when the CR work library is created by duplicating the application job description name and then further changing its INLLIBL.

The application job description name (which is specified against the application configuration) can exist in various libraries. The selected library depends on the way the CR has been set up:

- When a CR is created in the Change Manager, the library list level is specified. Refer to *Data items* for creating a CR in Change Manager User and Reference Manual.
- The library list level indicates which library list is used as the based-on list for constructing the CR library list. The following values can be specified:
 - ***BAS** Base application library list. The library list of the application job description in the application Module/Integration Database library is used as the based-on list.
 - ***SIT xxx** Site specific library list. The library list of the application job description in the site specific Module/Integration Program library for site *xxx* is used as the based-on list.
 - ***GRP xxx** Group specific library list. The library list of the application job description in the site specific Module/Integration Program library for the first site belonging to the group at the local system is used as the based-on list.

For a further explanation of the above terms, refer to *Source levels* in *Configuration Manager User* and *Reference Manual*.

The following table shows how the CRJOBD library list is constructed:

	INLLIBL of CRJOBD	Description
Тор	QTEMP	
	O#XXXXXXXX	The CR work library
	OMSSAV	SEE/Change save library (value of general parameter @SVL)
		All the libraries stored in the INLLIBL of the application job description
		as specified for the CR Library List Level (as above)
	OMSOBJ	SEE/Change object library (value of general parameter @OBL)
Bottom	OMSDTA	SEE/Change database library (value of general parameter @DTL)

Submitting jobs

Whenever a job is about to be submitted, the batch submit window overlays the lower right corner of the current panel. The window shows you the default job description and enables you to change it to any job description to which you are authorised, or to the value *CURRENT, which indicates that the job description associated with the user profile and the current interactive library list are used. You can also use the prompt option (F4) to specify the parameters that will be used by the SBMJOB command.

The default job description is either *CURRENT or CRJOBD in the CR library, depending on the value you specify for general parameter @SBM. Refer to *Maintaining general parameters* in *Configuration Manager User and Reference Manual*.

Using CRJOBD can be useful if, for example, you want all jobs under certain applications to use a dedicated job queue, while a number of user profiles are allocated work spanning multiple applications. Since CRJOBD is initially constructed based on the application job description, different values can be automatically assigned to CRJOBD for CRs of different applications.

Registering application parts under a CR

While using function WRKCROBJ, you can register an application part under the CR by requesting a retrieve operation via action option **1=Retrieve**.

Object reference id

Each application part is internally associated with an *object reference id*. Each object reference id defines the following change management attributes:

- The type of originating and target library associated with the part, which can be program library (*PGM) or database library (*DB).
- Whether the application part is implemented as an AS/400 object, an AS/400 source-based member, or as both an object and a source-based member.
- The AS/400 object type and attribute, for parts implemented as objects.
- The default source file name, source type, and source record length for parts implemented as source members.
- The source usage type, for parts implemented as source members. This can be one of the following (for further details refer to *Source usage* on page 5-27.):

*COMPILE	Source member is used to compile an object, for example, RPG source.
*MEMO	Source member is used as a memorandum, for example, program specifications or internal documentation.
*INTERPRET	Source member is used as run-time data (interpretive source), for example, REXX specifications.
*CPYREF	Source member is used as compile time copy reference, for example, member referenced in /COPY statement in RPG program.

Appendix C: Object reference id table on page 5-137 shows the attributes of each object reference id. You can alter the source usage, the default source file name, the source record length of entries in the table that are for source based application parts. Refer to Command CHGOBJDFT in Configuration Manager User and Reference Manual.

To retrieve an application part, you must specify its name and object reference id, either by selecting an item from the source member search panel, or by explicitly typing these details. When you type details, you can either type the object reference id, or the OS/400 object type and attribute.

For all source-based parts, only the source is retrieved into the CR. For non-source based parts, the object itself is retrieved into the CR.

Retrieval type

After an application part has been registered under the CR, it is assigned a retrieval type code. This code identifies the retrieval status.

The following table shows the various retrieval type codes:

Code	Meaning
*CCD	Part registered while being concurrently developed elsewhere
*CHG	Existing part registered for change
*DEP	Part registered as a dependency of another part
*ECD	Part registered while being concurrently developed as emergency fix elsewhere
*EMG	Part registered as emergency fix
*FRZ	Part has been frozen after it was retrieved and registered
*IMP	Part has been registered as fully imported from external library
*NEW	Part has been registered as a new application part
*REG	Part has been registered as pending full import
*XRF	Part has been registered as a cross-referenced part on another part

Change management locks

Normally, if an application part is already registered under an active CR (that is, a CR that has not yet been promoted to the Live/Production environment), you cannot retrieve the same part under a different CR.

When the CR is created, it can be specified that concurrent development is allowed for the CR, or that the CR is an emergency fix CR. If either of these attributes are specified, you can retrieve a source-based application part that is already under development elsewhere.

When concurrent development is initiated, the system issues warning messages whenever the CR is promoted, showing the various versions being developed concurrently. However, the merging of concurrent source changes is not automated. A separate Thenon product, *SEE/One Compare and Merge Manager*, can be used to create, on demand, composite source members from concurrently developed source versions.

Alternatively, when concurrent development is not allowed, you can freeze the application part registered under the CR. Refer to *Freezing source members* on page 5-33. When you freeze the application part, it is no longer locked under its original name, and you can therefore re-retrieve it into a different CR.

The concurrent development and freezing options are applicable only for source-based objects.

Transferring application parts from one CR to another

Action option **11=Transfer** from function WRKCROBJ enables you to transfer an application part from one CR to another. Both the originating CR and the target CR must be created for the same application, and the transfer is allowed even if the CRs have been promoted to the Module/Integration environment or the Acceptance/QA environment.

Note:

This capability is also available in the Change Manager and the Release Manager when displaying CR application parts.

The following table shows which transfer request operations are allowed, based on the current environment of both originating and target CRs:

Originating CR	Target CR environment			
Environment	Development	Module/Integration	Acceptance/QA	Live/Production
Development	х			
Module/Integration	х	х		
Acceptance/QA	х		х	
Live/Production				
CR error status (*)	Х			

(*) If the CR is in error status *ERL (Errors while promoting the CR to Live/Production), an application part can be transferred only if it has not yet been successfully promoted to the Live/Production environment.

If the originating CR is in Module/Integration or Acceptance/QA and the target CR is in Development, the selected part is reverted to development; that is, it is removed from the testing environments, and if it is a database file or an interpretive source member, the existing Live/Production version is re-instated in the testing environments. An Object Log report is generated for each transfer operation; an Error Log report is generated only if one or more errors or warnings were encountered.

After the transfer is complete, all promote transactions for the selected part in the context of the originating CR are transferred to the target CR; that is, you can view the full promote history for the part under the target CR.

If both a logical file and its based-on physical file are registered under the originating CR, you should first transfer the physical file followed by the logical file. If the CR is in the Module/Integration or Acceptance/QA environments and the target CR is in the Development environment, and if the logical file is selected first, SEE/Change issues warning messages to indicate that the Live/Production database relationships might not be reinstated in the testing environments.

If you transfer the physical file first (as is recommended), the completion message may indicate that one or more *CHK warnings were encountered. This is because the physical file which has been taken from the testing environment could not be deleted due to outstanding database relationships. After you transfer all dependent logical files, the old physical file will be removed and its associated transaction completion code will be changed from *CHK to *OK.

Note that CR objects are moved from one CR to another. Database relationships are not manipulated,

ie: the dependent-on or based-on relationships as they exist in the originating CR library are carried with the object into the target CR library.

When you transfer an application part:

- Non-source based objects and objects created by source compilations are moved to the target CR work library.
- Source members are copied into the same source file name in the target CR work library.
- The source member in the originating CR work library is retained for backup purposes. its description is changed to indicate that it is a backup member.
- The application part is de-registered from the originating CR and is registered under the target CR.

See *Working with Document Library Objects* on page 5-90 for details of transferring document library objects between CRs.

Importing external application parts

The import facility enables you to import multiple application parts from an external library in a single operation into the CR. An attempt is made to interpret the whole content of the external library and register every application part under the CR.

You can use this facility to manage the testing and the promotion of application parts that have been developed outside your organisation. In effect, it allows you to use SEE/Change's configuration, change management cycle, and network distribution capabilities to handle the implementation of applications or application parts developed by third parties.

The concurrent development option is not applicable for imported parts, that is, normal change management lock checks are applied regardless of the concurrent development setup of the CR.

The import facility serves two mutually exclusive purposes:

- Allowing the importation of application parts that have been generated by a CASE tool.
- Allowing the importation of application parts held in an external library.

In both cases, the application parts designated for importation are first recorded in a SEE/Change import file; then they are registered and physically imported into the CR from the import file.

The following diagram illustrates the various components of the import facility:



Three related action options can be selected from function WRKCRDEV or from the status pull-down menu of function WRKCROBJ:

35=Import	Enables you to either register, or register and fully import, all application parts recorded in the import file.
	Using the *REGISTER mode enables you to register existing entries in the import file without physically duplicating objects and source members into the CR work library. This is particularly useful when the list of required objects is known, but the actual objects are yet to be compiled. The import routine is automatically executed with MODE(*REGISTER) when control is returned from a CASE work session. Later on, when all the required objects have been generated, the import routine can be executed with MODE(*FULL).
	Regardless of the selected mode, the import routine first checks and validates existing import file entries. If any errors are found, entries will not be registered or imported into the CR context.
	Refer to Command IMPORT on page 5-125.
36=Import lib	Enables you to analyze an external library and record application parts in the import file. Optionally you can specify that an import operation (command IMPORT) is to be executed following successful load of the import file.
	Refer to Command IMPORTLIB on page 5-127.
37=Upd imp reg	Enables you to manipulate the contents of the import file. This can be used when a large volume import is attempted, and a number of entries created in the import file cannot be resolved; you can use this function to remove or change the status of problematic entries, thereby allowing the full import run to complete successfully.
	Refer to Command UPDIMPREG on page 5-133.

There are a number of issues you should consider before attempting to execute function IMPORTLIB:

- **Authorities and locks** Before executing this command, make sure that your user profile has full authority to all objects in the external library. The external library and the objects and source files within it must not be locked by any other job. Also ensure that no other import function is active for the selected CR.
- **Data from previous executions** Before the function scans the external library, all existing records in the import file for the CR are removed. Therefore any records previously generated into the import file that have not yet been fully imported into the CR work library are lost. Only records generated by the latest IMPORTLIB run can be fully imported at a later time. For the same reason you cannot request the function for CRs designated as CASE development CRs (CRs with *CASE Tool Id* other than *NONE).
- **Object and source member matching** For source-based objects, both source members and objects must be present in the same external library, with the same name. The only exception to this are source members for menu commands (Object Reference Id: MNUCMD), which are expected to be named as xxxxxxxQQ, where xxxxxxx is the menu name).

Source and object matching is done on the basis of the source file names found in the external library and the source type of each of the members found in these source files. Source file names and member types are associated with object reference id, using the application source file configuration information as provided through configuration function WRKAPPCFG and the object reference id table as shown in *Appendix C* on page 5-137. This means that:

- Every source file name you wish to import must be present within the application source pool configuration, that is, its name must be listed in the source configuration panel in function WRKAPPCFG; the pool id (*BAS 1-5, *SIT or *GRP) and the library name associated with the pool configuration, are irrelevant.
- Every source member you wish to import must have a recognisable member type; that is, it must be one of the edit types you can find in the object reference id table in *Appendix C*.

Source-based objects with no matching source members are defaulted to PGM-NOSRC, DSPF-NOSRC, PRTF-NOSRC, PF-NOSRC, LF-NOSRC and CMD-NOSRC; menu command objects with no source are defaulted to MSGF objects; menu panel objects with no source are defaulted to DSPF-NOSRC objects.

A message is sent for each object and source member that cannot be recorded in the import file. An object or source member may be rejected if it is locked by another job, or if the member type is not recognisable.

Viewing application part history and movement logs

Action option **21=History** from function WRKCROBJ enables you to view the history of changes for any application part.

If you need to view the history for an application part that is not currently under development, you can use menu SEEDEV2 option **2**. **Display Object History**, which prompts command DSPOBJHST, allowing you to specify any application part.

The panel shows a list of the CRs under which the application part has been modified, and enables you to request CR and IR details, associated text members, and a full list of all change management movements logs showing the originating and target libraries, the operation codes and the completion status of each transaction.

Multiple versioning

Normally, the CR work library is automatically deleted after the CR is promoted to the Live/Production environment at the development centre.

Alteratively the application can be configured for multiple versioning, which results in the CR work library being retained unconditionally. This enables the distribution of specific previous application changes without the need to distribute the latest version of the application.

Text documents

There are three types of text documents associated with the change management cycle. You can access these documents from the main list panel of function WRKCHGRQS:

User text	User text is for use by end users and/or personnel responsible for user liaison to supply information to IS describing end user's requests or problems. User text is associated with investigation requests (IRs). One user text document can be maintained for each IR. User text is always included in the release packet and is distributed to remote systems. User text can be displayed via functions WRKCRDEV and WRKCROBJ.
IS text	IS text is for use by information systems (IS) personnel responsible for user liaison to supply information in response to user's requests or problems. It can be used to clarify a problem that does not require any software changes, or to provide instructions and guidelines to complement the software changes made against the IR. One IS text document can be maintained against each IR. IS text is always included in the release packet and is distributed to remote systems. IS text can be entered via <i>Change Manager</i> function WRKCHGRQS or <i>Development Manager</i> functions WRKCRDEV and WRKCROBJ.
Devpt	Development text is for use by information systems (IS) specialists to provide text technical documentation for internal IS purposes. Development text is associated with the CR. Against each CR one development text document can be maintained. Generally, the development text is intended to be used as an internal IS document, but it can be collected into the release text, which is revised when a software release is created. Development text is usually entered via <i>Development Manager</i> functions WRKCRDEV and WRKCROBJ.

Managing source members

For an application part implemented as a source member, or as both an object and a source member, you can manage the change management cycle within the same application on three different levels. When you retrieve and register the application part, you specify its source level.

Source levels

The following describes the various source levels:

- ***BAS** Application base level Parts on this level are designated as the application core, and are delivered to all network locations where the application is used.
 - Parts targeted at program libraries are delivered to the core application program library at each system where the application is used.
 - Parts targeted at database libraries are delivered to each of the database libraries associated with the sites configured for the application at each system.
- ***SIT** Site specific level Parts on this level are designated for use by a specific site, and are delivered to the specified site only.
 - All parts, both those targeted at program libraries and those targeted at database libraries, are delivered to a library that is specially designated to contain **site specific programs**.
- *GRP Site group level Parts on this level are designated for use by a group of network sites, and are delivered to all sites belonging to the group.
 - Parts targeted at program libraries are delivered to a library that is specially designated to contain **group specific programs** at each of the systems that includes one or more sites belonging to group.
 - Parts targeted at database libraries are delivered to each of the libraries that are specially designated to contain **site specific programs**.

Application parts not associated with source members (like data areas, job descriptions, job queues) are always treated as application base objects (*BAS).

The availability of site and group specific levels is determined by the application configuration and the restrictions that can be specified when the CR is created.

Source usage

Each object reference id implemented as a source member, or as both an object and a source member, is associated with a source usage type. Source usage determines the way the source member is promoted through the change management cycle. The following describes each usage type and its associated characteristics:

*COMPILE

- Source member is used to compile an object.
- Source is promoted at the development centre only to the live source pool.
- Source is loaded into the release packet if either *Distribute source code* or *Re-compile obis at remote sites* are specified in the application configuration as *YES, or if *Load source to release packet* is specified in the configuration override facility as Y.
- Source is promoted at remote systems if either *Distribute source code* is specified in the application configuration as *YES, or if *Unload source from release packet* is specified in the configuration override facility as Y.
- The configuration override facility can be used to override whether source is distributed, and the target libraries at remote systems.

*MEMO

- Source member is used as a memorandum, for example, program specifications or internal documentation.
- Source is promoted at the development centre only to the live source pool.
- Source is loaded into the release packet if *Distribute source code* is specified in the application configuration as *YES.
- Source is promoted at remote systems if *Distribute source code* is specified in the application configuration as *YES.
- The configuration override facility is not available.

*INTERPRET

- Source member is used as run-time data (interpretive source).
- Source is promoted at the development centre to all target environments; the member is also promoted to the live source pool.
- Source is always loaded to the release packet and promoted at remote systems.
- The configuration override facility can be used to override the target libraries for the source member.

*CPYREF

- Source member is used as compile time copy reference, for example, member referenced in /COPY statement in an RPG program.
- Source member is promoted at the development centre to all target environments; the member is also promoted to the live source pool.
- Source is loaded into the release packet if either *Distribute source code* or *Re-compile obis at remote sites* are specified in the application configuration as *YES, or if *Load source to release packet* is specified in object overrides as Y.
- Source is promoted at remote systems if either *Distribute source code* is specified in the application configuration as *YES, or if *Unload source from release packet* is specified in the configuration override facility as Y.
- The configuration override facility can be used to override whether source is distributed, and the target libraries.

Searching and retrieving source members

You can request source member retrieval from function WRKCROBJ, from the generic member search function MBRSEARCH, or from the *Change Manager* function WRKCHGRQS.

The function that handles the actual retrieval process is RTVCRSRC (Retrieve CR Source).

The following diagram illustrates the various ways you can retrieve a member into the CR:



When you use function MBRSEARCH, its panel overlays the bottom half of the screen, and shows a list of all current live source members. It shows only members in the Live/Production environment. The input fields below the column headings allow you to further select by:

- Member name (or partial name)
- Object type
- Member text (or partial text)
- Application code

Against each member you can select an action option to:

- Display the member
- Print the member
- Attempt to retrieve the member into the CR.

You can also request to retrieve a new member by using a function key.

Function RTVCRSRC is always invoked to perform the required retrieval processing, but its screen panel is presented only if one of the following occurs:

- The member and/or object reference id were not specified, for example, action option **1=Retrieve** is selected from WRKCROBJ without any other details. The RTVCRSRC panel is shown, prompting the user to enter the required member name and object reference id.
- Retrieval is requested for a member without specifying the source level (base, site or group specific) and the application allows more than one source level. The RTVCRSRC panel is then shown with all versions available for selection.
- Retrieval is requested for a member that is already under development. The option to retrieve a member for concurrent development can then be explicitly requested by the user, subject to CR and application level concurrent development controls.
- A condition that stops the retrieval process is detected. The panel is then shown with all member versions, and a message indicating the condition.

For applications configured for base objects only, most retrieval requests from function WRKCROBJ, including requests to initiate a new member, are executed without showing the RTVCRSRC panel. A completion message indicates the name of the member that has been retrieved, the source level, and whether a new member was initiated.

When the RTVCRSRC panel is shown, it shows the overall member status throughout the change management cycle for the CR application. When a member is selected, the top section of the list shows:

- All versions of the member that are currently being developed, the associated CR number, retrieval type and CR status code.
- All versions of the member that have been *frozen*, the associated CR number, retrieval type and CR status code.
- All versions of the member that are currently in the Live/Production environment, and their current version number.

The bottom section of the list shows:

• All additional new versions of the member that can be initiated for the application base, site and group specific objects (if any).

Against each member you can select an action option to:

- Display the member
- Print the member
- Attempt to retrieve the member into the CR, for normal or concurrent development
- Show the object history, movements and current configuration overrides

Source retrieval restrictions

When a CR is created in the Change Manager, source retrieval restrictions can be specified as either:

- ***NO** Source member retrieval is not restricted. You can retrieve any source member subject to the normal change management cycle rules.
- ***YES** Source member retrieval is not allowed. This enables the change controller to retrieve the required members, and then change retrieval restriction to *****YES, thereby blocking any further member retrieval into the CR.
- *LVL Source member retrieval is restricted to the source level specified under the Library List Level, for example, it can be specified that only application base parts can be retrieved, or that only site specific parts for a certain site can be retrieved.

Managing concurrent development

When a CR is created as an Emergency Fix CR, or when it is set up to allow planned concurrent development, function RTVCRSRC enables you to request action option **3=Copy for CCD**. You can specify this option against any of the listed source members, so that you can use any existing source member as a base for the newly initiated CR source.

There are three retrieval type codes associated with concurrent development:

- *CCD Member is worked-on while one or more other versions are under concurrent development.
- *EMG Member is worked-on in the context of an Emergency Fix CR.
- *ECD Member is worked-on while one or more other versions are under concurrent development in the context of an Emergency Fix.

When **3=Copy for CCD** is requested within the context of a non-emergency CR, the retrieval type of the member is set to *CCD, and all other members of the same name currently under development are changed to *CCD.

When **3=Copy for CCD** is requested within the context of an Emergency Fix CR, the retrieval type of the member is set to *EMG, and all other members of the same name currently under development are changed to *ECD.

Program (*PGM) parts

When you request CR promotion, or when you allocate the CR to a release, the concurrent development status of each source member registered under the CR is checked, and warning messages notify you of the status of all the other versions of the same source member name under development. You can choose to ignore the warnings and continue processing, or abort the request.

If the target Module/Integration or Acceptance/QA environment for the movement/promote request already contains the same object/source member name from a different CR, an additional warning message will notify you that the CR entry in that other CR will be automatically removed before the current movement/promote request is processed. This enables you to update the target environment with the latest version without having to revert the other CR to development.

If, after removing the CR entry (as above), the other CR contains no objects, then the CR status of that other CR is automatically changed to *DEV (Under Development).

Database (*DB) parts

If Module/Integration or Acceptance/QA movement is requested, and a database part in the CR has already been delivered to either Module/Integration or Acceptance/QA by the other CR, the promotion request is rejected and an error message is issued.

In this situation, the CR can be promoted to the Live/Production environment only. Then, when the promotion is requested, an additional warning message is issued to indicate which of the testing environments (Module/Integration or Acceptance/QA) will be bypassed by the database part during the promotion. This enables one version of the database part to be delivered to the Live/Production environment without interfering with another version of the same application part that is being currently tested under another CR.

Retrieving CR source for concurrent development

A CR containing a concurrently developed source member can be automatically allocated to the same release as the CR containing the original source version.

This provides flexible management of objects in remote Acceptance/QA environments.

When you retrieve a CR source for concurrent development from another CR that is already allocated to a release, if the target CR is not allocated to a release, SEE/Change displays a dialogue box for you to specify whether to allocate the current CR to the same release as the originating CR:

When you retrieve a CR source for concurrent development from another CR which is already allocated to a release, if the target CR is already allocated to a different release, SEE/Change displays a warning message. You can cancel or continue the retrieval processing.

Freezing source members

From function WRKCROBJ you can select action option **7=Freeze** to freeze the source member. This option enables you to remove the change management locks for the member and allow it to be retrieved again into another CR, while the current work in progress is retained for future reference under the original CR.

When you select this option, the application part registration under the CR, the member and its associated object (if it exists) are all automatically renamed. The original application part name is shown under the **additional info** column for reference. You can continue to do development work on the renamed frozen member.

The CR must remain under development (*DEV) if it contains one or more frozen members. To change the CR status to ready for testing (*TST), the frozen members have to be either transferred to another CR, or removed after the source changes in the frozen member have been incorporated into another source member. A separate product, *SEE/One Compare and Merge Manager*, can be used to create, on demand, a composite source member from the frozen member and any other changed version of the original member in another CR.

Source member naming patterns

Naming pattern tables can be used to enforce your own naming convention standards for new source members initiated for the application.

The use of naming pattern tables is governed by the setting of the NAMP general parameter, which is described in the SEE/Change *Configuration Manager User and Reference Manual*.

When you configure the application source pools, you can associate every object reference id being configured with a naming pattern table name.

Each table includes one or more valid naming pattern entries. When you initiate a new source member, the selected member name is checked for compatibility with one or more of the entries in the table name associated with the object reference id.

Each table entry consists of a 10-character field pattern and a description of the pattern.

The validation of the source member name is done against each of the pattern table entries until a match is found. If no match is found, retrieval of the new source member is not allowed. The validation is performed by checking each of the member name characters against each of the characters in the pattern. The following rules are employed:

- Character *a* in the patterns indicates that the corresponding position in the member name must be occupied by any letter A-Z # @ _ or \$ (blanks are not allowed).
- Character *b* indicates that the corresponding position in the member name must be occupied by any letter A-Z # @ _ \$ or a blank.
- Character *n* indicates that the corresponding position in the member name must be occupied by any digit 0-9 (blanks are not allowed).
- Any other capital letter or digit indicates that the corresponding position in the member name must be occupied by that character.

The following examples demonstrate how naming patterns can be used:

Pattern entry:	BIL1nnCab	
Valid names:	BIL199CA BIL102CFG BIL156CZ	
Invalid names:	BIL999CA BIL101C BIL156CZXX BIL123C7 BIL1FMCA A	ACP500

Source version number

When you load the source register for the first time, each source member belonging to the application is assigned version number 001. (Refer to *Source Register* in *Configuration Manager User and Reference Manual*).

Similarly, when you register a new source member it is assigned version number 001.

Every time you initiate a new change cycle, this version number is increased by 1.

The version number can be shown in function WRKCROBJ, and it can be used by the source documentation feature. Refer to *Documenting source members* on page 5-39.

When multiple concurrently developed versions exist in the development or testing environments, all versions share the same version number. When a member is promoted to the Live/Production source pool at the development centre, the version number of all other members of the same name currently under development is increased by 1.

Source templates

File O#SRCTYP in the SEE/Change object library (OMSOBJ) can be used to specify source member templates to be used when new members are initiated under the application.

For each source type (RPG, CLP, CBL, CMD, PF, LF etc) a member with the same name exists in O#SRCTYP.

You can use PDM or SEU to edit these members in O#SRCTYP.

Compiling source members

While using function WRKCROBJ, you can request source compilation by using either of the following two action options:

14=Compile	Using this option, the compilation command string is submitted to batch, bypassing command prompts. The various compilation parameter values can be specified on system level. Refer to <i>Source compilation</i> in <i>Configuration Manager User and Reference Manual</i> .
	When you use this option to compile a database or a device file, certain file attributes are automatically changed after compilation to the values associated with the object when it was retrieved into the CR. Refer to <i>Retaining file attributes after compilation</i> on page 5-37.
15=Pmt Compile	Using this option, the compilation command is prompted with the default parameter values as specified on system level. After confirmation of the compilation parameters, the common submit window appears allowing you to select batch or interactive execution.
	Also, if you are compiling a database file (PF or LF), an additional prompt is shown before the compilation command prompt, enabling you to specify whether to automatically re-compile all programs containing one or more references to database files that have changed in the CR work library since the program was last compiled. Refer to <i>Re-compiling cross-referencing programs</i> on page 5-38.

Managing varying target OS/400 release levels

The compilation command parameter TGTRLS, which controls the target OS/400 release level, can be automatically assigned by the program that invokes the compilation.

If you configure the system level compilation command to include a specific value for parameter TGTRLS, or if you prompt for command parameters (via action option **15=Pmt Compile**), the default value or the value you specify for TGTRLS is unconditionally used.

If you do not specify the TGTRLS parameter, then it is automatically assigned by the program based on the earliest OS/400 release level that is assigned to any of the systems using the application. For further details about assigning the OS/400 release level against each system refer to *Configuring systems* in *Configuration Manager User and Reference Manual*.

Pre-compilation processes and override statements

You can specify pre-compile execution string(s) within the source you submit for compilation. You do this by coding CL commands anywhere within the source member in specially designated source comment lines that start with character string **/*OMX*** in columns 2-7. The plus sign (+) can be used to extend command specifications to any number of lines. In CLP source, the *end comment* characters ***/** can be coded anywhere following the command string.

Using this facility you can implement any required file overrides prior to compilation, and store the required override specifications in the actual source member. Future compilations of the same source member will automatically include these overrides.

The following examples show how you can incorporate these override statements in RPG and CLP source code:

Pre-compile statements in RPG source

```
.
C* The following statement will be executed before compilation:
C*
/*OMX* OVRDBF FILE(PF1A) TOFILE(PF1)
C*
```

Pre-compile statements in CLP source

```
.
/* The following statement will be executed before compilation */
/*OMX* OVRDBF FILE(PF1A) TOFILE(PF1) */
.
```

Compilation parameter overrides

You can specify compilation parameter override statements within any source member. These statements override any generic compilation command string specified against the object reference id.

Such override statements must adhere to the following rules:

- All statements must be coded as comment statements at the very top of the source member, before any other statement.
- Each statement line must include the string '/*CPL*' (or '.**CPL* for UIM source members) at the beginning of the statement. In the case of a CL source member, the statement can end with the end-comment string '*/'.
- Each statement line can contain one or more sets of parameter name & value in the form of: PPP...(XXX...) where 'PPP...' is the parameter name, and 'XXX...' is the value to be assigned .
- Any number of statement lines can be coded.
Compilation parameter override statements in RPG source

<pre>/*CPL* USRPRF(*OWNER) /*CPL* ALWNULL(*YES)</pre>	OPTION(*SRC	*XREF) IGNDE	ECERR(*YES)	
V001 F* V001 FDSTLF2 IF E	ĸ	DISK	*	
V001 C *ENTR' V001 C	Y PLIST PARM	##GNAM	10	

Compilation parameter override statements in DDS source (PF)

/*CPL* W /*CPL* M A***	WAITRCD(120) WAITF MAXMBRS(*NOMAX) S *****	ILE(120) LVLCH IZE(1000 1000 ******	K(*NO) 50) MAINT(*REBLD) ********
A	R RCD1		
A* A	CENT	 1 A	TEXT('Century: $0=20$ th $1=21$ s
A	02111		COLHDG('Century' '0=20th' '

The specified values are incorporated into the default compilation command string when option **14=Compile** or **15=Pmt Compile** are selected in function WRKCROBJ, or when the object is recompiled while being promoted to a target environment.

Retaining file attributes after compilation

When you compile device and database files and you bypass compilation command prompts (by using action option **14=Compile**), the following object attributes as they existed before compilation are automatically re-applied:

- **DSPF**: MAXDEV, RSTDSP, DFRWRT, WAITFILE, WAITRCD, SHARE, LVLCHK.
- **PRTF**: DEVTYPE, PAGESIZE, LPI, CPI, OVRFLW, FOLD, RPLUNPRT, PAGRTT, JUSTIFY, DUPLEX, OUTPTY, ALIGN, PRTQLTY, PRTTXT, SPOOL, OUTQ, FORMTYPE, COPIES, MAXRCDS, FILESEP, SCHEDULE, HOLD, SAVE, WAITFILE, SHARE, LVLCHK, USRDTA.
- **PF**: MAXMBRS, MAINT, RECOVER, FRCACCPTH, SIZE, ALLOCATE, UNIT, FRCRATIO, WAITFILE, WAITRCD, DLTPCT, SHARE, LVLCHK.
- LF: MAXMBRS, MAINT, RECOVER, FRCACCPTH, UNIT, FRCRATIO, WAITFILE, WAITRCD, SHARE, LVLCHK.

Retaining data members after compilation

When you compile a database file, if the database file was previously created within the CR, an unconditional attempt is made to duplicate the existing database members and data into the newly created object.

- For physical files, the previously existing members are added to the newly created object, retaining attributes for MBR, SHARE and TEXT. The data is copied using the CPYF command with FMTOPT(*MAP *DROP).
- For logical files, the previously existing members are added to the newly created object, retaining attributes for MBR, SHARE, TEXT and DTAMBRS, thereby re-instating the member's data scope.

Re-compiling database dependencies in the CR work library

When you compile a physical file, database relations are automatically scanned. Dependent database objects existing within the CR work library are automatically re-compiled. If dependent objects exist outside the CR work library, the compilation process terminates with errors, and the existing file is not removed.

Re-compiling cross-referencing programs in the CR work library

When you compile a database file, and prompting is selected (by using action option **15=Pmt Compile**), the first prompt panel enables you to specify *YES or *NO for compilation of program cross-references. The default is *YES. When prompting is bypassed (using action option **14=Compile**) the default is *NO.

If program cross-reference is specified as *YES, a generic scan is performed on all programs that were created in the CR. All programs that make a reference to a record format level-id that is different from the current level-id of the same record format, are submitted for re-compilation.

Note that the scan is independent of the actual database object that triggers it off, i.e; all programs that require re-compilation are submitted, regardless of whether they refer to the specific database file that triggers the scan process.

Documenting source members

From function WRKCROBJ you can select action option **19=Document** to document your source member. When you select this option, command DOCCRSRC is prompted so you can select one of the following documentation options:

- ***HIST** For all source types, a source modification history table is inserted in the actual source as comment lines in the header portion of the source. The table header shows the member name type and source level (*BAS, *SIT xxx, or *GRP xxx). The table entries are sorted in descending version number sequence, and each entry shows:
 - Source version number
 - CR number
 - Retrieve type
 - Retrieve date
 - Assigned user
 - Associated release number
 - CR text

When you retrieve a member into the CR, the documentation might not show the most up to date values for the above items. This is because the above items can change since the last time documentation was generated. You can always re-execute the documentation option to update it with the latest values.

In addition to the above, for column oriented source members (RPG, DDS etc), all statement lines that you have modified in the context of the current CR are marked with the current version number. User data in columns 1-5 is overwritten.

- ***RPG** For RPG source members, iteration level documentation is included in the source in columns 60-73. User data in columns 60-73 is overwritten.
- *ALL Includes both *HIST and *RPG as above, and as appropriate to the source type.

Refer to Command DOCCRSRC on page 5-123.

General parameter @DOC can be used to specify which documentation option, if any, is automatically invoked after source compilation. Refer to *Maintaining general parameters* in the SEE/Change *Configuration Manager User and Reference manual*.

Also, when you configure an application, you can specify a strategy for cross-documentation that determines how occurrences of the same part in other applications are documented. Refer to *Working with the application details panel* in the SEE/Change *Configuration Manager User and Reference manual*.

Scanning and retrieving dependent and cross-referenced application parts

From function WRKCROBJ you can request a report, and optional automatic retrieval into the CR work library, of dependent files and cross-referencing application parts (that is, application parts that reference a specific database file).

You request the scan for a specific database file.

The function is automatically invoked when you retrieve the source of a database file into the CR. You can also request this function for any database file that was already retrieved into the CR by using action option **18=Scan DB Rel**.

The scan is performed in two steps:

- Database dependencies for the file are extracted from the application Module/Integration database library.
- Program usage of the database file and its associated dependencies are extracted from the application Live/Production program libraries.

When this function is invoked you are prompted to specify the following parameters:

Application code	The application code determines the scope for the program cross- references. You can specify:		
	appl code	All programs in the Live/Production program libraries of the specified application code are scanned. For standard applications, only one library is defined as the application Live/Production program library. For applications configured to handle site and/or group specific programs, the scan is performed for all Live/Production program libraries associated with all source levels. For further information on application configuration refer to <i>Configuration Manager User and Reference Manual.</i>	
	*ALL	All configured applications are scanned for program cross- references. For each application the above process is executed independently.	
	*NONE	Program cross-references are not included in the scanning process. Only database dependencies are scanned.	
Jobd for pgm libs	This job description is optional, and can be used to specify additional program libraries that are not configured against each of the selected applications. The libraries included under the INLLIBL parameter of the named job description in the Live/Production program library (as configured for the application) are also scanned for referencing programs. For example, if certain programs are regularly delivered to library QGPL, which is not included in the standard application configuration, you can create job description SCANPGMS in all application program libraries; in the INLLIBL parameter of SCANPGMS you specify QGPL. You can specify SCANPGMS as the job description name in t prompt. After the application Live/Production program library is scanned, an library name contained in the INLLIBL parameter of job description		

SCANPGMS is also processed as if it was another application Live/Production library. QGPL is therefore scanned for programs referencing the database file.

If the job description you nominate cannot be located in the application Live/Production program library, or if its INLLIBL is specified as *NONE, no additional program libraries are scanned.

Action code The action code determines the activity after the cross-referencing parts have been determined. You can specify:

- ***RPT** Report is generated. No further action is taken.
- ***RTV** Report is generated and an attempt is made to retrieve the source of the cross-referenced parts into CR work library.

When you select automatic retrieval, SEE/Change checks that the referencing parts belongs to the application being processed:

- For database dependencies, the application is the application associated with the originating CR
- For referencing programs, the application is the application being processed in the current step

If the source member is not registered in SEE/Change, or it is associated with a different application, the part is not retrieved. The retrieval process then checks whether the cross-referencing part is already under development. If it is, the part is not retrieved. If it is not currently under development, the CR into which the part is retrieved is determined as follows:

- Database dependencies are always retrieved into the originating CR.
- Cross-referencing programs belonging to the application of the originating CR are retrieved into the originating CR.
- Cross-referencing programs belonging to applications other than that of the originating CR are retrieved into new CRs that are automatically created under the same originating IR one new CR for each application.

Certain limitations apply to the retrieval process:

- A maximum of 199 database dependencies can be processed.
- A maximum of 99 CRs can be opened under any one IR. If in the process of automatically creating new CRs this limit is reached, no more CRs are created and no more parts are retrieved.
- For applications allowing site and/or group specific programs, only the first found version is retrieved. Parts in the CR library must have unique names and therefore multiple source versions of the same name cannot be retrieved into the same CR. In this case you will have to manually retrieve the required source members into different CRs.

- Program cross-references are scanned for an unqualified file name. All programs in the selected application referring to database file name are considered as cross-referencing programs. If you use the same file name in different applications (and in different database libraries), it is advisable to execute the scan database relations separately for each application, each execution requested from a CR belonging to each application.
- It is advisable to first run the scan database relations function in report mode (action *RPT) to verify the extent of database dependencies and cross-references before actually requesting the retrieve option.

Managing non-source based objects

You can include OS/400 objects are not associated with source members in the CR. When you prompt for a list of valid object reference ids, you can identify non-source based objects as those ids with unspecified source usage.

Retrieving objects

You can request non-source based object retrieval from function WRKCROBJ by using the generic action option **1=Retrieve**. When you select this option against an object reference id for a non-source based object, the program attempts to register the application part under the CR, and duplicate the object from its current library into the CR work library.

You are prompted to specify the *From Library*. You can either specify a library name, or use the default keyword *CFG, which indicates that the application configuration information is used to determine the current object location, as follows:

- For database objects, it is the application Module/Integration database library.
- For program objects, it is the application Live/Production program library.

If the object is not found in the specified *From Library*, you are prompted to indicate whether you wish to create the object in the CR work library.

Handling compiled objects as non-source based objects

You can retrieve into the CR an object that is usually associated with a source member as a non-source based object. This can be useful if, for example, you want to optimize or remove observability of a program object without changing or re-compiling its source, or similarly change one or more of the device attributes of a printer file without re-compiling it.

A number of object reference ids are supplied for this purpose. They are:

CMD-NOSRC DSPF-NOSRC ICFF-NOSRC LF-NOSRC PF-NOSRC PGM-NOSRC PRTF-NOSRC

Managing message files

Message files are handled differently than other non-source based objects:

- Change management locks are not applied to message files. Any message file can be registered under one or more CRs under development at the same time, provided that all CRs are for the same application.
- When a message file is created, or retrieved for the first time, the object is created or duplicated into the library that has been configured as the message file library for the CR's application. SEE/Change also creates or updates a set of internal indices that link the message file to the CR's application. SEE/Change disallows any subsequent attempt to retrieve the same message file in the context of a different application that uses the same message file library.
- A message file's name must be unique across all applications that share a common message file library. This means that message files that have the same name can be separately developed under different applications within the same SEE/Change environment, provided that a different application message file library is configured for each application.
- A message file can be retrieved and registered under all CRs for the same application. Changes to message ids by users of different CRs are made in the same message file, using the SEE/Change message edit utility, which is invoked when action option **2=Edit** is selected in function WRKCROBJ.
- When you configure the application, you can specify the preferred message file operation as either Merge (*MRG) or Duplicate (*DUP). Refer to *Configuring applications* in *Configuration Manager User and Reference Manual*. If *MRG is specified, then the message file is merged into the message file of the same name in the target program library when the CR is promoted. If the message file does not exist, it is duplicated into the target program library from the Save Library. If *DUP is specified, then the existing message file is deleted and the message file is unconditionally duplicated into the target program library.
- Action option **4=Delete** in function WRKCROBJ de-registers the message file from the CR. When deleted, the message file is no longer part of the CR, and accordingly it will not be promoted with the CR. The actual message file object and associated indices in the message file library remain untouched.
- To break the association between a message file and its current application, use function DLTAPPMSGF, which will remove the message file object and associated indices from the message file library. Then, you can create or retrieve the same name under a CR for a different application. Refer to *Command DLTAPPMSGF* in *Configuration Manager User and Reference Manual*.

Managing menu objects

The following object reference ids can be associated with an AS/400 menu:

MENU	The menu object that links a display file and a message file.
MENU-PGM	The menu object that invokes a user-defined program.
MNUDDS	The display file object and its DDS source member.
MNUCMD	The message file object and its special source member.

MENU and MENU-PGM can be used to access the non-source-based menu objects, to change parameters like CMDLIN and DSPKEY - in case source changes are not required for the menu appearance and/or commands.

MNUDDS and MNUCMD can be used to access the menu source, for panel DDS and menu commands. When you retrieve the source into the CR work library using action option **1=Retrieve**, both source members are retrieved at the same time. When you use action option **17=SDA/RLU** SDA session is invoked; when control is returned, the menu object (MENU) is automatically registered for the same name. If you do not need the MENU object, because it already exists in target environment(s) and does not require any changes, you can remove it from the CR using action option **4=Delete**; in this case only the display file and message file objects are promoted with the CR.

The source for MNUCMD is held in source member name xxxxxxQQ, where xxxxxxx is the menu, display file, message file and MNUDDS source member name.

Two object reference ids can be associated with SYSTEM/36 environment menu:

MNU36	The display file object and its SFGR source member.
MNU36-MSGF	The message file object and its special source member.

When you retrieve MNU36 source into the CR work library using action option **1=Retrieve**, both source members are retrieved at the same time. The MNU36-MSGF member name is xxxxx## where xxxxx is the menu name. When you use action option **17=SDA/RLU**, SDA session is invoked (SYSTEM/36 style); when control is returned, MNU36-MSGF is automatically registered (with the name xxxxx##). If you do not need the MNU36-MSGF object, because no changes are made to the menu commands, you can remove it from the CR using action option **4=Delete**; in this case only the display file object is promoted with the CR.

When creating a new SYSTEM/36 menu, the source members for MNU36 and MNU36-MSGF are empty and SDA will default to free-format menu selection. If you wish to create a fix-format menu, use the delete option within SDA to remove the existing members; thereafter SDA will default to fix-format menu selection when entering the panel layout function.

Preparing the CR for promotion

When you have completed all development work for a CR, you change the CR status to *TST (Ready for Testing) in order to progress it through the change management cycle. You can do this by using option **2**. **Exit Rdy Tst** from the exit pull-down menu of function WRKCROBJ, or by using action option **14=Chg CR *TST** from function WRKCRDEV.

This indicates to the change control coordinator that the CR can be promoted. If you change the CR status to *TST, and then you need to do further development work, you simply select the CR using action option **12=Wrk with CR** from function WRKCRDEV. The CR status is automatically changed back to *DEV.

When SEE/Change changes the CR status to *TST, it performs a series of integrity checks of the CR library. These checks can be executed independently, and on demand (using option **14=Check CR** from the status pull-down menu of function WRKCROBJ), so you can anticipate the problems you might have when you need to flag the CR as Ready for Testing.

The CR is the basic unit you can promote. When you promote the CR through the change management cycle or allocate it to a release, all application parts registered under the CR are promoted. Generally, the application configuration determines the processing and target destination for each application part. However, there are a number of facilities that allow you to override or extend the standard delivery processing as defined by the application configuration:

• You can write your own programs to be automatically executed either before or after the CR promote processing. This, in effect, enables you to extend the standard change management activities to include your own special requirements. These programs are referred to as *BEFORE, *AFTER or *LOAD programs. Refer to *Developing *BEFORE, *AFTER and *LOAD processes* on page 5-48.

You can develop such programs and assign them permanently to the application, or only to a specific CR. If assigned to the application, they are automatically executed whenever any CR belonging to the application is promoted.

• Normally, physical files are promoted without data, and the existing data in the target library is mapped over the new physical file description. In cases where you that to distribute data, you can either use the configuration overrides facility to specify that data is always included with specific physical files; then, data from the CR is distributed and existing data in the target libraries is replaced.

Alternatively you can register virtual object reference id CRDTA under the CR. CRDTA is a physical file that is not promoted, but is copied into the release packet with its data members. Then, you can write a *BEFORE or an *AFTER program to copy or distribute the data included in the CRDTA file.

- You can override the application configuration for each application part. You can, for example, specify that a certain program is targeted at library QGPL instead on the program library that was configured for the application. You can also specify that a certain application part is to be re-compiled whenever it is promoted while the re-compilation feature is turned off on application level. Refer to *Overriding the application configuration* on page 5-53.
- Finally, you can specify at each local system, specialised processing that is executed when a certain object is installed at a certain local library. You can specify these object level delivery processes for a specific qualified object, all objects of a certain type in a certain library, all objects in a certain library, all objects of a certain type, or for all objects being installed at all local libraries. While *BEFORE and *AFTER processing execute the same process at each network location, the object level delivery processing facility enables you to specify different execution strings at different systems. This may be useful if, for example, you promote a printer file and at each network location you need to adjust the

printer file object for different formatting options. For further details on how to specify object level processing, refer to *Specifying object authorities and processing templates* in *Configuration Manager User and Reference Manual*.

Using virtual object reference id CRDTA

Object reference id CRDTA is a physical file that is registered under the CR as a non-source based object in the normal way, but that does not participate in the change management cycle. its main purpose is to provide a vehicle for data distribution.

You can either create the file in the CR library, or retrieve it if it already exists in the application context. If you use the default value of *CFG for parameter *From Library*, the program attempts to create a duplicate of the object from the application Live/Production program library. Data is not automatically duplicated.

When you have registered it under the CR, you can create members and load data into the file as required.

When a release packet is created, the file with its current data members in the CR work library is copied into the release packet. If the CR work library has already been erased when release packaging occurs, or if the CR has already been promoted to the Live/Production environment and *LATEST version is selected when the CR is allocated to the release, an attempt is made to copy the data from the same file name in the application Live/Production program library. If the file cannot be located there, an attempt is made to find the file in each of the local site's Live/Production database libraries (in site sequence). If the file cannot be located, an error will occur and the release packet creation job will terminate with errors. For further information about release packaging, refer to *Working with Releases* in *Release Manager User and Reference Manual*.

Developing *BEFORE, *AFTER and *LOAD processes

Sometimes it is necessary to perform a specific process before or after a CR is promoted. For example, the CR might contain database changes, and data conversion programs have to be executed to initialise new fields.

You can develop these processes in programs whose names follow a special convention described below. When the CR is promoted, if these programs can be located in either the Live/Production environment, the CR work library or release packet, they are executed - once for each target database environment.

You can develop programs that are associated with a specific CR (including LANSA CRs), and are executed in conjunction with the promotion of that specific CR, or programs that are associated with the application and are executed in conjunction with the promotion of each CR belonging to that application.

There are three types of processes that can be developed:

- ***BEFORE** The process to be executed before any of the application parts registered under the CR have been promoted.
- *AFTER The process to be executed after all of the application parts registered under the CR have been promoted successfully. It is not executed if one or more errors were encountered during the promotion of any of the CR application parts. At the development centre, the *AFTER process is executed after completion of all promote operations and before source pool update operations.
- *LOAD The process to be executed in the context of release packet creation after all of the application parts registered under the CR have been loaded successfully into the release packet.

The following table shows the program names and the order in which they are invoked, where *xxxxxx* is the IR number, *yy* is the CR sequence number and *aaa* is the application code:

Type of process	Program level	Program name	
*BEFORE	CR level	@Bxxxxxyy	
	Application level	@Baaa	
*AFTER	CR level	@Axxxxxyy	
	Application level	@Aaaa	
*LOAD	CR level @Lxxxxxyy		
	Application level	@Laaa	

You can automatically create a source template for each of the above programs by using option **33. Crt templat** from the status pull-down menu of function WRKCROBJ.

The Command Language Program (CLP) source templates that are generated include all the mandatory input parameters, the documentation for these parameters, and code structure suggestions in comment lines.

The following entry parameters must be specified in the following order:

System	3A	The system code of the system where the program is executed.
Movement type	4A	For *BEFORE/*AFTER programs, it can be either: *MDL Promote to Module/Integration - locally *ACP Promote to Acceptance/QA - locally *LIV Promote to Live/Production - locally *IAC Promote to Acceptance/QA - from release packet *ILV Promote to Live/Production - from release packet
		For *LOAD programs it is always *RLS (Create release packet)
Target Pgm library	10A	The name of the program library that will receive the program object. For *LOAD programs it is the release packet library.
Target Db library	10A	The primary database library name that is included in the library list while the program is executed. For *LOAD programs it is the Module/Integration database library at the development centre.
Site	3A	The site code associated with the database and library list being used when the program is executed. For *LOAD programs it is the development centre site code.
Originating library	10A	For movement types *ILV and *IAC it is the release packet library name; for movement type *LIV at production systems it is the Acceptance/QA program library; for all other movement types it is the CR work library name.
		For *LOAD programs, if the release is packaged after the CR library has been removed, this parameter is initialised with the application live program library.
Run count	3A	The run count. The program is executed once for each site configured to use the application environment. The first time the program is run, this parameter is set to 001. You can use this parameter to limit execution to one run per CR movement.
		For *LOAD programs it will always have the value of 001, since the load to the release packet is performed only once.
IR system	3A	The system code where the IR was raised.
IR number	6A	The IR number.
CR sequence	2A	The CR sequence number.
Release number	5A	The release number (if the CR is already allocated to a release).

There are a number of issues you should consider before developing and using these programs:

• Accessing the application configuration It is sometimes necessary to access the application configuration information, for example, to manage the distribution of data in CRDTA files when promoting a CR to the Live/Production environment at a production system - then you need to get the Acceptance/QA database library that contains the data you want to duplicate into the Live/Production environment.

Command RTVTHNCFG retrieves the configuration data into data area QTEMP/THNCFG. After successful execution of the command, your programs can access QTEMP/THNCFG and pick the required data elements. An optional code section in the template demonstrates how you can use this command.

Command RTVTHNCFG returns the name of the Mdl/Integration database library configured for the specific site being processed. If no Mdl/Integration database library is configured for that site, the name of the configured for the application's development centre site is returned. If the application's development centre site Mdl/Integration database library name is blank, this means there is no Mdl/Integration library for the application, and the returned library name is blank.

For a full description of command parameters, refer to Command RTVTHNCFG on page 5-129.

- **Error handling** In the template, an optional code section enables you to control the CR promotion completion status. If message CPF9899 is sent as an escape message to previous invocation, the CR movement/promote operation ends abnormally, and the CR status indicates an error condition.
- **Transfers** If you transfer a CR level *BEFORE, *AFTER or *LOAD program to a different CR, you must rename it to reflect the new CR number in the program name, otherwise they will not be executed.
- **Customising the source templates** The source being used for the generation of *BEFORE, *AFTER and *LOAD templates is stored in CLP source member names @BEFORE, @AFTER and @LOAD in source file O#SRCTYP in the SEE/Change object library. You can modify these members to include your own requirements. You can change all source lines after the PGM statement. Do not change any source line before the PGM statement, since these are manipulated when you request the automatic creation of a template.

Checking the CR library

CR integrity checks are automatically performed when the status of a CR is changed to *Ready for Testing* (*TST), and when a movement/promote request is selected for a CR that is in the status of *Ready for Testing* (*TST). You can also request these checks on demand using option **14. Check CR** from the status pull-down menu of function WRKCROBJ.

The checking process can result in one or more errors and/or warnings. When you execute the job interactively and only warnings are detected, these warnings are shown and you can elect to ignore them. When you execute the job in batch, warnings are assumed to be ignored, but the completion message indicates that one or more warnings exist.

Whenever the checking process is executed, all error and warning messages generated are stored in message queue CHKLOG in the CR work library. You can view the message log of the last execution of the checking process by using option **65**. Check CR log from the status pull-down menu of function WRKCROBJ, or the same action option from functions WRKCRDEV and WRKCHGRQS (which is the *Change Manager* function from where CR promotion can be requested).

The following checks are performed:

- For every application part registered under the CR, an object and/or source member with the same name exists in the work CR library. The exception to this are message files, which are managed in the application's message file library.
- For every part registered under the CR as a part with source usage *COMPILE, the *last source update date* as recorded in the member is not later than the *source change date* as recorded in the object.

When you transfer an application part from one CR to another, the *last source update date* is unconditionally changed by the copy operation. If you do not re-compile the part in the target CR, source and object date differences will be detected when you execute these checks. General parameter SCHK enables you to control whether these conditions are treated as errors or as warnings that can be ignored. Refer to *Maintaining general parameters* in *Configuration Manager User and Reference Manual*.

- For every database file registered under the CR, at least one member is created. For files with no members an attempt is made to add a member with the same name. If this member cannot be added, an error is generated.
- For every database file registered under the CR, all dependent database files (as they exist in the Module/Integration library) are also registered under the CR. If one or more dependent files are not included in the CR, a warning is generated.
- For every database file registered under the CR, none of its related database files are being modified in the context of a different CR. An example of related database files is two logical files that are based on the same physical. If one or more related files are being changed elsewhere, a warning is generated.
- No frozen source members are registered under the CR.

- All import entries for the CR (in the import file) have been fully imported. Refer to *Importing external application parts* on page 5-22.
- No locks are active for the CR library by any job other than the current job.

You should take note of the consequences of ignoring the database dependency checks:

- A logical file **must be re-compiled** when the CR is promoted if it is to be based on a physical in another library, either as a consequence of overriding the object configuration, or due to a definition of the logical file as a site/group specific object based-on a base application physical file. The dependency checks will alert you to this condition if re-compilation was not elected at either application level or object override level. If you ignore this condition, the logical file will be duplicated into its target library retaining its current dependency, i.e; the object in the target library will be based on the same data file(s) as the object in the CR library.
- If not all dependent logical files (as they exist in the Module/Integration database) are included in the CR, the logical files that do exist in the target database but were not included in the CR will end up with dependency over the old version of the physical file.

For example, in Module/Integration you have a physical file PFA with three dependent logical files: LF1, LF2 and LF3. You retrieve PFA, LF1 and LF2 into one CR1, but not LF3. When you promote CR1 to the Module/Integration environment, the new version of PFA, LF1 and LF2 will be installed successfully in the Module/Integration library, but the movement transaction of PFA will indicate the completion status of *CHK - i.e; the temporary work library contains the old version of PFA that cannot be removed due to its existing dependency pointer to LF3 in the Module/Integration library. Now you retrieve LF3 into CR2 and promote CR2; LF3 will be installed successfully in the Module/Integration library, based-on the new PFA, and the transaction work library containing the old version of PFA is now automatically removed.

In the same scenario, when you promote the CR to the Live/Production environment, and assuming you have configured one or more archiving levels, the old version of PFA is stored in an archive library with a dependency pointer to LF3 in the Live/Production database library. All movement transactions will indicate the completion status of *OK, since there is no attempt to remove the old version of PFA at this point. However, in subsequent change cycles for PFA, when the original archived version of PFA is due for deletion, the program will not be able to remove it due to its dependency pointer to LF3. A message will be generated in the movement error log informing you of this eventuality.

You should also note that in the above example, if you retrieve LF3 into CR2 before CR1 was promoted, LF3 in CR2 will be based on the old version of PFA. You will, therefore have to re-compile LF3 in CR2 after CR1 has been promoted, before promoting CR2.

Overriding the application configuration

You can override certain application configuration details for a specific application part. You can maintain the overriding details using action option **22=Overrides** from functions WRKCROBJ, RTVCRSRC, or from function DSPCROBJ, which shows a list of application parts under the CR and can be requested from a number of *Development Manager, Change Manager* and *Release Manager* functions.

The override details you specify are recorded permanently against the application part. They are not recorded against the CR. After you specify the overrides, they are used for every movement/promote operation of that application part, regardless of the CR context. To cancel the overrides you must explicitly remove them. To remove overrides, you request the override facility for the application part and then use the delete command key.

When the application is configured, you specify whether override details are included in the release packet and distributed to remote systems. If distributed, you can specify, at the development centre system, override details for the local system and for each of the remote systems using the application. The details for the remote systems are included in the release packet and are installed at each remote system before installing the software included in the release. If not distributed, you can specify local override details only.

You can override the following configuration items:

- The Live/Production library name. For base application database objects you can specify keyword *BYPASS to bypass a specific site database library.
- The Acceptance/QA library name. For base application database objects you can specify keyword *BYPASS to bypass a specific site database library.
- The Module/Integration library name. This item can be overridden only at the application development centre system.
- For physical files, whether existing data is retained, or data from the CR library is distributed to all target sites.
- For source based application parts, whether the source member is distributed, i.e; whether it is loaded to the release packet at the development centre and whether it is unloaded from the release packet at remote systems.
- For application parts that can be compiled, whether the object is re-compiled instead of being moved or duplicated.
- For application parts that are re-compiled, the application job description name for the recompilation.

Organising your application database - warnings and recommendations

Database relationships and dependencies can be set up on the AS/400 in varying degrees of complexity.

To secure simple, manageable, and trouble-free change management operations, it is strongly advised that you adopt the following recommendations:

- Ideally, you should structure the application configuration so that all related database files, both physical and logical, reside in the same library.
- Ideally, you should avoid defining site/group specific database files. Alternatively, it is recommended that you use the *BYPASS option in the configuration override facility to deliver a certain base level file only to certain sites, instead of defining the file as a site/group specific file.
- If you opt to use alternative complex structures, you should always verify all database object movement and error logs, which are generated by the CR promotion mechanism, to ensure correct implementation. It is also recommended that, as a matter of course, you check database relationships of the database files you have implemented using OS/400 commands DSPFD and DSPDBR.

This function enables you to access existing CRs that are open for development and are allocated to your user or group profile.

How to get into this function

Menu/Option: SEEDEV / 1 Command: WRKCRDEV

List panel viewing and manipulation

SEE/Change Testing Environment Flt: *NONE Work Change Request Development 5=Display CR 8=Display obj 9=Display IR 12=Wrk with CR 13=Wrk CASE 14=Chg CR *TST 27=User text 28=Dev text 29=IS text 31=Crt CR lib Opt Ptv IR/no CR Text Applicat/n Status *URGT 100335 05 A Version Numbering Test Demo appli Developmnt *VHI 100353 01 RC JIS rtvsrc pass 1 cr *VHI 100353 03 rc jis pf change Demo appli Developmnt *NOLIB Demo appli Developmnt *VHI 100353 04 Crtd by SCNDBREL for BASPF *NOLIB Lansa Inte Testing *VHI 100353 05 this cr for pgm 1 *VHI 100353 08 RC JIS rtvsrc pass 100353 08 RC JIS rtvsrc pass 1 cr 100352 02 vovra trained *NOLIB Lansa Inte Developmnt Demo appli Developmnt *VHI 100352 02 xovra test *NOLIB Demo appli Developmnt 100352 06 jis diff ir cr already rtvd 1 *NOLIB Lansa Inte Developmnt *VHI *HIGH 100297 08 Lansa again *LANSA Lansa Inte Developmnt *NOLIB Lansa Inte Developmnt ____ *HIGH 100297 11 another ordinary cr *HIGH 100042 08 Keep the IR open *NOLIB Demo appli Testing ____*HIGH 100042 16 emg cr *NOLIB Demo appli Developmnt More F1=Help F3=Exit F4=Prompt F5=Refresh F9=Cmd F11=Change seq F12=Cancel F14=Curr flt F21=Filter F22=Status F23=More options F24=Msgs

This panel shows all CRs in the status of *DEV or *TST that are allocated to your user or group profile. If a data filter is attached to your enrolment record, only CRs that satisfy the assigned filter specifications are shown.

The CRs are listed in descending priority and IR number sequence. You can use **F11=Change seq** to change the CR list panel sequence to strict IR/CR number sequence.

Selecting CRs and positioning the CR list

You can use the input fields below the column headings to specify criteria for searching and selecting CRs for display. These input fields are consolidated with any filtering specifications that might be in force against your enrolment record.

The following are the selection criteria items you can specify:

Pty and IR/CR	If the list is in descending priority sequence, the list can be positioned from a certain priority. You can use F4 to prompt and select from a list of priority mnemonics. If you also specify a CR number, the list is positioned from the first CR number equal to or less than the specified number within the selected priority.
	If you leave the priority input field blank and specify a CR number, the program attempts to locate that specific CR number. If the CR cannot be located, an error condition occurs. Otherwise, the list is positioned with the priority mnemonic and CR number of the specified CR.
	If the list is in strict IR/CR number sequence (i.e; F11 was pressed after the initial panel is shown), the priority input field is not shown, and you can use the IR/CR input field to position the list from the first CR number equal to or less than the specified number.
Text	The <i>CR summary</i> text is searched. You can enter a maximum of 5 words, and all CRs that contain one or more of these words anywhere in this field are shown.

To revert to the full list, blank out all the search items and press enter.

The highlighted constant *NOLIB appears at the end of the CR text if a CR library does not exist. These CRs cannot be selected for action option **12=Work with CR** until a CR library is created using action option **31=Crt CR lib**.

For CRs that are CASE tool based, the CASE tool id is shown at the end of the CR text. Object development for these CRs is performed in the appropriate CASE environment. To access the CASE environment you can use action option **13=Wrk CASE**.

Filtering

If a data filter is assigned, the filter name is shown in the top right corner of the panel (next to the mnemonic **Flt:**). If no filter is assigned, *NONE is shown. Refer to *Data filtering* on page 5-13. You can:

- Show the filter pull-down menu, which enables you to change an active filter or select a different filter, by using **F21=Filter**.
- Use **F14=Curr flt** to bypass the pull-down menu and go directly to the *Work with Data Filters* panel, which enables you to change the currently assigned filter.

Filtering pull-down menu

The following pull-down menu is displayed when you use **F21=Filter**.

: Filter Options	. SEE/Change Testing Environment : ork Change Request Development :	Flt: RICHARD
: 1. Maint *CURR : 2. Use *USRPRF : 3. Use *GRPPRF	: lay obj 9=Display IR 12=Wrk w : text 28=Dev text 29=IS te :	with CR 13=Wrk CASE ext 31=Crt CR lib
: 4. Use *SELECT	:	Applicat/n Status
: : : : :	<pre>: rsion Numbering Test : IS rtvsrc pass 1 cr : is pf change *NOLIE : by SCNDBREL for BASPF *NOLIE : cr for pgm 1 *NOLIE : IS rtvsrc pass 1 cr : a test *NOLIE : diff ir cr already rtvd 1 *NOLIE</pre>	Demo appli Developmnt Demo appli Developmnt Demo appli Developmnt Lansa Inte Testing Lansa Inte Developmnt Demo appli Developmnt Demo appli Developmnt
: : : : : F1=Help F12=Cancel	: a again *LANSA : her ordinary cr *NOLIE : the IR open *NOLIE : cr *NOLIE :	Lansa Inte Developmnt Lansa Inte Developmnt Lansa Inte Developmnt Demo appli Testing Demo appli Developmnt More
: :	: ompt F5=Refresh F9=Cmd F11=Cha : t F21=Filter F22=Status F23=Mc	nge seq pre options F24=Msgs

1=Maint *CURR	Maintain the current filter. Subject to whether you are authorised to make filter changes, this option enables you to change the current filter specifications.
2=Use *USRPRF	Assign a filter with the same name as your user profile to be your current filter.
3=Use *GRPPRF	Assign a filter with the same name as your group profile to be your current filter.
4=Use *SELECT	Select a filter name from a list of available filters to be your current filter.

Filtering specifications

Enter the codes to which the use IR/CR Applications (P):	r is restricted: 		
IR Sites/Locations (P):			
IR Categories (P):			
CR Types (P):			
Fl=Help F3=Exit F4=Prompt F5=	Refresh F9=Cmd	F12=Cancel	F24=Messages

This panel is displayed when you choose to change the current filter.

You can specify lists of application codes, site codes, IR category codes and CR type codes. The main list panel is refreshed showing only CRs with details matching the codes you have specified in these lists.

If you have changed the original filter assigned to you, you can use F5 to refresh the current filter with its original specifications.

Action codes

You can select one of the following action codes:

5=Display CR	Display CR details as entered by change control personnel. Refer to <i>Displaying IR/CR details</i> on page 5-61.
8=Display obj	Display details of application parts currently registered under the CR. Refer to <i>Displaying CR application parts</i> on page 5-63.
9=Display IR	Display IR details as entered by the user. Refer to <i>Displaying IR/CR details</i> on page 5-61.
12=Wrk with CR	Work with application parts in the CR work library. Refer to <i>Developing application parts in a CR</i> on page 5-81.
13=Wrk CASE	Invoke a development session using the CASE tool specified for the CR. Refer to <i>Using CASE tools</i> on page 5-14.
14=Chg CR *TST	Change the CR status from *DEV (Under Development) to *TST (Ready for Testing). By changing a CR status to *TST you indicate to the change control coordinator that you have finished development work and that the CR can be promoted. A CR cannot be promoted while it is in the status of *DEV.
27=User text	Display user text. User text is entered when an IR is created. It normally contains a text description of the associated problem or request. User text can only be maintained via <i>Problem Manager</i> function WRKINVRQS (Work with Investigation Requests).
28=Dev text	Edit development text. Development text is associated with the CR. It is an internal IS document containing technical information associated with the CR work. It can be maintained here by CR developers, and via <i>Change Manager</i> function WRKCHGRQS (Work with Change Requests).
29=IS text	Edit IS text. IS text is associated with the IR. It enables IS to respond to user problems, and/or provide additional information for the users regarding the fixes provided by IS. It can be maintained in this function and via <i>Change Manager</i> function WRKCHGRQS (Work with Change Requests). Users can display this document via <i>Problem Manager</i> function WRKINVRQS (Work with Investigation Requests).
31=Crt CR lib	Create the CR library if it is not already created. Refer to <i>Creating the CR work library</i> on page 5-15.
35=Import	Import external objects and source members are already registered in SEE/Change's import file, into the CR library.
	Refer to <i>Importing external application parts</i> on page 5-22, and <i>Command IMPORT</i> on page 5-125.
36=Import lib	Scan external library objects and source members, register them in SEE/Change's import file, and optionally import them into the CR library.

	Refer to <i>Importing external application parts</i> on page 5-22, and <i>Command IMPORTLIB</i> on page 5-127.
37=Upd imp reg	Manipulate SEE/Change's import file entries. This is a utility command that can be used to manipulate the data in import entries, which cannot be executed successfully.
	Refer to <i>Importing external application parts</i> on page 5-22, and <i>Command UPDIMPREG</i> on page 5-133.
65=Check CR log	Display all messages generated when you last checked the CR. Refer to <i>Checking the CR library</i> on page 5-51.

Displaying IR/CR details

This function enables you to display details of IRs and CRs.

How to get into this function

Menu/Option:	SEEDEV / 1, then 9=Display IR or 5=Display CR
Command:	WRKCRDEV

The following panel shows IR details:

SEE/Change Testing Environment Work with Investigation Request Details Request number : 100335 Entered by: RICHARD 2/03/99 Request Summary Text . . . : Bispedition Before Program Testing CRs 2/03/95 10:24:16 Request Detailed Text. . . : 1 changed the text 2 3 4 5 6 7 8 More... Main function. No alternative. <code>Fl=Help F3=Exit F9=Cmd F10=Position text Fl1=Search F12=Cancel F17=Top F18=Bottom</code>

The following panel shows CR details:

Work with Change Request Details
Change Request Number . . : 100335 / 05
Change Application . .(P): AP1 Demo application 1 *
Request Summary Text . . : A Version Numbering Test
CR Type(P): *EMG Emergency Fix
Contact Reference . . . :
IS Priority(P): *URGT Urgent
CR CASE Tool(P): *NONE
Estimated Hours :
Estimated Cost :
Assigned User/Grp Profile : RICHARD
Planned concurrent dev ? . : *NO *YES/*NO
Library list level . . .(P): *BAS Application Base Level
Retrieval Restriction . . : *NO *YES/*NO/*LVL
Current Status / Date . . : *DEV - Developmnt: Under Development 11/04/95
Assigned Release Number . : *N/A
Fl=Help F3=Exit F9=Cmd Fl2=Cancel Fl6=Bypass

Displaying CR application parts

This function enables you to display all application parts registered under a CR.

How to get into this function

Menu/Option:	SEEDEV / 1, then option 8=Display obj
Command:	WRKCRDEV

List panel viewing and manipulation

5=Display	SEE/(11=Transfer	Change Testing Environment Display CR Objects 20=Movements 21=History 22=Overrides
CR : SY1 : Appl : AP1 I Status: *DEV	100335 / 05 Demo appli 11/04/95	A Version Numbering Test Contact Ref: Assigned to: RICHARD Pty: *URGT Rls: *N/A
Act Object	Ref Id (P) Tez	xt
@AAP1 AP1CL	CLP *AI CLP V00	FTER program for CR deliveries to app AP1 01 100042/06
		Rottom
Fl=Help F3=1	Exit F4=Prmpt	F5=Rfrsh F9=Cmd F11=Chg view F12=Cancel

The panel shows the CR details followed by the name, type (Object Reference Id) and description of the parts contained within the CR. You can use **F11=Change view** to show more details of the part(s).

The following panel is shown:

5=Display	S 11=Trans	EE/Change T Displa fer 20=	Testing En ay CR Obje -Movements	vironment cts 21=Hi	story	22=Overrides
CR : SY1 Appl : AP1 : Status: *DEV	A Vers Contac Assign	sion Numbe ct Ref: ned to: RI	ering Test CHARD	Pty: *UR	GT Rls: *N/A	
Act Object	Type (P)	Attr (P)	Level	Ver Rtv	status	Additional Info
@AAP1 AP1CL	*PGM *PGM	CLP CLP CLP	*BAS *BAS	005 *CHG 025 *EMG	3 12/04/95 3 12/04/95	Dist: Obj & Src Dist: Obj & Src
F1=Help F3=	Exit F4=Prm	pt F5=Rfrs	sh F9=Cmd	l F11=Chg	yview Fl	Bottom 2=Cancel

The part name and reference id are shown, along with the following:

Level	The part level within the application.		
	*BAS *SIT xxx	Applicat Site spec	ion base level. fic level. xxx indicates the site code.
	*GRP xxx	Group s	pecific level. xxx indicates the group code.
	Non-source base	ed parts a	re always registered as base application parts, i.e; *BAS.
Ver	The source version retrieved into a Coversions are assigned Live/Production of 1.	on numbe CR. If the gned the s environm	r. The source version is updated every time the member is member is under concurrent development, all concurrent same version number; later, when the CR is promoted to the ent, the version number of all other versions is incremented by
Rtv status	The retrieval type and date. Refer to the retrieval status code table on page 5-19.		
Iditol info	Additional information, as follows:		
	Orig: xxxxxxx	x	Original source member name of a frozen source member.
	Overrides Exis	st	Configuration overrides may affect source distribution and re-compilation. You can use action option 22=Overrides to view these overrides.
	Dist: Obj		Only object will be distributed to remote production systems.

Dist: Obj and Sac	Object and source will be distributed to remote production systems.
Dist: Sac	Only source will be distributed to remote production systems.
Dist: Sac/Compl	Only source will be distributed and re-compiled at each remote production system.
Dist: Compile	Source will be distributed and re-compiled at each remote production system, and removed after compilation.

Action codes

You can select one of the following action codes:

5=Display	Display the source member. The member and source file are searched in the following order:			
	 CR work library. The target library as recorded in the last movement/promote transaction for the selected member. The current live source pool for the selected member type. 			
20=Movements	Display the movements of the part within the context of the current CR. All movement/promote transactions that have not been purged are displayed, showing the movement/promote characteristics and completion status. Refer to <i>Displaying application part movements</i> on page 5-71.			
21=History	Display the part's CR history. All occurrences of the part within any CR for any application are shown. Refer to <i>Displaying application part history</i> on page 5-67.			
22=Overrides	If you have authority, you are able to specify configuration overrides for the part. If you do not have the necessary authority, you can only display the overrides. Refer to <i>Specifying configuration overrides</i> on page 5-75.			

Displaying application part history

This function enables you to display an application part's accumulated change history. All occurrences of the part within any CR for any application are shown.

How to get into this function

Menu/Option:	SEEDEV2 / 2
Command:	DSPOBJHST
Menu/Option: Command:	SEEDEV / 1, then options 8=Display obj , 21=History WRKCRDEV

Selection criteria

The following panel is displayed when you select option **2 Display object history** from the Development Manager secondary panel, or when you run the command DSPOBJHST.

Dis	splay CR Object History	(DSPOBJHST)
Type choices, press Ente	er.	
Object Name: Object Type: Object Attribute:		Name Character value Character value
F3=Exit F4=Prompt F! F24=More keys	5=Refresh F12=Cancel	Bottom F13=How to use this display

Parameters for command DSPOBJHST are prompted if a part name was not previously selected.

Object Name	Specify the name of the part for which you need to display CR reference details. This field is mandatory.
Object Type	Specify the object type of the part for which you need to display CR reference details. If you leave this parameter blank, you are shown details for the first part that matches the entered object name value.

Object Attrib

Specify the object attribute of the object for which you need to display CR reference details. If you leave this parameter blank, you are shown details for the first part that matches the entered object name and type values.

The following panel is shown. The input fields at the top allow you to change the values of the Object Name, Type and Attribute. The Type and Attribute fields, or just the Attribute field, can be left blank and you will be shown history for the first part that matches the data entered.

SEE/Change Testing Environment Display Object History 5=Display CR 8=Display IR 9=Rls distrib 10=Network sts 20=Movements 21=CR Auth Hist 27=User text 28=Dev text 29=IS text __ Type (P): *PGM___ Object: @AAP1_ _ Attr (P): CLP__ More: Opt CR Nbr App Level Rtv status Src file Src lib Ver Rls Stat
 SY1
 10033505
 API
 *BAS
 *CHG
 12/04/95
 QCLS03
 APISYIPOOL
 005
 *DEV

 SY1
 10028105
 API
 *BAS
 *CHG
 1/11/94
 QCLS03
 APISYIPOOL
 005
 *DEV

 SY1
 10028103
 API
 *BAS
 *CHG
 1/11/94
 QCLS03
 APISYIPOOL
 004
 33437
 *LIV

 SY1
 10024103
 API
 *BAS
 *CHG
 28/10/94
 QCLS03
 APISYIPOOL
 003
 33432
 *LIV

 SY1
 10034301
 AP2
 *BAS
 *EMG
 11/04/95
 QCLS03
 APISYIPOOL
 002
 33515
 *LIV
 Bottom F1=Help F3=Exit F4=Prompt F7=Prev F8=Next F9=Cmd F11=Date seq F12=Cancel F23=More Options

The list shows all CR registration history records in a descending sequence of version number and retrieval date.

You can use the **F7=Prev** and **F8=Next** command keys to see history for the previous or next part that has the same name but different Type/Attribute to the part whose history is currently shown.

For each history record, the following information is provided:

CR	The development centre system code and CR number.		
Аррі	The CR application code.		
Level	The part level within the application.		
	*BAS *SIT xxx *GRP xxx All non-source b	Application base level. Site specific level. xxx indicates the site code. Group specific level. xxx indicates the group code. based objects are registered on the *BAS level.	
Rtv status	The retrieval typ 5-19.	e and date. Refer to the retrieval status code table on page	

Sac File	The originating source file, if the source member was retrieved for change (rather than initiated as a new source member in the CR).
Sac Lib	The originating source file library, if the source member was retrieved for change (rather than initiated as a new source member in the CR).
Ver	The source version number.
RIs	The release number, if the CR is allocated to a release.
Stat	The current CR status. Refer to the CR status code table on page 5-12.

Action codes

You can select one of the following action codes against a history item:

5=Display CR	Show details of the selected CR as entered via function WRKCHGRQS. Refer to <i>Displaying IR/CR details</i> on page 5-61.
8=Display IR	Show details of the selected IR as entered via function WRKINVRQS. Refer to <i>Displaying IR/CR details</i> on page 5-61.
9=RIs distrib	Display a window showing CR distribution information, i.e; the system(s) to which it was sent, the target environment, and the date and method of delivery. Refer to <i>Displaying CR distribution status</i> in <i>Change Manager User and Reference Manual</i> .
10=Network sts	Display the current status (i.e; latest movement) of the CR at every system to which the CR has been distributed. Refer to <i>Displaying CR network status</i> in <i>Change Manager User and Reference Manual</i> .
20=Movements	Display movements of the part within the context of the selected CR. All movement/promote transactions that have not been purged are displayed, showing the movement/promote characteristics and completion status. Refer to <i>Displaying application part movements</i> on page 5-71.
27=User text	Display user text. User text is entered when an IR is created. It normally contains a text description of the associated problem or request being raised. Refer to <i>Text documents</i> on page 5-25.
28=Dev text	Display development text. Development text is associated with the CR. It is an internal IS document containing technical information associated with the CR work. Refer to <i>Text documents</i> on page 5-25.
29=IS text	Display IS text. IS text is associated with the IR, and is maintained by change control coordinators. It enables IS to respond to user problems, and/or provide additional information for the users regarding the fixes provided by IS. Refer to <i>Text documents</i> on page 5-25.

Displaying application part movements

This function enables you to display the movement transaction logs of an application part within the context of the current CR. All movement/promote transactions that have not been purged are displayed, showing the movement/promote characteristics and completion status.

How to get into this function

Menu/Option:	SEEDEV / 1, then: options 8=Display obj, 20=Movements, or options 12=Wrk with CR, 20=Movements
Command:	WRKCRDEV
Menu/Option:	SEEDEV2 / 2, then option 20=Movements
Command:	DSPOBJHST

List panel viewing and manipulation

		SEE/C	hange – (Display	Change Manag CR Object M	gement Moveme	t Syst ents	cem			
5=Display 63=Completn c	6=Print cd		6=Print 12=Wrk job		61=Movment cd		62=0peratn		cd	
CR: SYD 00000	04 / 02	Object:	DSTCTL10	C *PGM	CI	ΓP				
Act Date & T 7/10/93 1 3/09/93 1 3/09/93 1 3/09/93 1 3/09/93 1	Fime 11:36:22 16:43:37 16:43:17 16:43:06 16:43:06	Type Fri *RSL *RSP *SRC 0# *ARP DS *LIV 0# *ARC DS	m Lib 00000402 TSRC 00000402 TOBJLIV	To Lib DSTOBJLIV DSTSRC DSTSRC Y000000008 DSTOBJLIV Y000000007	Oper *DLT *DLT *CPY *DUP *DUP *MOV	Comp *OK *OK *RDV *OK *RDV *OK	Trans 000000 000000 000000 000000 000000	Nbr 0855 0854 0843 0842 0835 0834	Rls	Envr
F1=Help F3=F	Exit F4	=Prompt	F5=Refre	esh F9=Cmd	F12=	=Cance	el		Во	ttom

The list is shown in descending transaction date and time. Each movement/promote of a part into a target library is uniquely identified by a transaction number.

For each transaction, the following information is provided:

The date and time of the movement/promote operation.

Туре

Date and Time

Movement/promote type. You can use option 61=Movment cd to display the

	valid movement/promote type codes and their meaning.
Frm Lib	The originating library.
To Lib	The target library.
Oper	The operation type. You can use option 62=Operatn cd to display the valid operation codes and their meaning.
Comp	The movement/promote completion status. You can use option 63=Completn cd to display the completion codes and their meaning.
Trans Nbr	The movement/promote transaction number. Each movement/promote is uniquely identifiable by its transaction number.
RIs	The release number if the movement/promote is performed in the context of release packaging or release delivery.
Envr	The release target environment, if release number is shown: *ACP Acceptance/QA Environment *LIV Live/Production Environment.

Action codes

You can select one of the following action codes against a transaction:

5=Display	Display full details for the transaction. All movement/promote details for the part, originating and target libraries, source files and duplication of data members are shown. Refer to <i>Movement details</i> on page 5-73.
6=Print	Print movement transaction logs for the CR. Command parameters are prompted. For further details, refer to <i>Listing movement transaction logs</i> and <i>Command LSTMVTLOG</i> in <i>Change Manager User and Reference Manual</i> .
12=Wrk job	Work with the job details (WRKJOB command) of the job that effected the part movement/promote, if the job is still in the system.
61=Movment cd	Show the movement/promote type codes and their meaning
62=Operatn cd	Show the movement/promote operation codes and their meaning.
63=Completn cd	Show the movement/promote completion codes and their meaning.
Movement details

You can use **5=Display** against a transaction to display full details of the selected movement/promote. You can see:

- ! the transaction type and number,
- ! the job that processed the transaction,
- ! the application, system and site where the movement was executed,
- ! the date and time of the transaction,
- ! the CR number,
- ! the application part being manipulated,
- ! the from and to libraries being used,
- ! whether configuration overrides were in effect at the time when the transaction was executed,
- ! whether the part was replaced in the target library, and if it was the temporary work/archive library used to store the part being replaced,
- ! the type of operation executed and the completion status of the transaction.

Movement Transacti	ion Details
Type . : *RSL Trans : 000000855 Job . : 033335/YUVAL/MOVCR	Appl : DST Site: SYD Date/Time: 7/10/93 11:36:22
Object : DSTCTL1C *PGM CLP	Src level: *BAS Use: *COMPILE Config overrides used ?: N Work library name : #000000855
To : DSTOBJLIV Oper . : *DLT Delete Object and/or Member Status : *OK Movement completed OK.	Obj/mbr replaced ? : N
Fl=Help F3=Exit F5=Refresh F9=Cmd F12=	-Cancel

For database files, in addition to the above, the status of the data member(s) duplication is shown on the lower part of the panel, as shown below:

Movement Transaction Details Type . : *LIV Trans : 000000921 Appl . . : DST Site: SYD/SYD Job . : 037981/JULIE/MOVCR CR . . : SYD 00000401 Date/Time: 6/12/93 16:18:07 Use: *COMPILE Object : DSTMAST *FILE PF Src level: *BAS Config overrides used ?: N From . : DSTSYDACP Work library name . . : Y00000020 To . . : DSTSYDLIV Obj/mbr replaced ? . . : Y Oper . : *DUP Duplicate Object and/or Member Status : *RDV Mov`nt backed out for re-development. Member Name Data Member duplication completion status Movement completed OK. DSTMAST *OK Bottom F1=Help F3=Exit F5=Refresh F9=Cmd F12=Cancel

When a database file is being delivered to any target library, the existing members and their data are duplicated into the newly installed database file. In the case of logical files, the original member's scope is also applied to each logical file member. The completion status of each attempt to re-instate a database member is shown.

Data and members are not duplicated if re-compilation is specified for the application or is specified in the configuration overrides for the file (i.e; the operation code for the movement is *CPL), or if data inclusion is specified in the configuration override for the file.

For further details, refer to *Object movements* and *Archiving* in the *Key concepts and basics* section of *Change Manager User and Reference Manual*.

Specifying configuration overrides

When you promote a CR, the application parts registered under the CR are moved or duplicated into the target libraries based on the application configuration details.

This function enables you to specify values that override the application configuration details for a specific application part. For more information about how configuration overrides are managed, refer to *Overriding the application configuration* on page 5-53.

How to get into this function

Menu/Option: Command:	SEEDEV / 1, then options 8=Display obj, 22=Overrides WRKCRDEV
Menu/Option:	SEEDEV / 1, then: options 12=Wrk with CR, 1=Retrieve, 22=Overrides, or options 12=Wrk with CR, 22=Overrides
Command:	WRKCRDEV

Modes of operation

This function can execute in update (*UPD) or browse (*BRW) mode. A minimum authority level of *OPER (3) in module CFG is required to use the update mode. When you select **22=Overrides** it is assumed you are requesting update mode. If you are not authorised, browse mode is used.

Entry panels

The panel you see and the configuration items you can override depend on whether override information is distributed to remote production systems (as specified in the application configuration), and on whether the application part you select is a program type or database type application part.

The panel you see is for a specific system or site. For program type application parts the panel is for a specific system; for database type application parts the panel is for a specific site at a specific system.

If configuration overrides can be distributed to remote production systems, you can specify the overriding details that will take effect at each of the production systems using the application. If configuration overrides are not distributed, you can only specify the overriding details for the local system.

For program type application parts, you initially get the panel for the local system. For database type application parts at the development centre you initially get the panel for the development site, and at production systems you initially get the panel for the first local site.

You can use the roll up/down keys to show override details for other systems/sites. The sequence of the panel is alphabetically by system/site code. You can also use the *Locate System/Site* field on the top part of the panel to get the panel for a specific system/site. You can also use **F4=Prompt** to prompt a list of valid systems or sites.

Entry panel for program type application parts

THNDEV SEE/Change Testing Environment Work with Object Override Details Enter the movement override specifications for object: Enter the movement overline optical Application: AP1 Demo application 1 * Type/Attr: *PGM RPG Level: *BAS Locate System/Site(P): ____ System/Site SY1 SY1-Asia/P (Dev System) Configuration Overrides Live/Production Lib : APISYIPL Acceptance/QA Lib : APISYIPA Mdl/Integration Lib : AP1SY1PM Load Source to Release Packet ? : Y _ Re-compile? Y Job Description for re-compile : AP1JOBD Source pool library : APISY1POOL Source pool file : QRPGS01 More... F1=Help F3=Exit F4=Prompt F9=Cmd F12=Cancel F23=Dlt overrides F24=Msgs

Entry panel for database type application parts

THNDEV	SEE/Change Testing Env Work with Object Overric	vironment de Details
Enter the movement over Application: AP1 Demo Object: BASLF Typ	cride specifications for c application 1 * pe/Attr: *FILE LF	bject: Level: *BAS
Locate System/Site	(P):	
System/Site	: SY1 SY1-Asia/F	? SIl SIl-Hongko (Dev Site)
Live/Production Lib Acceptance/QA Lib Mdl/Integration Lib	Configuration : AP1SY1DL0 : AP1SY1DA0 : AP1SY1MDL	Overrides
Load Source to Release Re-compile? Job Description for re- Source pool library Source pool file	Packet ? : Y : Y compile : AP1JOBD : AP1SY1POOL : QDDSS03	
Fl=Help F3=Exit F4=Pr	compt F9=Cmd F12=Cancel	F23=Dlt overrides F24=Msgs

The lower part of the panel shows information in two columns.

- The column on the left shows the existing configuration details for the various configuration items. You cannot alter these values.
- The column on the right shows the existing overriding values, if any. In update mode (*UPD) you can update these values.

In update mode you can also use **F23=Dlt overrides** to remove all override information for the application part. A confirmation window will pop up showing the part details; press Enter to confirm delete and override information is removed for all systems and all sites; use F12 to cancel the delete operation.

Data items you can override

Live/Produ	ction Lib	Specify the library name to override the configured application Live/Production database or program library. It must be a valid library name existing at the target system. If this system is the local system, and the library is not found, an error will occur.
		The specified library must contain the application job description as previously configured for the application, or as overridden in this panel.
		Database object movements to the Live/Production environment can be bypassed by specifying the keyword *BYPASS. If specified, *BYPASS must also be specified for the Acceptance/QA library on this panel.
		Note that at least one site at the application development centre must be configured to receive the object, i.e; at least one site must not be overridden with *BYPASS.
Acceptance	e/QA Lib	This item is not shown if the Acceptance/QA environment has not been configured for the application at the shown system.
		Specify the library name to override the configured application Acceptance/QA database or program library. It must be a valid library name existing at the target system. If this system is the local system, and the library is not found, an error will occur.
		The specified library must contain the application job description as previously configured for the application, or as overridden in this panel.
		Database object movements to the Acceptance/QA environment can be bypassed by specifying the keyword *BYPASS. If specified, *BYPASS must also be specified for the Live/Production library on this panel.
		Note that at least one site at the application development centre must be configured to receive the object, i.e; at least one site must not be overridden with *BYPASS.
Module/Int	grtn Lib	This item is shown only at the development centre system.
		Specify the library name to override the configured application Module/Integration database or program library. It must be a valid library name existing in the target system. If this system is the local system, and the library is not found an error will occur.
		The specified library must contain the application job description as previously configured for the application, or as overridden in this panel.

Include data?	This ite	m is shown only for physical files. Valid values are:
	Ν	Data is not included when physical files are promoted and distributed. An attempt is made to retain existing data members in the target libraries under the new file.
	Y	Data is included when physical files are promoted and distributed. Data members are copied into the target libraries from the CR library (or, at remote production systems, from the release packet). Existing data members are replaced.
		This also indicates that when reverting to development, both the object and data members are restored into the Module/Integration or Acceptance/QA environment from the Live/Production environment.
		Note that data inclusion and re-compilation are mutually exclusive.
Load source?	This ite membe Valid v	em is shown for application parts implemented as both object and source r (source usage of *COMPILE), and only for the development centre. alues are:
	Ν	Source member is not loaded to the release packet.
	Y	Source member is loaded into the release packet.
	Note th source	at interpretive source members (*INTERPRET) and copy reference members (*CPYREF) are distributed unconditionally.
Unload source?	This ite membe Valid v	em is shown for application parts implemented as both object and source r (source usage of *COMPILE), and only for remote production systems. alues are:
	Ν	Source member is not unloaded from the release packet.
	Y	Source member is unloaded from the release packet and is distributed to the default source file name in the target libraries.
	Note th source	at interpretive source members (*INTERPRET) and copy reference members (*CPYREF) are distributed unconditionally.
Re-compile ?	This ite membe	em is shown for application parts implemented as both object and source r (source usage of *COMPILE). Valid values are:
	Ν	Object is moved or duplicated into the target libraries.
	Y	The source member is used to re-compile the object into each of the target libraries. The library list in the application job description name, or the job description name specified in this panel, in each of the target libraries is used when the compilation command is executed.

	Note that special consideration must be given for those logical files that do not reside in the same library as the based-on physical files: you must ensure these files are always re-compiled. The library list used when the compilation command is executed will determine which is the based-on physical file.
Job Description	Specify the job description name to override the configured application job description name. Either the application job description or the override job description must reside in each of the target libraries. The library list of this job description is used when a compilation command is executed as part of the promote operation.
Source pool library Source pool file	The source pool file/source pool library you specify must be compatible with the application's source pool configuration as it exists on the local database. Therefore, the validation rules for the overriding source library and file are:
	• The specified source pool file/source pool library must be configured as a target source pool for the object type/attribute (using function WRKAPPCFG).
	• The configured target source pool is unlocked.
	• For existing members, the target pool id is equal to or higher than the originating pool id (ie: the target pool id is same or a lower number than the pool id where the source is currently located). For new source members this check is bypassed.

Specifying overrides for remote systems

If the application is configured to distribute overrides, users at the development centre system can set override specifications for both the development centre and all remote production systems. These can cover the target source file/target library.

Under the column labelled *Configuration*, the panel shows the configured source file/library, that is, the source file/source library that will be used if overrides are **not** specified. This is worked out by SEE/Change uses the local source pool configuration information to determine these files/libraries. At the development centre, override specifications for the development centre show the default source file/library, but records for remote systems show the constant narrative *Remote config.*

Specifying overrides for database source members

For database objects, a specification 'page' is shown for every configured site for the application at each system. However, source pool update is performed only once for each object, regardless of the number of target database object libraries (ie: regardless of the number of sites). Therefore, the first source override specification found for any site will be used for all sites configured under the same page. You should specify the overriding source file/library for one site (any site); SEE/Change automatically copies the same details to all other site override records for the same system.

Developing application parts in a CR

This function enables you to perform programming tasks on application parts in the CR such as retrieving, editing and compiling source. It is only available if a CR library exists for the CR. On entry to this function the work environment is initialised for the selected CR. Refer to *Managing development work in the CR work library* on page 5-15.

How to get into this function

Menu/Option:SEEDEV / 1, then option 12=Wrk with CRCommand:WRKCRDEV

List panel viewing and manipulation

		Work With Parts Usi	ng SCDM	
File Library	· · *2 · · T#	ALL ‡10035301		
Type options, 1=Retrieve 7=Freeze	press Enter 2=Edit 8=Displa	r. 4=Delete ay obj 11=Transfer	5=Display 12=Work with	6=Print 13=Change obj
Opt Object	Туре	Text		
BASLF BASLF2 BASPF BASPFREF USE_BASPF	LF LF PF RPG CLP	BAS_V13_100003/12 lf_over_baspf BAS_Pf_V6_100003/12_ pgm_ref"ing_baspf V001_100042/02		
				Bottom
F3=Exit F4=Pr F16=Search F1	compt F5=Re 8=Work DLO	efresh F9=Cmd F11=Ch F21=Text F22=Status	ng view F12=Cance F23=More option	l F13=Repeat s F24=Messages

This panel shows all application parts currently registered under the CR available for work.

The list is initially shown in *part name sequence*. You can use option **15. Change seq** from the Status pull-down menu to change the listed parts to be shown in *part type sequence*.

You can also use the input fields under the column headings to position the application parts shown.

Object Enter an application part name here, and the list is positioned from this part name onwards. The list sequence is implicitly changed to be by name.

Enter an object reference id here, and the list is positioned from parts with that object reference id onwards. If you enter the reference id and leave the object name blanks, the list sequence is implicitly changed to be by type.

You can use **F11=Chg view** to change the list to show additional details, as follows:

		Work W	With Parts Us	ing SCDM	
File Library	*A T#	LL 10035301	L		
Type options, 1=Retrieve 7=Freeze	press Enter 2=Edit 8=Displa	yobj 1	4=Delete 1=Transfer	5=Display 12=Work with	6=Print 13=Change obj
Opt Object	Туре	Attr	Level	Ver Status	Additional Info
BASLF BASLF2 BASPF BASPFREF USE_BASPF	*FILE *FILE *FILE *PGM *PGM	LF LF PF RPG CLP	*BAS *BAS *BAS *BAS *BAS	014 *XRF 7/06/95 001 *NEW 13/06/95 007 *CHG 7/06/95 001 *NEW 7/06/95 002 *XRF 7/06/95	6 Obj not in CR 6 Obj not in CR 7 Obj not in CR 7 Obj not in CR 8 Obj not in CR
					Bottom
F3=Exit F4=Pr F16=Search F1	ompt F5=Re 8=Work DLO	fresh F F21=Tex	F9=Cmd F11=C ct F22=Statu	thg view F12=Cance s F23=More option	el F13=Repeat ls F24=Messages

Type/Attr	The OS/400 type a values.	and attribute. You can use F4 to prompt for a list of valid
Level	The part level wit	hin the application:
	*BAS *SIT xxx *GRP xxx	The application base level. The site specific level. <i>xxx</i> indicates the site code. The group specific level. <i>xxx</i> indicates the group code.
	All non-source ba	sed objects are registered on the *BAS level.
Version	The current source	e version number.
Status	The retrieval type 5-19.	and date. Refer to the retrieval status code table on page
Iditol Info	Additional inform	ation:
	Obj not in CR	Object does not exist in the CR library.
	Orig: xxxxxxxx	Original source member name of a frozen source member.
	Overrides Exist	Object overrides may affect source distribution and re-compilation.

Ref Id

Dist: Obj	Only object will be distributed to remote sites.
Dist: Obj and Sac	Object and source will be distributed to remote sites.
Dist: Sac	Only source will be distributed to remote sites.
Dist: Sac/Compl	Only source will be distributed and re-compiled at each remote site.
Dist: Compile	Source will be distributed and re-compiled at each remote site and removed after compilation.
No Distribution	Source is not distributed.

You can use F16 to search the Live/Production source members. Refer to *Searching for an application source member* on page 5-99.

You can use F21 to use all text related options. Refer to *Text pull-down menu* on page 5-95.

You can use F22 to use all status related options. Refer to Status pull-down menu on page 5-96.

Action codes

You can select one of the following action codes:

1=Retrieve Retrieve an application part into the CR library. You can specify this option on the first (top) input field together with the application part name and reference id or type/attribute of the part you want to retrieve.

F16=Search can be used to search the Live/Production source members - refer to *Searching for an application source member* on page 5-99.

If you specify all the necessary details, and the application part is available for retrieval or can be created as a new part, the retrieval process completes without further interaction. Otherwise, for source based parts, the panel of function RTVCRSRC is shown - refer to *Retrieving source members into the CR* on page 5-101.

For further information about source retrieval, refer to *Searching and retrieving source members* on page 5-29.

For further information about retrieval of non-source based parts, refer to *Retrieving objects* on page 5-43.

The attributes of the latest (Live/Production) version of a source-based application part are applied to any new version of that part.

2=Edit

application part. The following table identifies the particular edit command run for each part type:

Edit the

Part	Process
Source based parts	SEU - Edit
CRDTA	STRDFU
DFU	STRDFU - Change option
JOBD	CHGJOBD
MSGF	Message file utility - refer to page 5-105.
QRY	WRKQRY

4=Delete

De-register the part. The object in the CR library is deleted, but the source member is kept as a backup copy in the CR library. The source member text is changed to indicate it is a backup copy. The part will no longer be under the CR development cycle.

A confirmation window will pop up showing the part name you have selected for deletion; press Enter to confirm and the part is removed; use F12 to cancel the delete operation.

	Part	Process
	Source based parts	SEU - Browse
	Non-source based parts	DSPOBJD
	CRDTA	DSPPFM
	QRY	WRKQRY
Print Treeze	For source by Mid development sou	ased parts only, print the source member. rce member <i>freezing</i> . Available for source based parts
	be retrieved normally current source versior renamed, but its origi Additional Info colum renamed.	(from live source) into another CR, but keeping th for future reference. The <i>frozen</i> member is autom hal name is kept for reference and is shown under n. The object of a frozen member (if it exists) is al
)isplay obj	Refer to <i>Freezing sou</i> Display the part's des	<i>rce members</i> on page 5-33. cription and/or data. The following table identifies
)isplay obj	Refer to <i>Freezing sou</i> Display the part's desp particular display con	<i>rce members</i> on page 5-33. cription and/or data. The following table identifies mand run for each part type:
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con	rce members on page 5-33. cription and/or data. The following table identifies amand run for each part type:
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM
Display obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPCMD
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD DTAARA	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPCMD DSPCMD DSPDTAARA
Display obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD DTAARA JOBD	rce members on page 5-33. cription and/or data. The following table identifies amand run for each part type: Process DSPPGM DSPFD DSPCMD DSPCMD DSPDTAARA DSPJOBD
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD DTAARA JOBD JOBQ	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPFD DSPCMD DSPDTAARA DSPJOBD DSPJOBQ
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD DTAARA JOBD JOBQ MENU	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPCMD DSPCMD DSPDTAARA DSPJOBD DSPJOBQ DSPMNUA
Display obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMs All FILES CMD DTAARA JOBD JOBQ MENU MSGQ	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPFD DSPCMD DSPDTAARA DSPJOBD DSPJOBQ DSPMNUA DSPMSG
)isplay obj	Refer to <i>Freezing sou</i> Display the part's dese particular display con Part All PGMS All FILES CMD DTAARA JOBD JOBQ MENU MSGQ OUTQ	rce members on page 5-33. cription and/or data. The following table identifies mand run for each part type: Process DSPPGM DSPFD DSPCMD DSPDTAARA DSPJOBD DSPJOBQ DSPMNUA DSPMSG WRKOUTQ

Display the application part. The following table identifies the particular

5=Display

11=Transfer Transfer a part to another CR. Target CR details are prompted. The target CR must be in the status of *DEV, and be for the same application as the originating CR. The target CR library must already have been created. Refer to *Transferring application parts from one CR to another* on page 5-20.

12=Work with

Work with application part. The following table identifies the particular workwith command run for each part type:

Part	Process
All PGMs	WRKPGM
All FILEs	WRKF
CMD	WRKCMD
DTAARA	WRKDTAARA
JOBD	WRKJOBD
JOBQ	WRKJOBQ
MENU	WRKMNU
MSGF	WRKMSGF
MSGQ	WRKMSGQ
ουτα	WRKOUTQ
PNLGRP	WRKPNLGRP
SCHIDX	WRKSCHIDX
All other parts	WRKOBJ

13=Change obj

Change the part. The following table identifies the particular change command run for each part type:

Part	Process
All PGMs	СНGРGМ
CMD	CHGCMD
CRDTA	CHGPF
DFU	СНGРGМ
DFUFMT	CHGDSPF
DSPF	CHGDSPF
DTAARA	CHGDTAARA
ICFF	CHGICFF
JOBD	CHGJOBD
LF	CHGLF
MENU	DSPMNUA
MSGQ	CHGMSGQ
OUTQ	CHGOUTQ
PF	CHGPF
PRTF	CHGPRTF
SCHIDX	WRKSCHIDX
QRY	WRKQRY

14=Compile Submit the compilation of a source member in the CR library. The source must have been previously retrieved via option **1=Retrieve**. For commands, the Refer to *Compiling Source Members* on page 5-35.

15=Pmt Compile Prompt for compilation parameters and execute/submit the compilation of a source member in the CR library. The source must have been previously retrieved via option **1=Retrieve**. Refer to *Compiling Source Members* on page 5-35.

16=Execute

Execute the part. The following table identifies the particular execute command run for each part type:

	Part	Process	
	All PGMs	CALL	
	CMD	Execute	
	DFU	CHGDTA or DSPDTA	
	MENU	GO	
	PF	DSPPFM	
	QRY	RUNQRY	
	SCHINX	WRKSCHIDXE	
17=SDA/RLU	Use Screen Design Aid of option is available for D	or Report Layout Utility to work with sour SPF, PRTF parts only.	ce. This
18=Scan DB Rel	Scan database relations, dependencies into the CH or LF).	and optionally retrieve database and progr R. This option is available for database par	am ts only (PF
	Refer to Scanning and reparts on page 5-40, and	etrieving dependent and cross-referenced to Scanning database relations on page 5	application -111.
19=Document	Document source member. Available for source based parts only. Refer to <i>Documenting source members</i> on page 5-39.		
20=Movements	Display the mov of the current C been purged are characteristics a	vement transaction logs of the part within R. All movement/promote transactions that displayed, showing the movement/promo and completion status.	the context at have not te
	Refer to Displaying appl	lication part movements on page 5-71.	
21=History	Display the part's CR history. All occurrences of the part within any CR for any application are shown.		y CR for any
	Refer to Displaying appl	ication part history on page 5-67.	
22=Overrides	Specify configuration overrides for the part. If you have authority, you are able to maintain overrides for the part. If you do not have the necessary authority, you can view the existing overrides.		you are able authority,
	Refer to Overriding the a Specifying configuration	<i>application configuration</i> on page 5-53, an overrides on page 5-75.	nd to
24=PDM	Work with source memb utility). The source file a Available for source base	ers under PDM (Programming Development associated with the selected part is used as ed parts only.	ent Manager the default.

25=Find string Invoke the PDM source search facility interactively. After a source member is found to contain a match, SEU edit is invoked

	automatically. The source file associated with the selected part is used. Other parameters are prompted before the search commences. Available for source based parts only.
26=Batch Find	Invoke the PDM source search facility in batch. A list is produced in batch showing all source members containing a match. The source file associated with the selected part is used. Other parameters are prompted before the search commences. Available for source based parts only.
47=Exc Cmp/Mrg 48=Cmp/Mrg Rept 49=Mrg Composit	Options 47 - 49 are available if you use the <i>SEE/One Compare and Merge Manager</i> product in conjunction with SEE/Change. Refer to <i>SEE/One User and Reference Manual</i> .
69=Config opt	Configure your own action options in the range 70-99. Refer to <i>Command CFGBAROPT</i> on page 5-119.

Use **F13=Repeat** when you want to specify the same action against multiple entries on the list panel. The selected action code is automatically repeated against all items to the end of the list.

Use **F18=Documents** to manipulate Document Library Objects associated with the current CR (if DLO handling is enabled for the application). For more details, see page 5-90.

Working with Document Library Objects

When a CR is created, SEE/Change can create an associated OfficeVision/400 document library object (DLO) folder for the CR.

The CR folder is created within the top level document folder for the current application, which is set up using the *Work with Application Details* panel (Configuration Manager). This folder can contain documents and other subfolders, which are handled by the Release Manager along with other objects associated with the CR. That is, they are automatically packaged with releases at the development centre and installed when the release is processed at production centres.

When the CR folder has been created, you can add documents and subfolders to it or to existing subfolders to create a hierarchy of folders and documents. The hierarchy of folders can extend to any level. Documents can be retrieved (copied) into a CR folder or subfolder from any folder object within the system.

Documents can also be deleted from CR folders, edited in place, or displayed or printed (if appropriate). You can also move (transfer) a document from one CR folder to another CR folder. The authority required to create, update or delete a document in a CR folder is the same as for creating, updating or deleting a CR object.

Note that a document in this context is any object that can be placed in a folder. This includes PC-format files. Not all PC-format files can be edited, displayed, or printed on the AS/400: for example, PC executable files are not editable. Of the PC files that are editable, you can set an attribute that determines whether editing, display, or printing are allowed using the SEE/Change facilities described here.

SEE/Change creates a folder for a CR if:

! the application is enabled for document processing (see the section on configuring applications in the *SEE/Change Configuration User and Reference Manual*)

and

! you specifically request it. Note that an empty CR folder is created once, when you use F18=Documents on the *Work With Parts Using SCDM* panel. There is no facility for removing the CR folder, although you can delete all documents and subfolders from it.

SEE/Change maintains a list of objects (including subfolders) in the CR folder. The existence of the CR folder triggers the processing required to send and install the document objects when the CR is distributed as part of a release.

The following panel is displayed when you use **F18=Documents** on the *Work with Change Request Objects* panel.

	S W	EE/Change Testing Envi ork with Documents using	ronment ng SCDM	
Current Folder: AP	1/100013	02.T#	(contain	ns 2
Subiolders) Type options, pre 2=Edit 21=History	ss Enter 4=Delete	5=Display	6=Print	11=Transfer
Opt Document	Attr.	Description		
DATABASE.DOC ENHANCE.DOC INITSEE.EXE OVERVIEW.DOC TECHNCAL.DOC USERMAN.DOC	OS400 OS400 PCFILE OS400 OS400 OS400	Database_changes_for_1 Enhancements_within_tl Initialisation_for_SE Overview_for_Document_ Technical_Overview_for User_Manual_for_Docume	DLOS his_CR E/Change Library_Object r_DLOS ent_Library_Obj	ts
F3=Exit F5=Refre F15=Select subfld	sh F9=C r F16=W	nd F11=Chg view F12=0 ork subfldrs F17=Retr	Cncl F13=Rpt ieve F18=Extns	Bottom F14=Show parent s F24=Messages

	Current Folde	The full path of the current document.			
	Document	The name of the current document. Document names can contain a single period.			
Attr		The type of the document. This is one of: PCFILE OS400			
	Description	Short description of the document, taken from the Description attribute of the object.			
	Contains <i>n</i> subfolders	The number of immediate child folders in the current folder.			
Actio	ns				
	2=Edit	Edit the document. The document must be editable, and (if it is a document of type PCFILE) its extension must be defined as type Source.			
	4=Delete	Delete the specified document. Display the document. The document must be editable, and (if it is a document of type PCFILE) its extension must be defined as type Source.			
	5=Display				
	6=Print	Print the document. The document must be editable, and (if it is a document of type PCFILE) its extension must be defined as type Source.			
	11=Transfer	Transfer a document from one folder into another registered folder.			

21=History Display the retrieval history of a document.

Use **F11=Change view** to display an alternative view of the details, including the size of the document, its creation date, and the date it was last updated.

Two command keys enable you to navigate up and down the hierarchy of subfolders within the top-level folder. Use **F14=Show parent** to display the immediate parent of the current folder. Use **F15=Select subfoldr** to select a subfolder to work with.

Use **F16=Work subfidrs** to add or delete subfolders within the hierarchy of subfolders.

Use F17=Retrieve to retrieve a folder or document into the current folder.

Tasks

Selecting a folder to work with

To select a folder to work with, use **F15=Select subfldr** on the *Work with Documents Using SCDM* panel.

If the current folder has no subfolders, F15 has no effect.

If the current folder has one subfolder only, that subfolder is presented as the subfolder to work with.

If the current folder has more than one subfolder, a window pops up, displaying a list of the existing subfolders.

SEE/Change Testing Environment Work with Documents using SCDM Current Folder: AP1/10001302.T# Type : CR 100013/02 Select Subfolder Select Subfolder 2=E : Flr: AP1/10001302.T# : 21=H : 1=Select subfolder 2=Next Level Opt : _ FUNCSPEC.FLR Functional Specifications for DLOs • : _ MEETINGS.FLR Notes from Meetings re DLOs : : Bottom : F1=Help F12=Previous F14=Show Parent : F3=Exit F5=Refresh F9=Cmd F11=Chg view F12=Cncl F13=Rpt F14=Show parent F15=Select subfldr F16=Work subfldrs F17=Retrieve F18=Extns F24=Messages

You can:

! Select one of the folders

or

! Against one of the folders, select **2=Next level** to display subfolders of that folder.

When you select a subfolder, the **Current folder** field changes to reflect the "path" of the selected folder. Documents in that subfolder are presented. You can then edit, delete, display, print or transfer documents in the selected subfolder.

Adding or deleting a subfolder

To add or delete a subfolder, use **F16=Work subfldrs**. This displays a list of subfolders within the current folder.

Select **2=Next level** against a subfolder to display a list of subfolders within it.

Select **4=delete** against a subfolder to delete the subfolder. A folder cannot be deleted unless it is empty of subfolders and documents. Multiple folders can be deleted.

Use **F6=Create subfolder** to create a new subfolder within the current subfolder.

Retrieving a document into a folder

To retrieve a document into a SEE/Change folder, select the folder and use **F17=Retrieve**. This displays a list of all objects defined in the operating system as top-level folder objects under root (¹/¹). You can navigate within this hierarchy of folders and subfolders and select documents (one at a time) into the current SEE/Change folder.

SEE/Change does not allow an existing document to be replaced in a folder by a document of the same name. To replace a document with a different revision of the same document:

- 1. Delete the document from the folder
- 2. Retrieve the revision into the folder.

Deleting a document from a folder

To delete a document from a folder, select the folder using **F15=Select subfldr**. Select **4=Delete** against one or more documents.

Editing, displaying and printing a document

To edit, display, or print a document, find the document and select option **2=Edit**, **5=Display**, or **6=Print** against it. Whether these functions are successful or not depends on whether the document is of type PCFILE or OS400, and on the attributes set for the document's extension (if it has one).

If a document of type PCFILE has its Source extension attribute set to Y, SEE/Change attempts to perform the requested function by creating a temporary member and processing it using AS/400 facilities (for example, SEU for editing). The function may fail if the contents of the document are inappropriate for the requested function (for example, executable PC files cannot be displayed).

If a document of type PCFILE has its Source extension attribute set to N, SEE/Change cannot perform the requested function.

SEE/Change edits, displays, and prints documents of type OS400 using OS/400 facilities or OfficeVision/400 facilities.

Transferring a document from one folder to another

To transfer a document from one folder to another, use action **11=Transfer** against the document.

Specify the target CR and the path of the folder within that CR to transfer to. The rules governing transfer of documents between CRs are the same as for transferring objects between CRs (see *Transferring application parts from one CR to another* on page 5-20).

Displaying the history of a document

To display the retrieval history of a document, use option **21=History** against the document's name.

For each retrieval of the document, the list shows the date of the movement, details of the CR into which it was retrieved, and the folder from which it was retrieved. The information presented on this panel is similar to the information presented for CR objects. See *Displaying application part history* on page 5-67.

When you delete or transfer a document from a folder within a CR, this destroys all history records that relate to the original retrieval.

Defining extension attributes for PCFILE documents

The filename of documents of type PCFILE can have an extension of up to three characters. You can define extension attributes for such filenames to determine whether SEE/Change should try to edit, display or print a file whose name has a given extension. (Documents of type OS400 are assumed to be Office/400 documents, that can be edited, displayed, or printed using Office/400 commands.)

To set the attributes of a particular PC-format filename extension, select **F18=Extns** on the *Work With Documents Using SCDM* panel. This displays a list of extensions for which attributes have already been defined. Use **4=Delete** to remove an extension attribute. Use **F6=Create Extension** to define attributes for a new extension.

For each extension, you can set the Source field to Y or N. To enable PC-format documents that have a particular extension to be treated as source (that is, they can be edited using SEU, printed, or displayed), set the Source attribute to Y.

Note:

A document of type PCFILE must have an extension; otherwise it cannot be edited, displayed, or printed from within SEE/Change using the facilities described here.

Text pull-down menu

	Work With Parts Using SCDM
: Text Options :	
: : :	*ALL
: 1. Edit Dev Txt :	T#10035301
: 2. View Usr Txt :	
: 3. Edit IS Txt :	er.
: :	4=Delete 5=Display 6=Print
: :	lay obj 11=Transfer 12=Work with 13=Change obj
: :	
: :	Text
: :	
: :	BAS_V13_100003/12
: :	lf_over_baspf
: :	BAS_Pf_V6_100003/12
: :	pgm_ref"ing_baspf
: :	V001_100042/02
: :	
: :	
: :	
: :	
	Bottom
: FI=Help Fl2=Cancel :	
: :	Refresh F9=Cmd Fil=Chg view Fi2=Cancel Fi3=Repeat
•••••••••••••••••••••••••••••••••••••••	0 F21=Text F22=Status F23=More options F24=Messages

The Text pull-down menu is available from the *Work with Change Request Objects* panel. Use command key **F21=Text**.

You can select any of the following actions:

1=Edit Dev Txt	Edit development text. Development text is associated with the CR. It is an internal IS document containing information associated with the CR work. It can be maintained here by CR developers, and via <i>Change</i> <i>Manager</i> function WRKCHGRQS (Work with Change Requests).	
2=View Usr Txt	Display user text. User text is entered when an IR is created. It normally contains a text description of the associated problem or request. User text can be maintained via <i>Problem Manager</i> function WRKINVRQS (Work with Investigation Requests) only.	
3=Edit IS Txt	Edit IS text. IS text is associated with the IR. It enables IS to respond to user problems, and/or provide additional information for the users regarding the fixes provided by IS. It can be maintained in this function and via <i>Change</i> <i>Manager</i> function WRKCHGRQS (Work with Change Requests). Users can display this document via <i>Problem Manager</i> function WRKINVRQS (Work with Investigation Requests).	

Status pull-down menu

	Worl	k With Parts Us	ing SCDM	
: Status Options :				
:	*ALL			
: 2.Change CR :	т#10035	301		
: 5.Display CR :				
: 8.Display IR :	er.			
: 13.Wrk CASE :		4=Delete	5=Display	6=Print
: 14.Check CR :	lay obj	11=Transfer	12=Work with	13=Change obj
: 15.Change seq :				
: 33.Crt templat :	Text			
: 35.Import :				
: 36.Imp lib :	BAS_	V13_100003/12		
: 37.Upd imp reg :	lf_o	ver_baspf		
: 45.Adhoc Compar :	BAS_	Pf_V6_100003/12		
: 46.Adhoc Merge :	pgm_:	ref"ing_baspf		
: 47.Exc Cmp/Mrg :	V001_	_100042/02		
: 48.Cmp/Mrg Rept :				
: 49.Mrg Composit :				
: 65.Check CR log :				
: 66.Submtd job + :				
: : :				Bottom
: Fl=Help Fl2=Cancel :				
: :	Refresh	F9=Cmd F11=C	hg view Fl2=Canc	el Fl3=Repeat
•••••••••••••••••••••••••••••••••••••••	O F21=	Fext F22=Statu	s F23=More optio	ns F24=Messages

The Status pull-down menu is available from the *Work with Change Request Objects* panel. Use **F22=Status** to display this menu

You can select any of the following actions:

2=Change CR	Change details for the selected CR, if authorised.
5=Display CR	Display CR details. Refer to Displaying IR/CR details on page 5-61.
8=Display IR	Display IR details. Refer to Displaying IR/CR details on page 5-61.
13=Wrk CASE	Use this option to invoke a development session using the CR default CASE tool. Refer to <i>Using CASE tools</i> on page 5-14.
14=Check CR	Perform the standard CR checks. This function can be executed on demand to allow the CR developer to anticipate and analyze CR errors and warnings. Refer to <i>Checking the CR library</i> on page 5-51.
15=Change seq	Switch application part list sequence. Two sequence types are available: <i>part name sequence</i> (which is the default), and <i>part type sequence</i> , which shows the part list grouped by type in logical processing order. Selecting this option will change the list sequence to the alternate sequence type.
	Note that the list sequence is switched automatically when requesting record positioning. If the object name is specified, the <i>name sequence</i> is selected, otherwise the part <i>type sequence</i> is selected.

33=Crt templat	Create source template for *BEFORE, *AFTER or *LOAD processing. Refer to <i>Developing *BEFORE, *AFTER and *LOAD processes</i> on page 5-48.	
35=Import	Use this option to physically import external objects and source members that are already registered in the SEE/Change import file into the CR library. Refer to <i>Importing external application parts</i> on page 5-22, and <i>Command IMPORT</i> on page 5-125.	
36=Imp lib	Use this option to scan external library objects and source members, register them in SEE/Change's import file, and optionally import them into the CR library. Refer to <i>Importing external application parts</i> on page 5-22, and <i>Command IMPORTLIB</i> on page 5-127.	
37=Upd Imp Reg	Use this option to manipulate SEE/Change's import file entries. It is a utility command that can be used to manipulate the data in import entries that cannot be executed successfully. Refer to <i>Command UPDIMPREG</i> on page 5-133.	
45=Adhoc Compar 46=Adhoc Merge 47=Eec Cmp/Mrg 48=Cmp/Mrg Rept 49=Mrg Composit	Options 45 - 49 are available if you use the <i>SEE/One Compare and Merge Manager</i> product in conjunction with SEE/Change. Refer to <i>SEE/One User and Reference Manual</i> .	
65=Chk CR log	Use this option to display all messages generated in message queue CHKLOG when you last checked the CR. Refer to <i>Checking the CR library</i> on page 5-51.	
66=Submtd jobs	Display submitted jobs.	
67=Wrk Outq	Work with the standard CR output queue (CROUTQ).	
68=Chg sbm dft	Change the submit defaults for CR environment.	
69=Config opt	Configure your own status window options in the range 70-99. Refer to <i>Command CFGBAROPT</i> on page 5-119.	

Searching for an application source member

This function enables you to search all source members registered in the Live/Production environment.

How to get into this function

Menu/Option: SEEDEV / 1, then: option 12=Wrk with CR, F16=Search, or options 12=Wrk with CR, 1=Retrieve, F4=Prompt Command: WRKCRDEV

List panel viewing and manipulation

Work With Parts Using SCDM File *ALL T#10035301 Library Type options, press Enter. 1=Retrieve2=Edit4=Delete5=Display7=Freeze8=Display obj11=Transfer12=Work with 6=Print 13=Change obj Text Opt Object Type Live/Production Member Search: 1=Retrieve 5=Display 6=Print Act_Member___Ref_Id_(P)_Text___ _Appl_(P)___Level_ AP1_ @AAP1CLP*AFTER program for CR deliveriesDemo appli *BAS 03_ @A10000306CLP*AFTER program for CR 888920/06 dDemo appli *BAS 03_ @A10003409CLP*AFTER program for CR 100034/09 dDemo appli *BAS 03_ @A10003505CLP*AFTER program for CR 100035/05 dDemo appli *BAS 03_ @BAP1CLP*BEFORE program for CR deliveriesDemo appli *BAS 03_ @BAP1CLP*BEFORE program for CR 100034/09 dDemo appli *BAS 03_ @LAP1CLP*LOADprogram for CR rls load foDemo appli *BAS 03 AP1 یں 409 CLP _ @LAP1 *LOAD program for CR rls load fo Demo appli *BAS 03 *LOAD program for CR 100034/09 r Demo appli *BAS 0 + _ @L10003409 CLP F1=Help F4=Prompt F6=Create F9=Cmd F12=Cancel F24=Messages

The bottom half of the panel is overlaid by the member search panel.

For each item, the part name, object reference id, description, application description and source level are shown.

Searching and selecting members

You can use the input fields below the column headings to specify criteria for searching and selecting members for display. Following are the selection criteria items you can specify:

Ref Id	Enter a member type here, and the list shows all members matching that type.
Text	Enter a maximum of 5 words and all members containing one or more of these words anywhere in the member text field are shown.
Аррі	Enter an application code here, and the list shows all members matching that code. You can use F4 to prompt for valid application codes.

To revert to the full list, blank out all the search items and press enter.

Action codes

You can select one of the following action codes:

1=Select	Select the member for retrieval into the CR.
5=Display	Display the source member.
6=Print	Print the source member.

Retrieving source members into the CR

This function enables you to retrieve an application part into the CR. The source member is retrieved for source based parts; an object is retrieved for non-source based parts. For source based parts, if you request this function without specifying the source member details (i.e; name and type) the overall development status of the source member is shown - then you can select the member you want to retrieve.

For further information about source retrieval, refer to *Searching and retrieving source members* on page 5-29. For further information about retrieval of non-source based parts, refer to *Retrieving objects* on page 5-43.

How to get into this function

Menu/Option: SEEDEV / 1, then option 12=Wrk with CR, F16=Search, 1=Retrieve Command: WRKCRDEV

List panel viewing and manipulation

SEE/Change Testing Environment Work with Parts using SCDM				
File *A Library T# Type options, press Enter 1=Retrieve 2=Edit 7=Freeze 8=Displa	LL 10001302 · 4=Delete y obj 11=Transfer	5=Display 12=Work with	6=Print 13=Change obj	
Opt Object Type	Text *AFTERprogram_for_(*AFTERprogram_for_(*BEFORE_program_for_(*BEFORE_program_for_(*LOADprogram_for_(Work_with_Documents_	CR_deliveries_to CR_100035/05_del CR_deliveries_to CR_100034/09_del CR_rls_load_for_	_app_AP1 iveries app_AP1 iveries appAP1	
F3=Exit F4=Prompt F5=Re F16=Srch F18=Documents	fresh F9=Cmd F11=Chs F21=Text F22=Status	g view F12=Canc F23=More option	Bottom el F13=Repeat s F24=Messages	

This panel enables you to retrieve source members normally or for concurrent development (action **3=Copy for CCD**), to display or print source members, or to display information about objects.

Scr mbr... Enter the name of the member to be processed. You can use F4 to perform member name and text search of all existing source members across the CR application, using the name and type entries as initial selection criteria.

Note that for the member search, the member name field can be any character string. Refer to *Searching for an application source member* on page 5-99.

Ref Id The selection of source type is done by specifying the object reference id. You can use F4 to prompt for a list of all available object reference ids.

When you enter a source member and source type, the panel below is shown:

SEE/Change Testing Environment CR..: 100353 / 01 Retrieve CR Source Member Appl: Demo applic 3=Copy for CCD 5=Display 6=Print 20=Movements 1=Retrieve 21=History 22=Overrides 45=Compare 46=Merge Src mbr for retrieve or browse (P): @A10000306 Ref Id (P): CLP Act Level Text Status/Information _1 *BAS *AFTER program for CR 888920/06 deliv 100353/01 *CHG *DEV *BAS *AFTER program for CR 888920/06 deliv Live/Prod V001 -You can initiate these Source Levels-*GRP EUR New Level _ New Level *SIT SI2-Bangko _ *SIT SY1-Operat __ _ New Level Bottom Retrieval not allowed for selected member. Reason code is 02... F1=Help F3=Exit F4=Prompt F9=Cmd F12=Cancel F24=Messages

The panel is divided into three parts:

- The input fields for member name and reference id.
- The upper list showing details of all versions of the part that are under CR development (including frozen members) OR are in the live environment, across all source levels for the current application.
- The lower list showing all new additional source members that can be created in the context of the current application.

If the part is not found anywhere in the current application, the upper list section will not appear. If all configured source levels for the part appear in the upper list section, the lower list section will not appear.

Level	The part level within the application:		
	*BAS *SIT xxx *GRP xxx	The application base level. The site specific level. <i>xxx</i> indicates the site code. The group specific level. <i>xxx</i> indicates the group code.	
Text	The existing member text, or the text to be entered for new members.		

Status/Info	Additional status information:

Live/Prod Vnnn

This is shown against the Live/Production member; Vnnn indicates its current version number.

• xxxxxx/xx *rtvt *stat

This is shown against a member already under development. xxxxxx/xx indicates the CR number, *rtvt indicates the retrieval type and *stat indicates the current CR status. If the member is in the CR from which this retrieval request is issued, the CR number is shown in reverse image.

New level

Source member does not exist but can be initiated for the shown level. Text must be entered for a new member before it can be retrieved.

Action codes

You can select one of the following action codes:

٠

1=Retrieve	Retrieve the source member into the current CR. The current CR and CR application are shown in the top right corner of the panel. The following rule: apply:				
	 You can only retrieve from the Live/Production environment. The member must not already be under CR development. The member name must not already have been used in the context of the current CR for the same object reference id (for a different source level). 				
	This option can be used for both the retrieval of an existing source member and the initiation of new source member.				
3=Copy for CCD	Retrieve the source member into the current CR and register it for concurrent development. If the same part is already under development in another CR, its retrieve type in the other CR is changed to reflect the concurrent development situation. Refer to <i>Managing concurrent development</i> on page 5-31.				
	The current CR and CR application are shown in the top right corner of the panel. The following rules apply:				
	 Both the CR's application, and the CR, must be configured to support concurrent development. You can copy for CCD from the Live/Production environment, or from another CR (even from a <i>Frozen</i> member if required). The member name must not already have been used in the context of the current CR for the same object reference id (for a different source level). You cannot copy a new source member for concurrent development. 				

5=Display	Display the source member. Any existing source members can be displayed. Display cannot be requested against new source members. The source is displayed from either the CR library where it is under development, or from the application live source file according to the information shown under the Status/Information column.			
6=Print	Print the source member. Any existing source member can be requested for printing. Printing cannot be requested against new source members. The source is printed from either the CR library where it is under development, or from the application live source file according to the information shown under the Status/Information column.			
20=Movements	Display the movements of the part within the context of the current CR. All movement/promote transactions that have not been purged are displayed, showing the movement/promote characteristics and completion status. Refer to <i>Displaying application part movements</i> on page 5-71.			
21=History	Display the part's CR history. All occurrences of the part within any CR for any application are shown. Refer to <i>Displaying application part history</i> on page 5-67.			
22=Overrides	If you have authority, you are able to maintain overrides for the part. If you do not have the necessary authority, you can only display the overrides. Refer to <i>Specifying configuration overrides</i> on page 5-75.			
45=Compare 46=Merge	Options 45 and 46 are available if you use the <i>SEE/One</i> <i>Compare and Merge Manager</i> product in conjunction with SEE/Change. Refer to <i>SEE/One User and Reference Manual</i> .			

Retrieval checks

• If a naming pattern table was configured against the application live source file, and a new member is being initiated, the member name must adhere to one of the naming patterns specified in that table.

If the new member name is incompatible, an error message is shown. You can use F4 to prompt for the naming patterns you can use. Refer to *Source member naming patterns* on page 5-33.

• Retrieval will not be allowed if the CR is configured to stop retrieval, or if the CR is restricted to working with application parts at a specific source level. Refer to *Source retrieval restrictions* on page 5-31.

Maintaining application message files

This function enables you to maintain a CR related message file, create new message ids and update, display or delete existing message ids.

How to get into this function

Menu/Option:SEEDEV / 1, then 12=Wrk with CR, 2=Edit for message files (Ref id MSGF)Command:WRKCRDEV

List panel viewing and manipulation

Ac	tions	Exit	Help			
OMS286C1	TSPLSYD	Work wi	th appli	cation messa	ge file	Msgf: DSTMSGF Appl: DST
2=Chang	e	3=Add/Copy	4=D	elete	5=Display	6=Print
Act_Msgid	Messag	ge_text				
DST0001 Customer record not found. DST0002 Item number not found. DST0003 Invalid date entered. DST0004 Invalid invoice amount.						
Fl=Help	F3=Exit	F4=Prompt	F9=Cmd	F10=Action	F12=Cancel	F23=More options

This panel shows all messages in the selected application message file in the common message file handling area. For more information about the way message files are handled within the change management cycle, refer to *Managing message files* on page 5-44.

Searching and selecting message ids

You can use the input fields below the column headings to specify criteria for searching and selecting message ids for display.

Text

Enter text here, and the list shows all entries that contain that text in the message text. You can enter a maximum of five words, and all entries containing one or more of these words in the first-level text are shown.

After a list is constructed based on the specified selection criteria, you can further position the list using the **Msgid** input field. The list is shown in message id sequence starting with the message id you have specified. To revert to the full list, blank out the search items and press enter.

Action codes

You can select one of the following action codes:

2=Change	Change an existing message description. First and second level text is available for editing. Use F4 to prompt for further parameters.
	Refer to Changing a message id on page 5-107.
3=Add/Copy	Add a new message description. Refer to Adding a message id on page 5-109.
4=Delete	Delete the message id. A confirmation window will pop up showing the message id you have selected for deletion; press Enter to confirm and the message id is removed; use F12 to cancel the delete operation.
5=Display	OS/400 menu Select Message Details to Display is prompted.
6=Print	OS/400 command DSPMSGD is prompted.

Changing a message id

The following panel is shown when you use action option **2=Change** from the *Work with application message file* panel.

OMS290F1 TSPLSYD		Work	with Message	Text		Mode:	*UPD
Message Id: DST00	01 Message	File:	DSTMSGF	Application	: DST		
lst Level Text: C	Customer_reco	ord_not	_found				
2nd Level Text: _							
F1=Help F3=Exit	F4=Prompt C	CHGMSGI	F12=Cancel	F16=Check	command st	cring	

In the first-level text you enter is a command character string (rather than the normal textual string), you can use **F16=Check command string** to check and prompt the command string via IBM program QCMDCHK.

If message variables (&n) are incorporated in either the 1st or second-level text, the program will automatically prompt for additional parameters associated with OS/400 command ADDMSGD/CHGMSGD. You can specifically request these prompts, even when no message variables are used, by using F4. The OS/400 command CHGMSGD is prompted, as shown below:

Change Message Descr	iption (CHGMSGD)
Type choices, press Enter.	
Message identifier > DST000 Message file > DSTMSG Library > OMSS First-level message text > 'Custor Second-level message text > '_'	L Name 7 Name AVDOC Name, *LIBL, *CURLIB ner record not found.'
Severity code *SAME_	0-99, *SAME
F3=Exit F4=Prompt F5=Refresh F10=Ado F13=How to use this display F24=Mon	More ditional parameters F12=Cancel re keys
Adding a message id

The following panel is shown when you use action option **3=Add/Copy** from the *Work with application message file* panel.

	SEE/Char Work wi	nge Testin 1th applic	g Environme ation messa	nt +))))))))))))	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,)))), *
2=Change	3=Add/Copy	4=De	lete	* Msg-id to *	add:	*
Act Msgid	Message text			<pre>* Enter the * or_blanks * Msg-Id .</pre>	based-on msg- : : DST0001	-id * * *
3 DST0001 DST0002 DST0003 DST0004	Customer record n Item number not f Invalid date ente Invalid invoice a	not found. Found. ered. amount.		* Msg File * Msg File * Enter F1= .))))))))))))	: DSTMSGF Lib : OMSSAVDO Help F12=Cano))))))))))))))))))))))))))))))))))))	*)C * cel *
F1=Help F	3=Exit F4=Prompt	F9=Cmd	F10=Action	F12=Cancel	F23=More opt:	ions

Use this pop up window to specify the new message id to be added to the message file you are working with. The message id must not already exist in the message file.

Msg-id to add	The message id must be a 7-character id beginning with a character in the range AZ, followed by 2 alphanumeric characters, followed by 4 digits.
Based-on msg-id	If a based-on message id is specified, the first and second level text of that message is used as defaults for the message being added. If this field is left with blanks, no based-on message is selected and the text for the new message is defaulted to blanks.
Msg-id	Enter the message id, message file and message file library to be used as the based-on text for the new message being added. Any message file can be selected. The default is the message file you are working with in the common message handling library. If specified, the message id must exist in the specified message file/library.

Scanning database relations

This function enables you to extract cross-reference information, and optionally retrieve the crossreferencing parts into a CR. Refer to *Scanning and retrieving dependent and cross-referenced application parts* on page 5-40

How to get into this function

Menu/Option:SEEDEV / 1, then: options 12=Wrk with CR, 18=Scan DB Rel, or options
12=Wrk with CR, 1=Retrieve for database files.Command:WRKCRDEV

List panel viewing and manipulation

	+)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,0
	SEE/Change Tes*	SCNDBREL: Scan Database Relations	*
	Work with Ch*	CR : 000004 / 01	*
	*	Database File: DSTMAST	*
1=Retrieve	2=Edit 4=De*	X-ref Type . : *PF	*
7=Freeze	8=Display obj 11=Tr*		*
	*	Type the application programs to be	*
Act_Object_(P)_Re	f Id_(P) Text*	scanned, *ALL or *NONE. If *NONE,	*
DST002 RP	G*	only database dependencies will be	*
DST002 RP	G Distributio*	scanned. Type the required action:	*
	*	*RTV = retrieve source into a CR lib	*
Live/Production M	ember Search: 1=Re*	*RPT = report only. Name a JobD for	*
Act_MemberRef	Id_(P)_Text*	additional pgm reference libraries.	*
PF	*	Warning: bypassing full database	*
1 DSTMAST PF	Distribution *	scan may result in object delivery	*
_ DST002FM DSPF	Distribution *	errors and program execution errors	*
_ FLDREF PF	Field Referen*		*
	*	Appl (P): DST Appl, *ALL or *NONE	*
	*	Action : *RTV or *RPT	*
	*	Job Desc: *NONE *NONE or name	*
	*		*
	*	Enter F1=Help F4=Prompt F12=Cancel	*
	.))))))))))))))))))))))))))))))))))))))))) -
F1=Help F4=Promp	t F6=Create F9=Cmd	F12=Cancel F24=Messages	

The above window is shown when a database file is retrieved for change. It is also available on demand, by using **18=Scan DB Rel** from function WRKCROBJ, against any database file already retrieved into the CR library.

The extracted information can be used for reporting only purposes, or for reporting and automatic retrieval of cross referencing objects into CR work libraries. Refer to *Appendix D* on page 5-141 for report examples. The options are:

Appl The application code determines the scope for the scan of program crossreferences:

<Appl> All programs in the Live/Production program libraries of the

		specified application code are scanned.
	*ALL	All configured applications are scanned for program cross- references. For each application the above process is executed independently.
	*NONE	Program cross-references are not included in the scanning process. Only database dependencies are scanned.
Action	The action code of been determined:	determines the activity after the cross-referencing objects have
	*RPT	Cross-references are only reported. No further action is taken.
	*RTV	Cross-references are reported, and an attempt is made to retrieve the source of the cross-referencing objects into CR work libraries.
Job Desc	A job description cross-references:	name, if specified, expands the scope for the scan of program
	name	In addition to the application Live/Production program library, the scan will also be performed for all libraries specified under the INLLIBL parameter in the named job description. The job description must reside in the application Live/Production program libraries.
	*NONE	Job description is not specified. Only the application Live/Production program library is scanned.

Interpreting the database relations listing

The first section of report shows the database file for which the scan has been requested, followed by a list of all the database dependencies for that file. The next section(s) shows all programs, application by application, referencing one or more of the above database files.

The application context of the first section, showing database dependencies, is the application associated with the originating CR.

Against each record in the report the based-on database file(s) are also shown. In the program crossreferences section, file usage indicates the mode in which the based-on file is used in the referencing program.

Retrieval status

The retrieval completion or error status message is printed, in the right column, against each dependent or cross referencing part that has been identified.

One of the following completion status massages may be printed:

• **Source retrieved into CR xxxxx/xx.** This message is printed if action *RTV is requested and the part is successfully retrieved.

• Source retrieval not requested. This message is printed if action *RPT is requested.

One of the following error status messages may be printed if action *RTV is selected (an exception status is indicated by an asterisk (*) in front of the message narrative):

- Source already under CR xxxxx/xx. The part has already been retrieved into a CR. The item is not retrieved.
- Name already used in CR xxxxx/xx. Sac not rtvd. A part with the same name is already under development in the CR. This can occur if, for example, multiple versions of the same program name exist within the same application for different source levels (i.e; site or group specific). Part names under development must be unique within the CR work library.
- **Object belongs to application xxx. Object excluded.** The part is identified as belonging to an application that is different than the application context for the current section. Note that application ownership is determined using SEE/Change's source register file.
- **Object not registered. Object excluded.** The part found in Module/Integration or Live/Production program library but was not registered in SEE/Change's source register. If the part is a dependent database file, it is not be included in the referencing list. Programs referencing this database file are not retrieved or reported.
- New object under development. Object excluded. The part is not registered in SEE/Change's source register, but is registered under an active CR. This can occur if, for example, the dependent file is a new file being worked on. The dependent database file is already under development and will not be included in the referencing list.
- No more CRs avail for IR xxxxx. Source not rtvd. The part has been identified as belonging to an application that is different than the originating CR application. In order to retrieve this part, an attempt was made to create a new CR under the same IR. The last CR sequence under the current IR is 99 (the maximum limit) and it is not possible to create another CR.
- Errors in CRTCRLIB cmd. Source not retrieved. The part has been identified as belonging to an application that is different than the originating CR application. In order to retrieve this part, an attempt was made to create a new CR library via function CRTCRLIB, and this function ended in error. See job log for details.
- **Errors while retrieving source.** One or more errors were encountered during execution of command CPYSRCF. See job log for details.

Just before the end of the report the following message may appear:

• Retrieve pgm references from library (xxxxxxxx) failed. See joblog for error. One or more error were encountered during the execution of command DSPPGMREF. See job log for details.

Listing Change Requests

This function enables you to select and print Change Requests. You can select the format of the report you want, and which CRs are printed on that report.

How to get into this function

Menu/Option: SEEDEV2/1 Command: LSTCHGRQS

Refer to Listing Change Requests in Change Manager User and Reference Manual.

The Configure Bar Option (CFGBAROPT) command allows you to configure user-defined action and status options to be integrated into certain SEE/Change functions.

You can use this command to create a new user-defined option, replace or remove an existing user-defined option.

Note:

User-defined options are not supported by SEE/Change. It is the user's responsibility to ensure these options are configured correctly. User-defined options will be retained when subsequent upgrades to SEE/Change are installed.

Function or Panel Id (PANEL)

Specifies the SEE/Change function containing the user-defined option. Possible values are:

WRKCROBJ

Work with CR Objects (Action or Status option)

WRKCRDEV

Work with CR Development (Status option)

WRKINVRQS Work with Investigation Requests (Status option)

WRKCHGRQS Work with Change Requests (Status option)

WRKRLS Work with Releases (CR Allocation panel Status option)

Mnemonic (MNEMONIC)

Specifies the type of user-defined option. Possible values are:

*ACTION

Action option. The user-defined option will appear in the action pull-down menu when F4 is pressed, and when action codes are displayed on the top of the panel. The Action option can be specified only if PANEL(WRKCROBJ) is specified.

*STATUS

Status option. The user-defined option will appear in the status pull-down menu (when F22 is pressed).

Option Number (OPTION)

Specifies the user-defined option number. You can specify any option number in the range of 70-99 (option numbers in the range of 01-69 are reserved for SEE/Change internal options).

This is a required parameter.

Option Text (TEXT)

Specifies the text associated with the user-defined option. Possible values are:

Text

Specify text string not longer than 12 characters.

*NOCHG

No change to existing text, when adding or changing the execution string.

*RMV

Remove user-defined option. Remove text and all associated execution strings.

Object Reference Id (OBJREF)

Specifies the SEE/Change object reference id if MNEMONIC(*ACTION) is specified. Possible values are:

Object Ref (id)

The execution string you specify under parameter EXEC will be executed when the option specified under parameter OPTION is used against any object with this reference id.

*ALL

The execution string you specify under parameter EXEC will be executed when the option specified under parameter OPTION is used against any object.

Execution String (EXEC)

Specifies the command string executed when the option is selected. Possible values are:

CL command

Specify any valid CL command. The command will be validated; if invalid, a message will be returned indicating the error, and the execution string will not be made operational. When specifying the execution string for PANEL(WRKCROBJ) MNEMONIC(*ACTION) you can embed the following run-time substitutional variables in the execution string:

Variable	Description
&1	Object name.
&2	CR library name. For application message files it is the common work library as specified under general parameter @SVL.
&3	Default source file name.
&7	SEE/Change object reference id.
&8	SEE/Change object type.
&9	SEE/Change object attributes.
&10	CR application mode.
&11	Local system code.
&13	IR number.
&14	CR sequence number.

*NOCHG

No change to existing string when changing the option text.

*RMV

Remove execution string.

Submit Execution ? (SBM)

Specifies whether the string is executed interactively or in batch. Possible values are:

*NO

Do not submit execution. Execute interactively.

*YES

Force batch execution.

*<u>OPT</u>

Optional. Allow run-time selection.

Submit Job Name (SBMJOB)

Specifies job name for submitted jobs. This parameter is prompted only for MNEMONIC(*STATUS), and when an execution string is specified against parameter EXEC. Jobs submitted from a MNEMONIC(*ACTION) option will always be assigned a job name that is the same as the selected object name.

Possible values are:

Job name

Specify the job name to be assigned to submitted jobs.

*DEFAULT

The job name will be constructed automatically.

Command DOCCRSRC: Document CR Source Member

The Document CR Source Member (DOCCRSRC) command enables you to generate and insert documentation in a specified source member in the CR work library.

IR Number (IRNBR)

Specifies the IR number of the CR containing the source member to be documented.

This is a required parameter.

CR Sequence Number (CRSEQ)

Specifies the CR sequence of the CR containing the source member to be documented.

This is a required parameter.

Source member name (SRCMBR)

Specifies the source member name to be documented.

This is a required parameter.

Object Type (OBJTYP)

Specifies the type of the object associated with the source member being documented.

This is a required parameter.

Object Attribute (OBJATR)

Specifies the attribute of the object associated with the source member being documented.

Documentation type (TYPE)

Specifies the type of documentation to be performed. Possible values are:

*HIST

Insert source modification history table as comment lines in the header portion of the source. Each entry in the table shows the version number, CR number, retrieval type and date, user, release number and CR text.

In addition, for column oriented source members (RPG, DDS etc), insert the CR version number in columns 1-5 in each of the statements that have been modified in the context of the current CR.

*RPG

For RPG source members, insert iteration level documentation in columns 60-73 in all statements.

*ALL

Include both *HIST and *RPG documentation as above.

Command IMPORT: Import Object/Source Register

The Import Object/Source Register (IMPORT) command enables you to import external objects and source members (registered in the Thenon Import File) into a CR environment.

This command can be run with Import Mode *REGISTER to register objects into a CR without physically duplicating the objects and source members into the CR library.

IR Number (IRNBR)

Specifies the IR number of the CR into which the objects are to be registers/imported.

This is a required parameter.

The IR Number (IRNBR) and CR Sequence (CRSEQ) parameters identify the CR being manipulated. The CR must be under development (in the status of *DEV).

CR Sequence Number (CRSEQ)

Specifies the CR sequence of the CR into which the objects are to be registered/imported.

This is a required parameter.

The IR number (IRNBR) and CR Sequence (CRSEQ) parameters identify the CR being manipulated. The CR must be under development (in the status of *DEV).

Import Mode (MODE)

Specifies the mode of the import operation.

This is a required parameter. Possible values are:

*FULL

Validates Import File entries, and if there are no errors, the entries are registered in the specified CR environment and all registered objects and source members are duplicated into the CR library.

*REGISTER

Validates Import File entries, and if there are no errors, the entries are registered in the specified CR environment. The objects and source members are not duplicated into the CR.

Command IMPORTLIB: Import External Library

The Import External Library (IMPORTLIB) command enables you to update the Import File with the details of all objects and source members that exist in a specified external library.

If required, the Import Mode parameter can be used to invoke the IMPORT function after the IMPORTLIB function has successfully completed.

Import Library name (IMPLIB)

Specifies the name of the external library that contains the object and source member details to be loaded into the Thenon Import File.

This is a required parameter.

IR Number (IRNBR)

Specifies the IR number of the CR into which the external library objects are to be registered. This IR number will also be used by the IMPORT function if it is executed (refer to the Import mode parameter).

This is a required parameter.

The IR Number (IRNBR) and CR Sequence (CRSEQ) parameters identify the CR being manipulated. The CR must be under development (in the status of *DEV).

CR Sequence Number (CRSEQ)

Specifies the CR Sequence of the CR into which the external library objects are to be registered. This CR Sequence will also be used by the IMPORT function if it is executed (refer to the Import mode parameter).

This is a required parameter.

The IR Number (IRNBR) and CR Sequence (CRSEQ) parameters identify the CR being manipulated. The CR must be under development (in the status of *DEV).

Import Mode (IMPMODE)

Specifies the mode of operation of the IMPORT function. If requested, the IMPORT function will be executed after IMPORTLIB processing has completed.

This is a required parameter. Possible values are:

*NONE

The IMPORT function is not executed. Object and source member entries are written into the Import File, available for the IMPORT function to process at a later date.

*REGISTER

The IMPORT function is to be executed in *REGISTER mode. It validates Import File entries, and if there are no errors, the entries are registered in the specified CR environment. The objects and source members are not duplicated into the CR.

*FULL

The IMPORT function is to be executed in *FULL mode. It validates Import File entries, and if there are no errors, the entries are registered in the specified CR environment and all registered objects and source members are duplicated into the CR library.

Command RTVTHNCFG: Retrieve SEE/Change Configuration

The Retrieve Thenon Configuration (RTVTHNCFG) command enables you to retrieve application configuration information into data area QTEMP/THNCFG. If the data area does not exist, it is created. If the data area exists, it is cleared before being re-initialised.

From	То	Len	Description			
1	10	10A	Value specified for parameter CFGTYP			
11	13	ЗA	Application code used			
14	16	3A	Site code used			
17	40	24A	*** Reserved for future use			
41	50	10A	Application job description name			
51	60	10A	Base application Module/Integration program library			
61	70	10A	Base application Acceptance/QA program library			
71	80	10A	Base application Live/Production program library			
81	90	10A	*** Reserved for future use			
91	100	10A	Site Module/Integration database library			
101	110	10A	Site Acceptance/QA database library			
111	120	10A	Site Live/Production database library			
121	130	10A	*** Reserved for future use			
131	140	10A	Site specific Module/Integration program library			
141	150	10A	Site specific Acceptance/QA program library			
151	160	10A	Site specific Live/Production program library			
161	170	10A	*** Reserved for future use			
171	173	3A	LANSA Development Partition Code			
174	183	10A	LANSA Development Program Library			
184	193	10A	LANSA Development Default Database Library			
194	196	3A	LANSA Module/Integration Partition Code			
197	206	10A	LANSA Module/Integration Program Library			
207	216	10A	LANSA Module/Integration Default Database Library			
217	219	ЗA	LANSA Acceptance/QA Partition Code			
220	229	10A	LANSA Acceptane/QA Program Library			
230	239	10A	LANSA Acceptance/QA Default Database Library			
240	242	ЗA	LANSA Live/Production Partition Code			
243	252	10A	LANSA Live/Production Program Library			
253	262	104	LANSA Live/Production Default Database Library			

The following table describes the contents of data area QTEMP/THNCFG.

263	265	ЗA	LANSA Archive Partition Code
266	275	10A	LANSA Archive Program Library
276	285	10A	LANSA Archive Default Database Library
286	512	227A	***Reserved for future use

If the command is requested for a site that is not configured to use the Acceptance/QA environment, the Acceptance/QA database library name of first site on the local system configured to use the Acceptance/QA environment is returned.

This can be useful in the situation where some sites on the production system are configured to use the Acceptance/QA environment and some are not. You can use this command in the CR *BEFORE or *AFTER programs to determine the location of data members that were previously delivered to Acceptance/QA environment, and now have to be delivered into the Live/Production environment.

Configuration Type (CFGTYP)

Possible values are:

*ALL

All program and database libraries are retrieved.

*PGMLIBS

Only program libraries are retrieved. If the specified site is configured to accept site specific software, the site specific program libraries are also retrieved.

*DBLIBS

Only database libraries are retrieved.

Application code (APPL)

Specifies the application for which configuration is retrieved. Possible values are:

Application code

Specify a valid application code configured for the local system.

*CURRENT

Can be specified when the command is executed under a controlled SEE/Change environment, like the *BEFORE, *AFTER or *LOAD processing programs; then, the application code being currently processed by the main SEE/Change function is used in this command.

Site code (SITE)

Specifies the site for which configuration is retrieved. Possible values are:

Site code

Specify a valid site code configured for the application at the local system.

*FIRST

The first site configured for the application at the local system is used.

Command UPDIMPREG: Update Import Register

The Update Import Register (UPDIMPREG) command enables you to perform a single specified action against a specified group of related Thenon Import File entries.

This function will normally be used to delete or change the status of problematic Import File entries, thereby allowing an IMPORT run to complete successfully.

IR Number (IRNBR)

Specifies the IR number of the CR for which Import File entries will be processed.

This is a required parameter.

CR Sequence Number (CRSEQ)

Specifies the CR Sequence of the CR for which Import File entries will be processed.

This is a required parameter.

Scope of entries to process (SCOPE)

Specifies the scope of entries to be processed.

This is a required parameter. Possible values are:

*ALL

All entries for the specified IR/CR Sequence will be processed.

*DBFILES

Only database file entries for the specified IR/CR Sequence will be processed.

*SELECT

Only entries for the specified IR/CR Sequence that match all of the selection values specified or the Select Object Name, Select Object Type, Select Object Attribute and Select Member name parameters will be processed.

Entry status (STAT)

Specifies the action to be performed on all Import File entries selected according to the specified selection criteria.

This is a required parameter. Possible values are:

*DLT

Entries for all selected objects and their associated help text source members will be deleted from the Import File.

*NOTRDY

The status flag of all selected entries will be flagged as not ready, i.e; the object is not available.

*RDY

The status flag of all selected entries will be flagged as ready for IMPORT.

*REG

The status flag of all selected entries will be flagged as already registered in the CR context.

*IMP

The status flag of all selected entries will be flagged as *fully imported*.

Select Object Name (SELOBJ)

This parameter can be used only if parameter SCOPE is specified as *SELECT. If entered, Import File entries that match this object name will be selected for processing. A generic value cannot be specified.

Select Object Type (SELTYP)

This parameter can be used only if parameter SCOPE is specified as *SELECT. If entered, Import File entries that match this object type will be selected for processing. A generic value cannot be specified.

Select Object Attribute (SELATR)

This parameter can be used only if parameter SCOPE is specified as *SELECT. If entered, Import File entries that match this object type will be selected for processing. A generic value cannot be specified.

Select Object Member (SELMBR)

This parameter can be used only if parameter SCOPE is specified as *SELECT. If entered, Import File entries that match this object type will be selected for processing. A generic value cannot be specified.

Command WRKCRDEV: Work with CR Development

The Work with CR Development (WRKCRDEV) command enables you to initiate software development processing. You can:

- 1. Execute development functions against a CR.
- 2. Develop objects under a CR.

The parameters of this command determine whether the WRKCRDEV (Work with CR Development) list panel is actually presented, and the point at which the list panel will be positioned, or whether the WRKCROBJ (Work with CR Objects) function is immediately executed for a given CR number.

IR Number (IRNBR)

Leave this entry blank to obtain the WRKCRDEV list panel showing all CRs that are available for development.

Specify an IR number (used in conjunction with the specified CR Sequence Number and Select CR parameters), to:

- 1. Obtain the WRKCRDEV list panel, positioned at the specified CR, or
- 2. Develop objects under the specified CR.

CR Sequence (CRSEQ)

Specify the CR Sequence Number to be processed if the IR Number parameter has been specified, or leave this entry blank if IR Number has not been specified.

Select CR (SELECT)

Specify whether you want to have the WRKCRDEV list panel shown, or whether you want to execute function WRKCROBJ (Work with CR Objects) for a specified CR.

This parameter is ignored if IR Number has not been specified. Possible values are:

*YES

The WRKCRDEV list panel will be shown, positioned at the entered CR number.

*NO

Function WRKCROBJ (Work with CR Objects) will be immediately executed for the specified CR number.

Appendix B: Object reference id table

Object Reference Id	OS/400 Type	OS/400 Attribute	Source Usage	Default Source File	Edit Type	Lib Type	Internal id
BAS	*PGM	BAS	*COMPILE	QBASSRC	BAS	*PGM	30
BAS38	*PGM	BAS38	*COMPILE	QBASSRC	BAS38	*PGM	31
С	*PGM	с	*COMPILE	QCSRC	с	*PGM	58
CREF			*CPYREF	Н	с	*PGM	75
CBL	*PGM	CBL	*COMPILE	QCBLSRC	CBL	*PGM	24
CBLREF			*CPYREF	QCBLREF	CBL	*PGM	73
CBLTPL			*MEMO	QCBLTPL	CBL	*PGM	53
CBL36	*PGM	CBL36	*COMPILE	QS36SRC	CBL36	*PGM	63
CBL38	*PGM	CBL38	*COMPILE	QCBLSRC	CBL38	*PGM	25
CLP	*PGM	CLP	*COMPILE	QCLSRC	CLP	*PGM	26
CLP38	*PGM	CLP38	*COMPILE	QCLSRC	CLP38	*PGM	27
CMD	*CMD		*COMPILE	QCMDSRC	CMD	*PGM	01
CMD-NOSRC	*CMD					*PGM	44
CMNF38	*FILE	CMNF38	*COMPILE	QDDSSRC	CMNF38	*PGM	80
CRDTA	*FILE	PF				*PGM	13
DFU	*PGM	DFU				*PGM	28
DFUEXC38	*PGM	DFUEXC				*PGM	29
DFUFMT	*FILE	DFU				*PGM	03
DFUFMT38	*FILE	DFUEXC				*PGM	04
DSPF	*FILE	DSPF	*COMPILE	QDDSSRC	DSPF	*PGM	05
DSPF-NOSRC	*FILE	DSPF				*PGM	43
DSPF36	*FILE	DSPF	*COMPILE	QS36SRC	DSPF36	*PGM	65
DSPF38	*FILE	DSPF38	*COMPILE	QDDSSRC	DSPF38	*PGM	06
DTAARA	*DTAARA					*DB	02
FTN	*PGM	FTN	*COMPILE	QFTNSRC	FTN	*PGM	57
ICFF	*FILE	ICFF	*COMPILE	QDDSSRC	ICFF	*PGM	69
ICFF-NOSRC	*FILE	ICFF				*PGM	70
JCL	*PGM	JCL	*INTERPRET	QTXTSRC		*PGM	81
JOBD	*JOBD					*DB	17
JOBQ	*JOBQ					*PGM	37
LF	*FILE	LF	*COMPILE	QDDSSRC	LF	*DB	09
LF-NOSRC	*FILE	LF				*DB	41
LF-SQL	*FILE	LF				*DB	79
LF38	*FILE	LF38	*COMPILE	QDDSSRC	LF38	*DB	10

Object Reference Id	OS/400 Type	OS/400 Attribute	Source Usage	Default Source File	Edit Type	Lib Type	Internal id
MENU	*MENU	DSPF				*PGM	51
MENU-PGM	*MENU	PGM				*PGM	52
MENU-UIM	*MENU	UIM	*COMPILE	QMNUSRC	MENU	*PGM	96
MNUCMD	*MSGF		*COMPILE	QDDSSRC	MNUCM D	*PGM	49
MNUDDS	*FILE	DSPF	*COMPILE	QDDSSRC	MNUDDS	*PGM	50
MNU36	*FILE	DSPF	*COMPILE	QS36SRC	MNU36	*PGM	67
MNU36-MSGF	*MSGF		*COMPILE	QS36SRC	MNU36	*PGM	68
MSGF	*MSGF					*PGM	23
MSGF36	*MSGF		*COMPILE	QS36SRC	DSPF36	*PGM	66
MSGQ	*MSGQ					*DB	38
OCL36			*INTERPRET	QS36SRC	OCL36	*PGM	45
OUTQ	*OUTQ					*DB	36
PF	*FILE	PF	*COMPILE	QDDSSRC	PF	*DB	11
PF-NOSRC	*FILE	PF				*DB	40
PF-SQL	*FILE	PF				*DB	78
PF38	*FILE	PF38	*COMPILE	QDDSSRC	PF38	*DB	12
PGM-NOSRC	*PGM	???				*PGM	39
PLI	*PGM	PLI	*COMPILE	QPLISRC	PLI	*PGM	59
PNLGRP	*PNLGRP		*COMPILE	QPNLSRC	PNLGRP	*PGM	71
PNLREF			*CPYREF	QPNLSRC	PNLSRC	*PGM	74
PRTF	*FILE	PRTF	*COMPILE	QDDSSRC	PRTF	*PGM	15
PRTF-NOSRC	*FILE	PRTF				*PGM	42
PRTF38	*FILE	PRTF38	*COMPILE	QDDSSRC	PRTF38	*PGM	16
QRY	*QRYDFN	QRY				*PGM	14
QMQRY	*QMQRY					*PGM	82
QMFORM	*QMFORM					*PGM	83
QMPROC	*PGM	QMPROC	*INTERPRET	QQMPRCSRC		*PGM	84
QMQRY-SRC	*QMQRY		*COMPILE	QQMQRYSRC		*PGM	85
QMFORM- SRC	*QMFORM		*COMPILE	QQMFORMSRC		*PGM	86
REXX			*INTERPRET	QREXXSRC	REXX	*PGM	47
RPG	*PGM	RPG	*COMPILE	QRPGSRC	RPG	*PGM	32
RPGREF			*CPYREF	QRPGSRC	RPG	*PGM	72
RPGTPL			*MEMO	QRPGTPL	RPG	*PGM	54
RPG36	*PGM	RPG36	*COMPILE	QS36SRC	RPG36	*PGM	64
RPG38	*PGM	RPG38	*COMPILE	QRPGSRC	RPG38	*PGM	33

Object Reference Id	OS/400 Type	OS/400 Attribute	Source Usage	Default Source File	Edit Type	Lib Type	Internal id
RPT	*PGM	RPG	*COMPILE	QRPGSRC	RPT	*PGM	76
RPT36	*PGM	RPG36	*COMPILE	QS36SRC	RPT36	*PGM	77
SCHIDX	*SCHIDX					*PGM	95
SPEC			*MEMO	QTXTSRC	тхт	*PGM	55
SQLC	*PGM	SQLC	*COMPILE	QCSRC	SQLC	*PGM	61
SQLCBL	*PGM	SQLCBL	*COMPILE	QCBLSRC	SQLCBL	*PGM	56
SQLFTN	*PGM	SQLFTN	*COMPILE	QFTNSRC	SQLFTN	*PGM	60
SQLPLI	*PGM	SQLPLI	*COMPILE	QPLISRC	SQLPLI	*PGM	62
SQLRPG	*PGM	SQLRPG	*COMPILE	QRPGSRC	SQLRPG	*PGM	34
SQLRPT	*DTAARA					*PGM	08
SQLVIEW	*DTAARA					*PGM	07
SRT36			*INTERPRET	QS36SRC	SRT36	*PGM	48
UNS36			*MEMO	QS36SRC	UNS36	*PGM	46
YWINDOW	*USRSPC	YWINDO W			WDW	*PGM	99

SCNDBREL		TSPLSYD		THENON Software E	Invironment Engineer	ing	Da	ate:	08/12/9	3	Page : 1	
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App Src Lvl	Obj	Library At	tr Text			File	Library	Attr	Usage	Completion	ı Status	
DST *BAS DST *BAS DST *BAS DST *BAS DST *BAS	DSTMAST DSTMASTL01 DSTMAL01 DSTMAL02	DSTSYDMDL PF DSTSYDMDL LF DSTSYDMDL LF DSTSYDMDL LF	Distributic Distributic Distributic Distributic	on master file on master logical - on master logical - on master logical -	- by client - by dscnd area code - by warehouse	DSTMAST DSTMAST DSTMAST	DSTSYDMDL DSTSYDMDL DSTSYDMDL	PF PF PF PF		Retrieval Retrieval Retrieval	not reque not reque not reque	ested ested ested
DST *BAS DST *BAS	DST005 DST007	DSTOBJLIV RF DSTOBJLIV RF	G Distributio G Distributio	n main processing n main processing	- Credit calc - Inventory status	DSTMAST DSTMAL01 DSTMAL02 DSTMAST	DSTSYDMDL	PF LF LF DF	* INPUT * INPUT * INPUT * INPUT	Retrieval Retrieval	not reque not reque	ested
OST *BAS	DST010A	DSTOBJLIV RF	G Distributio	on main processing	- A/R posting	DSTMAD1 DSTMAL01 DSTMAL02		LF LF	*INPUT *INPUT	Retrieval	not reque	ested
File DSTSYDM	IDL/DSTMAST	has 3 depend	ency reference	e(s).								
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SCNDBREL)))))))))))	TSPLSYD)))))	THENON Software Environment Engine	ering)))))))))))))))))	Date:	08/12/9	93)))))))))))))))	Page : 1))))))))))))))))
				P A R A M E T E R S Originating CR Originating CR Application Database File Name for scan Cross Reference Type Application for Program Cross-refere Required Action Job Description Additional Pgm Refere Job Details	ence : rence :	000004/ DST DSTMAST *PF DST *RTV *NONE 038285.	JULIE	(*PF or (Name o: (*RPT o: (Name o: .SCNDBR)	*LF) r *NONE) r *RTV) r *NONE) EL	
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App Src Lvl	Obj	Library	Attr	Text	File	Library	Attr	Usage	Completion	Status
DST *BAS DST *BAS DST *BAS DST *BAS	DSTMAST DSTMASTL01 DSTMAL01 DSTMAL02	DSTSYDMDL DSTSYDMDL DSTSYDMDL DSTSYDMDL	PF LF LF LF	Distribution master file Distribution master logical - by client Distribution master logical - by dscnd area coor Distribution master logical - by warehouse	DSTMAST le DSTMAST DSTMAST	DSTSYDMDL DSTSYDMDL DSTSYDMDL	PF PF PF		Alrdy under Retrvd into Retrvd into	CR 000004/01 CR 000004/01 CR 000004/01
DST *BAS DST *BAS	DST005 DST007	DSTOBJLIV DSTOBJLIV	RPG RPG	Distribution main processing - Credit calc Distribution main processing - Inventory status	DSTMAST DSTMAL0 DSTMAL0 DSTMAL0	DSTSYDMDL 1 2	PF LF LF PF	* INPUT * INPUT * INPUT * INPUT * INPUT	Retrvd into Retrvd into	CR 000004/01 CR 000004/01
DST *BAS	DST010A	DSTOBJLIV	RPG	Distribution main processing - $\ensuremath{A}\xspace/\ensuremath{R}\xspace$ posting	DSTMAL0 DSTMAL0	1 2	LF LF	* INPUT * INPUT	Retrvd into	CR 000004/01
File DSTSYD	MDL/DSTMAST	has 3 dep	enden	cy reference(s).						
2 dependent	file sourc	e member(s) ret	rieved into CR 000004/01						
3 xref prog	ram source	member(s) :	retri	eved into CR 000004/01						
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