Report Designer

Programmer's Guide and Reference
Licensed Program 2A55RDA V3R1M0

Application Development

Edition

Twentieth Edition (April 2009)

This edition applies to the licensed program Report Designer (Program 2A55RDA), Version 3 Release 1 Modification 0, and to all subsequent releases and modifications until otherwise indicated in new editions. This revision makes all previous editions obsolete. Make sure you are using the proper edition for the level of the product.

A version of this manual in Adobe's Portable Document Format (PDF) is available on the web.

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Chapter 1 How to use this manual

What's In This Chapter

This chapter describes who this manual is written for, how this manual is organized, and how to use this manual to get the information you need.

Who This Manual Is Written For

Report Designer Programmer's Guide and Reference Manual is written for programmers. The reader should have experience using i5/OS and be familiar with the following:

- DDS
- Printer files
- RPG programming
- IBM's Screen Design Aid (SDA) utility

How This Manual Is Organized

This manual is divided into five parts:

- Chapters 1 through 4 are directed towards first time users of Report Designer.
- Chapters 5 through 10 contain detailed descriptions of the display screens used by Report Designer.
- Chapters 11 and 12 contain detailed examples, showing how to design reports from start to finish using Report Designer.
- Chapters 13, 14, 15 and 16 describe how to convert report source using Report Designer's Convert Report Source (CVTRPTSRC) command, how to print a sample report using Report Designer's Print Report Sample (PRTRPTSAM) command, how to re-create a printer file using the Create Report Designer Printer File (CRTRDAPRTF) command, and how to print information using the Print Report Information (PRTRPTINF) command.
- Chapters 17 and 18 are for reference in the event problems are encountered using Report Designer.

How To Use This Manual

If you are familiar with Report Designer or like to jump right into a new utility, you can skip the early chapters and the examples, and use this manual and the on-line Help Text as reference tools.

If you are new to Report Designer, the first chapters of this manual provide you all the information you need to get started and the two example chapters provide a good introduction to the Report Designer features you will use most often.

Chapter 2 Introduction

What's In This Chapter

This chapter:

- Describes Report Designer's features.
- Describes Report Designer's considerations.
- Describes Report Designer's report records.
- Describes Report Designer's DDS creation parameters.
- Describes Report Designer's display flow.
- Describes Report Designer's relationship to other products.

Report Designer Features

Report Designer is an interactive utility for the IBM System i. With Report Designer applications programmers can create and maintain report records coded in DDS, RPG or ILE/RPG. Report Designer replaces report design using printer layout charts and hand coding of DDS, RPG or ILE/RPG source specifications.

Report Designer:

- Features functional equivalence to IBM's Screen Design Aid (SDA), with extensions for printer files.
- Supports all DDS keywords and works with existing printer file source members.
- Supports RPG internally described printer files and works with existing RPG source.
- Supports both RPG and ILE/RPG.
- Supports 27 line by 132 column display mode on the Design Image (Work) Display.
- Provides rolling and windowing capabilities for designing reports larger than the display device in use.
- Handles all report widths up to the DDS maximum of 378 columns.
- Allows field selection from existing database files and from fields defined in an RPG program.
- Allows printing of sample reports (PRTRPTSAM command).
- Allows printing of report information (PRTRPTINF command).
- Provides conversions between RPG and DDS (CVTRPTSRC command).
- Stores and reapplies DDS printer file creation parameters.
- Operates on any model System i with i5/OS V5R4M0 or higher installed, and is compatible with all security levels.
- Participates in the full range of licensed program support provided by i5/OS. Licensed program installation, PTF management, etc. are handled with the same commands used to manage IBM software. Complete online manual and context sensitive help are included.

Report Designer Considerations

Consider the following when using existing DDS and RPG source with Report Designer.

- For DDS, Report Designer is designed to handle 92-byte source records. (Eighty bytes of source data, and 12 bytes for source date and sequence number.) Any source records that contain more than 80 bytes of source data are truncated on input and padded with blanks on output.
- For RPG, Report Designer is designed to handle up to 112-byte source records. (One Hundred bytes of source data, and 12 bytes for source date and sequence number.) Any source records that contain more than 100 bytes of source data are truncated on input and padded with blanks on output.
- For DDS source, comment lines are identified by an asterisk (*) in column 7, or by blanks in columns 1 - 5 and 7 - 80. Report Designer retains all DDS source comments. Comment lines which

have blanks in columns 1 - 5, 'A*---' in columns 6 - 10, and blanks in columns 11 - 44 have special meaning to Report Designer.

Comments before the first report record specification are file level comments. Comments between a report record specification, and the first field specification of the report record are record level comments. Comments after the last field in the source member are end of file comments. Comments which are not file level, record level, or end of file comments are field comments. Field comments immediately precede the field they are associated with. The first field in a report record can have no associated comments because these are assumed to be record level comments.

File level and end of file comments are always output to their original locations. Record level and field level comments are tied to their associated report record/field specifications. If a report record or field is moved within the source member, its comments are moved with it. If a report record or field is deleted, its comments are also deleted.

- For RPG source, comment lines are identified by an asterisk (*) in column 7. Report Designer retains all comments in RPG source. All comments are replaced to their original positions on output, with the exception of comments imbedded within the output specifications of the printer file.

  Comments between a report record specification and the first field specification of the report record are record level comments. See "What Is A Report Record?" later in this chapter for an explanation of report records as they apply to RPG source. Comments after the last field in the printer file being edited are end of file comments. Comments which are not record level or end of file comments are field comments. Field comments immediately precede the field they are associated with. The first field in a report record can have no associated comments because these are assumed to be record level comments.

  End of file comments are always output to their original locations. Record level and field level comments are tied to their associated report record/field specifications. If a report record or field is moved within the source member, its comments are moved with it. If a report record or field is deleted, its comments are also deleted.

- A maximum of 256 lines of comments may be associated with any field (field level comments). There is no limit to the number of file, report record, or end-of-file comments.
- A maximum of 50 characters of text information are carried with any field. DDS text specifications of greater than 50 characters are truncated.
- /COPY statements in RPG source are processed to look for field definitions. However, /COPY statements imbedded within the printer file are treated as comments and ignored. Report Designer requires the output specifications for the printer file be fully contained within a single source member.

What Is A Report Record?

The term "Report Record", is extended by Report Designer.

The meaning of "report record" depends on source type.

For DDS, a report record begins with a record specification (an "R" in column 17) and includes all field specifications up until the next record specification, or the end of the source. For DDS, the entire report record is sent to the print device with a single write statement.

For RPG internally described printer files, Report Designer considers similar, consecutive header specifications--along with their associated field specifications--to be part of the same record. To be considered alike, consecutive header specifications must have the same output type, the same EXCPT name, and must be conditioned by the same indicators.

If the spacing and skipping between two lines in the same logical report record for RPG source nets to zero, the second of the two lines becomes the beginning of a new report record.

DDS Creation Parameters

When updating DDS source with Report Designer, parameters specified for the CRTPRTF command are saved as comments in the source. Each parameter specified on the CRTPRTF command from the Report Designer create display is placed on a separate line in the updated DDS. The parameters are stored as comments that are meaningful to Report Designer. On the next access with Report Designer, these comments are used to establish session values and CRTPRTF default values.

Report Designer stamps its comment lines with a specific signature. Comment lines that do not match the Report Designer signature are processed as regular comments. Report Designer signature comments have blanks in columns 1 - 5, 'A*---' in columns 6 - 10, and blanks in columns 11 - 44.

Report Designer stores the specified CRTPRTF parameters as if they were DDS keywords, specified in columns 45 - 80 of a Report Designer signature comment line. Although these are comment lines, they follow the DDS syntax rules for specifying keywords. The keyword names are the same as those on the CRTPRTF command, and the values specified must be valid on the CRTPRTF command.

The PAGESIZE, OVRFLW, and FOLD keywords are always placed in updated DDS source because they affect the Report Designer interactive session.

Report Designer signature comment lines can be deleted from your DDS source with SEU. Report Designer will use the appropriate defaults for keywords not specified. To specify CRTPRTF parameters directly with SEU:

- Flag them as Report Designer signature comments.
- Follow the DDS syntax rules.
- Specify valid parameter values for the keyword.
- Specify the parameters at the file level.

Only file level Report Designer signature comments are significant. Report Designer signature comments at the record and field levels are treated as regular comments.

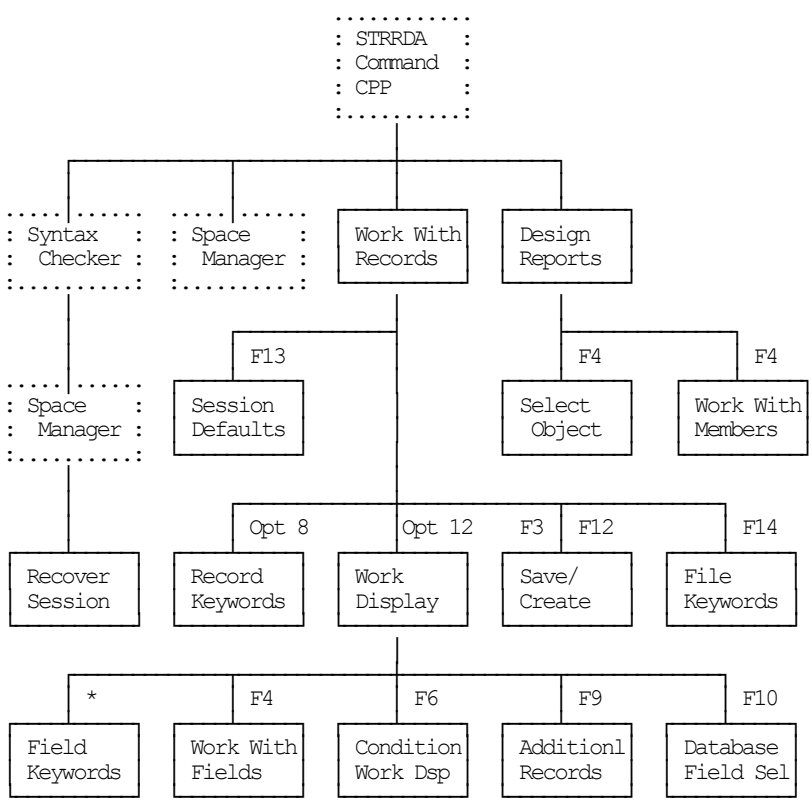
See the Create Report Designer Printer File (CRTRDAPRTF) command description to create printer files in batch using the stored creation parameter values.

Display Flow

This diagram shows the display order when options are selected from the Work with Report Records display. Detailed descriptions of the options appear in the following chapters:

- Chapter 5 Work With Report Records Display
- Chapter 6 File Keywords Displays
- Chapter 7 Record Keywords Displays
- Chapter 8 Design Image (Work) Display
- Chapter 9 Field Keywords Displays
- Chapter 10 Save And Create
- Chapter 17 Recovery

Figure: Display Flow



Product Positioning

Gumbo Software, Inc. has several i5/OS based products:

Number	Licensed Program
2A55RM1	Report Manager - Monitors output queues and distributes spooled files.
2A55SM1	SpoolMail - Sends spooled files as email.
2A55SAM	Spool-a-Matic - Converts spooled files into PC files.
2A55XL1	Excel-erator - Converts/emails database files into/as Excel spreadsheets.
2A55DCR	Dicer - Merge/sort/split/duplicate spooled files.
2A55RDA	Report Designer - Edit DDS, RPG and ILE/RPG print specifications.
2A55SM2	Gumbo Mail - Sends email from your applications.

There is some overlap between and unique function within the products. Choose the product or combination of products that provide the function you need:

	Product						
Function	RM1	SM1	SAM	XL1	DCR	RDA	SM2
Monitor an output queue for work	YES	YES	YES	—	—	—	—
Spooled file distribution	YES	—	—	—	—	—	—
Burst (split) spooled files	YES	YES	YES	—	YES	—	—
Merge/sort/dup spooled files	YES	—	—	—	YES	—	—
Convert spool to text PC file	YES	—	YES	—	—	—	—
Convert spool to PDF/RTF/HTML...	—	—	YES	—	—	—	—
Convert database file to Excel	—	—	—	YES	—	—	—
Email spool as text attachment	YES	YES	—	—	—	—	—
Email spool as PDF/RTF/HTML...	—	YES	—	—	—	—	—
Email database file as Excel	—	—	—	YES	—	—	—
Email any IFS file	—	YES	—	YES	—	—	YES
Set up i5/OS SMTP & mail router	YES	YES	—	YES	—	—	YES
Edit DDS, RPG, ILE/RPG source	—	—	—	—	—	YES	—

Chapter 3 Installation

What's In This Chapter

This chapter describes:

- How to install Report Designer.
- How to verify that Report Designer is installed correctly.
- How to include the RDA library in a job's library list.
- How to determine release dependencies.
- How to test a new release while leaving the old in production.
- How to tailor the installation
- How to remove Report Designer from the system.
- How to find additional installation information.
- How to contact technical support.
- Hot site installation.

Installing Report Designer

Follow these instructions to install Report Designer V3R1M0 on your System i:

Note: If you have downloaded this software from the web, instructions specific to installing from the download can be found in the file "readme.htm" which is included in the download.

1. Sign on to the system as the security officer (QSECOFR).
2. Verify that your machine is at i5/OS V5R4M0 or later by running:

   ```
   DSPDTAARA DTAARA(QGPL/QSS1MRI)
   ```

   Note: If you are running a version of i5/OS earlier than V5R4M0 you can not install Report Designer V3R1M0 on your machine. You must install an earlier version of Report Designer or upgrade the operating system.

3. Verify that user domain objects are allowed in the libraries RDA and QSRV, by running:

   ```
   WRKSYSVAL  SYSVAL(QALWUSRDMN)
   ```

   Take option 5 to display the value. If the value is not *ALL, use option 2 to add libraries RDA and QSRV to the list of libraries where user domain objects are allowed.

   Note: QSRV is required to correctly process PTFs when they are loaded and applied.

4. Insure that i5/OS will be able to verify the signatures that we apply to our product's objects by installing our Signing Certificate and Root CA Certificate using Digital Certificate Manager. Alternately, insure that signature verification will not prevent the restore operation by running:

   ```
   WRKSYSVAL SYSVAL(QVFYOBJRST)
   ```

   Take option 5 to display the value. If the value is 3 or higher, use option 2 to temporarily change the value to 1.

5. Mount the distribution media in the appropriate device.
6. Submit the Restore Licensed Program (RSTLICPGM) command to batch:

   ```
   RSTLICPGM  LICPGM(2A55RDA) DEV(device-name) LNG(2924)
   ```

Note: "device-name" is the device the media was mounted on and is usually OPT01.

Note: During the restore operation the system operator message queue may receive inquiry message CPA3DE4 "Directory not registered. (C G)". Unless you are using a directory naming convention similar to ours (that is the directory specified in the CPA3DE4's second level text is unrelated to our software), You can safely respond with a "G" to reestablish the relationship between the directory and the product. Typically the message will occur three times.

When the RSTLICPGM command finishes a new library RDA and a new directory '/Gumbo/ProdData/2A55RDA' are on the system. You can access the Report Designer menu by entering the following command:

```
GO   MENU(RDA/RDA)
```

You can determine which PTFs were included on the media by entering the following command:

```
DSPPTF   LICPGM(2A55RDA)
```

A list of current PTFs can be found at www.gumbo.com. If there are newer PTFs available, download and install them. The bottom of our PTF web page also includes a listing of any IBM PTFs that affect the product.

Note: Gumbo Software recommends downloading the current cumulative PTF package after installing the software.

Verifying Report Designer Installation

You can verify that Report Designer has been correctly installed by running the installation verification program.

1. Access the Report Designer menu by entering the following command:

   ```
   GO   MENU(RDA/RDA)
   ```

2. Select the option to 'Verify the product is installed correctly' and press enter.

If the message 'Report Designer is installed correctly.' is displayed on the bottom of your display when the option finishes, installation is complete.

If the message is not displayed, check your job log messages or see the Recovery Procedure .

Library List Considerations

Library RDA must be in the library list of jobs using Report Designer commands, or the commands must be qualified with library RDA. Depending on your installation and intended use you can choose to:

- Add library RDA to the system library list. This insures every job in the system has access to Report Designer commands. However this introduces problems with installing new releases and is not recommended.
- Add library RDA to the initial library list parameter of job descriptions controlling jobs which will use Report Designer commands. (recommended)
- Run a ADDLIBLE RDA command in individual threads requiring Report Designer commands.
- Qualify the command names on each use:

  ```
  RDA/CHGRDAAUT
  ```

  Library RDA will be temporarily added to the product portion of the current thread's library list.

Determine the best method for your installation and perform any changes required.

Release Considerations

Report Designer operates under i5/OS V5R4M0 or higher. Releases occur on a different schedule than IBM releases. Once Report Designer is installed the following considerations apply:

- A new release of i5/OS may be installed without installing a new release of Report Designer.

  Report Designer uses only published or IBM sanctioned interfaces and is upward compatible with all releases of i5/OS. The Report Designer authorization code does not change.

- A new release of Report Designer may be installed without installing a new release of i5/OS.

  Any change in the requirements for operating system release level will be noted in the documentation accompanying the Report Designer release. The new authorization code must be entered.

- More than one release of Report Designer may be installed on a system at one time.

  By restoring Report Designer to a library other than RDA a new release can be installed for testing while the current release remains in production. Any release to release considerations that may apply will be noted in the documentation accompanying the new release. Additional operational considerations may apply. For more information on renaming a library during licensed program installation see the Restore Licensed Program (RSTLICPGM) command and the New Release Testing section of this chapter.

- When a new release of Report Designer is installed in the same library as an old release the following processing is performed in order to preserve data and Report Designer authorization information:
  1. The Report Designer library is saved to QGPL/RDAVxRyMz. Where VxRyMz is the current release.
  2. Product objects that contain default settings and operational information are copied to library QTEMP.
  3. The Report Designer library is cleared.
  4. Report Designer is restored.
  5. Default settings and operational information are copied back to the product objects.
  6. All objects duplicated to QTEMP are deleted.
  7. Save file QGPL/RDAVxRyMz is deleted.

Note: Gumbo Software recommends making a backup of the current release before installing a new release of Report Designer.

New Release Testing

Unlike IBM licensed programs, Gumbo Software licensed programs are packaged in a way that allows multiple release to be installed on your System i at the same time. This feature allows you to test a new release while the current release remains in production.

The key to new release testing are the LIB() and CODHOMEDIR() parameters of i5/OS's Restore License Program (RSTLICPGM) command which allow you to restore the product to a library name and directory different than the those used during packaging.

To test a new release, follow this procedure:

1. Review the Enhancement Summary for any release to release considerations that could affect your installation.
2. Install the new release in library RDAV3R1M0 and directory '/Gumbo/ProdData/2A55RDAV3R1M0':

```
RSTLICPGM  LICPGM(2A55RDA) DEV(device-name) LNG(2924)
           LIB(RDAV3R1M0) REPLACERLS(*NO)
           CODHOMEDIR('/Gumbo/ProdData/2A55RDAV3R1M0')
```

where device-name is the device the media was mounted on.

3. Perform your new release testing.
4. When testing is complete you must delete the new release.

```
DLTLICPGM  LICPGM(2A55RDA) RLS(V3R1M0) OPTION(*ALL)
```

Note: Do not delete nor rename libraries and directories to move the new release into production. Doing so will corrupt the license program information kept internally by i5/OS. If this has already occurred, see the Software Installation Problems section of the "Trouble Shooting" chapter.

5. Follow the installation instructions to place the new release into production.

Installation Tailoring

To access the Installation Tailoring display, enter the following command:

```
CHGRDADFT
```

When you press Enter, the Installation Tailoring display appears:

```
RDA                      Installation Tailoring

Type choices, press Enter.
  Default page width. . . . . .    132      1 - 378
  Default page length . . . . .     66      1 - 255
  Default overflow line . . . .     60      1 - 255
  Default printer name. . . . .   *PRTF     Name, *PRTF, *PRTF38, *MBRTYPE.
  Default fold value. . . . . .   N          Y=Yes, N=No
  Display window segments . . .   3          1 - 9
  Display roll segments . . . .   3          1 - 9
  Off page fill element . . . .   .          Character
  Enable 27x132 mode. . . . . .   Y          Y=Yes, N=No
  Always write RPG printer name   Y          Y=Yes, N=No
  Use field name as image . . .   N          Y=Yes, N=No
  Preserve record list. . . . .   Y          Y=Yes, N=No
  Use unsupported interfaces. .   N          Y=Yes, N=No
  Process overrides . . . . . .   Y          Y=Yes, N=No
  Use DFT keyword . . . . . .     N          Y=Yes, N=No
  Authorized Serial No. . . . :   *DEMO
  Demo Expires. . . . . . . . :   2009/04/15
  Software Ver/Rel/Mod level. . :   V3R1M0  2A55RDA

F3=Exit   F12=Cancel
(C) Copyright Gumbo Software, Inc. 1989, 2009. All rights reserved.
```

The Installation Tailoring display allows you to tailor default values to reflect the standards used at your installation. From the Installation Tailoring display you can:

- Set the default page width.
- Set the default page length.
- Set the default overflow line.
- Set the default printer name.
- Set the default fold value.
- Set the number of display window segments.
- Set the number of display roll segments.
- Set the off page fill element.
- Enable 27x132 mode for 3180's.
- Control writing of RPG printer name.

- Set the appearance of fields on the Work Display.
- Control clearing of the list of additional records.
- Control the uses of unsupported interfaces.
- Control the processing of overrides.

Default page width

Page width is the number of columns on each line of a page. The maximum page width supported by DDS is 378.

Default page length

Page length is the number of lines on each page. The maximum page length supported by DDS is 255.

Default overflow line

Overflow line is the line number on the page at which printer overflow to a new page occurs. Overflow is signaled when the specified line number becomes the current line number, whether or not printing has occurred on that line. Report Designer uses overflow line when creating source.

Default printer name

Printer name is used by Report Designer to distinguish between RPG and DDS and to determine source code processing. *PRTF and *PRTF38 specify DDS source code with appropriate qualification and parameter syntax for the OS/400 and System/38 environments respectively. When a name is specified RPG source code is used. The name identifies the internally described printer file to process.

The possible values are:

***MBRTYPE**	Infer the printer name from the member's source type. Members with source type PRTF are treated as if *PRTF were specified. Members with source type PRTF38 are treated as if *PRTF38 were specified. Members with source type RPG, RPT, RPG36 etc. are treated as if *FIRST were specified.
***PRTF**	The source is treated as native i5/OS DDS.
***PRTF38**	The source is treated as System/38 compatible DDS.
***FIRST**	The source is treated as RPG and the first printer file name encountered in the source is processed.
file-name	Specify the name of the RPG internally described printer file.

Default fold value

Fold specifies whether print data that extends beyond the end of the page is folded to the next line or is dropped.

N	Do not fold data to the next line.
Y	Fold data to the next line.

Display window segments

The display window segments parameter governs the number of times you must press the window keys F19/F20 on the Report Designer Work Display to move one display width. A value of 2 would require 2 F19 keys to window the display one display width to the left.

Display roll segments

The display roll segments parameter governs the number of times you must press the page (roll) keys on the Report Designer Work Display to move one display length. A value of 2 would require pressing Page Down twice to roll the display one display length.

Off page fill element

When the Work Display is rolled or windowed beyond the edge of the page, an out-of-bounds area is exposed. The out-of-bounds area is filled with the off page fill character.

Enable 27x132 mode for 3180's

The Enable 27x132 mode parameter specifies whether 27 line by 132 column display mode is used with display devices that are capable of it. When not enabled, 24 line by 80 column display mode is used.

N	Do not use 27 x 132.
Y	Use 27 x 132 mode if available on device.

Always write RPG printer name

"Always write RPG printer name" governs the writing of the printer name in the generated source code. The parameter has no effect on DDS generation.

N	Write the printer name on the first record identification O-spec only.
Y	Write the printer name on each record identification O-spec.

Use field name as image

The "Use field name as image" parameter governs the appearance of fields on the Work Display. With a value of "N" character fields are displayed as a sequence of O's while numeric fields are shown as a sequence of 6's. With "Y" the field's name is used to represent the field.

Preserve record list

The "Preserve record list" parameter governs clearing of the list of additional records to display on the Work Display. With "N" Report Designer operates as SDA and the record list is cleared on exiting from the Work Display. With "Y" the record list is preserved on exiting the Work Display. This allows switching between records without re-keying the additional records to be displayed.

Use unsupported interfaces

The "Use unsupported interfaces" is an obsolete parameter that controlled the interface used to resolve field references. The problem the switch was designed to address has long since been resolved by IBM and the field is ignored.

Process overrides

The "Process overrides" parameter governs the processing of overrides when field references are resolved. With "N" Report Designer ignores any file overrides when resolving field references. With "Y", file overrides are applied before field references are resolved.

Use DFT keyword

The "Use DFT keyword" parameter provides control over generation of the "DFT" keyword in DDS source code. Use of the keyword is optional in DDS, not used at most installations and by default not placed in generated source code by Report Designer.

When set to "Y" Report Designer adds the DFT keyword. For example, DFT('literal') is generated instead of 'literal'.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Enter default values to reflect the standards used at your installation and press enter. Use F3 to exit Installation Tailoring.

Note: Additional individual tailoring is available to each user from within Report Designer. Press F13=Session defaults from the Work with Report Records Display.

Deleting Report Designer

Follow these instructions to remove Report Designer from your System i:

1. Sign on to the system as the security officer (QSECOFR).

2. Delete the Report Designer library by using the Delete Licensed Program (DLTLICPGM) command:

```
DLTLICPGM  LICPGM(2A55RDA) OPTION(*ALL)
```

Additional Installation Information

Additional detailed installation information and instructions can be found in the InfoCenter i5/OS and related software > Install, upgrade, or delete i5/OS and related software SC41-5120.

Technical Support

If you encounter a problem with Report Designer you should:

- Follow the steps in Chapter 18 Problem Determination.
- Load and apply the current cumulative PTF package for the software. You can obtain the current package by visiting the web site listed below.

If the problem remains unresolved, contact:

GUMBO
Software, Inc.

809 W Howe St
Seattle, WA 98119
United States of America
Phone: (206) 284-5078
Email: support2009@gumbo.com
Web: www.gumbo.com

Hot Site Installation

In the event of a catastrophic system failure, an otherwise properly licensed and authorized copy of our product may be copied to a back up or fail over machine. The product's authorization algorithm will detect that the software is operating on a machine serial number different than the licensed and authorized serial number and automatically create and install a 30 day temporary authorization code for the back up or fail over machine. You do not need to contact Gumbo Software, Inc. in the event of an emergency.

An otherwise properly licensed and authorized copy of this product may be transferred to a back up or fail over machine for the purpose of testing your emergency recovery procedures and the product's automatic temporary authorization function.

The correct sequence of steps is as follows:

1. Install the software and enter the permanent authorization code on your production machine.
2. Save the software from your production machine using the Save Licensed Program (SAVLICPGM) command. This creates an authorized copy, save it with your back ups.
3. When restoring to the back up or fail over machine you must first insure that any previous copies have been deleted. To delete a previous copy use the Delete Licensed Program (DLTLICPGM) command.
4. Restore the authorized copy to the back up or fail over machine using the Restore License Program (RSTLICPGM) command.
5. The first time the software is used on the back up or fail over machine the product's authorization algorithm will create and install a temporary authorization code running for 30 days. This allows you install the authorized copy in advance of a disaster.

Chapter 4 Accessing Report Designer

What's In This Chapter

This chapter describes how to access Report Designer. It describes the Start Report Designer (STRRDA) command and associated displays, how to create a user defined option for use within the Program Development Manager (PDM) and how to display the Report Designer Menu.

Using the Start Report Designer (STRRDA) Command

Use the STRRDA prompt to review or change the parameter values for the STRRDA command before beginning a Report Designer session. To request the STRRDA prompt:

1. Key in STRRDA on a command line.
2. Press F4.

After completing the display, press Enter. If *PRV is specified for any of the parameters, the Design Reports display appears. Otherwise the Work with Report Records display appears.

The Start Report Designer (STRRDA) command starts Gumbo Software Inc's Report Designer.

Source file (SRCFILE)

Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

The possible values are:

***PRV**	Use the source file name specified in the previous Report Designer session.
file-name	Specify the name of the source file.

The possible library values are:

***PRV**	Use the library specified in the previous Report Designer session.
***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
***LIBL**	All libraries in the thread's library list are searched.
library-name	Specify the name of the library.

Source member (SRCMBR)

Specifies the name of the member containing the source to be updated or the name of a new member to be created.

The possible values are:

***PRV**	Use the name of the source member specified on the previous Report Designer session.
***SELECT**	Specifies that selection prompting is used to determine the source member name.
member-name	Specify the name of the source member.

*PRTF or RPG printer file (PRINTER)

Specifies whether the source member is treated as DDS or RPG source. In the case of RPG source, specifies the name of the printer file to process as it appears in the F-spec.

The possible values are:

***PRV**	Use the printer name specified in the previous Report Designer session.
***MBRTYPE**	Infer the printer name from the member's source type. Members with source type PRTF are treated as if *PRTF were specified. Members with source type PRTF38 are treated as if *PRTF38 were specified. Members with source type RPG, RPT, RPG36 etc. are treated as if *FIRST were specified.
***PRTF**	The source is treated as native i5/OS DDS.
***PRTF38**	The source is treated as System/38 compatible DDS.
***FIRST**	The source is treated as RPG and the first printer file name encountered in the source is processed.
file-name	Specify the name of the RPG internally described printer file.

Object library (OBJLIB)

Specifies the name of the library where the program or printer file created by Report Designer is stored.

The possible values are:

***PRV**	Use the library specified in the previous Report Designer session.
***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
library-name	Specify the name of the library.

Job description (JOBD)

Specifies the name of the job description used with batch jobs submitted by Report Designer.

The possible values are:

***PRV**	Use the job description name specified in the previous Report Designer session.
***USRPRF**	Use the job description name specified in the user profile.
job-description-name	Specify the name of the job description.

The possible library values are:

***PRV**	Use the library specified in the previous Report Designer session.
***LIBL**	All libraries in the thread's library list are searched.
***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
library-name	Specify the name of the library.

Example

```
STRRDA  SRCFILE(SRC/QRPGSRC)  SRCMBR(INV310)  PRINTER(QPRINT)
```

This command updates an RPG printer definition in source file QRPGSRC in library SRC. The report layout in source member INV310 for file QPRINT is modified if it exists or added if it does not.

Creating a User-Defined PDM Option

IBM's Program Development Manager (PDM) allows creation of user-defined options. The following steps will create the user-defined option "RD" which can be used to access Report Designer from within PDM by keying "RD" next to a member name:

- Enter PDM by using the WRKMBRPDM command.
- Press F16 to work with user defined options.
- Press F6 to create a new user defined option.

```
                    Create User-Defined Option

Type changes, press Enter.

  Option  . . . . . .   RD   Value to change to

  Command . . . . . .   RDA/STRRDA SRCFILE(&L/&F) SRCMBR(&N)
PRINTER(*MBRTYPE) OBJLIB(&O) JOBD(&J)









F3=Exit       F4=Prompt       F12=Cancel
```

- Key the user defined option definition as shown above, and press Enter.
- Press F3 to exit the Work with User-Defined Options display. Now key RD in the option field for source members in PDM to edit them with Report Designer.

The Report Designer Menu

Use Report Designer's menu to access all of the available Report Designer functions:

1. Key in GO MENU(RDA/RDA) on a command line.
2. Press Enter

```
RDA                          Report Designer
                                                      System:   GUMBO003
Select one of the following:

     1. Online Manual

  Report Design
     2. Start Report Designer                                  STRRDA

  Other Report Options
     3. Create Report Designer Printer File                    CRTRDAPRTF
     4. Convert Report Source                                  CVTRPTSRC
     5. Print Report Sample                                    PRTRPTSAM
     6. Print Report Information                               PRTRPTINF

  Other Options
    61. Search Help Index
    62. Change Report Designer Default                         CHGRDADFT
                                                                  More...
Selection or command
===>

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel
(C) Copyright Gumbo Software, Inc. 1989, 2009. All rights Reserved.
```

The options on the Report Designer (RDA) menu are divided into 4 categories:

- Online Manual (Option 1)
- Report Design (Option 2)
- Other Report Options (Options 3 - 5)
- Other Options (Options 61 - 65)

The Report Designer (RDA) menu options are summarized below:

Note: See the individual command descriptions for a complete explanation of each option.

Option 1. Online Manual

The online manual allows you to view the contents of the Report Designer Manual from a work station.

Option 2. Start Report Designer

The Start Report Designer (STRRDA) command starts Gumbo Software Inc's Report Designer.

Option 3. Create RDA Printer File

The Create RDA Printer File (CRTRDAPRTF) command creates a DDS printer file using the same Create Printer File (CRTPRTF) command parameter values specified when the printer file was last created on exiting from Report Designer.

Option 4. Convert Report Source

The Convert Report Source (CVTRPTSRC) command converts a report definition contained in a source member from one source type to another.

Option 5. Print Report Sample

The Print Report Sample (PRTRPTSAM) command prints a sample report. The result is similar to pressing F17=Print from the Work Display and the command can be executed in batch.

Option 6. Print Report Information

The Print Report Information (PRTRPTINF) command parses a source member and generates various reports based on the content of the member.

Option 61. Search Help Index

Search help index allows you to access the Report Designer help index and search for specific information.

Option 62. Change RDA Defaults

The Change RDA Defaults (CHGRDADFT) command changes values used by Report Designer to control processing and as initial defaults.

Option 64. Change Report Designer Authorization

The Change Report Designer Authorization (CHGRDAAUT) command changes the authorization code for Report Designer. The command is used to extend a demonstration period or to permanently authorize Report Designer for a system or a partition.

Option 65. Display RDA Work Space Status

The Display RDA Work Space Status (DSPRDASPC) command prints a listing of the contents of internal work spaces.

Report Designer copies any existing DDS or RPG source into a work space, which is used to keep track of all additions, changes, and deletions that occur during the design session. Upon normal completion, this work space is used to update the DDS or RPG source, and the work space is deleted.

When Report Designer terminates abnormally (for example due to power failure or a ENDRQS command) the work space will usually be intact, and may be recoverable. The next attempt to modify the same source member with Report Designer presents the Recover RDA Session display.

Option 66. Verify the product is installed correctly

Installation verification checks to make sure that Report Designer has been correctly installed.

Option 67. Check Report Designer Authorization

The Check Report Designer Authorization (CHKRDAAUT) command executes Report Designer's authorization verification function. This allows you to determine whether and how the product is authorized for use.

Design Reports Display

The Design Reports display appears when you specify *SELECT for the source member parameter on the STRRDA command, or when you specify *PRV for any of the parameters on the STRRDA command. From the Design Reports display you can:

- Select a source file to work with.
- Select a member for editing.

Field Descriptions

File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Printer	The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Prompt	Provides assistance in typing additional parameter values for an option or in using a command.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

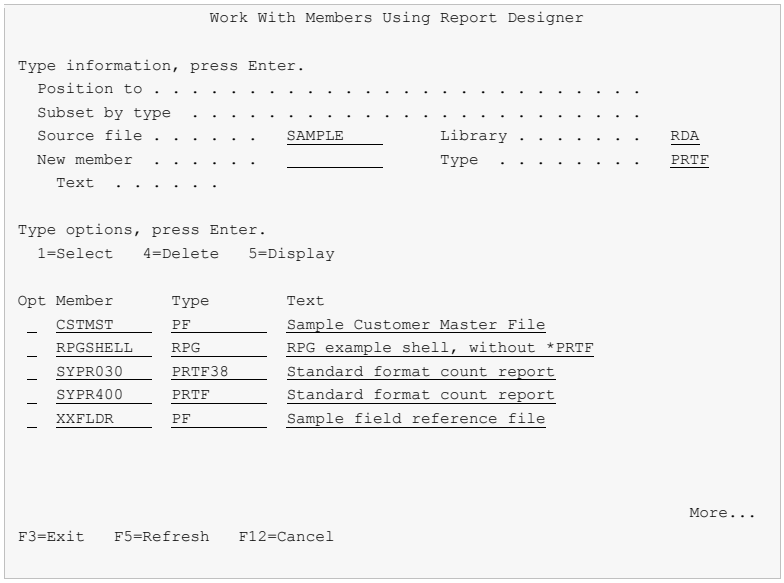
Work With Members Using Report Designer

The Work with Members display appears when F4 is pressed with the cursor positioned in the member name field on the Design Reports display or the Save/Create display. The Work with Members display presents a list of all members in the specified source file. From the Work with Members display you can:

- Position to a specific member in the list.
- Display members for a specific source type only.
- Select a source file to work with.
- Change the text for members in the selected source file.
- Change the source type for members in the selected source file.
- Select an existing member to work with.
- Delete members from the selected source file.
- Display members from the selected source file.
- Specify a new member to work with.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Option

Type the number of an option and press the Enter key.

1=Select	Selects the member for processing.
4=Delete	Delete the member from the source file.
5=Display	Display the member's contents.

Field Descriptions

Positioning to	To position the list to a specific member, key the name--or partial name--and press Enter. The cursor is positioned to the first member whose name is greater than or equal to the search characters you specify. If there is no member name greater than or equal to the specified search characters, the cursor is positioned to the last member in the list.
Subset by type	To include only members with a particular source type in the list, key the source type in the "Subset by type" field and press Enter. Press F5 to refresh the list and include all source types.
Source file	To select a new source file to work with, key the name and library of the source file in the fields provided, and press Enter.

New member	Specifies the name of a new member to create.
Type	Specifies a source type for a new member.
Text	Specifies a description for a new member.
Member	Specifies the name of the source member.
Type	Specifies the member source type. To change the source type for a member, key over the existing source type and press Enter.
Text	Specifies the member's description. To change the text description for a member, key over the existing text and press Enter.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Object Using Report Designer

The Select Object Using Report Designer display appears when a list is requested using F4. From the Select Object Using Report Designer display you can:

- Position to a specific object in the list.
- Display a filtered list of objects.
- Select an object to work with.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.

```
                  Select Object Using Report Designer

Library . . . . . .   RDA          Name, *ALL, *LIBL, *USRLIBL, *CURLIB...
Object type . . . . .   *PGM       *ALL, *ALRTBL, *AUTL, *CFGL, *CHTFMT...
Position to . . . . .               Starting character(s)
Subset by name  . . .   *ALL       *ALL, name, *generic*
Subset by attribute . .   *ALL     *ALL, attribute, *generic*

Type option, press Enter.
  1=Select

Opt Object      Library     Type        Attribute   Text
 _  RDCL000     RDA         *PGM        CLP         RDA Report Designer Command
 _  RDCL001     RDA         *PGM        CLP         RDA Work Space Build
 _  RDCL002     RDA         *PGM        CLP         RDA Create User Information
 _  RDCL006     RDA         *PGM        CLP         RDA Source Syntax Checker
 _  RDCL007     RDA         *PGM        CLP         RDA RTVMSGD for MSGCON Key
 _  RDCL009     RDA         *PGM        CLP         RDA Work Space Empty
 _  RDCL010     RDA         *PGM        CLP         RDA Retrieve Serial Number
 _  RDCL011     RDA         *PGM        CLP         RDA Work Space Recovery
 _  RDCL012     RDA         *PGM        CLP         RDA Change RDA Authorization
                                                                      More...
F3=Exit   F5=Refresh   F12=Cancel
```

Option

Type the number of an option and press the Enter key.

1=Select	Selects the object for processing.

Field Descriptions

Library	Enter the name of a specific library to see a list of objects in that library only. Alternatively, specify *ALL to see a list of objects in all libraries; *LIBL to see a list of objects in any of the libraries in the job library list; *USRLIBL to see a list of objects in any of the libraries in the user part of the job library list; *CURLIB to see a list of objects in the job's current library; *ALLUSR to see a list of objects in all user libraries.
Object type	Enter *ALL to include all object types in the list, or enter an object type specification.
Position To	To locate a particular object in the list, key the name or partial name in the "Position to" field, and press Enter. The cursor will be positioned to the first object name greater than or equal to the name you specify.
Subset by name	Enter *ALL to include all object names in the list. Enter a specific object name to include only objects with that name in the list. Key asterisks (*) or question marks (?) in the object name specification to include objects by generic name.
Subset by attribute	Enter *ALL to include all object attributes in the list. Enter a specific object attribute to include only objects with that attribute in the list. Key asterisks (*) or question marks (?) in the object attribute specification to include objects generically by attribute.
Object	Specifies the object's name.
Library	Specifies the library in which the object is located.
Type	Specifies the object's type.
Attribute	Specifies the object's attribute.
Text	Specifies the object's description.

Generic names must be in one of the following formats:

- ABC* includes all objects whose names begins with ABC.
- *ABC includes all objects whose names ends with ABC.
- *ABC* includes all objects whose names contains ABC anywhere in the name.
- A*C includes all objects whose names begins with A and ends with C.
- **ALL includes all objects whose names ends in ALL.

A question mark anywhere in an object name will match any character in the same position of the actual object name. Question marks may be keyed anywhere in the name except for the first character. You can combine the use of question marks with asterisks in specifying a generic object name as in the following examples:

- A?C* includes all objects whose names begins with A-anything-C.
- A??B?C* includes all objects whose names contain a string, anywhere in the name, with A in position 1, B in position 4 and C in position 6 of the string.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 5 Work with Report Records

What's In This Chapter

This chapter describes the Work with Report Records and associated displays.

Work with Report Records Display

From the Work with Report Records display you can:

- Add report records to a source member.
- Edit report record comments with SEU.
- Copy report records in a source member.
- Remove report records from a source member.
- Rename report records in a source member.
- Select record keywords for a report record.
- Design a report record's image.
- Change the Report Designer session defaults.
- Select file-level keywords.
- Edit file-level comments with SEU.

Use this display to work with report records in a file member by selecting options or pressing function keys.

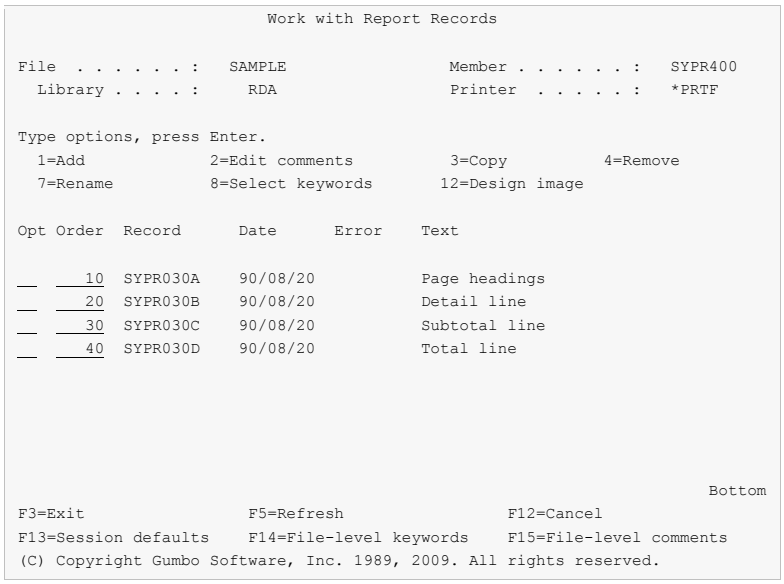
To select an option, type the option number in the Option list area and press Enter. If you know the name of a report record you want to work with, enter the name in the Record prompt of the first list entry and type the option you want in the Option prompt.

Note: You can select additional records to work with when you are using option 12 (Design Image). Press F9 and the Select Additional Records for Display display will appear.

If you press Enter without choosing any options, an exit display appears where you can choose to save and compile your work.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Option

Type the number of an option and press the Enter key.

1=Add Type 1 in the top entry of the list area to add a new report record. Type a name for your new report record in the Record prompt, and press Enter.

All new report records are added at the end of the report record list.

2=Edit comments Type 2 to edit the comments associated with the report record. When you press Enter the SEU display will appear.

3=Copy Type 3 to copy an existing report record to a new report record. When you press Enter, the Copy Records display appears.

All new report records are added at the end of the report record list.

4=Remove Type 4 to remove a report record from the member. When you press Enter, the Confirm Remove of Records display appears.

7=Rename Type 7 to change the name of a report record. When you press Enter, the Rename Records display appears.

8=Select keywords Type 8 to change the keyword selections for a report record. When you press Enter, a record-level keyword selection display appears.

12=Design Image Type 12 to change the image of a report record. When you press Enter, the Design Image work screen appears.

Field Descriptions

File Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

Member Specifies the name of the member containing the source to be updated or the name of a new member to be created.

Printer The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Order Contains a number (up to five digits) for each report record indicating the position of that report record in the source member. To change the position of a report record, change the number and Report Designer will renumber all order numbers in multiples of ten. You can type 0 as a number; however, it becomes 10 when you press Enter.

Group the report records that you use most near the beginning of the source member.

Record Specifies the name of the report record.

Date The date the report record was last updated.

Error Indicates whether or not errors were found during syntax checking of the report record. The most common cause of errors is reference in the source statements to files that cannot be located in the library list of the job. If this column

indicates errors, compile the source to get a list of errors and correct them using SEU.

Note: This column does not indicate whether an error has already been corrected within Report Designer.

Text Specifies a description of the report record.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
F13=Session defaults	Changes the session default values that govern the operations of Report Designer.
F14=File-level keywords	Displays the Select File Keywords display appears.
F15=File-level comments	Edits file-level comments associated with this member using SEU.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Copy Records Display

From the Copy Records display you can:

- Specify a new name for a record you are copying.

Use this display to copy records that you select from the Work with Report Records display in the current member. To copy a record, type a name in the New Name prompt next to a record from the Record list area, and press Enter. If the name of the copied record exists in the member, the Confirm Copy of Record display appears.

Field Descriptions

File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Printer	The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Record	Specifies the name of the report record.
New name	Specifies the new name for the report record.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

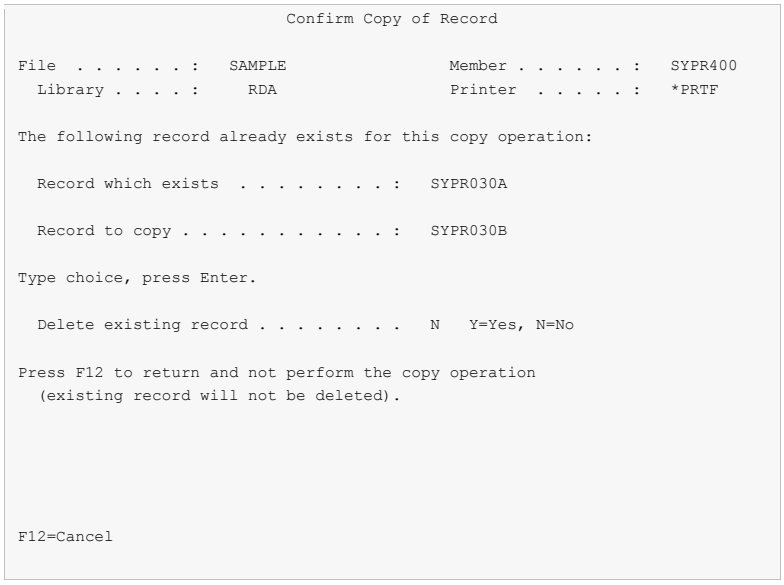
Confirm Copy of Record Display

From the Confirm Copy of Record display you can:

- Confirm the deletion of an existing record by the copy operation.

This display appears when you try to copy a record to another record that already exists in the current member. You can do one of the following:

- Type Y in the Delete existing record prompt and press Enter, to delete the existing record and perform the copy operation.
- Type N in the Delete existing record prompt and press Enter, to bypass the copy operation and process any other options.
- Press F12 to return to the previous display, and to cancel the copy operation and any pending options.



Field Descriptions

File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Printer	The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST

was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Record which exists The name of the existing record.

Record to copy The name of the record that you want to copy.

Delete existing record Choose from the following:

- **Y=YES** Type Y to delete the existing record and copy the new record.
- **N=NO** Leave N if you do not want to delete the existing record. The record is not copied and the existing record is not deleted. The next pending operation is processed.

Function keys

F1=Help Provides additional information about using the display or a specific field on the display.

F12=Cancel Cancels this display and returns to the previous display.

Enter Submit information on the display for processing.

Help Provides additional information about using the display or a specific field on the display.

Print Prints information currently shown on the display.

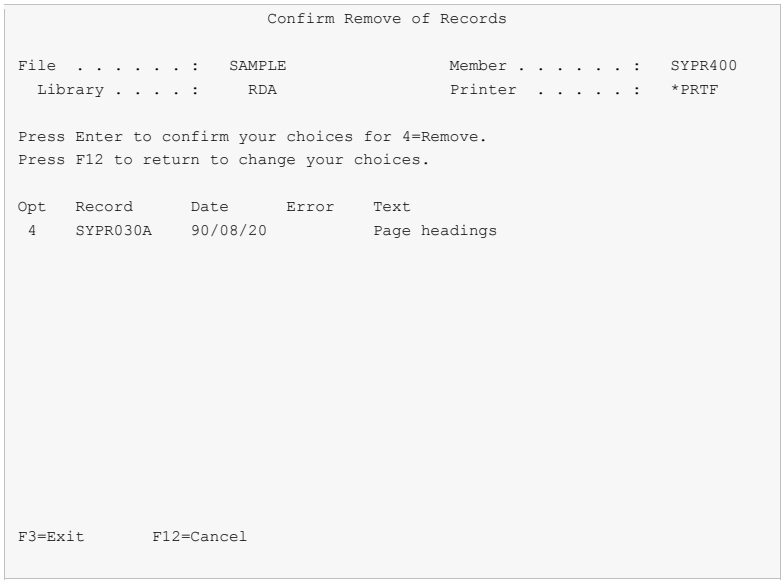
Confirm Remove of Records Display

From the Confirm Remove of Records display you can:

- Confirm the removal of records from a member.

Use this display to confirm the removal of selected records from the current member.

Press Enter to remove the record, or press F12 to cancel the request and return to the Work with Report Records display.



Field Descriptions

File Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

Member Specifies the name of the member containing the source to be updated or the name of a new member to be created.

Printer The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file

encountered in the source appears.

Record	Specifies the name of the report record.
Date	The date the report record was last updated.
Error	Indicates whether or not errors were found during syntax checking of the report record. The most common cause of errors is reference in the source statements to files that cannot be located in the library list of the job. If this column indicates errors, compile the source to get a list of errors and correct them using SEU. **Note:** This column does not indicate whether an error has already been corrected within Report Designer.
Text	Specifies a description of the report record.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Rename Records Display

From the Rename Records display you can:

- Specify a new name for a record you are renaming.

Use this display to change the name of records that you selected on the Work with Report Records display. To rename a record, type a name in the New Name prompt next to a record from the Record list area, and press Enter.

Field Descriptions

File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Printer	The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Record	Specifies the name of the report record.
New name	Specifies the new name for the report record.

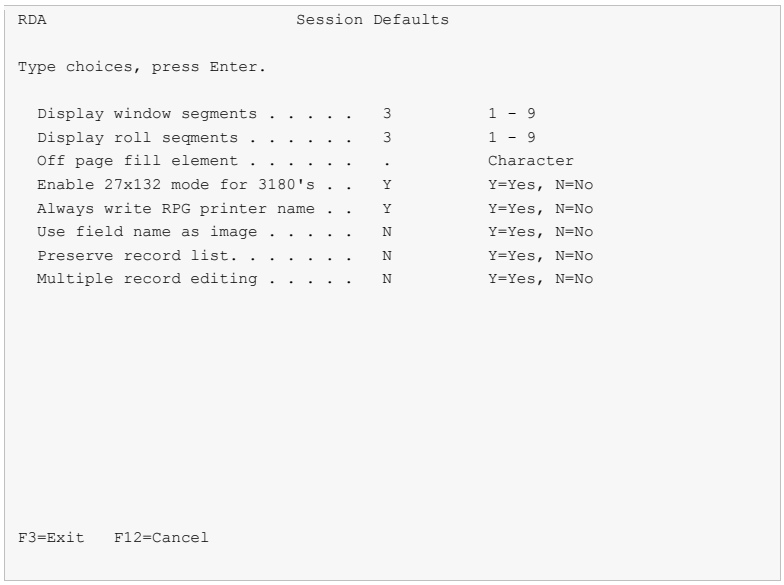
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Session Defaults Display

Report Designer's Session Defaults display tailors default values to reflect your individual preference. From the Session Default display you can:

- Set the number of display window segments.
- Set the number of display roll segments.
- Set the off page fill element.
- Enable 27x132 mode for 3180's.
- Control writing of RPG printer name.
- Set the appearance of fields on the Work Display.
- Control clearing of the list of additional records.
- Control record editing on the Design Image (Work) Display



Field Descriptions

Display window segments	Governs the number of times you must press the window keys F19/F20 on the Work Display to move one display width. A value of 2 would require 2 F19 keys to window the display one display width to the left.
Display roll segments	Governs the number of times you must press the page (roll) keys on the Work Display to move one display length. A value of 2 would require pressing Page Down twice to roll the display one display length.
Off page fill character	The character specified here will appear in out-of-bounds areas of the Report Designer work display.
Enable 27x132 mode	"Y" enables the 27 x 132 display mode of 27 x 132 capable displays. 27 x 132 capable devices

	will use 24 x 80 display mode if "N" is entered.
Always write RPG printer name	Governs the writing of the printer name in the generated RPG source code. With a value of "Y" the printer name is written on each record identification O-spec. With a value of "N" the printer name is written on the first record identification O-spec only. This value has no effect on DDS generation.
Use field name as image	Governs the appearance of fields on the Work Display. With a value of "N" character fields are displayed as a sequence of O's while numeric fields are shown as a sequence of 6's. With "Y" the field's name is used to represent the field.
Preserve record list	Governs clearing of the list of additional records to display on the Work Display. With "N" Report Designer operates as SDA and the record list is cleared on exiting from the Work Display. With "Y" the record list is preserved on exiting the Work Display. This allows switching between records without re-keying the additional records to be displayed.
Multiple record editing	Governs the report records that can be edited from the Design Image (Work) Display. With "N" Report Designer operates as SDA and only the current record can be edited from the Work Display. With "Y" all records on the Work Display including additional records may be edited.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 6 File Keywords Displays

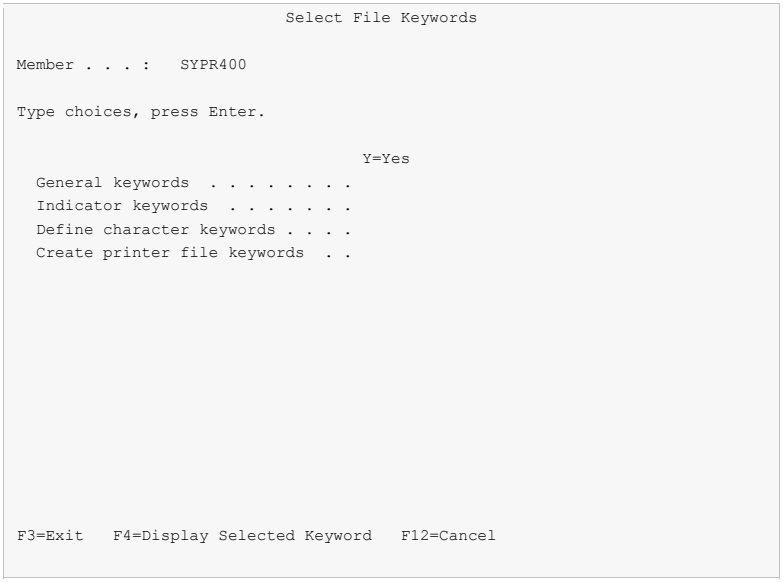
What's In This Chapter

This chapter describes the File Keywords displays - F14 from the Work with Report Records display.

Select File Keywords Display

From the Select File Keywords display you can:

- Select file-level keywords for review or update.
- Select file-level indicator text for review or update.
- Select file-level character definitions for review or update.
- Select create printer file command keywords for review or update.
- Display selected file-level keywords.



Field Descriptions

Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
General keywords	To review or update general keywords key a "Y" and press Enter.
Indicator keywords	To review or update indicator text key a "Y" and press Enter.
Define character keywords	To review or update define character keywords key a "Y" and press Enter.
Create printer file keywords	To review and select create printer file command parameters, key a "Y" in the column, and press Enter.

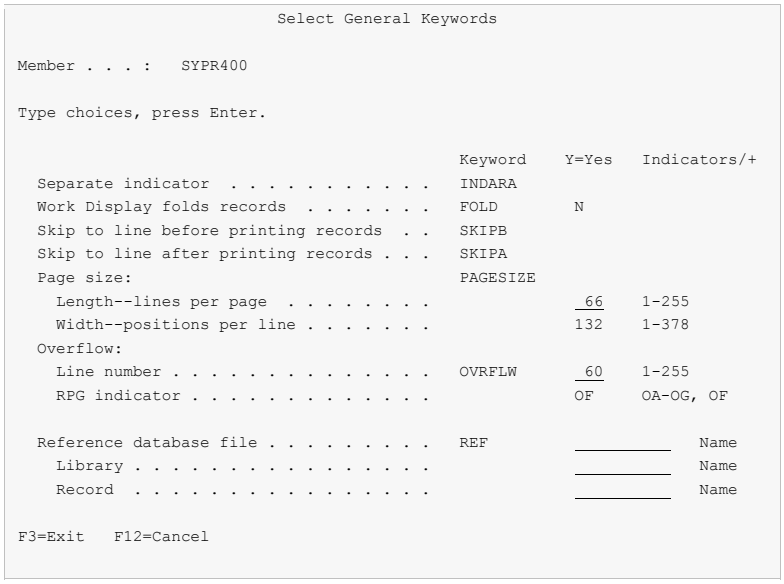
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Display Selected Keywords	Causes the Display Selected Keywords window to appear.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select General Keywords Display

From the Select General Keywords display you can:

- Specify a separate buffer area for printer file indicators.
- Specify whether to fold or truncate data extending beyond a line.
- Specify file-level skipping.
- Specify the page size to work with.
- Specify the page overflow information.
- Specify a field reference file.



```
                        Select General Keywords

Member . . . :   SYPR400

Type choices, press Enter.

                                          Keyword    Y=Yes   Indicators/+
  Separate indicator  . . . . . . . . . .  INDARA
  Work Display folds records  . . . . . .  FOLD        N
  Skip to line before printing records  . .  SKIPB
  Skip to line after printing records . . .  SKIPA
  Page size:                               PAGESIZE
    Length--lines per page  . . . . . .               66    1-255
    Width--positions per line . . . . . .             132   1-378
  Overflow:
    Line number . . . . . . . . . . . . .  OVRFLW      60    1-255
    RPG indicator . . . . . . . . . . . .              OF    OA-OG, OF

  Reference database file . . . . . . . .  REF          __________   Name
    Library . . . . . . . . . . . . . . .              __________   Name
    Record  . . . . . . . . . . . . . . .              __________   Name

F3=Exit   F12=Cancel
```

Field Descriptions

Separate indicator (INDARA)
Key a "Y" if indicators used in the printer file should be placed in a separate 99-byte buffer. This option is not valid with RPG source.

Work Display folds records (FOLD)
Key a "Y" to instruct Report Designer to fold any data that extends beyond a line on the work display. The folded data appears at the beginning of the next line.

Skip to line before printing records (SKIPB)
The value you enter for Skip Before at the file-level will cause the printer to skip to the indicated line before printing each record in the file. A value of zero indicates no Skip Before value.

Skip to line after printing records (SKIPA)
The value you enter for Skip After at the file-level will cause the printer to skip to the indicated line after printing each record in the file. A value of zero indicates no Skip After value.

File-level skipping keywords must be conditioned with indicators. Key the desired indicators in the spaces provided next to the appropriate keyword. Key a plus (+) in any indicator field to obtain more space for indicators.

File-level skipping is not valid with RPG source.

Page Size (PAGESIZE)
Specify the page width, and page length by keying values in the spaces provided. The values you specify will affect the dimensions of the work display.

Overflow (OVRFLW)
Specify the overflow line number and indicator (RPG only) by keying values in the spaces provided.

Reference Database File (REF)
To associate a field reference file with your printer file, key the name, library, and record name of the file to use. Within the printer file, referenced fields will look for their definitions in the field reference file indicated, unless this is overridden at the field level with the REFFLD keyword. The REF keyword is not valid with RPG source.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

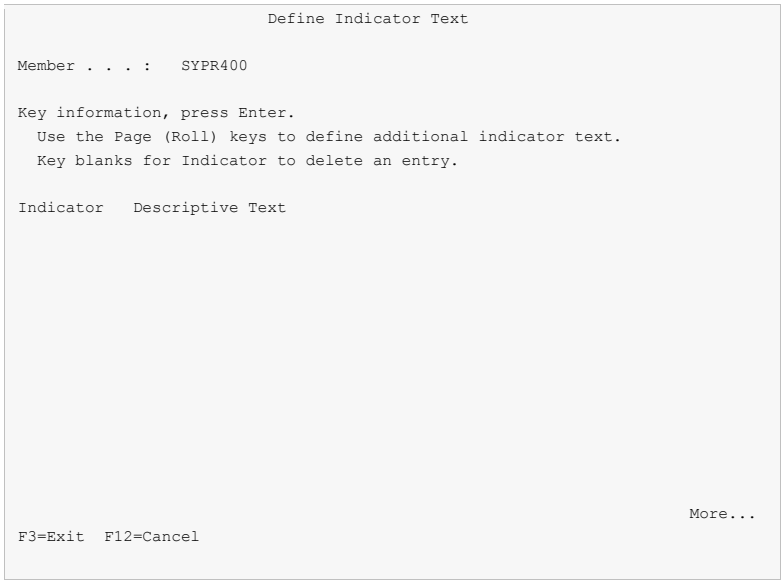
Define Indicator Text Display

From the Indicator Text display you can:

- Associate text with option indicators.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

Indicator	Specifies the option indicator to associate with the descriptive text. Indicators 01 - 99 are for this keyword. The keyword is not valid with RPG source. Use Page Down (Roll Up) to define more indicator text. To delete an indicator text definition, key blanks for the indicator.
Descriptive Text	Specifies descriptive text that is associated with the indicator.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

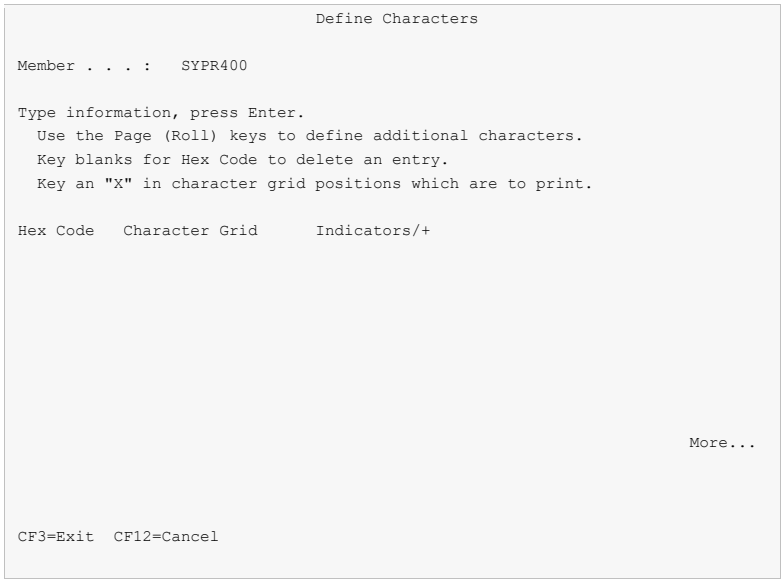
Define Characters Display

From the Define Characters display you can:

- Define customized print characters.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

Hex Code Specifies the character to define. Key in a two-character hex code. (Valid hex characters are "0" - "9" and "A" - "F".)

Use Page Down (Roll Up) to define more characters. To delete a character definition, key blanks for the hex code.

Not valid with RPG source.

Character Grid Specifies the character grid. Key an "X" for each grid position you want to print as part of your character. You cannot specify two consecutive horizontal grid positions. At execution time, character data sent to the output device, that matches the two-character hex code you specify, will print with the image you have defined.

Indicators/+ To condition your character definition, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Function keys

F1=Help Provides additional information about using the display or a specific field on the display.

F3=Exit Ends the current task and returns to the display from which the task was started.

F12=Cancel Cancels this display and returns to the previous display.

Enter Submit information on the display for processing.

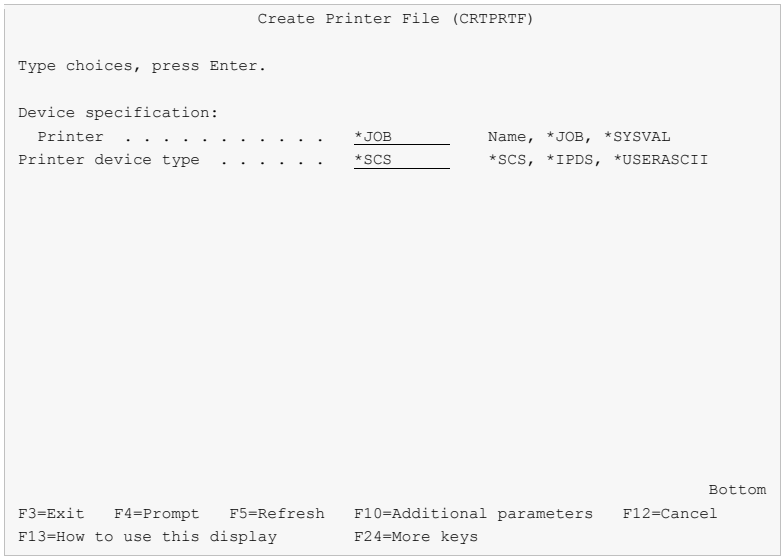
Help Provides additional information about using the display or a specific field on the display.

Print Prints information currently shown on the display.

Create Printer File Display

The Create Printer File (CRTPRTF) display appears after selecting Create Printer File Keywords from the Select File Keywords display. From this prompt you can:

- Specify additional Create Printer File Keywords.
- Review additional Create Printer File Keywords specified previously.



Field Descriptions

For an complete explanation of each keyword, see command CRTPRTF in the OS/400 Control Language Reference SC41-5722.

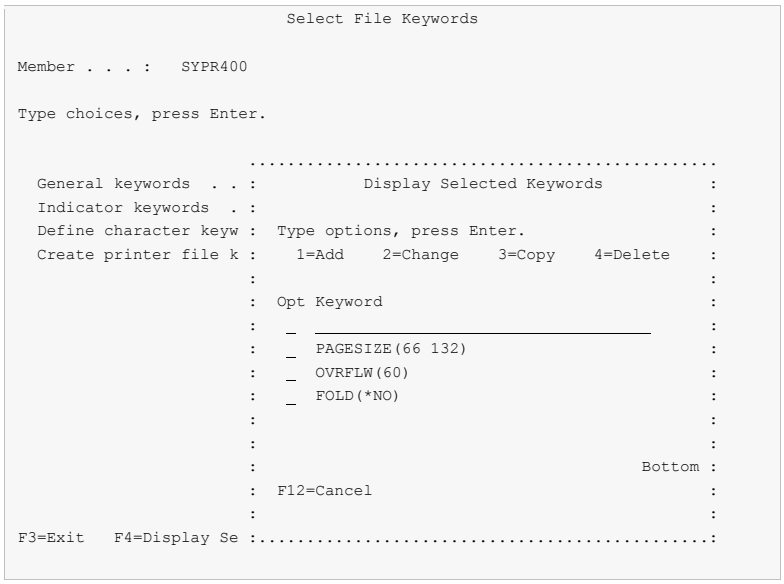
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Display Selected Keywords Window

The Display Selected Keywords window shows a list of currently selected keywords in DDS source code form. From the Display Selected Keywords window you can:

- Add keywords not supported on other displays.
- Change keywords not supported on other displays.
- Copy keywords not supported on other displays.
- Delete keywords not supported on other displays.



Option

Type the number of an option and press the Enter key.

1=Add	Use this option to add a new keyword. Only keywords that can not be added from other screens are allowed.
2=Change	Use this option to change a keyword. Only keywords that are inaccessible from other screens can be changed.
3=Copy	Use this option to copy a keyword. Only keywords that are inaccessible from other screens can be copied.
4=Delete	Use this option to delete a keyword. Only keywords that are inaccessible from other screens can be deleted.

Field Descriptions

Keyword	The keyword and associated parameter values. **Note:** The associated parameters end in an ellipsis (...) when they do not all fit.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 7 Record Keywords Displays

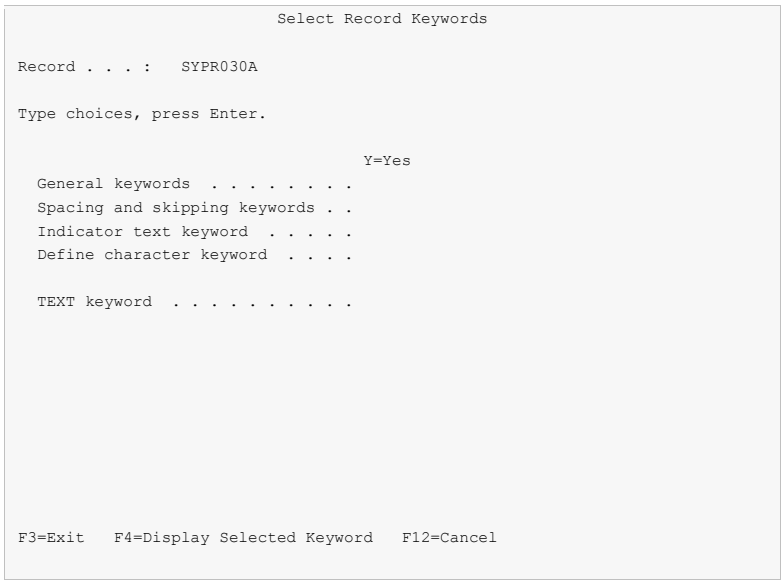
What's In This Chapter

This chapter describes the Record Keywords Displays - option 8 from the Work with Report Records display.

Select Record Keywords Display

From the Select Record Keywords display you can:

- Select record-level general keywords for review or update.
- Select record-level spacing and skipping keywords for review or update.
- Select record-level indicator text for review or update.
- Select record-level character definitions for review or update.
- Change the text associated with the report record.
- Display selected record-level keywords.



Field Descriptions

Record	Specifies the name of the report record.
General keywords	To review or update general keywords key a "Y" and press Enter.
Spacing and skipping keywords	To review or update spacing and skipping keywords key a "Y" and press Enter.
Indicator text keywords	To review or update indicator text key a "Y" and press Enter.
Define character keywords	To review or update define character keywords key a "Y" and press Enter.
Text	Specifies a description of the report record.

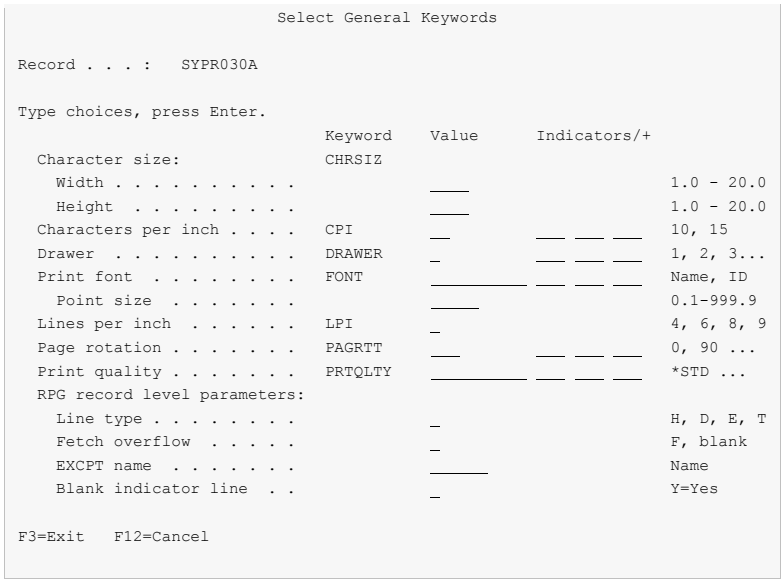
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Display Selected Keywords	Causes the Display Selected Keywords window to appear.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select General Keywords Display

From the Select General Keywords display you can:

- Change the Character Size (CHRSIZ) keyword value.
- Change the Characters Per Inch (CPI) keyword value.
- Change the Printer Drawer (DRAWER) keyword value.
- Change the Printer Font (FONT) keyword values.
- Change the Lines Per Inch (LPI) keyword value.
- Change the Page Rotation (PAGRTT) keyword value.
- Change the Print Quality (PRTQLTY) keyword value.
- Change the RPG line type.
- Change the RPG fetch overflow flag.
- Change the RPG EXCPT name associated with the record.
- Change the RPG record level indicators.
- Indicate that the first RPG indicator line should be blank.



```
                        Select General Keywords

Record . . . :   SYPR030A

Type choices, press Enter.
                               Keyword    Value      Indicators/+
  Character size:              CHRSIZ
    Width . . . . . . . . . .                ____                    1.0 - 20.0
    Height  . . . . . . . . .                ____                    1.0 - 20.0
  Characters per inch . . . .  CPI          __         __  __  __     10, 15
  Drawer  . . . . . . . . . .  DRAWER       _          __  __  __     1, 2, 3...
  Print font  . . . . . . . .  FONT         __________ __  __  __     Name, ID
    Point size  . . . . . . .                _____                   0.1-999.9
  Lines per inch  . . . . . .  LPI          _                       4, 6, 8, 9
  Page rotation . . . . . . .  PAGRTT       ___        __  __  __     0, 90 ...
  Print quality . . . . . . .  PRTQLTY     __________ __  __  __     *STD ...
  RPG record level parameters:
    Line type . . . . . . . .                _                       H, D, E, T
    Fetch overflow  . . . . .                _                       F, blank
    EXCPT name  . . . . . . .                ______                  Name
    Blank indicator line  . .                _                       Y=Yes

F3=Exit   F12=Cancel
```

Field Descriptions

Character Size — The CHRSIZ keyword allows you to specify the height and width of characters printed in the record. Not valid with RPG source.

Characters Per Inch — With the CPI keyword you specify the horizontal print density of characters in the record. Not valid with RPG source.

Drawer — With the DRAWER keyword, you specify the drawer from which forms will be selected at print time. Not valid with RPG source.

Font — With the FONT keyword, you control the style and appearance of characters printed in the record. Specify either a numeric font id or a graphic font name. If supported specify a point size. Not valid with RPG source.

Lines Per Inch — With the LPI keyword you specify the vertical print density of lines within the record. Not valid with RPG source.

Page Rotation — With the PAGRTT keyword, you specify the degree of clockwise rotation of text within the record, with respect to the physical printed form. Zero (or blank) indicates no rotation. Valid values are 0, 90, 180, 270. Not valid with RPG source.

Print Quality — With the PRTQLTY keyword, you can set the print quality of the fields in the record. Allowable values are *STD (standard), *DRAFT (draft quality), and *NLQ (near letter quality). Not valid with RPG source.

RPG Line Type — Each print line in RPG must be assigned a type. Report Designer assumes that all lines within a logical record have the same type. The valid line types are H (header), D (detail), E (exception) and

	T (total). If you leave the line type blank for RPG source, a type of D is assumed. This field is ignored for DDS source.
RPG Fetch Overflow Flag	An "F" in this field indicates that detail and header lines, conditioned with the overflow indicator, should be printed before the current record when page overflow is detected. This field is ignored for DDS source.
RPG EXCPT Name	An EXCPT name only has meaning for records with an output type of E (exception) in RPG source. Specifying an EXCPT name allows you to print the current record by name with the RPG EXCPT operation code. This field is ignored for DDS source.
RPG Record-Level Indicators	To condition a record, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators. Record level indicators are ignored for DDS source. When the record is conditioned by indicators, enter a "Y" for "Leave 1st indicator line blank" to cause the first line of indicators to be blank on output. Beginning the record level indicators on the second line can produce different results at print time. See the RPG Reference, SC09-1349 for more information. This field is ignored for DDS source, and when no record level indicators are specified.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

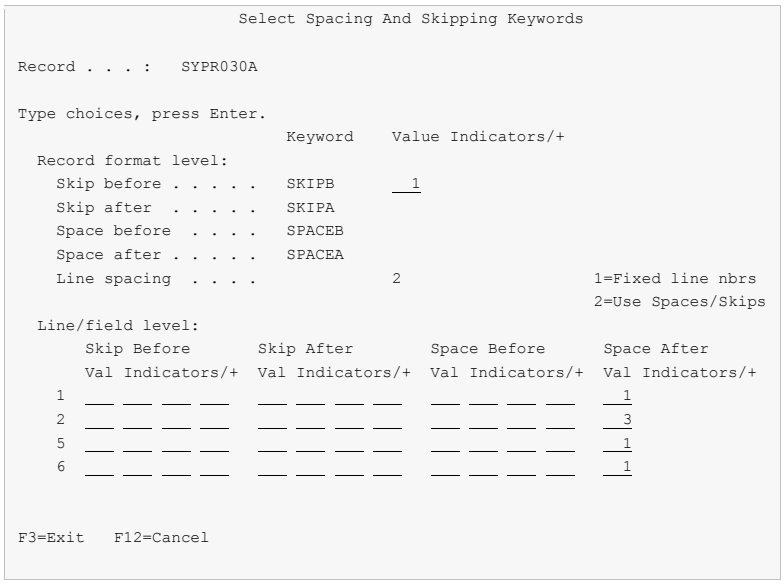
Select Spacing and Skipping Keywords Display

From the Select Spacing & Skipping Keywords display you can:

- Change the record level spacing & skipping values.
- Select fixed or relative line spacing for the record.
- Adjust the spacing & skipping between lines in the record.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

Record Level Spacing And Skipping

The value you enter for Skip Before at the record level will cause the printer to skip to the indicated line before printing the record. A value of zero indicates no Skip Before value.

The value you enter for Skip After at the record level will cause the printer to skip to the indicated line after printing the record. A value of zero indicates no Skip After value.

The value you enter for Space Before at the record level will cause the printer to advance the indicated number of lines before printing the record. A value of zero indicates no Space Before value. At execution time, the printer will skip to the line indicated by the Skip Before value (if any) before honoring any Space Before request.

The value you enter for Space After at the record level will cause the printer to advance the indicated number of lines after printing the record. A value of zero indicates no Space After value. At execution time, the printer will skip to the line indicated by the Skip After value (if any) before honoring any Space After request.

Any of the record level spacing and skipping keywords may be conditioned with indicators. Key the desired indicators in the spaces provided next to the appropriate keyword. Key a plus (+) in any indicator field to obtain more space for indicators.

Record level spacing and skipping cannot be specified for RPG source.

Keying a "1" for Line Spacing will cause fields within the DDS report record to be output with fixed line numbers. A value of "2" will cause spacing and skipping keywords to be used to achieve the required spacing within the record. For RPG source, only option "2" is valid.

Line/field Level Spacing And Skipping

A list of lines currently defined for the record is shown, along with spacing and skipping values that would result in the record printing with the lines indicated. You can change the spacing and skipping for any line.

The location of the first line in the record is determined by the record level Skip Before/Space Before values, and the Skip Before/Space Before values for the line in question. The location of subsequent lines in the record is determined by the Skip After/Space After values of the previous line, and the Skip Before/Space Before values for the line in question.

Any of the line level spacing and skipping keywords may be conditioned with indicators. Key the desired indicators in the spaces provided next to the appropriate keyword. Key a plus (+) in any indicator field to obtain more space for indicators.

Indicators associated with spacing and skipping keywords are not taken into account by Report Designer when calculating line positions for the Work Display.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

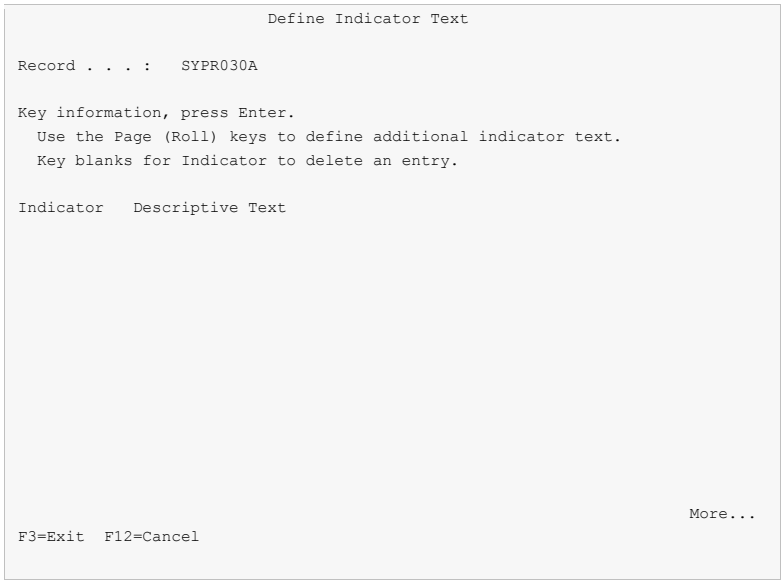
Define Indicator Text Display

From the Indicator Text display you can:

- Associate text with option indicators.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

Indicator	Specifies the option indicator to associate with the descriptive text. Indicators 01 - 99 are for this keyword. The keyword is not valid with RPG source. Use Page Down (Roll Up) to define more indicator text. To delete an indicator text definition, key blanks for the indicator.
Descriptive Text	Specifies descriptive text that is associated with the indicator.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

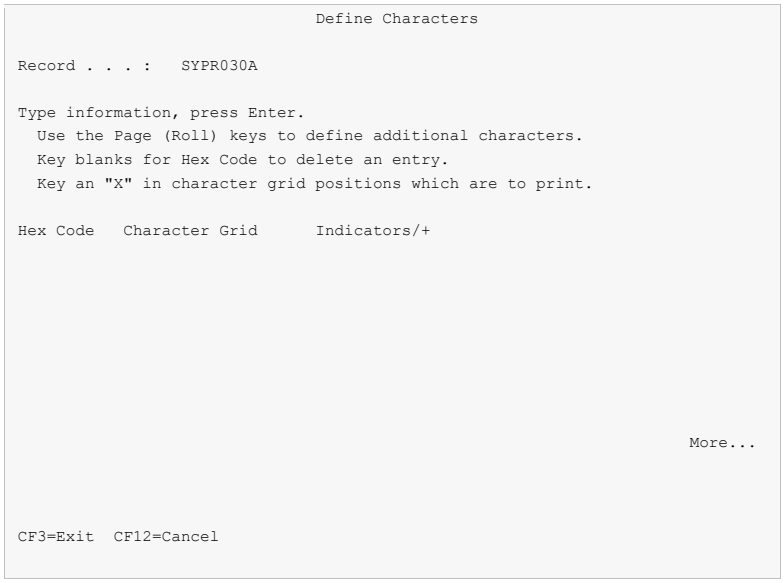
Define Characters Display

From the Define Characters display you can:

- Define customized print characters.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

Hex Code	Specifies the character to define. Key in a two-character hex code. (Valid hex characters are "0" - "9" and "A" - "F".) Use Page Down (Roll Up) to define more characters. To delete a character definition, key blanks for the hex code. Not valid with RPG source.
Character Grid	Specifies the character grid. Key an "X" for each grid position you want to print as part of your character. You cannot specify two consecutive horizontal grid positions. At execution time, character data sent to the output device, that matches the two-character hex code you specify, will print with the image you have defined.
Indicators/+	To condition your character definition, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

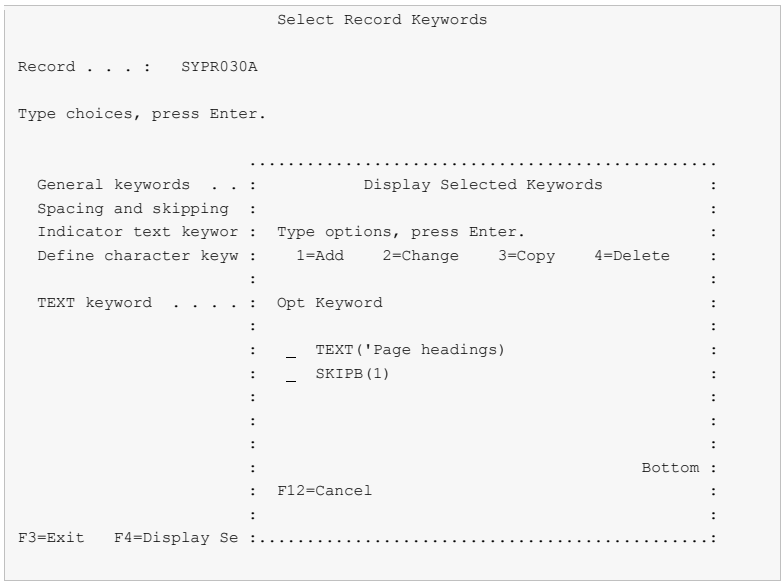
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Display Selected Keywords Window

The Display Selected Keywords window shows a list of currently selected keywords in DDS source code form. From the Display Selected Keywords window you can:

- Add keywords not supported on other displays.
- Change keywords not supported on other displays.
- Copy keywords not supported on other displays.
- Delete keywords not supported on other displays.



Option

Type the number of an option and press the Enter key.

1=Add	Use this option to add a new keyword. Only keywords that can not be added from other screens are allowed.
2=Change	Use this option to change a keyword. Only keywords that are inaccessible from other screens can be changed.
3=Copy	Use this option to copy a keyword. Only keywords that are inaccessible from other screens can be copied.
4=Delete	Use this option to delete a keyword. Only keywords that are inaccessible from other screens can be deleted.

Field Descriptions

Keyword	The keyword and associated parameter values. **Note:** The associated parameters end in an ellipsis (...) when they do not all fit.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 8 Report Image (Work) Display

What's In This Chapter

This chapter describes Design Image (field) definition using the Work Display - option 12 on the Work with Report Records display.

From the Design Image (Work) Display you can:

- Define fields and constants for the selected record.
- Move, copy, delete, and exclude fields on the Work Display.
- Select database fields and place them on the Work Display.
- Add or remove attributes and colors.
- Add or remove editing.
- Review or change the names of fields in a record.
- Condition the Work Display.
- Select additional records to display on the Work Display.
- Add and remove a ruler on the display.
- Center the fields and constants on a line.
- Center a field or constant between its nieghbors.
- Print the current Work Display.
- Reverse Image constants on the display.
- Window the Work Display left and right.
- Hide additional records on the Work Display.
- Enter i5/OS commands.
- Roll the Work Display up and down.

Defining Fields

To define an alpha field on the Work Display, key in a + followed by one or more O's, and press Enter.

To define a numeric field on the Work Display, key in a + followed by one or more 6's, and press Enter.

To define a floating point field, key in a + followed by one or more 6's, followed by an E (single precision) or a D (double precision).

Field definitions can be entered in either upper or lower case. Field length is determined by the number of characters after the plus sign (+) or by a length specification in brackets after the first character.

After defining a field, you can modify the field's attributes with the extended field definition displays. Key an asterisk (*) in the position preceding a field, and press Enter to see the extended definition displays for the field.

The following examples illustrate defining fields:

+OOO or +o(3)	3 character alpha field.
+66.66 or +6(4,2)	4 character numeric field with 2 decimal positions (set by an edit word).
+6.66E or +6(3,2)e	Single precision floating point field with 3 significant digits and 2 decimal positions.
+66.6d or +6(5,1)D	Double precision floating point field with 5 significant digits and 1 decimal positions.

Defining Constants

Key constants without quotes ('), and press Enter to define constants for each group of characters that is followed by a blank.

Surround character groups with quotes to define the constant lengths and boundaries.

Surround constants with quotes to redefine as one constant.

Use double quote (") to stop and start constants in one position.

Use +M and a length specification to define a MSGCON (message constant) field.

To add predefined constants, key *DATE *TIME or *PAGNBR (DDS); or key *DATE *PAGE *PAGE1 *PAGE2 *PAGE3 *PAGE4 *PAGE5 *PAGE6 or *PAGE7 (RPG), at the desired location and press Enter.

The following examples illustrate defining constants:

'x x x"Y Y Y'	Define 2 constant fields.
'xxx YYY zzz'	Combine 3 constant fields.
+MMMMMMM or +m(7)	Define a 7 character MSGCON field.
***TIME**	Define time constant field.
***page**	Define page number constant field.

Moving Fields

To move a single field, key a minus sign (-) in the position preceding the field. Key an equal sign (=) in the position preceding the desired target for the field, and press Enter. There must be adequate space for the field at the target location.

You can move a field to the left by keying one or more less than signs (<) in the positions preceding the field. You can move a field to the right by keying one or more greater than signs (>) in the positions following the field.

To move a group of fields, key a minus sign (-) in a blank position at the upper left corner of the group of fields to move. Key another minus sign in a blank position at the lower right corner of the group of fields to move. Key an equal sign (=) in the position before the desired target location, and press Enter. There must be adequate space for the group of fields at the target location.

The following examples illustrate moving fields:

1. Move a field 3 positions to the right.

```
_____________________________________________________
OOOOO    OOOOOOO>>>     (Before)
_____________________________________________________
_____________________________________________________
OOOOO       OOOOOOO     (After)
_____________________________________________________
```

2. Move a field 1 position to the right and another field 4 positions to the left.

```
_____________________________________________________
OOOOO> <<<<OOOOOOO     (Before)
_____________________________________________________
_____________________________________________________
 OOOOO OOOOOOO         (After)
_____________________________________________________
```

3. Move a field to a target.

```
_____________________________________________________
-OOOOO OOOOOOO         (Before)
  =
_____________________________________________________
_____________________________________________________
       OOOOOOO         (After)
   OOOOO
_____________________________________________________
```

4. Move a group of fields down 1 line.

```
_____________________________________________________
       OOOOOOO  OO     (Before)
   OOOOO
_____________________________________________________
_____________________________________________________
 -     OOOOOOO  OO     (Indicate group move)
   O=OOO       -
_____________________________________________________
_____________________________________________________
                OO     (After)
          OOOOOOO
      OOOOO
_____________________________________________________
```

Copying Fields

To copy a single field, key a minus sign (-) in the position preceding the field. Key two equal signs (==) beginning in the position preceding the desired target for the field, and press Enter. There must be adequate space for the new field at the target location.

To copy a group of fields, key a minus sign (-) in a blank at the upper left corner of the group of fields to copy. Key another minus sign in a blank position at the lower right corner of the group of fields to copy. Key two equal signs (==) beginning in the position before the desired target location, and press Enter. There must be adequate space for the new group of fields at the target location.

The following examples illustrate copying fields:

1. Copy a single field.

```
_____________________________________________________
 -OOOOO OOOOOOO          (Before)
    ==
_____________________________________________________
_____________________________________________________
  OOOOO  OOOOOOO         (After)
     OOOOO
_____________________________________________________
```

2. Copy a group of fields.

```
_____________________________________________________
- OOOOO  OOOOOOO         (Before)
     OOOOO       -
==
_____________________________________________________
_____________________________________________________
  OOOOO  OOOOOOO         (After)
     OOOOO
  OOOOO  OOOOOOO
     OOOOO
_____________________________________________________
```

Deleting Fields

To delete a field or constant from the Work Display, key a D or d in

the position preceding it and press Enter. When you delete a field, the field name is added to the field list displayed at the bottom of the screen. This allows you to add the field to the display again at a later time.

The following example illustrates deleting a field:

```
OOOOO  66/66/66  OOOOOOOOOOO     Before field delete.
OOOOO d66/66/66  OOOOOOOOOOO     Deleting a field.
OOOOO            OOOOOOOOOOO     After field delete.
```

Excluding Fields

To temporarily exclude a field or constant from appearing on the Work Display, key a X or x in the position preceding it and press Enter. When you exclude a field, any overlapped fields reappear. Excluding fields allows creation of overlapped fields. Use the Work with Fields Display to determine the overlap status of fields, and to include fields previously excluded.

The following example illustrates excluding a field:

```
OOOOO  66/66/66  OOOOOOOOOOO     Before field excluded.
OOOOO x66/66/66  OOOOOOOOOOO     Excluding a field.
OOOOO            OOOOOOOOOOO     After field excluded.
```

Working With Database Fields

Use F10 to select database fields. The selected fields are displayed at the bottom of the Work Display. You can add these fields to the Work Display by keying in a & sign, followed by a field number, followed optionally by a column heading position (L, R, C, or P). The field will be placed at the position of the & sign.

You do not have to specify a field number when working in single field mode.

The following example illustrates adding a database field:

&1	Add field number 1. Without column headings.
&2L	Add field number 2. Add column headings to its left.
&3R	Add field number 3. Add column headings to its right.
&4C	Add field number 4. Center column headings above it.
&5P	Add only column headings from field number 5.
&C	Add current database field with centered column headings.

Adding or Removing Attributes or Color

Key an H in the position preceding a field or constant, and press Enter to add the HIGHLIGHT attribute.

Key a U in the position preceding a field or constant, and press Enter to add the UNDERLINE attribute.

Key a - in the position preceding a field or constant followed by a U, H or A, and press Enter to remove the UNDERLINE, HIGHLIGHT or All attributes.

Key a C in the position preceding a field or constant, followed by a color code to add a COLOR attribute.

The valid color codes are:

```
K - Black          P - Pink
B - Blue           R - Red
N - Brown          T - Turquoise
G - Green          Y - Yellow
                   A - All colors (remove only)
```

Key a -C in the position preceding a field or constant, followed by a color code to remove a COLOR attribute.

Note: HIGHLIGHT, UNDERLINE, and COLOR are not supported by all printers.

The following examples illustrate using attributes and color:

```
 OOOOOOOOOO     Alpha field before adding attributes.
hOOOOOOOOOO     Specifying HIGHLIGHT attribute.OOOOOOOOOO    Alpha field
after adding HIGHLIGHT attribute.
UOOOOOOOOOO     Specifying UNDERLINE attribute.OOOOOOOOOO    Alpha field
after adding UNDERLINE attribute.
 Report Heading     Constant before adding COLOR attributes.
CTeport Heading     Specifying Turquoise attribute.
cgeport Heading     Specifying Green attribute.
-caport Heading     Removing all color attributes.
```

How Report Designer Displays Attributes

When you specify UNDERLINE, HIGHLIGHT, or COLOR attributes for a field, Report Designer attempts to display the field with its specified attributes on the Work Display. If part of the field is outside the display window, if the field begins in the first position of the line, or if the field ends in the last position of the line, the attributes are not shown. Where two or more fields are positioned contiguously without any spaces between them, attributes are shown only if they are the same for all of the fields in the group. Color attributes will not display as expected on monochrome displays.

The following chart shows how Report Designer displays fields with different combinations of attributes specified.

Figure: Attribute Rendering

Highlight	Underline	Color	Appearance On Color Display	Appearance On Monochrome Display
X		Any	White	HI
	X	None	Green, UL	UL
X	X	Any	White, UL	HI, UL
		None	Green	Normal
		Black	Green	Normal
		Green	Green	Normal
		Red	Red	Blink
		Brown	Red, RI	Blink, RI
		Turq	Turq	CS
		Yellow	Yellow	CS, HI
		Pink	Pink	CS, Blink
		Blue	Blue	CS, Blink, HI
	X	Black	Green, UL	UL
	X	Green	Green, UL	UL
	X	Red	Red, UL	Blink, UL
	X	Brown	Red, RI, UL	Blink, RI, UL
	X	Turq	Turq, UL	CS, UL
	X	Yellow	Yellow, UL	CS, HI, UL
	X	Pink	Pink, UL	CS, Blink, UL
	X	Blue	Blue, UL	CS, Blink, HI, UL

Adding or Removing Editing

Key a E in the position preceding a numeric field followed by an edit code to add editing to a field.

The valid edit codes are:

	No Sign	CR Sign	- Sign(R)	- Sign(L)
Commas and zero balance	1	A	J	N
Commas	2	B	K	O
Zero Balances	3	C	L	P
No commas or zero balances	4	D	M	Q
User-defined edit codes	5-9			
Date edit	Y			
Suppress leading zeros	Z			

Key a -E in the position preceding a numeric field to remove editing.

Note: Editing is only allowed for numeric fields.

The following examples illustrate using editing:

```
 66666666       Numeric field (8,2) before adding editing.
E16666666       Specifying edit code 1.
 666,666.66     Numeric field after adding editing.
 66666666       Numeric field (8,2) before adding editing.
el6666666       Specifying edit code L.
 666666.66-     Numeric field after adding editing.
 666,666.66     Numeric field with editing.
-e66,666.66     Removing editing.
 66666666       Numeric field with editing removed.
```

Centering a Field or Constant

Key an A in the position preceding a field or constant followed by a C. This command works slightly differntly than it does in SDA. The field or constant is centered in the space available between its nearest neighbors on the line. If there are no other field on the line, the field or constant is simply centered.

The following example illustrates centering:

```
OOOOO       66/66/66 OOOOOOOOOOO  Before centering.
OOOOO     ac6/66/66 OOOOOOOOOOO  Centering a field.
OOOOO    66/66/66    OOOOOOOOOOO  After centering.
```

Additional Features

Extended field definition Key an asterisk (*) in the position preceding the field to add field level attributes and keywords.

Display field name and length To review the name of a field on the Work Display, key a question mark (?) in the position preceding the field and press Enter. The field name and length are displayed at the bottom of the screen. To change the field name, key over the displayed name and press Enter.

You can also review/change field names from the Work With Fields display (F4).

When you key a question mark in front of a MSGCON (message constant) field, the message id, message file, and message file library are shown at the bottom of the screen. You can change any of these values by keying over them and pressing Enter. See the DDS Reference, SC41-9620 for more information on MSGCON fields.

Function keys

From the Design Image (Work) Display you can use various function keys to request additional Report Designer displays and functions. The function keys, the display names, and the functions are:

F1=Help Provides additional information about using the display or a specific field on the display.

F3=Exit Ends the current task and returns to the display from which the task was started.

F4=Prompt Causes the Work with Fields display to appear.

F6=Condition Causes the Condition Work Screen display to appear.

F7=Tab Moves the cursor to the attribute position of the next field.

F8=Back Tab Moves the cursor to the attribute position of the previous field.

F9=Select additional records. Prompts for additional records to display on the Design Image (Work) Display.

F10=Database Causes the Select Database Files display appear.

F11=Switch Switches between selected and unselected database field modes.

F12=Cancel Cancels this display and returns to the previous display.

F14=Ruler Places a ruler at the cursor or if the ruler is currently displayed, removes the ruler. Defining fields on the ruler may cause results that can not be predicted.

F15=Center Centers the fields of a line on the page.

F17=Print Prints the contents of the Design Image (Work) Display.

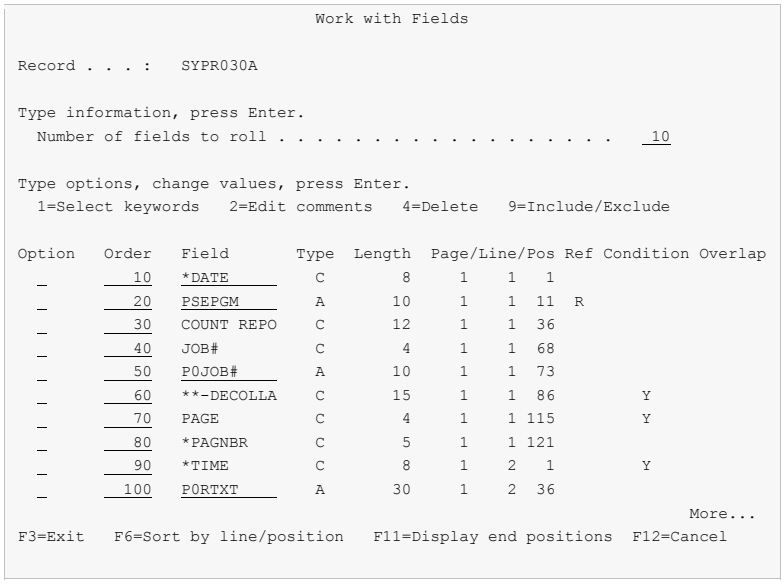
F18=Reverse Image constants Toggles the reverse imaging of constants on and off. This reverse imaging is temporary and does

	not affect the compiled image. Use F18 to determine the starting and ending points of the constants. When reverse imaged other attribute such as color do not display for constants.
F19=Left	Windows the display to the left.
F20=Right	Windows the display to the right.
F21=Display additional records	Toggles the display of additional records with the primary record. Use F21 to determine which fields on the display belong to the primary record.
F22=System command	Displays a window in which you can enter i5/OS commands.
HOME=Home	Positions cursor to current home position, or positions the Work Display to page 1, line 1, position 1.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Work with Fields Display

The Work with Fields display shows a list of fields in the current record on the Design Image (Work) Display. From the Work with Fields display you can:

- Change the order of fields in the DDS or RPG source.
- Rename fields.
- Delete fields.
- Include/Exclude fields.
- Select field keywords.
- Edit field-level comments.
- Sort the fields into line and position order.
- Switch the display between start and end positions



Option

Type the number of an option and press the Enter key.

1=Select keywords	Use this option to select field keywords for a field. The Field Keywords displays appear for each field in turn.
2=Edit comments	Use this option to edit comments associated with a field. The SEU edit display appears.
4=Delete	Use this option to delete a field.
9=Include/Exclude	Use this option to include a field previously excluded or to exclude a field not previously excluded.

Field Descriptions

Record	The name of the record that contains the fields.
Number of fields to roll	Type a number to indicate the number of entries to roll when paging down or up.
Order	To resequence a field, change the Order number for the field and press Enter. This changes the field location in the DDS or RPG source without affecting the print line/position for the field. **Note:** It is not possible to sequence a field before a field on a previous line or after a field on a subsequent line.
Field	Specifies the field's name. To rename a field, key over the field name and press Enter. Constant fields cannot be renamed.
Type	Specified the type of the field. Field types include C-constant, A-alpha, P-packed numeric, S-zoned numeric, etc.
Length	Specifies the length of the field. For numeric fields, the total number of digits in the field and the number of decimal positions are separated by a comma.
Page/Line/Pos	The relative position of the field within the record is shown.
Ref	An "R" is displayed in the REF column if the field is a referenced field.
Condition	A "Y" is displayed if the field is conditioned by indicators.
Overlap	A "Y" is displayed when the field is overlapped by another field. Overlapped fields are not shown on the Work Display. An "X" is displayed when a field has been excluded from the Work Display. Field exclusion takes precedence over field overlapping.

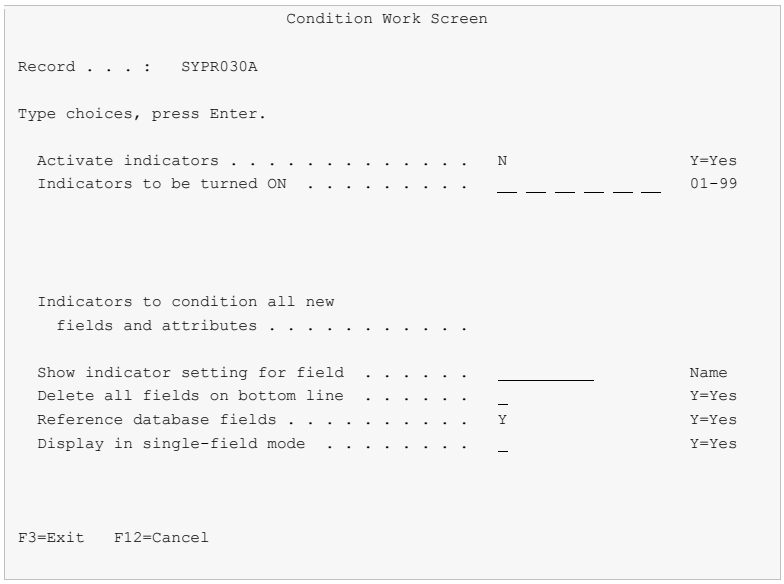
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F6=Sort By line/position	Resequence the fields to appear in order by line and position.
F11=Display start/end positions	Toggles the display from start positions to end positions and back again.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Condition Work Screen Display

From the Condition Work Screen display you can:

- Condition the Work Display with indicators.
- Specify indicators for all new fields and keywords added on the Work Display.
- Display the indicators associated with a particular field.
- Delete all fields from the work display prompt line.
- Indicate whether fields pulled from database files should be reference fields.
- Specify fields on the prompt line display one at a time.



Field Descriptions

Activate indicators — When display conditioning is specified, Report Designer displays only those fields on the Work Display whose conditioning indicators match the Work Display conditioning indicators. Similarly, keywords conditioned by indicators are only in effect when their indicator settings agree with the Work Display conditioning indicator settings. Report Designer always ignores indicator settings for spacing and skipping keywords when positioning fields on the Work Display.

Indicators to be turned on — When "Y" is specified for Activate indicators, the display is conditioned with the indicators listed set on. All other indicators are set off.

Indicators to condition all ... — To condition new fields added to the Work Display, key conditioning indicators. To obtain space for more indicators, key a plus (+) in one of the indicator spaces and press Enter.

Show indicator setting for field — To display the conditioning indicators associated with a field, key the field's name.

Delete all fields on bottom line — To delete all fields from the Work Display prompt line, key "Y".

Reference database fields — If fields selected from database files are reference fields, key a "Y" in the space provided. These fields will reference their definitions from the database field definition. This option is ignored for RPG source.

If the definition for fields selected from database files should be explicit, key "N".

Display in single-field mode — To display fields in the Work Display prompt line singly, key "Y". Otherwise, fields in the prompt line are displayed several across.

Function keys

F1=Help — Provides additional information about using the display or a specific field on the display.

F3=Exit — Ends the current task and returns to the display from which the task was started.

F12=Cancel — Cancels this display and returns to the previous display.

Enter — Submit information on the display for processing.

Help — Provides additional information about using the display or a specific field on the display.

Print — Prints information currently shown on the display.

Select Additional Records Display

The Select Additional Records display appears when you press F9 from the Design Image (Work) Display. From the Select Additional Records for Display display you can:

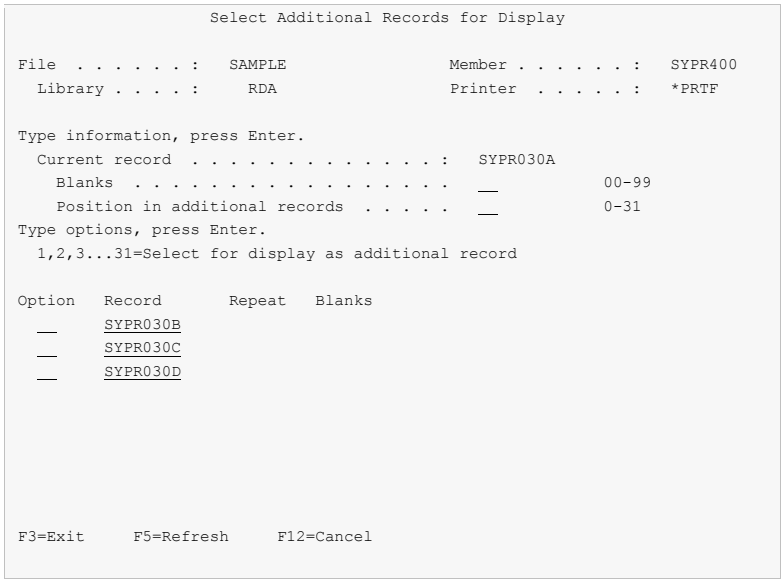
- Select additional report records for display on the Work Display.
- Specify the number of times to repeat an Additional record.
- Specify additional blank lines be displayed after a record.

- Specify the relative position of the current record.

Use this display to select additional records to appear with the current printer record on the Work Display. The current printer record is the printer record selected from the Work with Report Records display.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Field Descriptions

File
Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

Member
Specifies the name of the member containing the source to be updated or the name of a new member to be created.

Printer
The name of the printer. For DDS source this contains either *PRTF or *PRTF38. For RPG source this contains the name of the internally described printer file being edited (for example QSYSPRT). IF *FIRST was specified as the printer name, the name of the first internally described RPG printer file encountered in the source statements appears. If *MBRTYPE was specified, the printer name depends on the member's source type. For DDS source printer is either *PRTF or *PRTF38. For RPG the name of the first internally described RPG printer file encountered in the source appears.

Current record
The record selected from the Work with Report Records display.

Blanks
The number of blank lines to insert after the current record. Add blanks when you intend to add lines to the record. Unused blanks are dropped when the record is created.

If the current record is the last record on the Work Display, then the value entered for "Blanks" is ignored. All remaining lines in the logical page are available for use by the record.

Position in additional records
When selecting additional records for display with the current record, enter the relative position in which the current record should be displayed. For example, if two additional records are selected, and the current record should display between them, enter 2 for **Position in additional records**. If you do not specify a relative display position, the current record is displayed first.

Option
Use **Option** to select up to thirty-one additional records for display with the current printer record. Type the option numbers next to the records you want to select and press Enter. Each additional record has to be selected with a different option number. If more than one record is selected with the same option number, the last one processed is selected. The current record is always selected.

Choose from the following:

1,2,3...31=Select for display as additional record

	Type 1, 2, 3, through 31 to select an additional record for display on the Work Display. The option number reflects the order in which the records appear on the Work Display.
Record	Specifies the name of the report record.
Repeat	The number of times the record should be repeated on the display. Use repeat to give the appearance of repeated detail line printing.
Blanks	The number of blank lines to insert after the record.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F5=Refresh	Shows the display again with the most recent information and removes any typed selections.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Database Files Display

The Select Database Files display appears when you press F10 from the Design Image (Work) Display. From the Select Database Files display you can:

- Specify database files to use as reference files.
- Specify the source member as a reference.

Option

Type the number of an option and press the Enter key.

1=Display database field list
2=Select all fields

Field Descriptions

Database File	To access a database file as a reference file, key the file's name. To access fields defined within the source member as a reference file, key *SRCMBR for file name.
Library	Enter the library name of the file to use, let the library default to *LIBL, or enter *CURLIB.
Record	Enter the record of the database file to use. Position the cursor in the Record field and press F4 to select from a list of records in the file.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Record list	Display a list of records in the database file.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

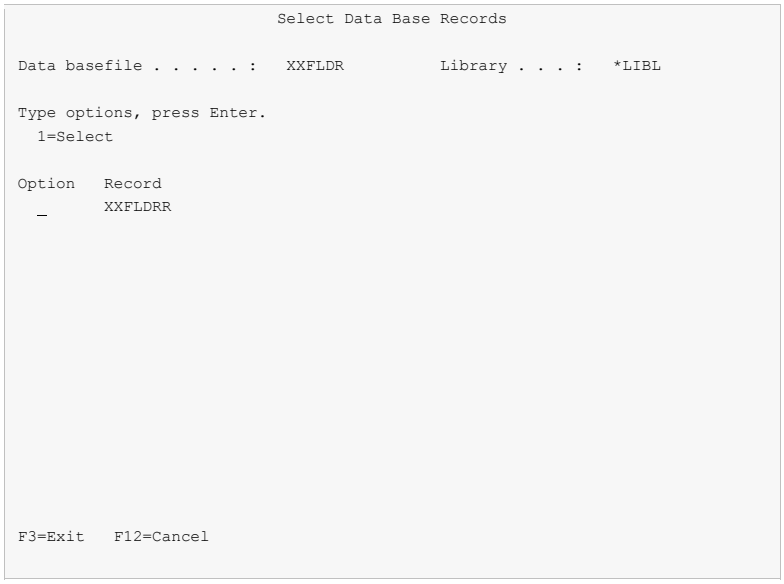
Select Database Records Display

The Select Database Records display appears when you prompt for a database record name from the Select Database Files display using F4. From the Select Database Records display you can:

- Select a database file record to use for field referencing.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



Option

Type the number of an option and press the Enter key.

1=Select	Selects the record for use on the Select Database Files display.

Field Descriptions

Record	Specifies the name of the database file's record.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.

Print Prints information currently shown on the display.

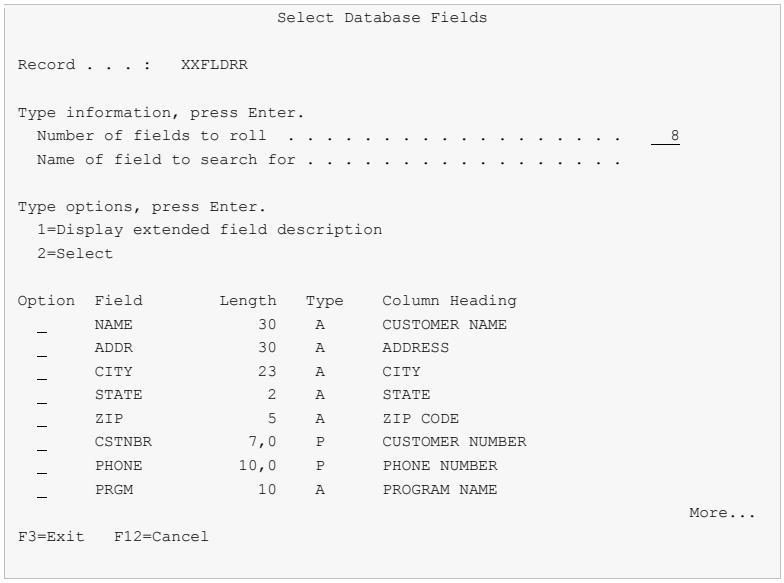
Select Database Fields Display

The Select Database Fields display appears when you select a database file with a "1" option on the Select Database Files display. From the Select Database Fields display you can:

- Select database fields for further review.
- Select database fields to use as reference fields.
- Search for a field name.

If you see More... on the lower right side of your display, there is more information to view. Press Page Down (Roll Up) to move toward the end of the information. Press Page Up (Roll Down) to move toward the beginning of the information.

If you see Bottom instead of More..., you are at the end of the list.



```
                          Select Database Fields

Record . . . :   XXFLDRR

Type information, press Enter.
  Number of fields to roll  . . . . . . . . . . . . . . . . . .   8
  Name of field to search for . . . . . . . . . . . . . . . . .

Type options, press Enter.
  1=Display extended field description
  2=Select

Option  Field        Length   Type    Column Heading
  _     NAME            30    A      CUSTOMER NAME
  _     ADDR            30    A      ADDRESS
  _     CITY            23    A      CITY
  _     STATE            2    A      STATE
  _     ZIP              5    A      ZIP CODE
  _     CSTNBR         7,0    P      CUSTOMER NUMBER
  _     PHONE         10,0    P      PHONE NUMBER
  _     PRGM            10    A      PROGRAM NAME
                                                                More...
F3=Exit   F12=Cancel
```

Option

Type the number of an option and press the Enter key.

1=Display extended field description The Select Extended Database Field display shows further information about the field.

2=Select Selects the field for use as a reference field. Selected fields are displayed on the Design Image (Work) Display field line.

Field Descriptions

Number of fields to roll Type a number to indicate the number of entries to roll when paging down or up.

Name of field to search for To locate a field in the list, key the full name of the field and press F16. If the field exists in the list, the cursor is positioned to the left of the field. Alternatively, key the first letters of the field name, end with an asterisk (*), and press F16. The cursor is positioned to the first field beginning with the letters keyed. Additionally, the wild card character (?) can be used in the search field. All characters match the wild card character.

Field Specifies the field's name.

Length Specifies the length of the field. For numeric fields, the total number of digits in the field and the number of decimal positions are separated by a comma.

Type Specified the type of the field. Field types include C-constant, A-alpha, P-packed numeric, S-zoned numeric, etc.

Column heading Specifies the column headings associated with the field.

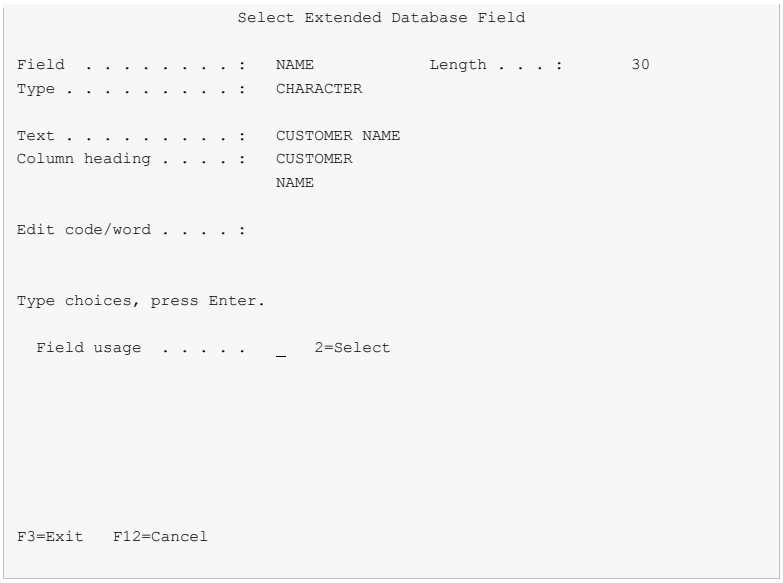
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
F16=Search for field	Search for the named field.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Extended Database Field Display

The Select Extended Database Field display shows additional information for a field when you select option 1 from the Select Database Field display. From the display you can:

- Select the database field to use as reference field.



Field Descriptions

Field	Specifies the field's name.
Length	Specifies the length of the field. For numeric fields, the total number of digits in the field and the number of decimal positions are separated by a comma.
Type	The type for the field is displayed.
TEXT keyword	Specifies the description associated with the field.
Column heading	Specifies the column headings associated with the field.
Edit code/word	The Edit Code or Edit Word associated with the field is displayed.
Field usage	Key a "2" to select the field for use as a reference field. Leave this space blank if you do not want to select the field. Fields selected will be displayed on the Work Display field line.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 9 Field Keywords Displays

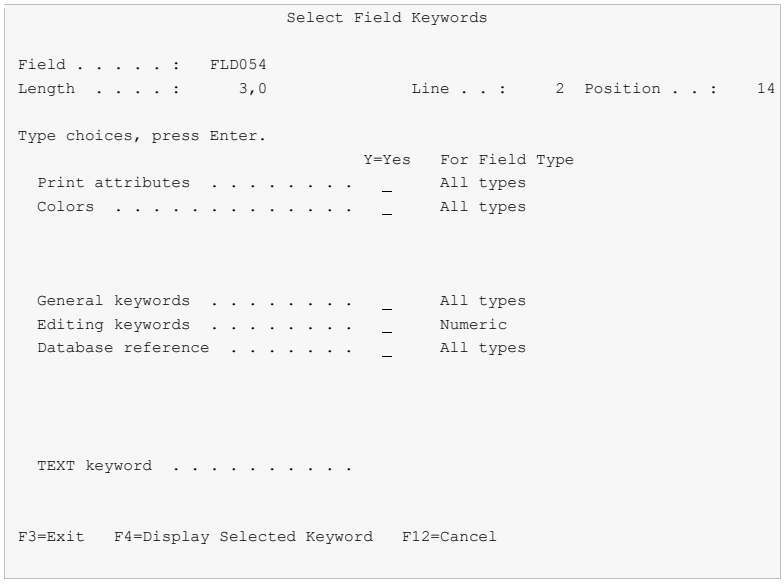
What's In This Chapter

This chapter describes the Field Keywords displays. The Field Keywords displays are accessed using option 1 from the Work with Fields display, or by keying an "*" in front of a field on the Design Image (Work) Display.

Select Field Keywords Display

From the Select Field Keywords display you can:

- Select field-level keywords for review or update.
- Change the text associated with the field.
- Display selected field-level keywords.



Field Descriptions

Field	Specifies the field's name.
Length	Specifies the length of the field. For numeric fields, the total number of digits in the field and the number of decimal positions are separated by a comma.
Line	Specifies the line number on which the field is locate relative to the beginning of the record.
Position	Specifies the position of the field within the line.
Keyword Group Choices	To select categories of keywords to review or update, key a "Y" in the column following the category description, and press Enter.
TEXT keyword	Specifies the description associated with the field.

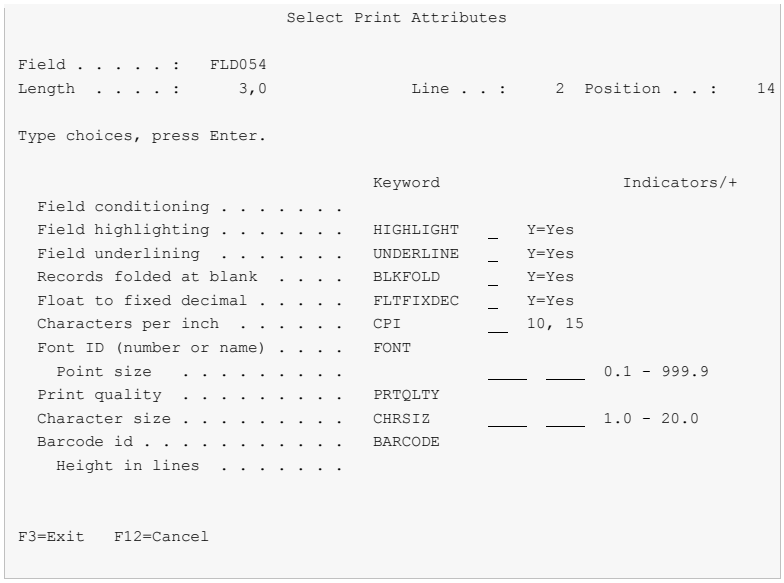
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Display Selected Keywords	Causes the Display Selected Keywords window to appear.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Print Attributes Display

From the Select Print Attributes display you can:

- Change the indicators that condition printing of the field.
- Specify the field is highlighted.
- Specify the field is underlined.
- Indicate that data in the field should be folded at a blank.
- Indicate that a floating point field is printed as decimal.
- Change the Characters Per Inch (CPI) keyword value.
- Change the Printer Font (FONT) keyword values.
- Change the Print Quality (PRTQLTY) keyword value.
- Change the Character Size (CHRSIZ) keyword value.
- Indicate the field is printed in barcode format.



```
                          Select Print Attributes

Field . . . . . :   FLD054
Length  . . . . :      3,0              Line . . :     2  Position . . :    14

Type choices, press Enter.

                                   Keyword                   Indicators/+
  Field conditioning . . . . . .
  Field highlighting . . . . . .   HIGHLIGHT    _   Y=Yes
  Field underlining  . . . . . .   UNDERLINE    _   Y=Yes
  Records folded at blank  . . .   BLKFOLD      _   Y=Yes
  Float to fixed decimal . . . .   FLTFIXDEC    _   Y=Yes
  Characters per inch  . . . . .   CPI          __  10, 15
  Font ID (number or name) . . .   FONT
    Point size   . . . . . .                    ____  ____  0.1 - 999.9
  Print quality  . . . . . .       PRTQLTY
  Character size . . . . . .       CHRSIZ       ____  ____  1.0 - 20.0
  Barcode id . . . . . .           BARCODE
    Height in lines  . . . . . .


F3=Exit   F12=Cancel
```

Field Descriptions

Field conditioning
By conditioning a field with indicators, you can control whether the field is printed. Key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Field highlighting (HIGHLIGHT)
Key a "Y" for the HIGHLIGHT keyword to cause the field to print in bold face. This option is not valid with RPG source. To condition this keyword, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Field underlining (UNDERLINE)
Key a "Y" for the UNDERLINE keyword to cause the field to print underlined. This option is not valid with RPG source. To condition this keyword, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Records folded at blank (FOLD)
Key a "Y" for the BLKFOLD to indicate that the field should be folded at a blank if it overflows to another line. BLKFOLD has no effect unless you specify *YES for the FOLD parameter on the CRTPRTF, CHGPRTF, or OVRPRTF commands. This option is not valid for RPG source.

Float to fixed decimal (FLTFIXDEC)
Key "Y" for the FLTFIXDEC keyword to indicate that a floating point field should be printed in fixed decimal format. This option is only valid with floating point fields.

Characters per inch (CPI)
With the CPI keyword you specify the horizontal print density of characters in the field. Not valid with RPG source. To condition this keyword, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Font ID (FONT)
With the FONT keyword, you control the style and appearance of characters printed. Specify either a numeric font id or a graphic font name. If supported specify a point size. Not valid with RPG source. To condition this keyword, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Print quality (PRTQLTY)	The PRTQLTY keyword allows you to vary the print quality of the field. Valid values are *STD (standard), *DRAFT (draft quality) and *NLQ (near letter quality). Not valid with RPG source.
Character size (CHRSIZ)	The CHRSIZ keyword allows you to specify the height and width of characters printed in the field. Not valid with RPG source.
Barcode ID (BARCODE)	To print a field in barcode format, enter a barcode-id and height in the spaces provided. Not valid with RPG source. See the Data Description Specifications Reference for more rules concerning barcodes.

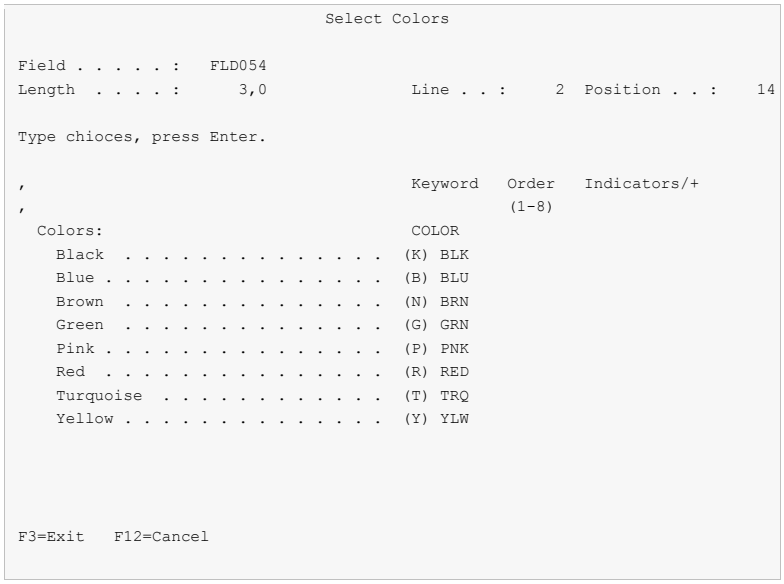
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Colors Display

From the Select Colors display you can:

- Assign colors to the field.



Field Descriptions

Order	To assign a color to the field, enter a value from 1 to 8 for the sequence number associated with the desired color. You can assign more than one color to the field but only one will be in effect at print time. When more than one color is specified for a field, the color used at print time is determined by indicator settings and the order of color specifications. At print time, some color specifications may be excluded by indicator settings. Of the specifications that are selected, the color specified first (lowest sequence number) will be the one used. Not valid with RPG source.
Indicator/+	To condition a color specification, key the desired indicators in the spaces provided. Key a plus (+) in any indicator field to obtain more space for indicators.

Function keys

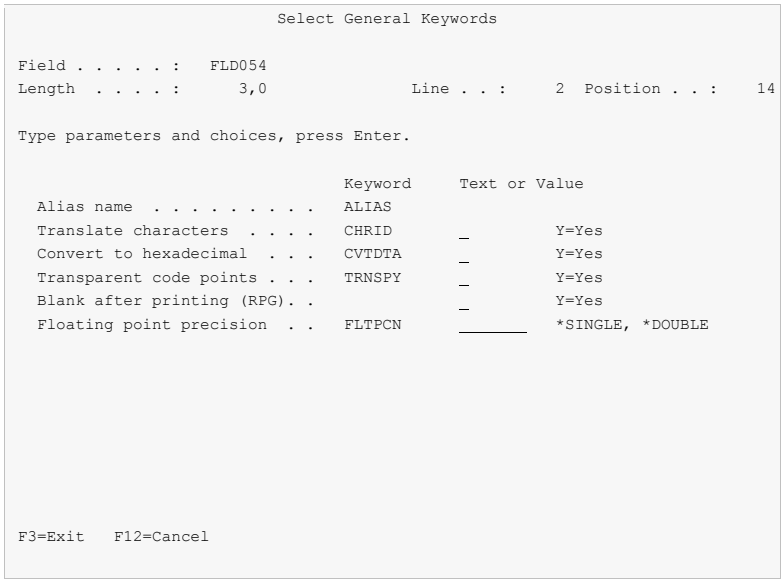
F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.

F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select General Keywords Display

From the Select General Keywords display you can:

- Associate an alias name with the field.
- Associate an alternate graphics character set with the field.
- Indicate character data is interpreted as hexadecimal.
- Insure the printer does not interpret the field as control characters.
- Indicate an RPG field is blanked after printing,
- Specify the precision for a floating point field.



Field Descriptions

Alias Name (ALIAS)	To associate an alternate name with the field, key the alias name in the field provided. Some high-level language compilers will bring the alias name into the program instead of the DDS name. See the specific compiler reference manual for more information. Not valid with RPG source.
Translate characters (CHRID)	Specify "Y" for CHRID to indicate that a graphics character set other than the device default can be used for this field. Not valid for numeric fields. Not valid for RPG source.
Convert to hexadecimal (CVTDTA)	Key a "Y" for the CVTDTA keyword to interpret the field's data as hexadecimal characters. When you specify "Y" for CVTDTA, your field must contain only valid hex characters--0 through 9, and A through F. Each two characters of data in the field are sent to the printer as a single character hex equivalent. Not supported by all printers. Not valid with RPG source.
Transparent code points (TRNSPY)	Specify "Y" for the TRNSPY keyword to indicate that hexadecimal data in the field should not be interpreted as control characters by the printer. Not supported by all printers. Not valid with RPG source.
Blank after printing	Key "Y" to indicate the field is set to blank/zero after printing. Valid only for RPG source.
Floating point precision (FLTPCN)	Use the FLTPCN keyword to indicate double or single precision for a floating point field when printed. The default is *SINGLE. Only valid with floating point fields. Not valid with RPG source.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.

F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Select Editing Keywords Display

From the Select Editing Keywords display you can:

- Edit a numeric field with a predefined edit code.
- Edit a numeric field with a customized edit word.

```
                        Select Editing Keywords

Field . . . . . :   FLD054
Length  . . . . :      3,0              Line . . :     2  Position . . :    14

Edit Code Description          No Sign   CR Sign   - Sign(R) - Sign(L)
Commas and zero balances          1         A         J         N
Commas                            2         B         K         O
Zero balances                     3         C         L         P
No commas or zero balances        4         D         M         Q
User defined edit codes          5-9
Date edit                         Y
Suppress leading zeros            Z

Type choices, press Enter.
                                          Keyword
  Edit code  . . . . . . . . . . . . .    EDTCDE    _   A-D, J-Q, Y, Z, 1-9
    Replace leading zeros with . . . .              _   *, $
  Edit word  . . . . . . . . . . . . .    EDTWRD



F3-Exit   F12=Cancel
```

Field Descriptions

Edit Code (EDTCDE) To edit a field with a predefined edit code, key the edit code character (A-D, J-M, Y, Z, 1-9) in the space provided. Each edit code has different features. The features are summarized in the table that appears on the screen. The table groups the edit codes into columns by the way they display negative numbers. The edit code description applies to all edit codes in that row.

When you specify an edit code, you can also specify that leading zeros in the field be replaced with asterisks (*). To do so, key an "*" in the space provided. To cause the currency symbol to print immediately to the left of the first non-zero digit, key a "$" in the space provided for floating currency symbol.

Edit codes and edit words are mutually exclusive.

Edit Word (EDTWRD) You can define an edit word to edit a numeric field in a customized fashion. Key your edit word in the space provided, enclosed in single quotes ('). See the DDS Reference, SC41-9620 for more information on the rules for specifying edit words for DDS. See the ILE RPG For OS/400 Reference, SC09-2508 for more information on the rules for specifying edit words for RPG.

For RPG you can specify the name of a constant field that contains an edit word.

Edit words and edit codes are mutually exclusive.

Function keys

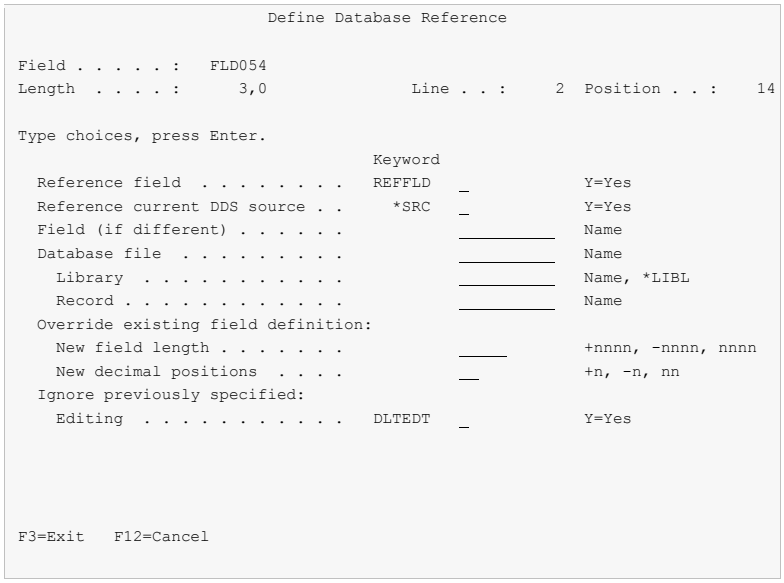
F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.

Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Define Database Reference Display

From the Define Database Reference display you can:

- Indicate the field is referenced from a database field, or another field in the same source member.
- Override reference attributes and tailor the field definition.



Field Descriptions

Reference field (REFFLD)	To base the definition of the current field on another field, key a "Y" to indicate that this is a reference field. Field referencing is not valid with RPG source.
Reference current source (*SRC)	To reference another field in the same source member, key a "Y" in the *SRC field.
Field	Specifies the name of the field referenced. If the name is left blank the name of the referencing field is used.
Database file	Specifies the name of the file, library, and record that contain the field to reference.
Override existing field definition	To override the referenced length of the field, key a new length in the space provided. You can also key a relative increment to the referenced field length by keying a plus (+) or minus (-) sign, followed by the increment amount. To override the referenced decimal positions of the field, key a new value for decimal positions in the space provided. You can also key a relative increment to the referenced field decimal positions by keying a plus (+) or minus (-) sign, followed by the increment amount.
Ignore previously specified editing	Key a "Y" for DLTEDT if the referenced field's editing does not apply to the current field.

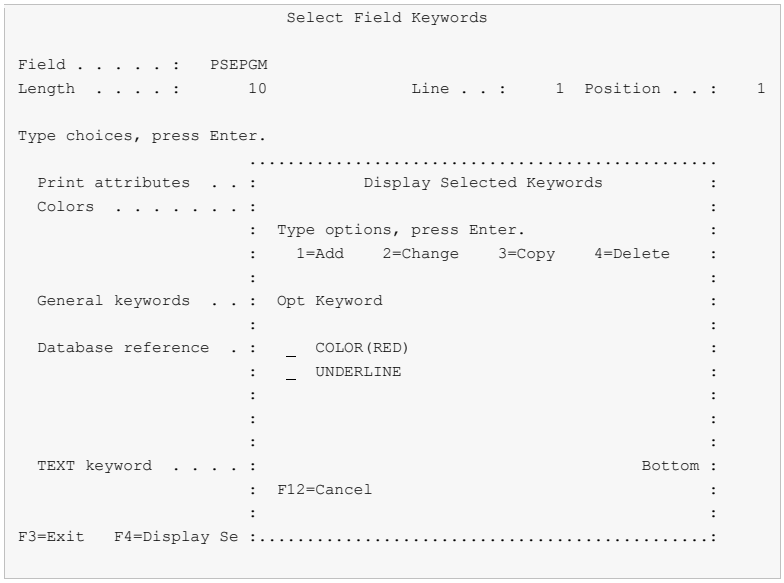
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Display Selected Keywords Window

The Display Selected Keywords window shows a list of currently selected keywords in DDS source code form. From the Display Selected Keywords window you can:

- Add keywords not supported on other displays.
- Change keywords not supported on other displays.
- Copy keywords not supported on other displays.
- Delete keywords not supported on other displays.



Option

Type the number of an option and press the Enter key.

1=Add	Use this option to add a new keyword. Only keywords that can not be added from other screens are allowed.
2=Change	Use this option to change a keyword. Only keywords that are inaccessible from other screens can be changed.
3=Copy	Use this option to copy a keyword. Only keywords that are inaccessible from other screens can be copied.
4=Delete	Use this option to delete a keyword. Only keywords that are inaccessible from other screens can be deleted.

Field Descriptions

Keyword	The keyword and associated parameter values. **Note:** The associated parameters end in an ellipsis (...) when they do not all fit.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 10 Save And Create Displays

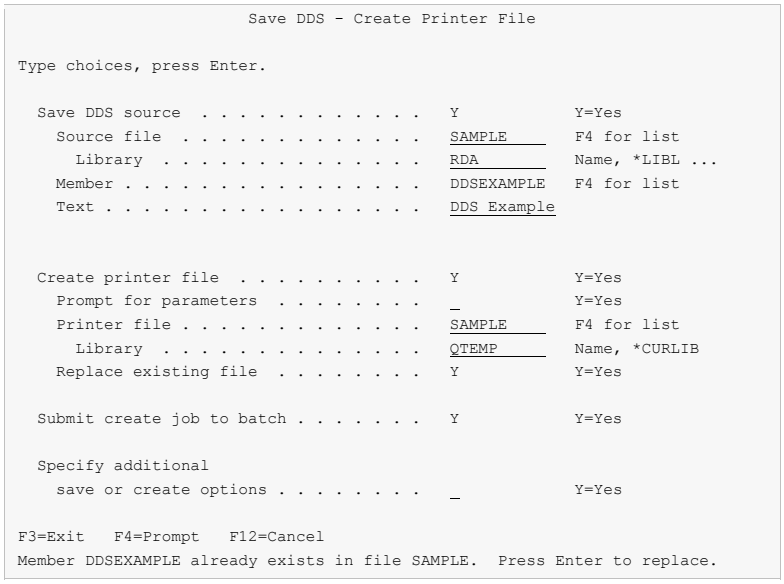
What's In This Chapter

This chapter describes how to save updated source and how to create objects from it using Save And Create Displays. Report Designer displays one of two screens when you exit the Work with Report Records display. If you are editing a DDS source member, the Save DDS - Create Printer File display appears. If you are editing an RPG source member, the Save RPG Source - Create Program display appears.

Save DDS - Create Printer File Display

The Save DDS - Create Printer File display appears on exiting the Work with Report Records display. From the Save DDS - Create Printer File display you can:

- Save the modified DDS source.
- Create a printer file from the DDS source.



```
                      Save DDS - Create Printer File

Type choices, press Enter.

  Save DDS source  . . . . . .  Y            Y=Yes
    Source file  . . . . . .  . SAMPLE       F4 for list
      Library  . . . . . .  . . RDA          Name, *LIBL ...
    Member . . . . . .  . . . . DDSEXAMPLE   F4 for list
    Text . . . . . .  . . . . . DDS Example


  Create printer file  . . . . . .  Y            Y=Yes
    Prompt for parameters  . . . . .  _          Y=Yes
    Printer file . . . . . .  . . .  SAMPLE     F4 for list
      Library  . . . . . .  . . . .  QTEMP      Name, *CURLIB
    Replace existing file  . . . . .  Y          Y=Yes

  Submit create job to batch . . . . . .  Y      Y=Yes

  Specify additional
    save or create options . . . . . .  _        Y=Yes

F3=Exit   F4=Prompt   F12=Cancel
Member DDSEXAMPLE already exists in file SAMPLE.  Press Enter to replace.
```

Field Descriptions

Save DDS source	Enter a "Y" to save the modified source.
File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Text	Specifies a description of the source member.
Create printer file	Enter a "Y" to create a printer file from the modified DDS source.
Prompt for parameters	Enter a "Y" to specify other parameters on the Create Printer File (CRTPRTF) command.
Printer file	Specifies the name and library of the printer file to create.
Replace existing file	Enter a "Y" if the created printer file is to replace an existing file by the same name.
Submit create job to batch	Enter a "Y" to execute printer file creation in batch.
Specify additional save or create options.	Enter a "Y" to view and change more options.

Function keys

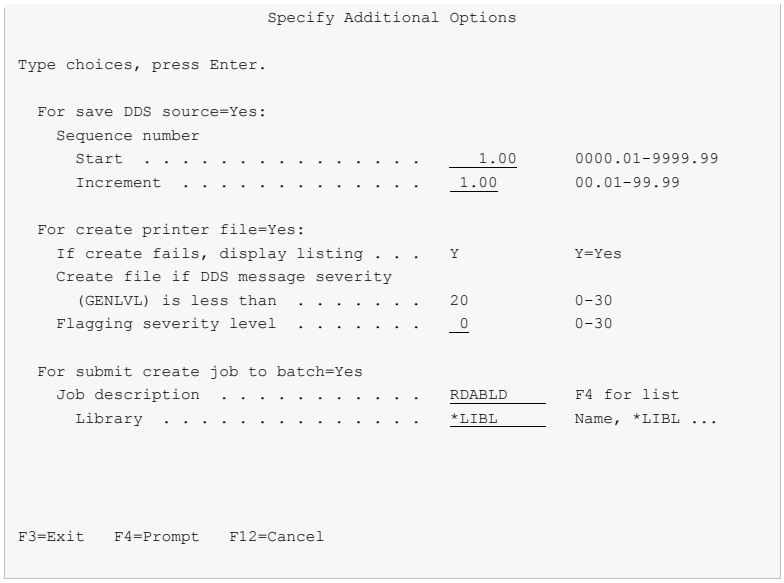
F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.

F4=Prompt	Provides assistance in typing additional parameter values for an option or in using a command.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Specify Additional Options

The Specify Additional Options display appears when additional options are requested from the Save DDS - Create Printer File display. From the Specify Additional Options display you can:

- Specify how to add sequence numbers to the updated source.
- Specify that a listing should display if the create fails.
- Specify the maximum message severity and flagging level on the create.
- Specify a job description to be used for batch creates.



Field Descriptions

Sequence Number	Specifies the starting number and an increment amount used to generate source statement sequence numbers.
If create fails, display listing	Specify "Y" to view the create listing on the screen in the event that the compile fails. This is only valid for interactive compiles.
Create file if DDS message ...	Specifies the maximum message severity allowed in the source before the create fails.
Flagging severity level	Specifies the minimum severity level of messages to be listed.
Job Description	Specifies the job description used to submit the create to batch.

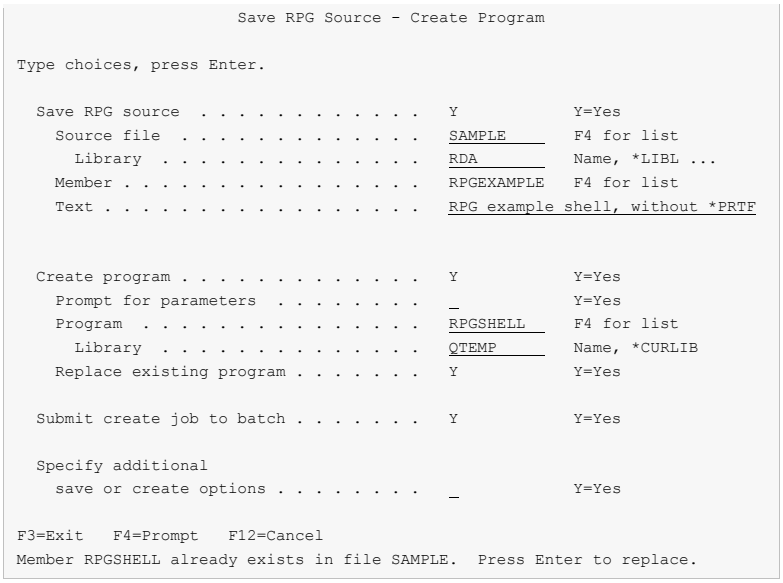
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Prompt	Provides assistance in typing additional parameter values for an option or in using a command.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Save RPG Source - Create Program Display

The Save RPG Source - Create Program display appears on exiting the Work with Report Records display. From the Save RPG Source - Create Program display you can:

- Save the modified RPG source.
- Create a program from the RPG source.



```
                    Save RPG Source - Create Program

Type choices, press Enter.

  Save RPG source  . . . . . .  Y            Y=Yes
    Source file  . . . . . .  SAMPLE     F4 for list
      Library  . . . . . .  RDA          Name, *LIBL ...
    Member . . . . . .  RPGEXAMPLE   F4 for list
    Text . . . . . .  RPG example shell, without *PRTF


  Create program . . . . . .  Y            Y=Yes
    Prompt for parameters  . . . . . .  _            Y=Yes
    Program  . . . . . .  RPGSHELL     F4 for list
      Library  . . . . . .  QTEMP       Name, *CURLIB
    Replace existing program . . . . . .  Y            Y=Yes

  Submit create job to batch . . . . . .  Y            Y=Yes

  Specify additional
    save or create options . . . . . .  _            Y=Yes

F3=Exit   F4=Prompt   F12=Cancel
Member RPGSHELL already exists in file SAMPLE.  Press Enter to replace.
```

Field Descriptions

Save RPG source	Enter a "Y" to save the modified source.
File	Specifies the name of the file containing the source member to be updated or to which a new source member will be added.
Member	Specifies the name of the member containing the source to be updated or the name of a new member to be created.
Text	Specifies a description of the source member.
Create program	Enter a "Y" to create a program from the modified RPG source.
Prompt for parameters	Enter a "Y" to specify other parameters on the Create RPG Program (CRTRPGPGM) command.
Program	Specifies the name and library of the program to create.
Replace existing program	Enter a "Y" if the created program is to replace an existing program by the same name.
Submit create job to batch	Enter a "Y" to execute program creation in batch.
Specify additional save or create options.	Enter a "Y" to view and change more options.

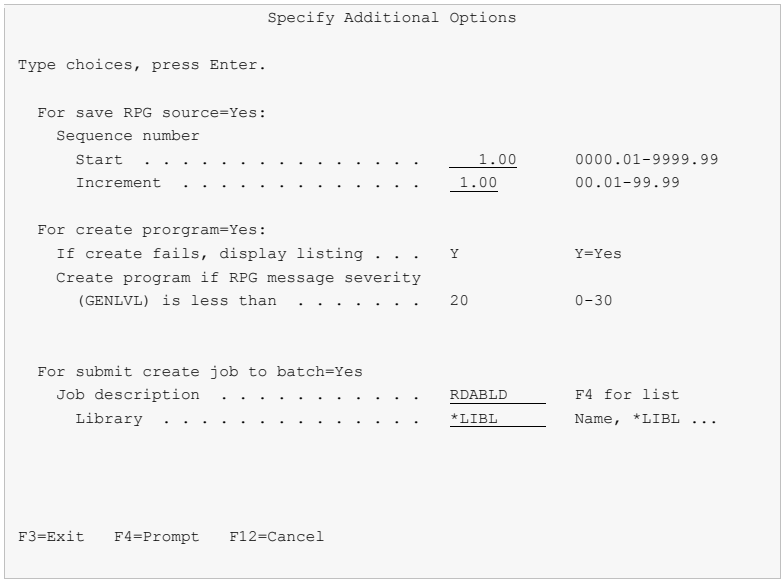
Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Prompt	Provides assistance in typing additional parameter values for an option or in using a command.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Specify Additional Options

The Specify Additional Options display appears when additional options are requested from the Save RPG Source - Create Program display. From the Specify Additional Options display you can:

- Specify how to add sequence numbers to the updated source.
- Specify that a listing should display if the create fails.
- Specify the maximum message severity on the create.
- Specify a job description to be used for batch creates.



Field Descriptions

Sequence Number	Specifies the starting number and an increment amount used to generate source statement sequence numbers.
If create fails, display listing	Specify "Y" to view the create listing on the screen in the event that the compile fails. This is only valid for interactive compiles.
Create program if RPG message ...	Specifies the maximum message severity allowed in the source before the create fails.
Job Description	Specifies the job description used to submit the create to batch.

Function keys

F1=Help	Provides additional information about using the display or a specific field on the display.
F3=Exit	Ends the current task and returns to the display from which the task was started.
F4=Prompt	Provides assistance in typing additional parameter values for an option or in using a command.
F12=Cancel	Cancels this display and returns to the previous display.
Enter	Submit information on the display for processing.
Help	Provides additional information about using the display or a specific field on the display.
Print	Prints information currently shown on the display.

Chapter 11 DDS Example

What's In This Chapter

This chapter takes you through the steps required to design and create a simple report using external printer file DDS.

Detailed descriptions of the Report Designer displays shown in this example, and those not covered, appear in other chapters.

Keying In The Example

To key in this example, your library list must include RDA, and you must be authorized to the source files.

- Selecting Field Descriptions

  A database file is supplied with Report Designer. You will select field descriptions from this file to design your report records.

- Removing a Previously Entered Example

  If the example has been entered previously, the member created must be removed from the DDS source file or be given a different name. To remove a member, use the RMVM command or option 4 from PDM. To rename a member, use the RNMM command or option 7 from PDM.

- Exiting From The Example

  If you do not want to complete the example, or if you make an error and wish to start over, exit from Report Designer by repeatedly pressing F3.

Begin the example here:

- At a command line enter the following:

  ```
  ADDLIBLE RDA.  Press Enter.
  STRRDA.  Press F4.
  ```

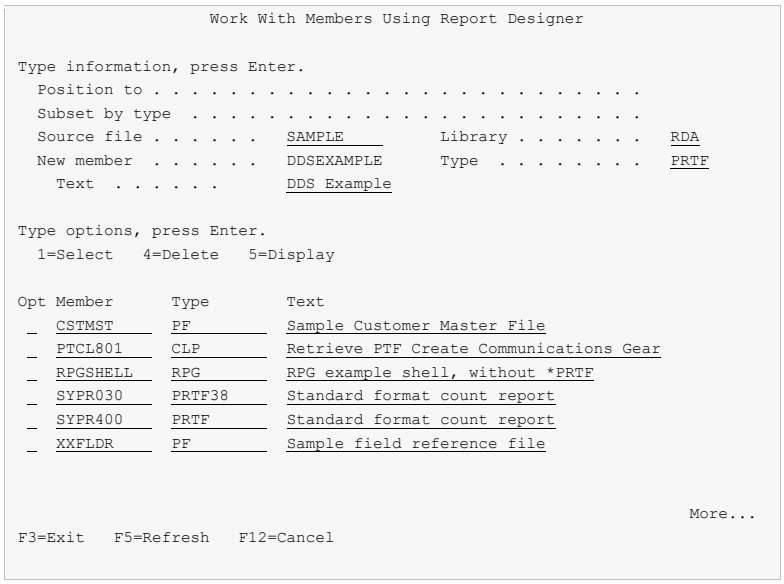
  The Start Report Designer prompt is displayed.

```
                      Start Report Designer (STRRDA)

Type choices, press Enter.

Source file  . . . . . .   SAMPLE       Name, *PRV
  Library  . . . . . .       RDA        Name, *PRV, *LIBL, *CURLIB
Source member  . . . . . .   *SELECT     Name, *PRV, *SELECT
*PRTF or RPG printer file  . . .  *MBRTYPE     Name, *PRV, *MBRTYPE...
Object library . . . . . .   QTEMP        Name, *PRV, *CURLIB
Job description  . . . . . .   RDA        Name, *PRV, *USRPRF
  Library  . . . . . .       RDA        Name, *PRV, *LIBL, *CURLIB

                                                                    Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

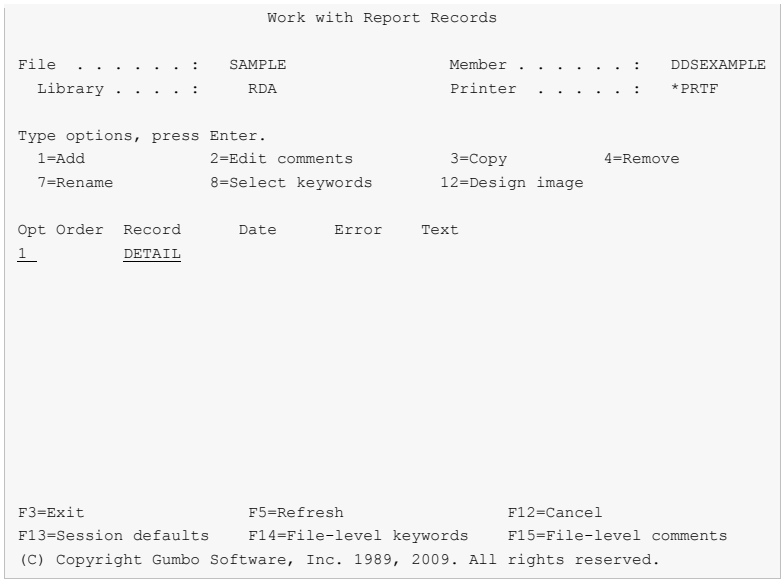
- Fill in the prompt screen as shown above, and press Enter. The Design Reports display appears.

```
                              Design Reports

Type choices, press Enter.

  Source file . . . . . .   SAMPLE     Name, F4 for list

    Library . . . . . .   RDA          Name, *LIBL, *CURLIB

  Member  . . . . . .     _____        Name, F4 for list

  *PRTF or RPG printer file . .  *MBRTYPE    Name, *MBRTYPE, *PRTF, *FIRST

F3=Exit     F4=Prompt     F12=Cancel
```

- Position the cursor to the Member field and press F4. The Work with Members display appears.



- Enter the name "DDSEXAMPLE" for "New member". Enter "DDS Example" for "Text". Press Enter twice. The Work with Report Records display is shown next.



- Enter "1" for Option and "DETAIL" for Record. Press Enter. The blank Work Display appears.

```
Report Designer Work Display for DETAIL:  Press HELP for function keys.
```

- With the cursor in the upper left-hand corner of the screen, press F14 to display the ruler.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
```

- Press F10 to access the Database File display.

```
                          Select Database Files

Type options and names, press Enter.
  1=Display database field list
  2=Select all fields



Option   Database File    Library      Record
  1        XXFLDR         RDA
  _        __________     *LIBL
  _        __________     *LIBL
  _        __________     *LIBL









F3=Exit   F4=Record list   F12=Cancel
```

- Enter a "1" for "Option". Enter "XXFLDR" for Database File. Enter "RDA" for Library. Position the cursor to the Record column and press F4. The Database Records display appears.

```
                         Select Data Base Records

Data basefile . . . . . :   XXFLDR         Library . . . :   RDA

Type options, press Enter.
  1=Select

Option   Record
  1      XXFLDRR
```

- Enter a "1" beside XXFLDRR, and press Enter. The Database Fields display appears.

```
                        Select Database Fields

Record . . . :   XXFLDRR

Type information, press Enter.
  Number of fields to roll  . . . . . . . . . . . . . . . . . .   __8
  Name of field to search for . . . . . . . . . . . . . . . . .

Type options, press Enter.
  1=Display extended field description
  2=Select

Option  Field        Length   Type    Column Heading
  2     NAME            30    A      CUSTOMER NAME
  2     ADDR            30    A      ADDRESS
  2     CITY            23    A      CITY
  2     STATE            2    A      STATE
  2     ZIP              5    A      ZIP CODE
  2     CSTNBR         7,0    P      CUSTOMER NUMBER
  2     PHONE         10,0    P      PHONE NUMBER
  _     PRGM            10    A      PROGRAM NAME
                                                                    More...
F3=Exit   F12=Cancel
```

- Enter a "2" beside the fields NAME, ADDR, CITY, STATE, ZIP, CSTNBR, and PHONE. Press Enter to select the fields and return to the Select Database Files display. Press F12 to return to the Work Display. The selected fields are displayed at the bottom of the Work Display.

```
 ... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 1:NAME 2:ADDR 3:CITY 4:STATE 5:ZIP 6:CSTNBR 7:PHONE
```

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
&12
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:NAME 2:ADDR 3:CITY 4:STATE 5:ZIP 6:CSTNBR 7:PHONE
```

- Key &1 at line 2 position 2 of the Work Display, and press Enter. The customer name field is added to the display.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:ADDR 2:CITY 3:STATE 4:ZIP 5:CSTNBR 6:PHONE
```

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
oooooooooooooooooooooooooooooooo   &1
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:ADDR 2:CITY 3:STATE 4:ZIP 5:CSTNBR 6:PHONE
```

- Key &1 at line 2 position 35 of the Work Display, and press Enter to add address to the display.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
oooooooooooooooooooooooooooooo   ooooooooooooooooooooooooooooooo
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE
```

```
  .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO




 1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE
```

- Press F20 to window the display to the right.

```
  .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO &1                    &2 &3
```

 1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE

- Key &1 at line 2 position 66, &2 at line 2 position 90, and &3 at line 2 position 93. Press Enter to add the city, state, and zip fields to the display.

```
 .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO
                                                                              
                                                                              
                                                                              
```

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  &2




 1:CSTNBR 2:PHONE
```

- Key &2 at line 2 position 100 of the Work Display, and press Enter to add the phone number to the display. Notice the phone number is displayed in edited format.

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666




 1:PHONE
```

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      &1




 1:PHONE
```

- Key &1 at line 2 position 118 of the Work Display, and press Enter to add the customer number to the display.

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      6666666
```

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666     *6666666
```

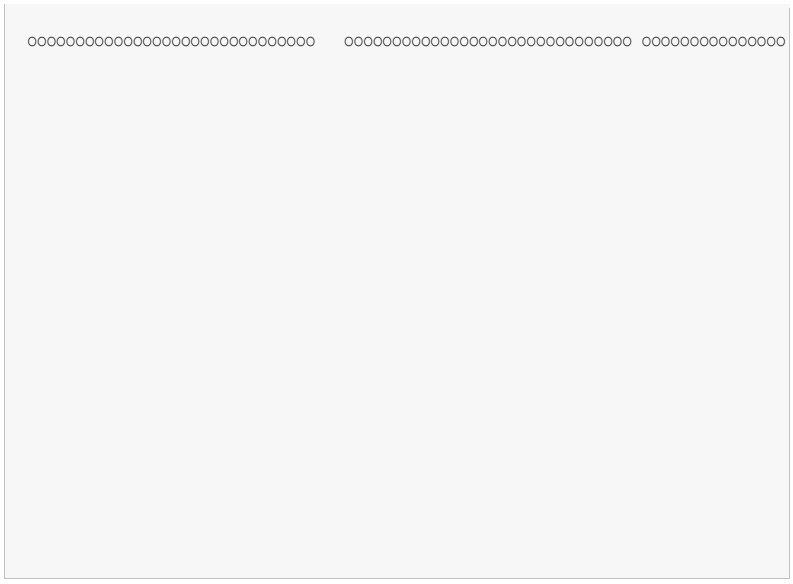
- Key an asterisk (*) in front of the customer number and press Enter to see the Field Keywords displays for customer number.

```
                          Select Field Keywords

Field . . . . . :   CSTNBR
Length  . . . . :      7,0              Line . . :     2  Position . . :   118

Type choices, press Enter.
                                  Y=Yes   For Field Type
  Print attributes  . . . . . .   _       All types
  Colors  . . . . . . . . . . .   _       All types



  General keywords  . . . . . .   _       All types
  Editing keywords  . . . . . .   Y       Numeric
  Database reference  . . . . .   _       All types




  TEXT keyword  . . . . . . . . .   CUSTOMER NUMBER


F3=Exit   F4=Display Selected Keyword   F12=Cancel
```

- Key a "Y" for Editing keywords and press Enter.

```
                        Select Editing Keywords

Field . . . . . :   CSTNBR
Length  . . . . :      7,0              Line . . :     2  Position . . :   118

Edit Code Description          No Sign   CR Sign   - Sign(R) - Sign(L)
Commas and zero balances          1         A         J         N
Commas                            2         B         K         O
Zero balances                     3         C         L         P
No commas or zero balances        4         D         M         Q
User defined edit codes          5-9
Date edit                         Y
Suppress leading zeros            Z

Type choices, press Enter.
                                            Keyword
  Edit code  . . . . . . . . . . . . . .   EDTCDE   3   A-D, J-Q, Y, Z, 1-9
    Replace leading zeros with . . . .             _   *, $
  Edit word  . . . . . . . . . . . . . .   EDTWRD



F3-Exit   F12=Cancel
```

- Enter 3 for edit code, and press F12 twice to return to the Work Display. This will cause the customer number to print in edited format.



- Press F14 to remove the ruler from the Work Display. Press Home to position the display to line 1 column 1.

- Move all of the fields up 1 line by keying the following information. Do not press Enter until all of the information has been entered. Key an equal sign in line 1 column 2 to mark the target for the move block. Key a minus sign in line 2 column 1 to mark the beginning of the move block. Press F20 twice to window to the far right of the display.

- Key a minus sign to the right of the last field to mark the end of the move block. Now press Enter. All fields are moved up 1 line and over 1 position to the right.

```
  OOOOOOOOOOOO OOOOOOOOOOOOOO OOOOOOOOO OO OOOOO  666-666-6666     6666666
```

- Press F12 to return to the Work with Report Records display.

```
                        Work with Report Records

File  . . . . . :   SAMPLE                Member . . . . . :   DDSEXAMPLE
  Library . . . . :     RDA                 Printer  . . . . . :   *PRTF

Type options, press Enter.
  1=Add             2=Edit comments          3=Copy          4=Remove
  7=Rename          8=Select keywords       12=Design image

Opt Order  Record      Date      Error    Text
1          HEADER
__   ___10  DETAIL___  09/03/30

F3=Exit                 F5=Refresh                F12=Cancel
F13=Session defaults    F14=File-level keywords   F15=File-level comments
```

- Enter "1" for Opt and "HEADER" for Record as shown. Press Enter.

```
Report Designer Work Display for HEADER:  Press HELP for function keys.
```

- The blank Work Display appears for report record HEADER. Press F9 to select additional records to display along with the HEADER record.

```
                  Select Additional Records for Display

File  . . . . . :   SAMPLE               Member . . . . . :   DDSEXAMPLE
  Library . . . . :     RDA                Printer  . . . . :   *PRTF

Type information, press Enter.
  Current record  . . . . . . . . . . . . . :   HEADER
    Blanks  . . . . . . . . . . . . . . . .   5           00-99
    Position in additional records  . . . . .   __          0-31
Type options, press Enter.
  1,2,3...31=Select for display as additional record

Option   Record       Repeat   Blanks
  __     DETAIL




F3=Exit     F5=Refresh     F12=Cancel
```

- Key 1 next to DETAIL, and 5 for Blanks as shown and press Enter.

```
OOOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      6666666
```

```
 Record HEADER displayed first relative to additional record(s) by default.
```

- The Work Display appears, with 5 blank lines at the top for the HEADER record. The DETAIL record is displayed below. Press the HOME key to position the display to line 1 position 1.

```
  *date
  *time

         Name                           Address
'------------------------------' '------------------------------'
 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOO
```

- Key constants for the HEADER record on the display as shown above. Be sure to enclose the dashed lines in single quotes ('). Pressing Enter defines the constant fields for the record.

```
  66/66/66
  66:66:66

         Name                          Address
  ------------------------------   ------------------------------
  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOO
```

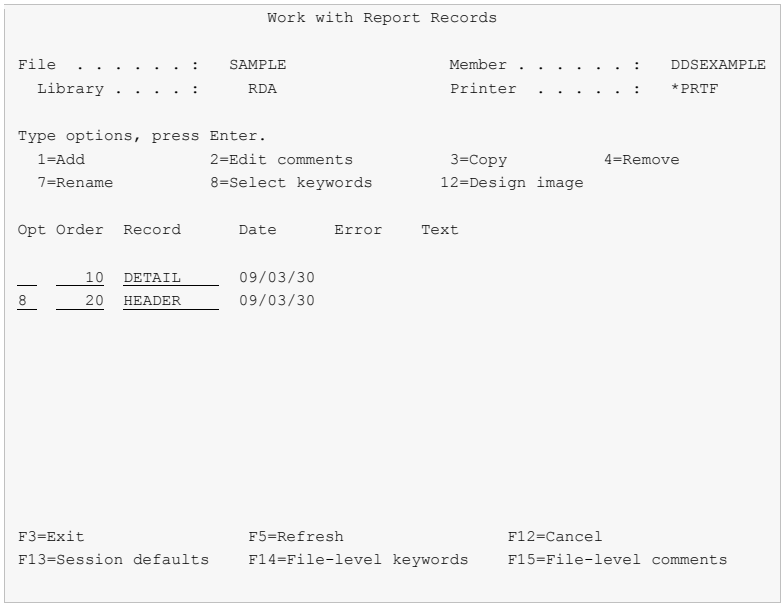
```
-------------
OOOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      6666666
```

- Press F20 twice to window the display to the right.

```
 Customer Master Listing                                Page *pagnbr


                   'City'           'ST''ZIP'   'Phone'         'Cust #'
-------------'----------------------"--"-----''------------'    '-------'
OOOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      6666666
```

- Enter the remaining constants for the HEADER record as shown above. Pressing Enter defines the constant fields for the record.

- Press F12 to return to the Work with Report Records display.



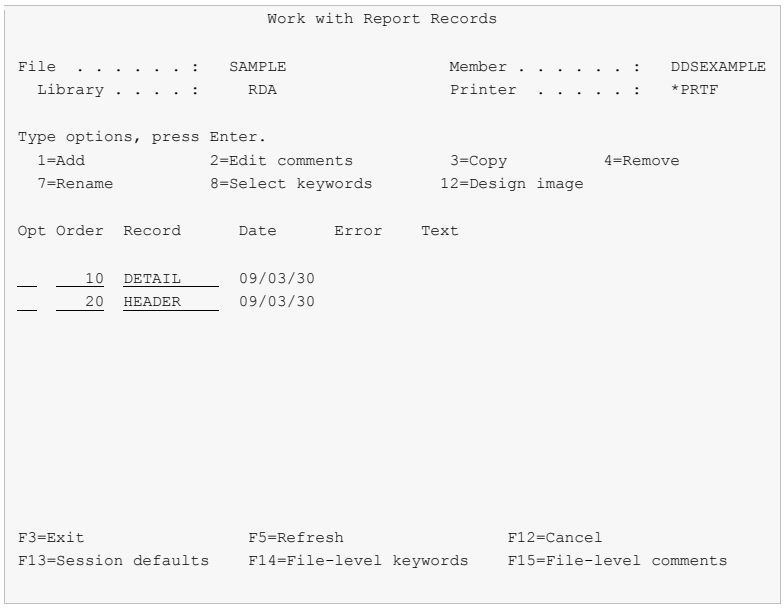
- Key "8" for Opt beside the "HEADER" record to select keywords for the report record. Press Enter.

```
                          Select Record Keywords

Record . . . :   HEADER

Type choices, press Enter.

                                   Y=Yes
  General keywords  . . . . . . . .
  Spacing and skipping keywords . .   Y
  Indicator text keyword  . . . . .
  Define character keyword  . . . .

  TEXT keyword  . . . . . . . . . .









F3=Exit   F4=Display Selected Keyword   F12=Cancel
```

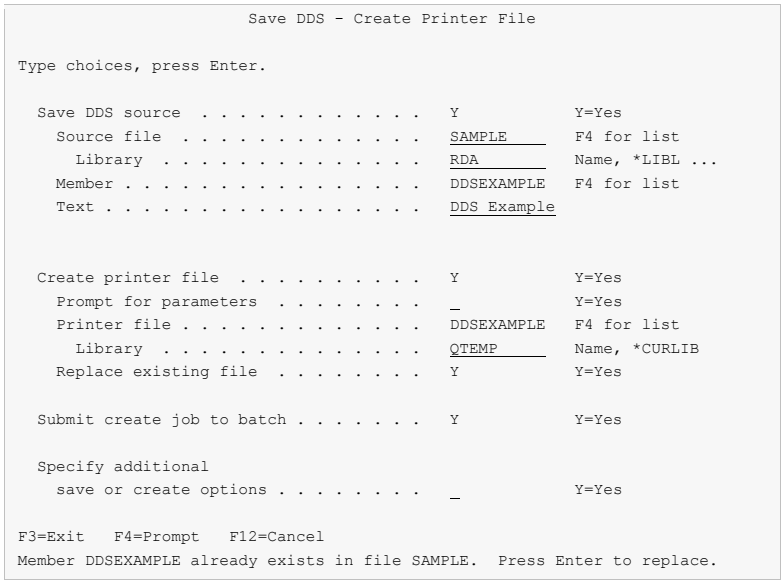
- Key a "Y" for "Spacing and skipping keywords" and press Enter.

```
                      Select Spacing And Skipping Keywords

Record . . . :   HEADER

Type choices, press Enter.
                          Keyword    Value Indicators/+
  Record format level:
    Skip before . . . . .   SKIPB      __1
    Skip after  . . . . .   SKIPA
    Space before  . . . .   SPACEB
    Space after . . . . .   SPACEA
    Line spacing  . . . .              2                   1=Fixed line nbrs
                                                           2=Use Spaces/Skips
  Line/field level:
       Skip Before       Skip After        Space Before      Space After
       Val Indicators/+  Val Indicators/+  Val Indicators/+  Val Indicators/+
    1  ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___   __1
    2  ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___   __2
    4  ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___   __1
    5  ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___   __1


F3=Exit   F12=Cancel
```

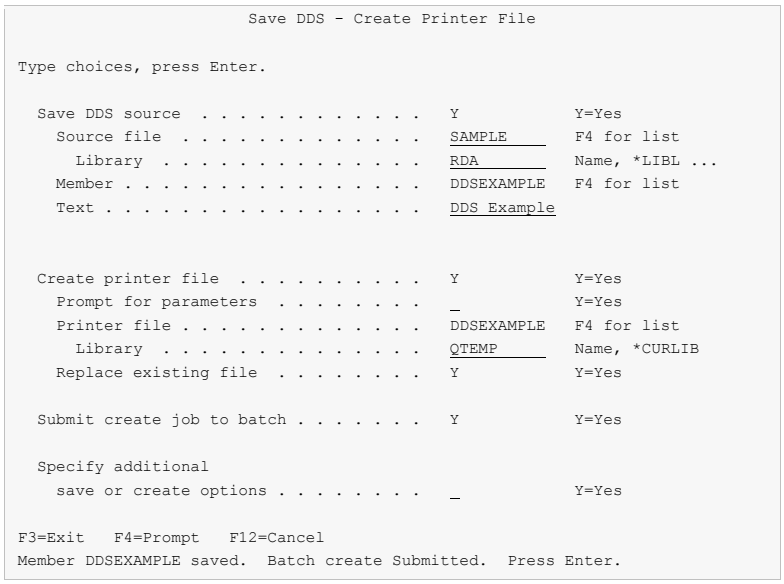
- Key a 1 for "Skip Before" at the record level as shown, to cause the report record to skip to line 1 each time it is printed.
- Press F12 twice to return to the Work with Report Records display.



- Press F3 to exit. The DDS exit display appears.



- Press Enter to save the source and create the printer file. A completion message is displayed at the bottom of the screen.



- Press Enter to exit Report Designer. This concludes this example.

Chapter 12 RPG Example

What's In This Chapter

This chapter takes you through the steps required to design and create a simple report using RPG internal printer file specifications.

Detailed descriptions of the Report Designer displays shown in this example, and those not covered, appear in other chapters.

Keying In The Example

To key in this example, your library list must include RDA, and you must be authorized to the source files.

- Selecting Field Descriptions

  A database file is supplied with Report Designer. You will select field descriptions from this file to design your report records.

- Removing a Previously Entered Example

  If the example has been entered previously, the member created must be removed from the RPG source file or be given a different name. To remove a member, use the RMVM command or option 4 from PDM. To rename a member, use the RNMM command or option 7 from PDM.

- Exiting From The Example

  If you do not want to complete the example, or if you make an error and wish to start over, exit from Report Designer by repeatedly pressing F3.

Begin the example here:

- At a command line enter the following:

  ```
  ADDLIBLE RDA.  Press Enter.
  STRRDA.  Press F4.
  ```

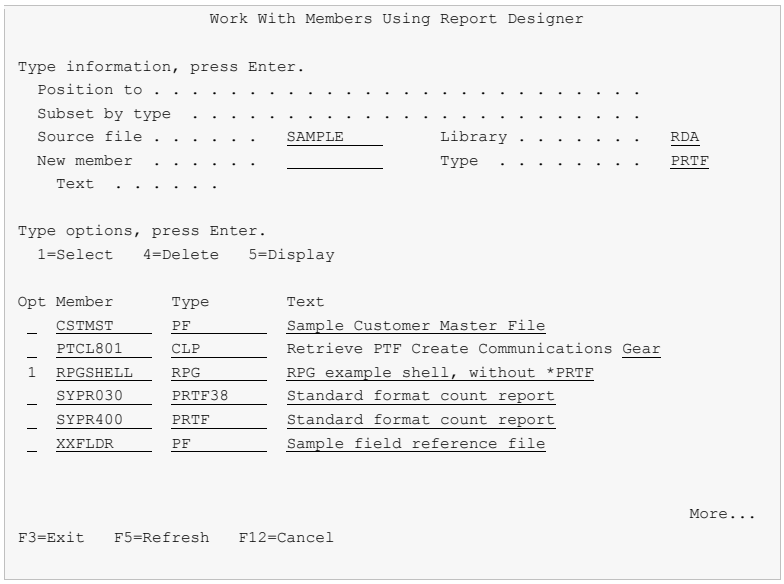
  The Start Report Designer prompt is displayed.

```
                      Start Report Designer (STRRDA)

Type choices, press Enter.

Source file  . . . . . .   SAMPLE       Name, *PRV
  Library  . . . . . .       RDA        Name, *PRV, *LIBL, *CURLIB
Source member  . . . . . .   *SELECT     Name, *PRV, *SELECT
*PRTF or RPG printer file  . . .   QPRINT     Name, *PRV, *MBRTYPE...
Object library . . . . . .   QTEMP      Name, *PRV, *CURLIB
Job description  . . . . . .   RDA        Name, *PRV, *USRPRF
  Library  . . . . . .       RDA        Name, *PRV, *LIBL, *CURLIB

                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

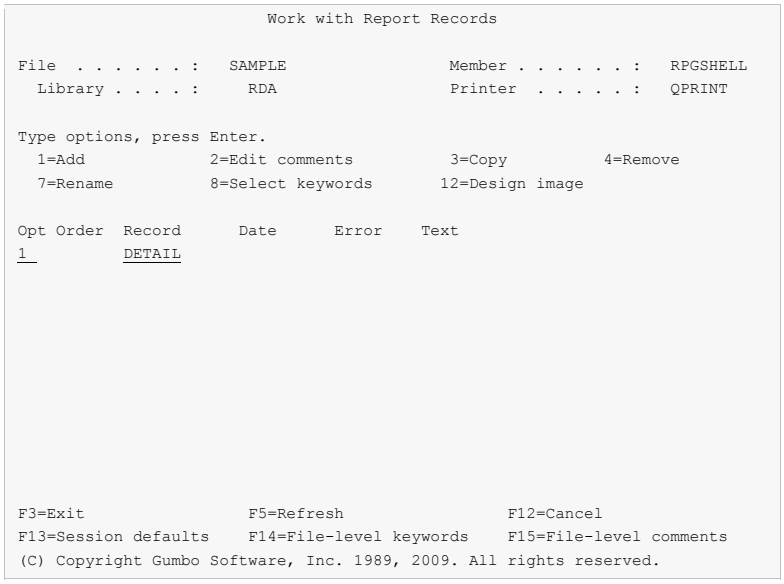
- Fill in the prompt screen as shown above, and press Enter. The Design Reports display is displayed.

```
                              Design Reports

Type choices, press Enter.

  Source file . . . . . .   SAMPLE     Name, F4 for list

    Library . . . . . .   RDA        Name, *LIBL, *CURLIB

  Member  . . . . . .   __________   Name, F4 for list

  *PRTF or RPG printer file . .   QPRINT     Name, *MBRTYPE, *PRTF, *FIRST

F3=Exit     F4=Prompt     F12=Cancel
```

- Position the cursor to the Member field and press F4. The Work with Members display appears.



- Key a 1 to the left of RPGSHELL to select it for processing. Press Enter twice. The message "* Syntax checking in progress" will be displayed. The Work with Report Records display is shown next.



- Enter "1" for Option and "DETAIL" for Record. Press Enter. The blank Work Display appears.

```
Report Designer Work Display for DETAIL:  Press HELP for function keys.
```

- With the cursor in the upper left-hand corner of the screen, press F14 to display the ruler.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
```

- Press F10 to access the Database File display.

- Enter a "1" for "Option". Enter "XXFLDR" for Database File. Enter "RDA" for Library. Position the cursor to the Record column and press F4. The Database Records display appears.

- Enter a "1" beside XXFLDRR, and press Enter. The Database Fields display appears.

```
                        Select Database Fields

Record . . . :   XXFLDRR

Type information, press Enter.
  Number of fields to roll  . . . . . . . . . . . . . . . . . .   __8
  Name of field to search for . . . . . . . . . . . . . . . . .

Type options, press Enter.
  1=Display extended field description
  2=Select

Option  Field        Length   Type    Column Heading
  2     NAME            30    A      CUSTOMER NAME
  2     ADDR            30    A      ADDRESS
  2     CITY            23    A      CITY
  2     STATE            2    A      STATE
  2     ZIP              5    A      ZIP CODE
  2     CSTNBR         7,0    P      CUSTOMER NUMBER
  2     PHONE         10,0    P      PHONE NUMBER
  _     PRGM            10    A      PROGRAM NAME
                                                                  More...
F3=Exit   F12=Cancel
```

- Enter a "2" beside the fields NAME, ADDR, CITY, STATE, ZIP, CSTNBR, and PHONE. Press Enter to select the fields and return to the Database File display. Press F12 to return to the Work Display. The selected fields are displayed at the bottom of the Work Display.

```
 ... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
  2
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 1:NAME 2:ADDR 3:CITY 4:STATE 5:ZIP 6:CSTNBR 7:PHONE
```

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
&12
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:NAME 2:ADDR 3:CITY 4:STATE 5:ZIP 6:CSTNBR 7:PHONE
```

- Key &1 at line 2 position 2 of the Work Display, and press Enter. The customer name field is added to the display.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:ADDR 2:CITY 3:STATE 4:ZIP 5:CSTNBR 6:PHONE
```

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   &1
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:ADDR 2:CITY 3:STATE 4:ZIP 5:CSTNBR 6:PHONE
```

- Key &1 at line 2 position 35 of the Work Display, and press Enter to add address to the display.

```
... ...10.... ...20.... ...30.... ...40.... ...50.... ...60.... ...70.... ...80
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE
```

```
  .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO    OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO




 1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE
```

- Press F20 to window the display to the right.

```
  .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO    OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO &1                    &2 &3
```

 1:CITY 2:STATE 3:ZIP 4:CSTNBR 5:PHONE

- Key &1 at line 2 position 66, &2 at line 2 position 90, and &3 at line 2 position 93. Press Enter to add the city, state, and zip fields to the display.

```
 .30.... ...40.... ...50.... ...60.... ...70.... ...80.... ...90.... ..100....
OOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO
                                                                              
                                                                              
                                                                              
```

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  &2




 1:CSTNBR 2:PHONE
```

- Key &2 at line 2 position 100 of the Work Display, and press Enter to add the phone number to the display. Notice the phone number is displayed in edited format.

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666




 1:PHONE
```

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      &1




 1:PHONE
```

- Key &1 at line 2 position 118 of the Work Display, and press Enter to add the customer number to the display.

```
  . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666      6666666
```

```
 . ...60.... ...70.... ...80.... ...90.... ..100.... ..110.... ..120.... ..130.
OOOOOOOOOOOO OOOOOOOOOOOOOOOOOOOOOOOO OO OOOOO  666-666-6666     *6666666
```

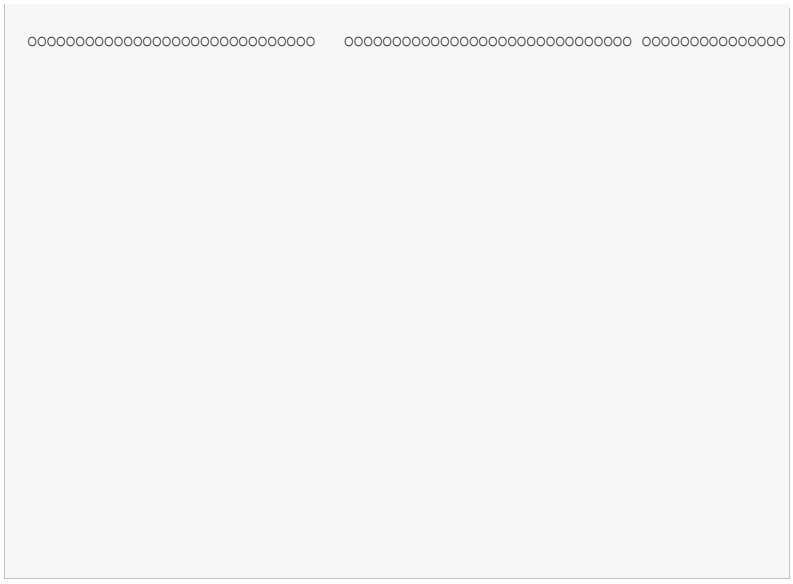
- Key an asterisk (*) in front of the customer number and press Enter to see the Select Field Keywords display for customer number.

```
                          Select Field Keywords

Field . . . . . :   CSTNBR
Length  . . . . :      7,0              Line . . :     2  Position . . :   118

Type choices, press Enter.
                                  Y=Yes   For Field Type
  Print attributes  . . . . . .   _       All types
  Colors  . . . . . . . . . . .   _       All types



  General keywords  . . . . . .   _       All types
  Editing keywords  . . . . . .   Y       Numeric
  Database reference  . . . . .   _       All types




  TEXT keyword  . . . . . . . . .   CUSTOMER NUMBER


F3=Exit   F4=Display Selected Keyword   F12=Cancel
```

- Key a "Y" for "Editing keywords" and press Enter.

```
                        Select Editing Keywords

Field . . . . . :   CSTNBR
Length  . . . . :      7,0              Line . . :     2  Position . . :   118

Edit Code Description          No Sign   CR Sign   - Sign(R) - Sign(L)
Commas and zero balances          1         A         J         N
Commas                            2         B         K         O
Zero balances                     3         C         L         P
No commas or zero balances        4         D         M         Q
User defined edit codes          5-9
Date edit                         Y
Suppress leading zeros            Z

Type choices, press Enter.
                                            Keyword
  Edit code  . . . . . . . . . . . . . .   EDTCDE   3   A-D, J-Q, Y, Z, 1-9
    Replace leading zeros with . . . .             _   *, $
  Edit word  . . . . . . . . . . . . . .   EDTWRD


F3-Exit   F12=Cancel
```

- Enter 3 for edit code, and press F12 twice to return to the Work Display. This will cause the customer number to print in edited format.



- Press F14 to remove the ruler from the Work Display. Press HOME to position the display to line 1 column 1.

- Move all of the fields up 1 line by keying the following information. Do not press Enter until all of the information has been entered. Key an equal sign in line 1 column 2 to mark the target for the move block. Key a minus sign in line 2 column 1 to mark the beginning of the move block. Press F20 twice to window to the far right of the display.

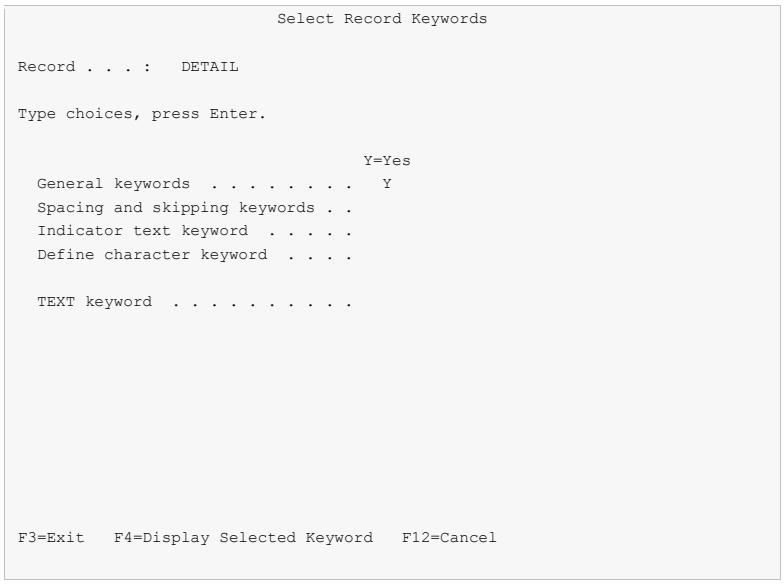
- Key a minus sign to the right of the last field to mark the end of the move block. Now press Enter. All fields are moved up 1 line and over 1 position to the right.

```
   OOOOOOOOOOOO OOOOOOOOOOOOOO OOOOOOOOO OO OOOOO  666-666-6666     6666666
```

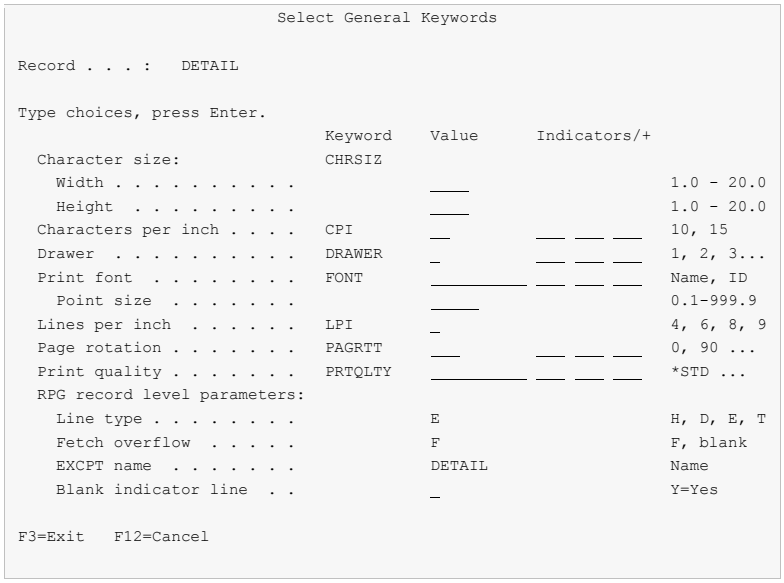
- Press F12 to return to the Work with Report Records display.

```
                          Work with Report Records

File  . . . . . :   SAMPLE                Member . . . . . :   RPGSHELL
  Library . . . . :     RDA                 Printer  . . . . . :   QPRINT

Type options, press Enter.
  1=Add             2=Edit comments          3=Copy          4=Remove
  7=Rename          8=Select keywords       12=Design image

Opt Order  Record      Date      Error    Text

8     10   DETAIL     09/03/30

F3=Exit                 F5=Refresh                F12=Cancel
F13=Session defaults    F14=File-level keywords   F15=File-level comments
```

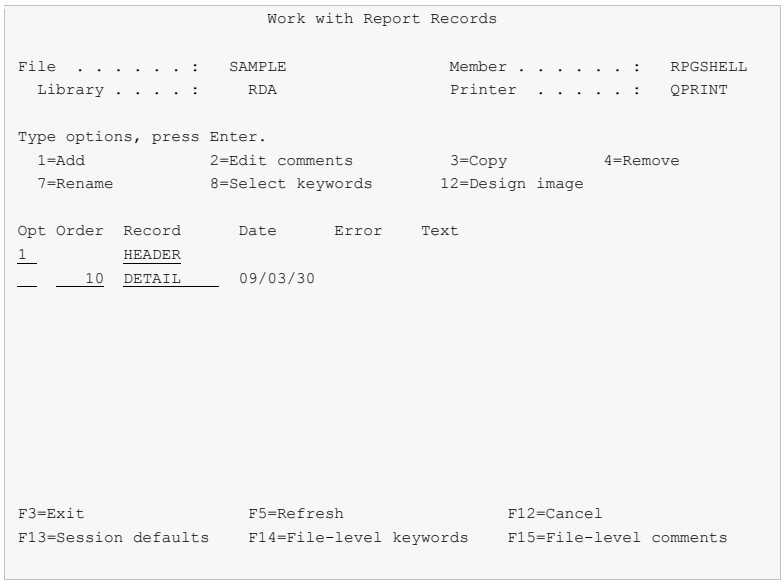
- Enter "8" for Opt beside the detail record as shown. Press Enter. The Select Record Keywords display appears next.



- Key "Y" for "General keywords". Press Enter.

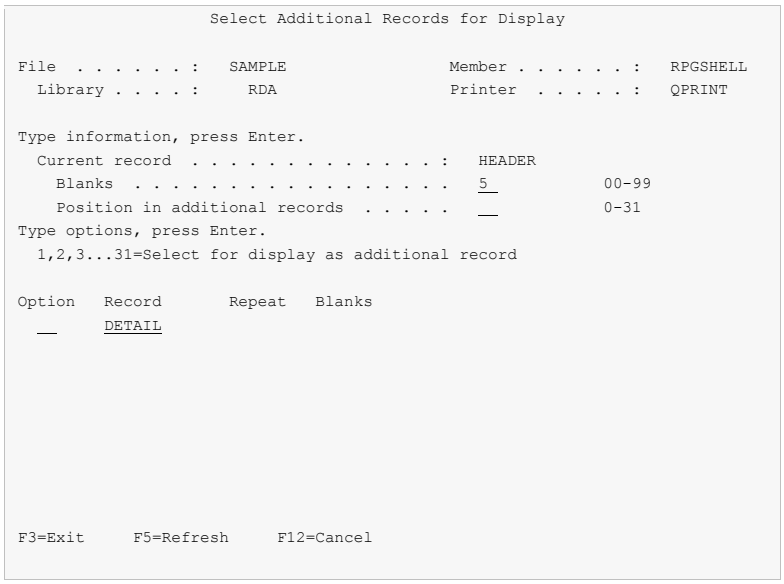


- Enter E for RPG "Line type", F for "Fetch overflow", and DETAIL for "EXCPT name". Press F12 twice to return to the Work with Report Records display.

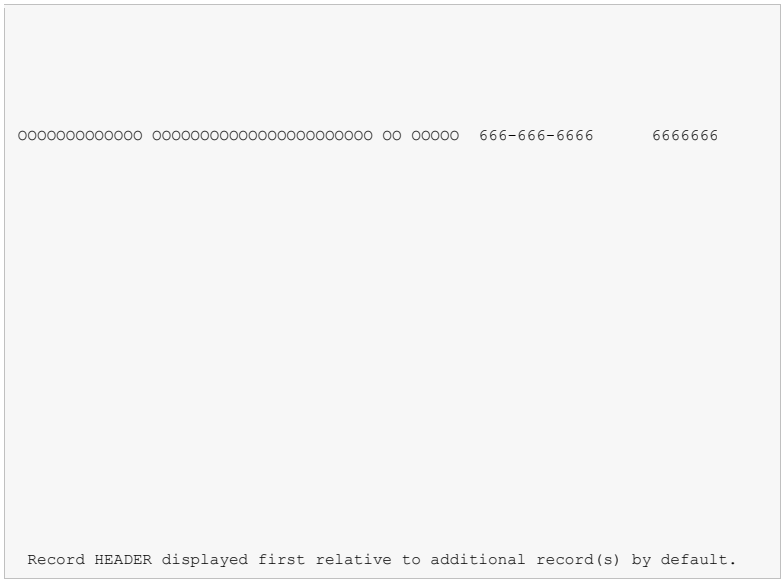


- Enter "1" for Opt and "HEADER" for Record as shown. Press Enter.

- The blank Work Display appears for report record HEADER. Press F9 to select additional records to display along with the HEADER record.



- Key 1 next to DETAIL, and 5 for Blanks as shown and press Enter.



- The Work Display appears, with 5 blank lines at the top for the HEADER record, and the DETAIL record displayed below. Press HOME to position the display to line 1 position 1.

```
 *date
+666666

         Name                          Address
'------------------------------' '------------------------------'
 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOO
```

- Key the field and constant definitions for the HEADER record on the display as shown above. Be sure to enclose the dashed lines in single quotes ('). Pressing Enter completes the field definitions.

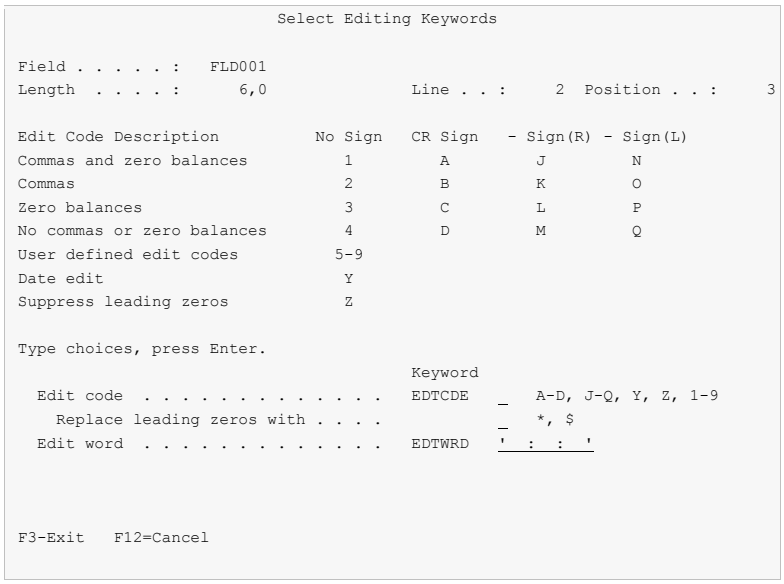
```
 66/66/66
 666666

         Name                          Address
 ------------------------------   ------------------------------
 OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOO
```

```
  66/66/66
 *666666

         Name                          Address
  ------------------------------   ------------------------------
  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO OOOOOOOOOOOOOO
```

- Key an asterisk (*) in front of the time field as shown, and press Enter to see the Select Field Keywords display for this field.

```
                          Select Field Keywords

Field . . . . . :   FLD001
Length  . . . . :      6,0              Line . . :     2  Position . . :     3

Type choices, press Enter.
                                  Y=Yes   For Field Type
  Print attributes  . . . . . .   _       All types
  Colors  . . . . . . . . . . .   _       All types



  General keywords  . . . . . .   _       All types
  Editing keywords  . . . . . .   Y       Numeric
  Database reference  . . . . .   _       All types




  TEXT keyword  . . . . . .


F3=Exit   F4=Display Selected Keyword   F12=Cancel
```

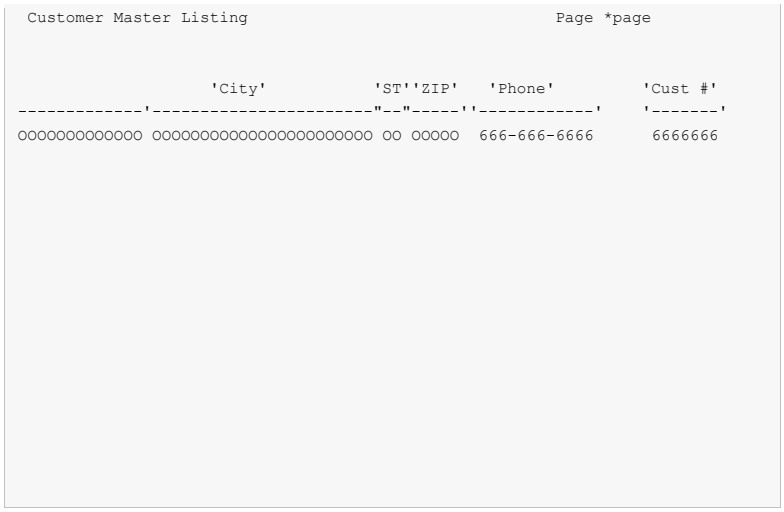
- Key a "Y" for "Editing keywords" and press Enter.



- Enter the edit word as shown, and press F12 twice to return to the Work Display. Notice the field is now displayed in edited format.

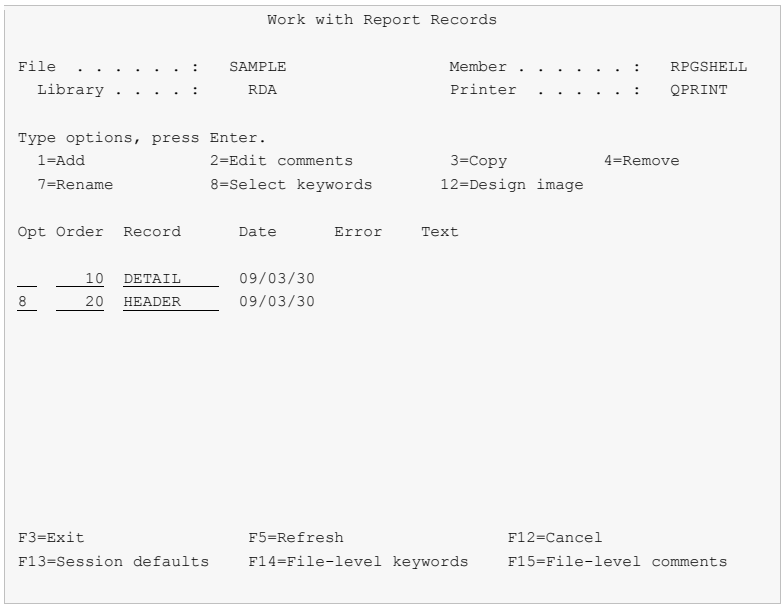
- Key a question mark (?) in front of the time field and press Enter to see the field name prompt.

- Key DSPTIM for the new field name and press Enter. Press F20 twice to window the display to the right.

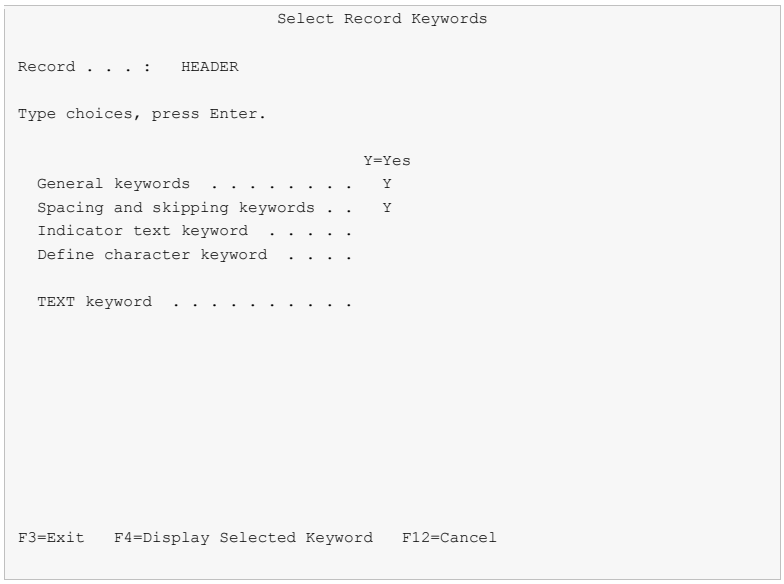


- Enter the remaining constants for the HEADER record as shown above. Pressing Enter defines the constant fields for the record.

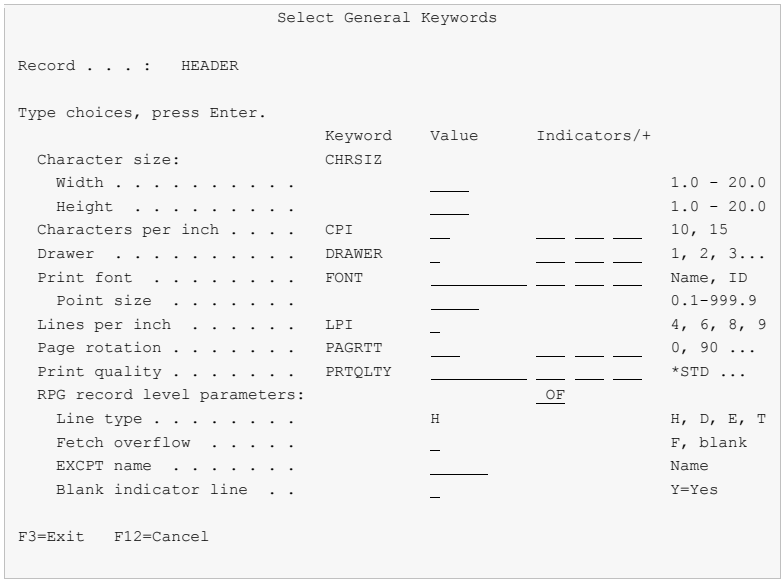
- Press F12 to return to the Work with Report Records display.



- Key "8" for Opt beside the "HEADER" record to select keywords for the report record. Press Enter.



- Key a "Y" for "General keywords" and for "Spacing and skipping keywords". Press Enter.



- Enter H for RPG "Line type", and OF for RPG record indicators. Press Enter to proceed to "Spacing And Skipping Keywords" display.

```
                    Select Spacing And Skipping Keywords

Record . . . :   HEADER

Type choices, press Enter.
                          Keyword    Value Indicators/+
  Record format level:
    Skip before . . . . .   SKIPB      1
    Skip after  . . . . .   SKIPA
    Space before  . . . .   SPACEB
    Space after . . . . .   SPACEA
    Line spacing  . . . .               2                    1=Fixed line nbrs
                                                             2=Use Spaces/Skips
  Line/field level:
       Skip Before       Skip After        Space Before      Space After
       Val Indicators/+  Val Indicators/+  Val Indicators/+  Val Indicators/+
    1  1   ___ ___ ___    ___ ___ ___ ___   ___ ___ ___ ___    1
    2  ___ ___ ___ ___    ___ ___ ___ ___   ___ ___ ___ ___    2
    4  ___ ___ ___ ___    ___ ___ ___ ___   ___ ___ ___ ___    1
    5  ___ ___ ___ ___    ___ ___ ___ ___   ___ ___ ___ ___    1


F3=Exit   F12=Cancel
```

- Key a 1 in "Skip Before" for line 1 as shown, to cause the record to skip to line 1 each time it is printed. Press F12 twice to return to the Work with Report Records display.

```
                        Work with Report Records

File  . . . . . :   SAMPLE               Member . . . . . :   RPGSHELL
  Library . . . . :     RDA                Printer  . . . . :   QPRINT

Type options, press Enter.
  1=Add             2=Edit comments          3=Copy          4=Remove
  7=Rename          8=Select keywords       12=Design image

Opt Order  Record      Date      Error    Text

__   ___10  DETAIL___   09/03/30
__   ___20  HEADER___   09/03/30









F3=Exit                 F5=Refresh                F12=Cancel
F13=Session defaults    F14=File-level keywords   F15=File-level comments
```

- Press F3 to exit. The RPG exit display appears.

```
                    Save RPG Source - Create Program

Type choices, press Enter.

  Save RPG source  . . . . . .  Y            Y=Yes
    Source file  . . . . . .  SAMPLE     F4 for list
      Library  . . . . . .  RDA        Name, *LIBL ...
    Member . . . . . .  RPGEXAMPLE   F4 for list
    Text . . . . . .  RPG example shell, without *PRTF


  Create program . . . . . .  Y            Y=Yes
    Prompt for parameters  . . . . . .  _            Y=Yes
    Program  . . . . . .  RPGSHELL    F4 for list
      Library  . . . . . .  QTEMP      Name, *CURLIB
    Replace existing program . . . . . .  Y            Y=Yes

  Submit create job to batch . . . . . .  Y            Y=Yes

  Specify additional
    save or create options . . . . . .  _            Y=Yes

F3=Exit   F4=Prompt   F12=Cancel
Member RPGSHELL already exists in file SAMPLE.  Press Enter to replace.
```

- Change the member name to RPGEXAMPLE so RPGSHELL is not changed and can be reused. Press Enter to save the source and create the program. A completion message is displayed at the bottom of the screen.

```
                    Save RPG Source - Create Program

Type choices, press Enter.

  Save RPG source  . . . . . .  Y            Y=Yes
    Source file  . . . . . .  SAMPLE     F4 for list
      Library  . . . . . .  RDA        Name, *LIBL ...
    Member . . . . . .  RPGEXAMPLE   F4 for list
    Text . . . . . .  RPG example shell, without *PRTF


  Create program . . . . . .  Y            Y=Yes
    Prompt for parameters  . . . . . .  _            Y=Yes
    Program  . . . . . .  RPGSHELL    F4 for list
      Library  . . . . . .  QTEMP      Name, *CURLIB
    Replace existing program . . . . . .  Y            Y=Yes

  Submit create job to batch . . . . . .  Y            Y=Yes

  Specify additional
    save or create options . . . . . .  _            Y=Yes

F3=Exit   F4=Prompt   F12=Cancel
Member RPGEXAMPLE saved.  Batch create submitted.  Press enter.
```

- Press Enter to exit Report Designer. This concludes this example.

Chapter 13 Convert Source

What's In This Chapter

This chapter explains how Report Designer's Convert Report Source (CVTRPTSRC) command works, discusses the limitations of conversion, gives a detailed explanation of the commands parameters, and contains a sample source conversion log.

Conversion Explanation

Report Designer contains high level language parsers to convert RPG or DDS source code into Report Designer's internal representation of report definitions. Additionally, Report Designer contains high level language source code generators that convert Report Designer's internal representation of report definitions into RPG or DDS. The Convert Report Source (CVTRPTSRC) command reads in a source member using one of the parsers and outputs a new member with one of the source code generators. CVTRPTSRC command provides the following functions:

- Generate DDS source code for an equivalent externally described printer file from RPG specifications for an internally described printer file.
- Generate RPG source code for an equivalent internally described printer file from DDS source code for an externally described printer file.
- Standardize RPG coding style of printer file O specs by reading in existing RPG and writing out RPG in the Report Designer style.
- Standardize DDS coding style by reading in existing DDS and writing out DDS in the Report Designer style.

Since printer function provided by RPG is a subset of that provided by DDS, DDS to RPG conversions may lose some printer function. As an example, since there is no RPG equivalent of the DDS COLOR keyword, COLOR is dropped on conversion to RPG. Additional differences will occur.

Limitations

Because Report Designer was not designed as a conversion aide, the Convert Report Source (CVTRPTSRC) command has several limitations:

- RPG fields defined by externally defined data structures have incorrect REFFLD keyword values when converted to DDS. These must be corrected by hand using SEU.
- The conversion process does not change the input source member when converting between source types. Removing output specifications, changing EXCPT opcodes to WRITE, etc must be performed by hand when converting from RPG to DDS.

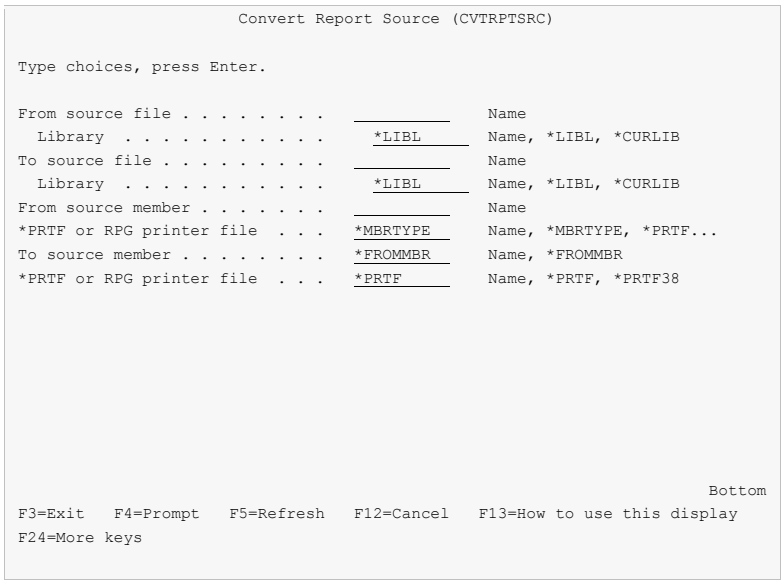
Convert Report Source

To prompt the Convert Report Source (CVTRPTSRC) command:

1. Key in CVTRPTSRC on a command line.
2. Press F4.

After completing the display, press Enter to convert the report source.

Note: The command can also be submitted to batch.



The Convert Report Source (CVTRPTSRC) command converts a report definition contained in a source member from one source type to another.

From source file (FROMFILE)

Specifies the name of the file containing the source to be converted and the library where it resides.

This is a required parameter.

The possible library values are:

***LIBL**	All libraries in the thread's library list are searched.
***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
library-name	Specify the name of the library.

To source file (TOFILE)

Specifies the name of the existing file to receive the converted source and the library where it resides.

This is a required parameter.

The possible library values are:

***LIBL**	All libraries in the thread's library list are searched.
***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
library-name	Specify the name of the library.

From source member (FROMMBR)

Specifies the name of the member containing the source to be converted.

This is a required parameter.

*PRTF or RPG printer file (FROMPRTF)

Specifies whether the source member is treated as DDS or RPG source. In the case of RPG source, specifies the name of the printer file to process as it appears in the F-spec.

The possible values are:

***MBRTYPE**	Infer the printer name from the member's source type. Members with source type PRTF are treated as if *PRTF were specified. Members with source type PRTF38 are treated as if *PRTF38 were specified. Members with source type RPG, RPT, RPG36 etc. are treated as if *FIRST were specified.
***PRTF**	The source is treated as native i5/OS DDS.

***PRTF38**	The source is treated as System/38 compatible DDS.
***FIRST**	The source is treated as RPG and the first printer file name encountered in the source is processed.
file-name	Specify the name of the RPG internally described printer file.

To source member (TOMBR)

Specifies the name of the member to receive the converted source.

The possible values are:

***FROMMBR**	Use the name of the source member to be converted.
member-name	Specify the name of the source member.

*PRTF or RPG printer file (TOPRTF)

Specifies whether the source member is treated as DDS or RPG source. In the case of RPG source, specifies the name of the printer file to process as it appears in the F-spec.

The possible values are:

***PRTF**	The source is treated as native i5/OS DDS.
***PRTF38**	The source is treated as System/38 compatible DDS.
file-name	Specify the name of the RPG internally described printer file.

Example

```
CVTRPTSRC   FROMFILE(SRC/QRPGSRC)   TOFILE(SRC/QDDSSRC)
            FROMMBR(INV310)
```

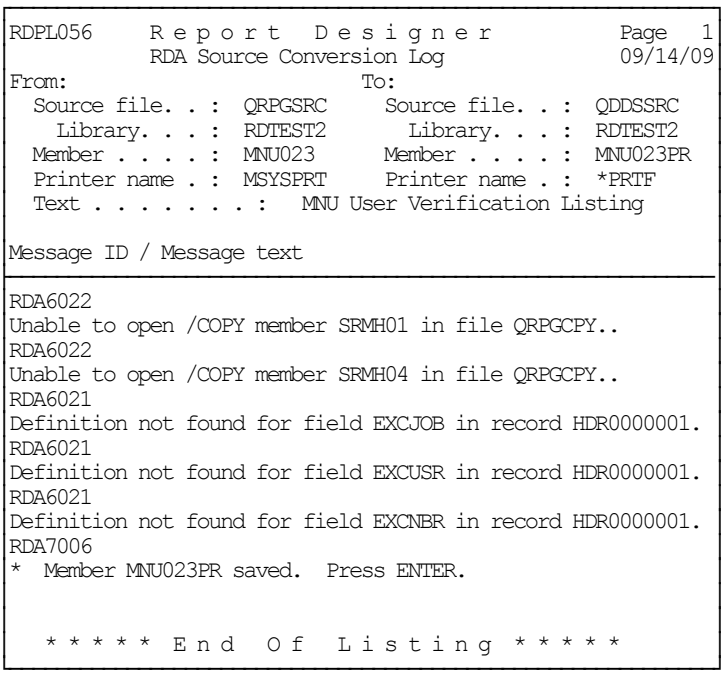
This command converts an RPG printer definition to DDS. The first printer file encountered in source member INV310 in source file QRPGSRC in library SRC is converted. The generated DDS source code is placed in new member INV310 in source file QDDSSRC in the same library.

Conversion Log

The Convert Report Source command outputs an "RDA Source Conversion Log" detailing the outcome of the conversion process. Review the listing for any correctable errors.

A representative listing for an RPG to DDS conversion might look like this.

Figure: RDA Source Conversion Log



```
RDPL056     R e p o r t   D e s i g n e r          Page   1
            RDA Source Conversion Log               09/14/09
From:                          To:
  Source file. . :  QRPGSRC      Source file. . :  QDDSSRC
    Library. . . :  RDTEST2        Library. . . :  RDTEST2
  Member . . . . :  MNU023       Member . . . . :  MNU023PR
  Printer name . :  MSYSPRT      Printer name . :  *PRTF
  Text . . . . . :   MNU User Verification Listing

Message ID / Message text
-------------------------------------------------------------
RDA6022
Unable to open /COPY member SRMH01 in file QRPGCPY..
RDA6022
Unable to open /COPY member SRMH04 in file QRPGCPY..
RDA6021
Definition not found for field EXCJOB in record HDR0000001.
RDA6021
Definition not found for field EXCUSR in record HDR0000001.
RDA6021
Definition not found for field EXCNBR in record HDR0000001.
RDA7006
*  Member MNU023PR saved.  Press ENTER.


   * * * * *  E n d   O f   L i s t i n g  * * * * *
```

Chapter 14 Print Report Sample

What's In This Chapter

This chapter explains how Report Designer's Print Report Sample (PRTRPTSAM) command works, and gives a detailed explanation of the commands parameters.

Command Explanation

Report Designer contains high level language parsers to convert RPG or DDS source code into Report Designer's internal representation of report definitions. Additionally, Report Designer contains routines to create and print a visual representation of Report Designer's internal definition. Usually the print function is accessed from the Report Designer Work Display. The Print Report Sample (PRTRPTSAM) command provides a means to access the print report definition function from a batch job. PRTRPTSAM command provides the following functions:

- Syntax check DDS or RPG printer file source code specifications.
- Generate a report sample equivalent to the Work Display print function.

Print Report Sample

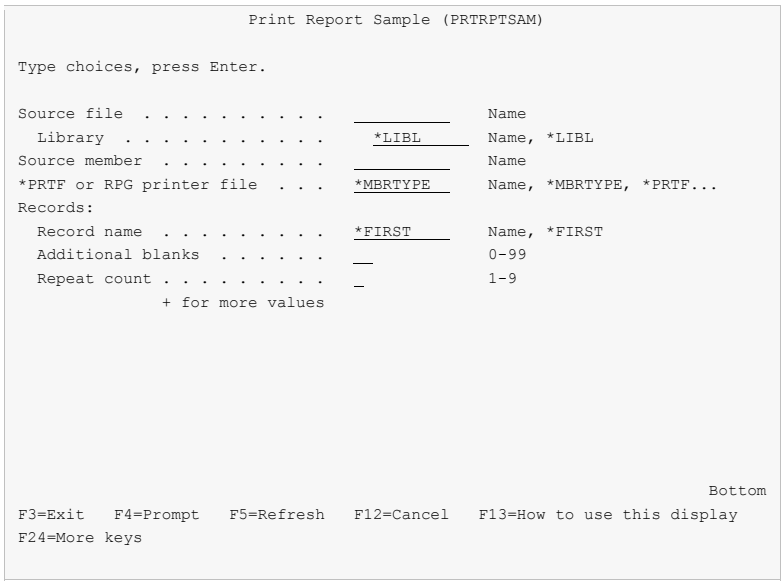
The Print Report Sample (PRTRPTSAM) command prints a sample report. The result is similar to pressing F17=Print from the Work Display and the command can be executed in batch.

To prompt the Print Report Sample (PRTRPTSAM) command:

1. Key in PRTRPTSAM on a command line.
2. Press F4.

After completing the display, press Enter to print the report sample.

Note: The command can also be submitted to batch.



The Print Report Sample (PRTRPTSAM) command prints a sample report. The result is similar to pressing F17=Print from the Work Display and the command can be executed in batch.

Source file (SRCFILE)

Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

This is a required parameter.

The possible library values are:

***LIBL**	All libraries in the thread's library list are searched.
library-name	Specify the name of the library.

Source member (SRCMBR)

Specifies the name of the member containing the source to be updated or the name of a new member to be created.

This is a required parameter.

*PRTF or RPG printer file (PRINTER)

Specifies whether the source member is treated as DDS or RPG source. In the case of RPG source, specifies the name of the printer file to process as it appears in the F-spec.

The possible values are:

***MBRTYPE**	Infer the printer name from the member's source type. Members with source type PRTF are treated as if *PRTF were specified. Members with source type PRTF38 are treated as if *PRTF38 were specified. Members with source type RPG, RPT, RPG36 etc. are treated as if *FIRST were specified.
***PRTF**	The source is treated as native i5/OS DDS.
***PRTF38**	The source is treated as System/38 compatible DDS.
***FIRST**	The source is treated as RPG and the first printer file name encountered in the source is processed.
file-name	Specify the name of the RPG internally described printer file.

Records (RECORDS)

The Records parameter specifies which records appear in the sample and the order in which they appear.

You can enter multiple values for this parameter. If you are on an entry display and you need additional entry fields to enter multiple values, type a plus sign (+) in the entry field opposite the phrase "+ for more", and press the Enter key.

Each record specification is made up of 3 elements:

Element 1 Record name

The name of the printer record in the source member. When the special value *FIRST is specified Report Designer uses the record names found in the source member in the order they are found.

Element 2 Additional blanks

The number of blank lines to insert after the record

Element 3 Repeat count

The number of times the record should be repeated. Use this to give the appearance of repeated detail line printing.

Field print control (FLDPRTCTL)

Specifies what field information is printed.

The possible values are:

***CURRENT**	Field definitions from the *CURRENT (first) record format are printed.
***NONE**	No field definitions are printed.
***ALL**	Field definitions for all of the selected record formats are printed.

Indicator setting (INDSET)

Specifies how conditioning indicators are processed. When *YES is specified for "Activate indicators", Report Designer displays only those fields whose conditioning indicators match those specified in "Indicators to be turned on". Similarly, keywords conditioned by indicators are only in effect when their indicator settings agree with the specified indicator settings. Report Designer always ignores indicator settings for spacing and skipping keywords when positioning fields.

You can enter multiple values for this parameter. If you are on an entry display and you need additional entry fields to enter multiple values, type a plus sign (+) in the entry field opposite the phrase "+ for more", and press the Enter key.

Example

```
PRTRPTSAM  SRCFILE(SRC/QRPGSRC)  SRCMBR(INV310)
```

This command prints a sample from RPG source member INV310. The first printer file encountered in source member is used. The report records are printed in order as they are encountered in the source member.

Chapter 15 Re-Creating Printer Files

What's In This Chapter

This chapter explains how Report Designer's Create RDA Printer File (CRTRDAPRTF) command works, and gives a detailed explanation of the commands parameters.

Command Explanation

When updating DDS source with Report Designer, parameters specified for the CRTPRTF command are saved as comments in the source. Each parameter specified on the CRTPRTF command from the Report Designer create display is placed on a separate line in the updated DDS. The parameters are stored as comments that are meaningful to Report Designer. On the next access with Report Designer, these comments are used to establish session values and CRTPRTF default values.

The Create RDA Printer File (CRTRDAPRTF) command runs the Create Printer File (CRTPRTF) command after applying the stored parameter values. Several benefits result from the ability to separate compilation from interactive design.

- Mass re-creations for a new releases of i5/OS are easier.
- "Compile to production" change management procedures are enabled.

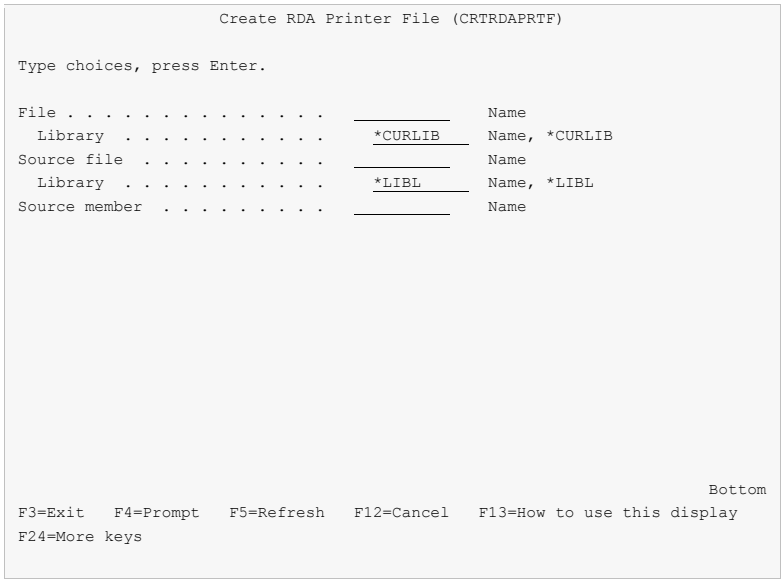
Create RDA Printer File

To prompt the Create RDA Printer File (CRTRDAPRTF) command:

1. Key in CRTRDAPRTF on a command line.
2. Press F4.

After completing the display, press Enter to print the report sample.

Note: The command can also be submitted to batch.



The Create RDA Printer File (CRTRDAPRTF) command creates a DDS printer file using the same Create Printer File (CRTPRTF) command parameter values specified when the printer file was last created on exiting from Report Designer.

File (FILE)

Specifies the name of the printer device file to create.

If the file is used in a high-level language program the file name should be consistent with the naming rules of that language.

This is a required parameter.

The possible library values are:

***CURLIB**	Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
library-name	Specify the name of the library.

Source file (SRCFILE)

Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

This is a required parameter.

The possible library values are:

***LIBL**	All libraries in the thread's library list are searched.
library-name	Specify the name of the library.

Source member (SRCMBR)

Specifies the name of the member containing the source to be updated or the name of a new member to be created.

The possible values are:

***FILE**	Use the name of the printer file to be created.
member-name	Specify the name of the source member.

Example

```
CRTRDAPRTF  SRCFILE(SRC/QRPGSRC)  SRCMBR(INV310)
```

This command executes IBM's Create Printer File (CRTPRTF) command using parameter values supplied in the last Report Designer session.

Chapter 16 Print Report Sample

What's In This Chapter

This chapter explains how Report Designer's Print Report Information (PRTRPTINF) command works, and gives a detailed explanation of the commands parameters.

Command Explanation

Report Designer contains high level language parsers to convert RPG or DDS source code into Report Designer's internal representation of report definitions. The Print Report Information (PRTRPTINF) command provides a means to print the information from the internal representation in a batch job. PRTRPTINF command provides the following functions:

- Syntax check DDS or RPG printer file source code specifications.
- Generate a selected report based on the data found in the source code.

Print Report Information

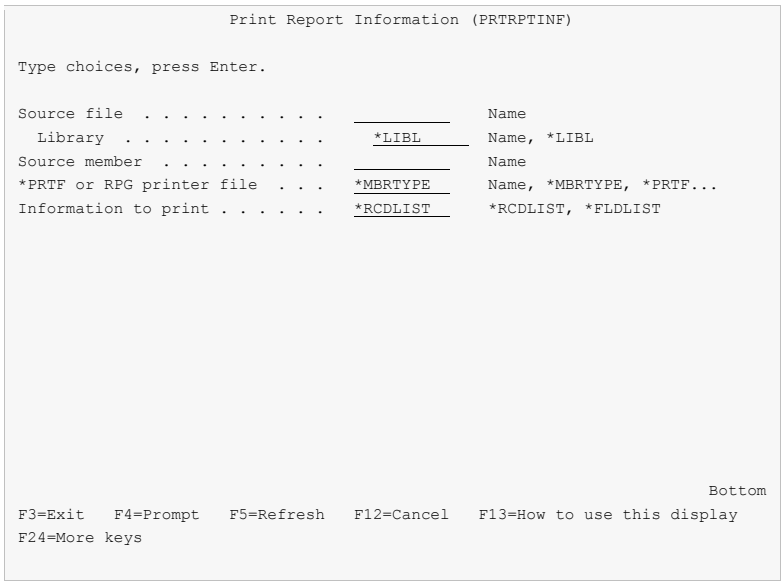
The Print Report Information (PRTRPTINF) command parses a source member and generates various reports based on the content of the member.

To prompt the Print Report Information (PRTRPTINF) command:

1. Key in PRTRPTINF on a command line.
2. Press F4.

After completing the display, press Enter to generate the report.

Note: The command can also be submitted to batch.



The Print Report Information (PRTRPTINF) command parses a source member and generates various reports based on the content of the member.

Source file (SRCFILE)

Specifies the name of the file containing the source member to be updated or to which a new source member will be added.

This is a required parameter.

The possible library values are:

***LIBL**	All libraries in the thread's library list are searched.
library-name	Specify the name of the library.

Source member (SRCMBR)

Specifies the name of the member containing the source to be updated or the name of a new member to be created.

This is a required parameter.

*PRTF or RPG printer file (PRINTER)

Specifies whether the source member is treated as DDS or RPG source. In the case of RPG source, specifies the name of the printer file to process as it appears in the F-spec.

The possible values are:

***MBRTYPE**	Infer the printer name from the member's source type. Members with source type PRTF are treated as if *PRTF were specified. Members with source type PRTF38 are treated as if *PRTF38 were specified. Members with source type RPG, RPT, RPG36 etc. are treated as if *FIRST were specified.
***PRTF**	The source is treated as native i5/OS DDS.
***PRTF38**	The source is treated as System/38 compatible DDS.
***FIRST**	The source is treated as RPG and the first printer file name encountered in the source is processed.
file-name	Specify the name of the RPG internally described printer file.

Information to print (TYPE)

The Information to print parameter specifies type of report that is printed.

The possible values are:

***RCDLIST**	A list of records found in the report is printed. The list is in the order in which they appear in the source along with the text and keywords associated with each record.
***FLDLIST**	A list of fields found in the report is printed. The list is in alphabetical order by field name and includes data associated with each field.

Example

```
PRTRPTINF  SRCFILE(SRC/QRPGSRC)  SRCMBR(INV310)
```

This command prints a record list for RPG source member INV310. The first printer file encountered in source member is used.

Chapter 17 Recovery

What's In This Chapter

This chapter describes Report Designer session interruptions and how to recover work if one occurs.

Session Interruption

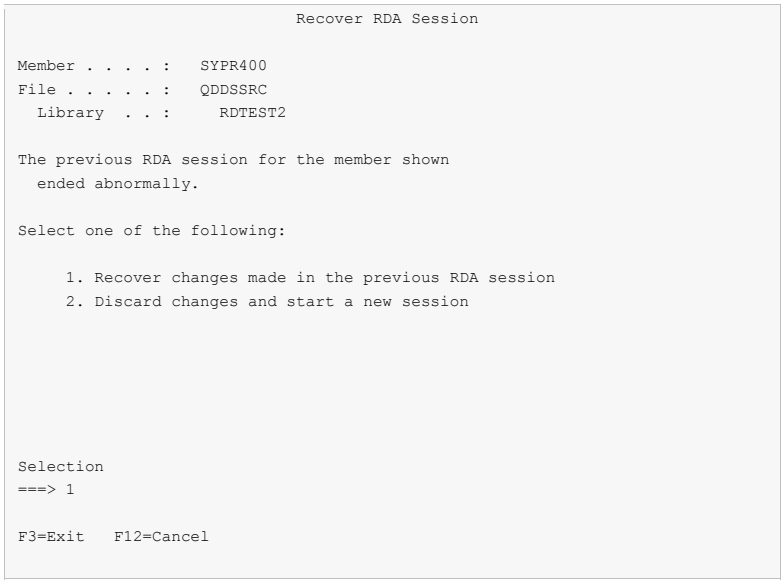
A Report Designer session can be interrupted for various reasons including the following:

- The display station is signed off by the system operator.
- The display station is turned off.
- A system failure occurs.
- An electrical failure occurs.

Report Designer helps recover most of the work from an interrupted session.

Recover RDA Session Display

If a session is interrupted, Report Designer will display the Recover RDA Session display the next time the source member is accessed:



Use one of two options to recover from an interrupted session:

- Select option 1 to recover the interrupted session and review the changes made.
- Select option 2 to discard changes made during the interrupted session, and reload the source member.

Chapter 18 Problem Determination

What's In This Chapter

This chapter describes the steps to follow if you encounter a problem while using Report Designer.

Basics

When you encounter a problem, always check these basic items first:

- Make sure you are authorized to the commands, programs, and files in library RDA.
- Make sure you are authorized to the source you are updating.

Check Low-Level Messages

If the basics check out, check low-level messages for more detail on the problem by following these steps.

1. Run the Display Job Log (DSPJOBLOG) command.
2. From the Display Job Log display, press F10 to display low-level messages.
3. Press F5 to refresh the display.
4. If necessary, press F18 to display the end of the job log.
5. When you have located the messages relating to the problem at hand, print the information by pressing the PRINT key.
6. If you cannot determine the nature of the problem from the job log, or if you cannot correct the problem, proceed to the next section.

Check PTF List

If you encounter a problem while using Report Designer, and you are unable to solve it by following the steps outlined in the sections above, review the list of currently available PTFs at www.gumbo.com.

Compare the PTF descriptions from the list to the problem you have encountered. If any sound similar, download and apply the cumulative PTF package to your system.

Contact GUMBO With Problem Information

If you encounter a problem while using Report Designer, and you are unable to solve it by following the steps outlined in the sections above collect the following information and contact Gumbo Software at:

GUMBO
Software, Inc.

809 W Howe St
Seattle, WA 98119
United States of America
Phone: (206) 284-5078
Email: support2009@gumbo.com
Web: www.gumbo.com

Save the following to a save file:

- The source member in use when the problem was encountered.

- All database files (without data) referenced in the source member for external field descriptions. For DDS source members, this includes any database files referenced with the REF or REF FLD keywords. For RPG source members, this includes all externally defined files and data structures.
- The job log described in the section above.

Include your:

- Name.
- Phone number.
- Company name and address.
- The current date.
- A description of the problem and a step-by-step narrative for how to recreate it.

Appendix A Notices

Notices

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Portions of this software are used with permission and:

- Copyright (C) 1991-2, RSA Data Security, Inc. All rights reserved.
- Copyright (c) April 29, 1997 Kalle Kaukonen. All Rights Reserved.

Appendix B Order Form

Name _____
Company _____
Address _____
City/State/Zip _____
Country _____
Phone _____
Email _____

I have read and agree with the Report Designer Software License Agreement. I am ordering the following licenses:

System Wide License --- Serial Number---	-- or -- Proc. Group	Partition License --- Serial Number---	Prt. No.	Proc. Count
_____	_____	_____	___	_____
_____	_____	_____	___	_____
_____	_____	_____	___	_____

See the Price List for pricing information. The current Price List is available at www.gumbo.com. License price includes one year of maintenance services. Add the amount shown on the price list for each additional year of maintenance services. In Washington state include sales tax (your local rate or 9.5%.

Licenses . . . . . _____
Maintenance . . . . . _____
In WA state, add sales tax . . . . . _____
Total enclosed . . . . . _____
Signature _____ Date _____
Title _____

Make checks payable to:

GUMBO
Software, Inc.

809 W Howe St
Seattle, WA 98119
United States of America
Phone: (206) 284-5078
Email: support2009@gumbo.com
Web: www.gumbo.com

Rev: 2001/12/21

Appendix C License Agreement

License

Gumbo Software, Inc. grants to the purchaser, permanent license to use Report Designer on the specified serial number and processor group IBM System i. For system licenses the grant is specific to the system as a whole. For partition licenses the grant is specific to a partition number (ID) and maximum processing capacity. This license is not transferable and not exclusive.

Warranty

Gumbo Software, Inc. makes no warranty, either expressed or implied, with respect to Report Designer, its merchantability or its fitness for any particular purpose. Report Designer software and documentation are provided on an "AS IS" basis.

Liability

Gumbo Software, Inc. assumes no responsibility for the use of Report Designer. Purchaser agrees that Gumbo Software, Inc's. liability under any circumstances shall not exceed the charges paid by purchaser.

Updates

Gumbo Software, Inc. may from time to time update Report Designer to correct defects or add enhancements. Purchaser will receive updates for a period of one year from date of purchase.

Rev: 2001/09/22