Dumpster

Programmer's Guide and Reference
Licensed Program 2A55DMP V1R8M0

Spooled File Internals

Edition

Eighth Edition (June 2012)

This edition applies to the licensed program Dumpster (Program 2A55DMP), Version 1 Release 8 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.

This manual is available as option 1 from the DUMPSTER menu or in PDF format in directory /Gumbo/Proddata/2A55DMP/doc on your System i and on the web.

We welcome your comments. Send them to:

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Chapter 1 Introduction

What's In This Chapter

This chapter introduces you to Dumpster. The chapter:

- Describes the features of Dumpster.
- Describes product support features.
- Describes what Dumpster does.
- Outlines future directions for the product.
- Describes conventions used in this manual.

Dumpster Features

Dumpster is a software utility that dumps the internals of IBM i spooled files.

Now you can use the same tools we use to inspect a spooled file and print resource internals. It isn't pretty but with it you can gain insight into the inner workings of IBM i's spool support. This can be useful for increasing printer through put or determining the exact effect of various DDS keyword combinations.

Dumpster supports most of the IBM i spooled file print data streams:

*SCS	SNA Character String.
*IPDS	Intelligent Printer Data Stream.
*AFPDS	Advanced Function Presentation Data Stream.

Dumpster generates the following formatted dumps:

*ATTRIB	The spooled file's complete attributes, equivalent to WRKSPLFA on steroids.
*RSCLST	A list of external resources referenced by the spooled file. This is the output of IBM i's QGSLRSC API.
*DTASTR	The raw data stream in readable form.
*BUFFER	Complete information on the spooled file's buffer's. This is the output of IBM i's QSPGETSP API for format SPFR0200.

Dumpster includes a work-a-like for IBM i's Work with Spooled File (WRKSPLF) command called Work with Gumbo Spooled Files (WRKGSISPLF). It also includes a work-a-like for IBM i's Work with Output Queue (WRKOUTQ) command called Work with Gumbo Output Queue (WRKGSIOUTQ). These commands provide the same functions as their IBM i equivalent. In addition they provide an option that allows you to access the function of Dumpster by entering an option number.

Best of all it is free.

Product Support Features

GUMBO products include a range of standard features that make them easy to use, easy to manage, and easy to live with:

- Extensive manual, both online as menu option 1 and in PDF
- Context sensitive help for every command and parameter.
- Menu that provides organized access to the product's features.
- Products are packaged as licensed programs and participates in the full range of support provided by IBM i Licensed program installation, PTF management, etc. are handled with the same commands used to manage IBM® software.
- Unlike IBM® Licensed Programs, our products are packaged to allow multiple releases to be installed at the same time, which facilitates new release testing.
- Product PTFs are available on the web at www.gumbo.com.

- Our products include a hot site friendly automatic authorization function that allows you to immediately move operations to any back up or fail over machine without contacting us for a license key or authorization code.
- We include a Check Dumpster Authorization (CHKDMPAUT) command that allows you to exercise the product's authorization algorithm and insure there are no authorization "surprises".
- An installation verification option is available on the menu. You can easily verify that the product is correctly installed.
- All (applicable) objects in our products are digitally signed allowing you to verify their integrity. Modifications that could jeopardize the security of your system are easily detected with IBM i's Check Object Integrity (CHKOBJITG) command.
- Our products are upward compatible with future releases of IBM i. You can install a new releases of IBM i without installing a new release from us.
- Our products are compatible with all IBM i security levels. We use only published interfaces.

What Dumpster Does

The main function of Dumpster is accessed by running the Dump Spooled File (DMPSPLF) command. The command takes a spooled file and generates a formatted dump of the internal information. You can use this information to optimize your printed output.

Future Directions

Future releases of Dumpster will include enhanced functionality based on customer feedback. Additionally, enhancements are often added to a current release by Program Temporary Fix (PTF).

Candidate enhancements include:

- Improved print formatting

Contact **GUMBO** to suggest additional enhancements.

Manual Conventions

A note on conventions used in this manual. In several places, instructions for entering commands are given. When the command is intended to be run from a PC command prompt, it is flagged by [PC]. When the command is intended to be run from an IBM i command line, it is flagged by [i], or is not flagged at all. [Enter] denotes the enter key.

Chapter 2 Installation

What's In This Chapter

This chapter describes

- How to install Dumpster.
- API authority granted during installation
- How to include the DUMPSTER 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 remove Dumpster from the system.
- How to find additional installation information.
- How to contact technical support.

Installing Dumpster

Follow these instructions to install Dumpster V1R8M0 on your System i:

Prepare

If you are upgrading a previous release (if Dumpster is currently installed on your System i) perform these steps before installing the software:

1. Read the Enhancement Summary to determine if any changes affect your installation.
2. Insure that the product is not in use, as the installation process must clear the product's library. This will fail if objects such as menus are in use. If the installation fails, the previous release will be restored.

Install

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 was included.

1. Sign on to the system as the security officer (QSECOFR).
2. Verify that your machine is at IBM i V6R1M0 or later by running:

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

    Note: If you are running a version of IBM i earlier than V6R1M0 you cannot install Dumpster V1R8M0 on your machine. You must install an earlier version of Dumpster or upgrade the operating system.

3. Verify that user domain objects are allowed in the libraries DUMPSTER 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 DUMPSTER 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 IBM i 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(2A55DMP) DEV(device-name) LNG(2924)
```

Note: Where "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.

Finish

When the RSTLICPGM command completes, library DUMPSTER and directory '/Gumbo/ProdData/2A55DMP' contain the new software. To complete the installation:

1. If you have an Authorization letter with your permanent authorization code, enter it now.

    Note: Dumpster automatically grants 30 days usage for new installs or 90 days usage for release upgrades.

2. Retrieve the current cumulative PTF package by running the following command:

    ```
    DUMPSTER/RTVGSIPTF
    ```

    Note: *GUMBO* recommends downloading the current cumulative PTF package from www.gumbo.com after installing the software.

3. You can access the Dumpster menu by running the following command:

    ```
    GO  MENU(DUMPSTER/DUMPSTER)
    ```

API Authority Granted During Installation

The first time Dumpster is installed on a system, public authority *USE is granted to 3 of the IBM i supplied spooling APIs. These are QSPOPNSP, QSPGETSP, and QSPCLOSP. The APIs are used by Dumpster to open, read and close spooled files. This is required to perform the product's functions.

Security restrictions and authority requirements pertaining to spooled files and output queues remain in effect and are enforced by IBM i during use of the APIs. However, if you are operating a highly secured environment you may wish to review and revise the authority granted during installation.

No authority is granted during installation if Dumpster exists on the system. This prevents new releases from altering changes made after the initial installation.

Library List Considerations

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

*   Add library DUMPSTER to the system library list. This insures every job in the system has access to Dumpster commands. However, this introduces problems with installing new releases and is not recommended.

- Add library DUMPSTER to the initial library list parameter of job descriptions controlling jobs that will use Dumpster commands. (recommended)
- Run an ADDLIBLE DUMPSTER command in individual threads requiring Dumpster commands.
- Qualify the command names on each use:

  ```
  DUMPSTER/CHGDMPDFT
  ```

  Library DUMPSTER 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

Dumpster operates under IBM i V6R1M0 or higher. Releases occur on a different schedule than IBM releases. Once Dumpster is installed, the following considerations apply:

- A new release of IBM i may be installed without installing a new release of Dumpster.

  Dumpster uses only published or IBM sanctioned interfaces and is upward compatible with all releases of IBM i. The Dumpster authorization code does not change.

- A new release of Dumpster may be installed without installing a new release of IBM i.

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

- A new release of Dumpster may be installed over any prior release of Dumpster.

  You can skip "missed" releases.

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

  By restoring Dumpster to a library other than DUMPSTER, a new release can be installed for testing while the old 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 Dumpster is installed in the same library as an old release the following processing is performed in order to preserve data and Dumpster authorization information:
  1. The Dumpster library is saved to QGPL/DMPVxRyMz. Where VxRyMz is the old release.
  2. Product objects that contain default settings and operational information are copied to library QTEMP.
  3. The Dumpster library is cleared.
  4. Dumpster 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/DMPVxRyMz is deleted.

Note: *GUMBO* recommends making a backup of the old release before installing a new release of Dumpster.

New Release Testing

Unlike IBM licensed programs, **GUMBO** 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 old release remains in production.

The key to new release testing are the LIB() and CODHOMEDIR() parameters of IBM i's Restore License Program (RSTLICPGM) command which allow you to restore the product to a library name and directory different from 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 DMPV1R8M0 and directory '/Gumbo/ProdData/2A55DMPV1R8M0':

   ```
   RSTLICPGM  LICPGM(2A55DMP) DEV(device-name) LNG(2924)
              LIB(DMPV1R8M0) REPLACERLS(*NO)
              CODHOMEDIR('/Gumbo/ProdData/2A55DMPV1R8M0')
   ```

   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(2A55DMP) RLS(V1R8M0) 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 IBM i. If this has already occurred, see the Software Installation Problems section of the *Trouble-Shooting* chapter of this manual.

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

Deleting Dumpster

Follow these instructions to remove Dumpster from your System i:

1. Sign on to the system as the security officer (QSECOFR).
2. Delete the Dumpster library by using the Delete Licensed Program (DLTLICPGM) command:

   ```
   DLTLICPGM  LICPGM(2A55DMP) OPTION(*ALL)
   ```

These instructions delete an otherwise healthy installation of Dumpster. If the installation has been damaged, follow the instructions for Installation Fails in the *Software Installation Problems* section of the *Trouble-Shooting* chapter of this manual.

Additional Installation Information

Additional detailed installation information and instructions can be found in *IBM i and related software > PDF file... > Installing, upgrading, or deleting IBM i and related software SC41-5120* topic in the IBM i Information Center at http://publib.boulder.ibm.com/iseries/.

Technical Support

If you encounter a problem with Dumpster you should:

- Review the information in the Trouble Shooting chapter for a description of and solution to common problems.
- 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 support@gumbo.com.

If your problem involves spooled file processing, the best method for getting it resolved is to capture the spooled file using the Create Spool Save File (CRTSPLSAVF) command and email the resulting save file along with a description of the problem to the address listed above. Be sure to include contact information.

Note: See the Trouble Shooting chapter for details on creating and sending spool save files.

Chapter 3 Menu

What's In This Chapter

This chapter describes how to access the Dumpster menu, and reviews the functions that can be performed from the menu.

Accessing Menu DUMPSTER

The Dumpster commands and functions that you will use most often are collected on menu DUMPSTER. To access the menu use the Go To Menu (GO) command:

```
GO   MENU(DUMPSTER/DUMPSTER)
```

Library DUMPSTER is added to the product portion of the current thread's library list while the menu is displayed.

DUMPSTER Menu Options

The DUMPSTER options are:

```
DUMPSTER                         Dumpster
                                                     System:    DMP
Select one of the following:

     1. Reference Manual

  Dumpster
     2. Dump Spooled File                            DMPSPLF
     3. Work with Gumbo Spooled Files                WRKGSISPLF
     4. Work with Gumbo Output Queue                 WRKGSIOUTQ
     5. Dump Print Resource                          DMPPRTRSC

  Other Options

    61. Display Current PTF Status                   DSPPTF
    62. Retrieve Gumbo PTF                           RTVGSIPTF
    63. Search Help Index                            STRSCHIDX
    66. Create Spool Save File                       CRTSPLSAVF
                                                            Bottom
Selection or command
===>

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

Option 1. Reference Manual

Provides access to the Dumpster Programmer's Guide and Reference Manual.

Option 2. Dump Spooled File

The Dump Spooled File (DMPSPLF) command dumps the contents or attributes of an IBM i spooled file.

Option 3. Work with Gumbo Spooled Files

The Work with Gumbo Spooled Files (WRKGSISPLF) command works like IBM i's Work with Spooled Files (WRKSPLF) command but provides additional options to access the functions of Dumpster.

Option 4. Work with Gumbo Output Queue

The Work with Gumbo Output Queue (WRKGSIOUTQ) command works like IBM i's Work with Output Queue (WRKOUTQ) command but provides additional options to access the functions of Dumpster.

Option 5. Dump Print Resource

The Dump Print Resource (DMPPRTRSC) command dumps the contents or print resources including *OVL, *FORMDF, *PAGSEG, *FCT, *FNTRSC, *PAGDFN, and *PGD.

Option 61. Display Current PTF Status

Displays the Dumpster PTFs that have been applied to the software.

Option 62. Retrieve Gumbo PTF

The Retrieve Gumbo PTF (RTVGSIPTF) command checks a remote system for new product PTFs, and, if available, downloads and installs them.

Option 63. Search Help Index

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

Option 66. Create Spool Save File

The Create Spool Save File (CRTSPLSAVF) command creates a save file containing a spooled file and all its related resources. The save file is suitable for emailing with a problem report.

Chapter 4 Implementation

What's In This Chapter

This chapter describes how to implement Dumpster in your environment. The chapter:

- Gives an overview of implementation choices.
- Describes useful spooled file information.
- Describes a CL coding tip.
- Describes changing command defaults.

Overview

The main function of Dumpster is accessed by running the Dump Spooled File (DMPSPLF) command. The command takes a spooled file and generates a formatted dump of the requested information.

There really isn't too much to it, simply run the Dump Spooled File (DMPSPLF) command specifying the spooled file to dump. Then use WRKSPLF to view the results.

Useful Spooled File Information

IBM i provides powerful printing capabilities collectively known as AFP (Advanced Function Presentation). If you use IPDS printers you also need PSF/400. Otherwise, the base operating system gives you everything you need to take advantage of the power of AFP. For example, you can create overlays (electronic forms) to replace preprinted forms and print invoices on plain paper on your laser printers. Detailed information on AFP can be found in the *Printing > Advanced Function Presentation (AFP)* topic of the IBM i Information Center at http://publib.boulder.ibm.com/iseries/.

The single best source that we've found for information on all aspects of IBM i printing is the Redbook *Printing V SG24-4389* (and its replacement *Printing VI SG24-6250*). The books are available for download in the PDF format at http://www.redbooks.ibm.com.

The Redbook supplements the standard reference documents on printing by providing more specific "how to" information, such as diagrams, programming samples, and working examples. We find that it pulls together the information from other manuals and fits the pieces together in an understandable way.

Creating Overlays and Page Segments

InfoPrint's (formerly IBM's®) AFP Printer Driver is a very useful piece of software that allows you to create IBM i overlays and page segments by "printing" from any PC based application. Best of all, it is free and available for download at www.infoprintsolutionscompany.com, search on "AFP Printer Driver" or Google '"AFP Printer Driver for Windows" download site:ibm.com'. In addition, Google *AFP AS/400 Programming Sampler* which contains useful tools for compiling the overlays and page segments on your System i. The sampler.savf was last spotted at ftp://ftp.software.ibm.com/printers/products/as400

Additional information is available from the IBM Software Knowledge Base Document Number 5184341, *Creating AFP Resources Using the IBM AFP Printer Drivers*.

Our experience shows that you get the best results using a smaller is better approach to creating overlays and page segments. Trim as much as possible and position instead of creating a page size overlay or page segment. Use the lowest resolution, color depth, etc. that gives acceptable results.

*LINE and *AFPDSLINE Data

Our spooled file conversions do not process spooled files with printer device type *LINE or *AFPDSLINE. However IBM i allows you to convert these to pure *AFPDS data which can be processed (most conversions). There are two methods for accomplishing this:

1. The printer file's CVTLINDTA() parameter while creating the spooled file.

2. Respooling an existing *LINE or *AFPDSLINE spooled file using CRTAFPDTA/PRTAFPDTA commands.

See Redbook *Printing VI SG24-6250* for details and examples.

CL Coding Tip

Many of our commands accept a variable number of values for a given parameter. For example, the Send Spool Mail (SNDSPLMAIL) command accepts up to 300 email addresses on the recipient parameter. When writing CL programs, the problem of how to code for a variable number of email addresses without coding the SNDSPLMAIL command multiple times (once for each address count) arises. The solution is a little known CL trick for coding "no value" in a variable. "No value" is represented in CL by '*N'. Consider the following program fragment:

```
PGM
DCL        VAR(&ADD1) TYPE(*CHAR) LEN(128) VALUE('*N')
DCL        VAR(&ADD2) TYPE(*CHAR) LEN(128) VALUE('*N')
DCL        VAR(&ADD3) TYPE(*CHAR) LEN(128) VALUE('*N')
           .
CHGVAR     VAR(&ADD1) VALUE(NOBODY@GUMBO.COM)
           .
SNDSPLMAIL FILE(QPDSPLIB) TRANSFORM(*TXT) +
             TOSMTPNAME((&ADD1) (&ADD2) (&ADD3))
           .
ENDPGM
```

Since &ADD2 and &ADD3 contain '*N' they are treated as if they were not specified on the command and the email is sent to only one address.

Changing Command Defaults

As with any CL command, you can change the default values of the commands found in our products. You do this using the IBM i Change Command Default (CHGCMDDFT) command.

But before you do, there are some gotchas (slang term for "I got you": a trap) you should be aware of. You WILL lose the change each time a new release of the product is installed, and you COULD lose the change when PTFs are applied to the product. You must then reapply the default change.

As an example, to change the default transform on SpoolMail's SNDSPLMAIL command from *TXT to *PDFA4, run the following:

```
CHGCMDDFT  CMD(SNDSPLMAIL) NEWDFT('TRANSFORM(*PDFA4)')
```

GUMBO recommends AGAINST changing command defaults, we know from the calls for support we receive that this regularly causes problems for customers.

Chapter 5 Commands

What's In This Chapter

This chapter describes the control language (CL) commands supplied by Dumpster. The commands are arranged in alphabetic order by command name (mnemonic). Each description includes environment and threadsafe classification, a brief general description, detailed parameter explanations, examples and message information. Additional explanatory material can be found in the *Programming > Control Language > CL Concepts > CL Commands > CL command information and documentation* topic in the IBM i Information Center at http://publib.boulder.ibm.com/iseries/.

Archive Spooled File (ARCSPLF)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Archive Spooled File (ARCSPLF) command creates a spooled file archive which can be saved and restored, and from which the spooled file can be retrieved (recreated).

Parameters

Keyword	Description	Choices	Notes
FILE	Spooled file name	*Name*	Required, Positional 1
ARC	Spooled file archive	*Qualified object name*	Optional
	Qualifier 1: Spooled file archive	*Name*, ***GEN**	
	Qualifier 2: Library	*Name*, ***CURLIB**	
JOB	Job name	Single values: ***** Other values: *Qualified job name*	Optional
	Qualifier 1: Job name	*Name*	
	Qualifier 2: User	*Name*	
	Qualifier 3: Number	000000-999999	
SPLNBR	Spooled file number	1-999999, *ONLY, ***LAST**, *ANY	Optional
JOBSYSNAME	Job system name	*Name*, ***ONLY**, *CURRENT, *ANY	Optional
CRTDATE	Spooled file created	Single values: ***ONLY**, *LAST Other values: *Element list*	Optional
	Element 1: Creation date	*Date*	
	Element 2: Creation time	*Time*, ***ONLY**, *LAST	

Spooled file name (FILE)

Specifies the name of the spooled file to process. CHAR(10)

This is a required parameter.

name   Specify the name of the spooled file.

Spooled file archive (ARC)

Specifies the name of the archive that contains the spooled file.

Qualifier 1: Spooled file archive

*GEN   Generate the archive name from the supplied FILE, JOB, and SPLNBR parameters.
name   Specify the name of the archive.

Qualifier 2: Library

*CURLIB   Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
name   Specify the name of the library.

Job name (JOB)

Specifies the job that contains the spooled file.

Single values

*   The job that issued the command.

Qualifier 1: Job name

name   Specify the name of the job. CHAR(10)

Qualifier 2: User

name   Specify the name that identifies the user profile under which the job is run. CHAR(10)

Qualifier 3: Number

000000-999999   Specify the system assigned job number. CHAR(6)

Spooled file number (SPLNBR)

Specifies the number of the spooled file. INT(4)

*LAST   The highest numbered spooled file with the specified file name is used.

*ONLY   Only one spooled file in the job has the specified file name; therefore, the number of the spooled file is not necessary.

*ANY   The spooled file number is not used to determine which spooled file is used. Use this value when the job system name parameter or the spooled file create date and time parameter is to take precedence over the spooled file number when selecting a spooled file.

1-999999   Specify the number of the spooled file.

Job system name (JOBSYSNAME)

Specifies the system where the job that created the spooled file (JOB parameter) ran. This parameter is considered after the job name, user name, job number, spooled file name, and spooled file number parameter requirements have been met.

*ONLY   There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, and spooled file create date and time.

*CURRENT   The spooled file created on the current system with the specified job name, user name, job number, spooled file name, spooled file number, and create date and time is used.

*ANY   The job system name is not used to determine which spooled file is used. Use this value when the spooled file create date and time parameter is to take precedence over the job system name when selecting a spooled file.

name   Specify the name of the system where the job that created the spooled file ran.

Spooled file created (CRTDATE)

Specifies the date and time the spooled file was created. This parameter is considered after the job name, user name, job number, spooled file name, spooled file number, and job system name parameter requirements have been met.

Single values

*ONLY   There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, and job system name.

*LAST   The spooled file with the latest create date and time of the specified job name, user name, job number, spooled file name, spooled file number, and job system name is used.

Element 1: Creation date

date   Specify the date the spooled file was created.

Element 2: Creation time

*ONLY   There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, job system name, and spooled file create date.

*LAST   The spooled file with the latest create time of the specified job name, user name, job number, spooled file name, spooled file number, job system name, and spooled file create date is used.

time   Specify the time the spooled file was created.

Examples

Example 1:
```
ARCSPLF  FILE(QSYSPRT)
```

This command archives the last spooled file named QSYSPRT. The current job is searched to locate the file. The archive is placed in the job's ***CURLIB**.

Example 2:

```
ARCSPLF  FILE(QPQUPRFIL) ARC(QGPL/*GEN) SPLNBR(3)
```

The file named QPQUPRFIL, which is spooled file number 3 in the job executing this command, is archived. The archive is placed in library QGPL.

Error messages

*ESCAPE messages

    SPLA106   Unable to archive spooled file for job //.

Create Spool Save File (CRTSPLSAVF)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Create Spool Save File (CRTSPLSAVF) command creates a save file containing a spooled file and all its related resources. The save file is suitable for emailing with a problem report.

Parameters

Keyword	Description	Choices	Notes
FILE	Spooled file name	*Name*	Required, Positional 1
SAVF	Save file	*Qualified object name*	Required, Positional 2
	Qualifier 1: Save file	*Name*	
	Qualifier 2: Library	*Name*, ***CURLIB**	
JOB	Job name	Single values: ***** Other values: *Qualified job name*	Optional
	Qualifier 1: Job name	*Name*	
	Qualifier 2: User	*Name*	
	Qualifier 3: Number	000000-999999	
SPLNBR	Spooled file number	1-999999, *ONLY, ***LAST**, *ANY	Optional
SAVRSC	Save resources	***YES**, *NO, Y, N	Optional
MSG	Message	*Character value*, ***NONE**	Optional

Spooled file name (FILE)

Specifies the name of the spooled file to process. CHAR(10)

This is a required parameter.

> **name**   Specify the name of the spooled file.

Save file (SAVF)

Specifies the name of the save file that is used to contain spooled file data. The saved file must not exist and will be created by the command.

This is a required parameter.

Qualifier 1: Save file

> **name**   Specify the save file name.

Qualifier 2: Library

> ***CURLIB**   Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.
> **name**   Specify the name of the library.

Job name (JOB)

Specifies the job that contains the spooled file.

Single values

> *****   The job that issued the command.

Qualifier 1: Job name

> **name**   Specify the name of the job. CHAR(10)

Qualifier 2: User

name	Specify the name that identifies the user profile under which the job is run. CHAR(10)

Qualifier 3: Number

000000-999999	Specify the system assigned job number. CHAR(6)

Spooled file number (SPLNBR)

Specifies the number of the spooled file. INT(4)

*LAST	The highest numbered spooled file with the specified file name is used.
*ONLY	Only one spooled file in the job has the specified file name; therefore, the number of the spooled file is not necessary.
*ANY	The spooled file number is not used to determine which spooled file is used. Use this value when the job system name parameter or the spooled file create date and time parameter is to take precedence over the spooled file number when selecting a spooled file.
1-999999	Specify the number of the spooled file.

Save resources (SAVRSC)

Specifies if external resource such as overlays and page segments are included in the save file.

*YES	Resources are saved.
*NO	Resources are not saved.

Message (MSG)

Specifies a short message to include in the save file.

*NONE	No message is included.
character-value	Specify a short message to include in the save file.

Examples

Example 1:
```
CRTSPLSAVF  FILE(QSYSPRT) SAVF(QGPL/PRBRPT)
```

This command creates save file PRBRPT in library QGPL. The last spooled file named QSYSPRT is saved along with its resources. The current job is searched to locate the file.

Example 2:
```
CRTSPLSAVF  FILE(QPQUPRFIL) SAVF(NEWPRB) SPLNBR(3)
```

The file named QPQUPRFIL, which is spooled file number 3 in the job executing this command, is saved to save file NEWPRB. The save file is placed in job's *CURLIB.

Error messages

*ESCAPE messages

SPLE101	Unable to create spool save file for job //.

Dump Print Resource (DMPPRTRSC)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Dump Print Resource (DMPPRTRSC) command dumps the contents or print resources including *OVL, *FORMDF, *PAGSEG, *FCT, *FNTRSC, *PAGDFN, and *PGD.

Parameters

Keyword	Description	Choices	Notes
RSC	Resource	*Qualified object name*	Required, Positional 1
	Qualifier 1: Resource	*Name*	
	Qualifier 2: Library	*Name*, ***LIBL**, *CURLIB	
OBJTYPE	Object type	*PAGSEG, *OVL, *FCT, *FNTRSC, *FNTTBL, *FORMDF, *PAGDFN, *PGD	Required, Positional 2

Resource (RSC)

Specifies the name of the resource to dump.

This is a required parameter.

Object type (OBJTYPE)

Specifies the type of the resource to dump.

This is a required parameter.

Examples

Example 1:

```
DMPPRTRSC   RSC(QFNTCDEPAG/T1V00037)  OBJTYPE(*FNTRSC)
```

This command dumps contents of the font resource T1V00037 in library QFNTCDEPAG.

Example 2:

```
DMPPRTRSC   RSC(RSCLIB/LOGO)  OBJTYPE(*PAGSEG)
```

This command dumps the page segment LOGO in library RSCLIB.

Dump Spooled File (DMPSPLF)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Dump Spooled File (DMPSPLF) command dumps the contents or attributes of an IBM i spooled file.

Parameters

Keyword	Description	Choices	Notes
FILE	Spooled file name	*Name*	Required, Positional 1
JOB	Job name	Single values: ***** Other values: *Qualified job name*	Optional, Positional 2
	Qualifier 1: Job name	*Name*	
	Qualifier 2: User	*Name*	
	Qualifier 3: Number	000000-999999	
SPLNBR	Spooled file number	1-999999, *ONLY, ***LAST**	Optional, Positional 3
OPTION	Dump options	Single values: *ALL Other values (up to 4 repetitions): ***DTASTR**, *RSCLST, *ATTRIB, *BUFFER	Optional, Positional 4
JOBSYSNAME	Job system name	*Name*, ***ONLY**, *CURRENT, *ANY	Optional
CRTDATE	Spooled file created	Single values: ***ONLY**, *LAST Other values: *Element list*	Optional
	Element 1: Creation date	*Date*	
	Element 2: Creation time	*Time*, ***ONLY**, *LAST	

Spooled file name (FILE)

Specifies the name of the spooled file to convert. CHAR(10)

This is a required parameter.

Job name (JOB)

Specifies the job that contains the spooled file.

Single values

*   The job that issued the command.

Qualifier 1: Job name

name   Specify the name of the job. CHAR(10)

Qualifier 2: User

name   Specify the name that identifies the user profile under which the job is run. CHAR(10)

Qualifier 3: Number

000000-999999   Specify the system assigned job number. CHAR(6)

Spooled file number (SPLNBR)

Specifies the number of the spooled file. INT(4)

*LAST   The highest numbered spooled file with the specified file name is used.

*ONLY   Only one spooled file in the job has the specified file name; therefore, the number of the spooled file is not necessary.

*ANY   The spooled file number is not used to determine which spooled file is used. Use this value when the job system name parameter or the spooled file create date and time parameter is to take precedence over the spooled file

number when selecting a spooled file.

1-999999 Specify the number of the spooled file.

Dump options (OPTION)

Specifies the information to be dumped.

*DTASTR	The spooled file's print data stream is dumped.
*RSCLST	The spooled file's resource list is dumped.
*ATTRIB	The spooled file's attributes are dumped.
*BUFFER	The spooled file's buffers are dumped.
*ALL	All of the spooled file's information is dumped.

Job system name (JOBSYSNAME)

Specifies the system where the job that created the spooled file (JOB parameter) ran. This parameter is considered after the job name, user name, job number, spooled file name, and spooled file number parameter requirements have been met.

*ONLY	There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, and spooled file create date and time.
*CURRENT	The spooled file created on the current system with the specified job name, user name, job number, spooled file name, spooled file number, and create date and time is used.
*ANY	The job system name is not used to determine which spooled file is used. Use this value when the spooled file create date and time parameter is to take precedence over the job system name when selecting a spooled file.
name	Specify the name of the system where the job that created the spooled file ran.

Spooled file created (CRTDATE)

Specifies the date and time the spooled file was created. This parameter is considered after the job name, user name, job number, spooled file name, spooled file number, and job system name parameter requirements have been met.

Single values

*ONLY	There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, and job system name.
*LAST	The spooled file with the latest create date and time of the specified job name, user name, job number, spooled file name, spooled file number, and job system name is used.

Element 1: Creation date

date	Specify the date the spooled file was created.

Element 2: Creation time

*ONLY	There is one spooled file with the specified job name, user name, job number, spooled file name, spooled file number, job system name, and spooled file create date.
*LAST	The spooled file with the latest create time of the specified job name, user name, job number, spooled file name, spooled file number, job system name, and spooled file create date is used.
time	Specify the time the spooled file was created.

Examples

Example 1:
```
DMPSPLF  FILE(QSYSPRT) JOB(033194/QPGMR/MONTHEND) SPLNBR(2)
```

This command dumps spooled file number 2, QSYSPRT from job MONTHEND/QPGMR/033194. The spooled file's data stream is dumped.

Example 2:
```
DMPSPLF  FILE(QSYSPRT) OPTION(*RSCLST)
```

This command dumps the list of resources used by the last spooled file with name QSYSPRT from the job running the command.

Retrieve Gumbo PTF (RTVGSIPTF)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Retrieve Gumbo PTF (RTVGSIPTF) command checks a remote system for new product PTFs, and, if available, downloads and installs them.

The command assumes that the System i has connectivity to the PTF server. Unless you are running your own internal server hosting our PTFs, this means that the System i has access to the internet and that FTP is not blocked by a firewall.

The command first checks the availability of new PTFs by retrieving a product and release specific file (Ex. q1p80LastPtf.txt) from the remote system and comparing its contents to the last PTF applied locally. If newer PTFs are available, a product and release specific PTF save file (Ex. q1p80all.svf) is downloaded, and the PTFs it contains are loaded and applied.

Note: *GUMBO* only delivers immediate PTFs. Immediate PTFs do not require an IPL and an IPL is never performed by the command.

Parameters

Keyword	Description	Choices	Notes
LICPGM	Product	*Character value*, ***THIS**, 2A55DCR, 2A55DMP, 2A55RDA, 2A55RM1, 2A55SAM, 2A55SM1, 2A55SM2, 2A55XL1	Optional, Positional 1
RLS	Release	*Character value*, ***THIS**	Optional, Positional 2
CHECK	Check	***YES**, *NO, *ONLY	Optional
RMTSYS	Remote system	*Character value*, ***GUMBOFTP**	Optional

Product (LICPGM)

Specifies the product for which PTFs are retrieved. All *GUMBO* products take the form 2A55tla where "tla" identifies the product. Run DSPSFWRSC to determine which *GUMBO* products are installed. CHAR(7)

*THIS	Use the product (2A55DMP) containing this copy of the Retrieve Gumbo PTF (RTVGSIPTF) command.
2A55DCR	Dicer
2A55DMP	Dumpster
2A55RDA	Report Designer
2A55RM1	Report Manager
2A55SAM	Spool-a-Matic
2A55SM1	SpoolMail
2A55SM2	Gumbo Mail
2A55XL1	Excel-erator
character-value	Specifies the 7-character identifier of the product for which PTFs are retrieved.

Release (RLS)

Specifies the release for which PTFs are retrieved. Run DSPSFWRSC to determine which *GUMBO* products are installed. CHAR(6)

*THIS	Use the release of the product (V1R8M0) containing this copy of the Retrieve Gumbo PTF (RTVGSIPTF) command.
character-value	Specify the release level of the product in the format VxRyMz, where Vx is the version number, Ry is the release number, and Mz is the modification level.

Check (CHECK)

Specifies if checking for newer PTFs is performed. CHAR(10)

<u>*YES</u>	Check for newer PTFs is performed before downloading. If newer PTFs are not available, processing stops.
***NO**	No check for newer PTFs is performed before downloading.
***ONLY**	Only a check for newer PTF availability is performed. Nothing is downloaded, regardless of the result.

Remote system (RMTSYS)

Specifies the name of remote system which serves PTF save files for download. CHAR(255)

<u>*GUMBOFTP</u>	Use **_GUMBO's_** FTP server ftp.gumbo.com.
character-value	Specify the remote system name to use.

Examples

Example 1:

```
RTVGSIPTF
```

The **_GUMBO_** FTP server is check for new PTFs available for product 2A55DMP release V1R8M0. If available, the PTFs are downloaded and installed.

Example 2:

```
RTVGSIPTF  PRODUCT(2A55DMP) RLS(V1R8M0) CHECK(*ONLY)
```

The **_GUMBO_** FTP server is check for new PTFs available for product 2A55DMP release V1R8M0. No other processing is performed.

Error messages

*ESCAPE messages

PID1007	Retrieve PTF failed for product .

Work with Gumbo Output Queue (WRKGSIOUTQ)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Work with Gumbo Output Queue (WRKGSIOUTQ) command works like IBM i's Work with Output Queue (WRKOUTQ) command but provides additional options to access the functions of Dumpster.

Parameters

Keyword	Description	Choices	Notes
OUTQ	Output queue	*Qualified object name*	Required, Positional 1
	Qualifier 1: Output queue	*Name*	
	Qualifier 2: Library	*Name*, ***LIBL**, *CURLIB	
OUTPUT	Output	*****, *PRINT	Optional, Positional 2

Output queue (OUTQ)

Specifies the name of the Output queue and the library where it resides.

This is a required parameter.

Qualifier 1: Output queue

name   Specify the name of the output queue.

Qualifier 2: Library

*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.
name   Specify the name of the library.

Output (OUTPUT)

Specifies where the output from the command is sent. CHAR(10)

*   The output is displayed (if requested by an interactive job) or printed with the job's spooled output (if requested by a batch job).
*PRINT   The output is printed with the job's spooled output.

Examples

Example 1:
```
WRKGSIOUTQ  OUTQ(PRT01)
```

This command allows you to work with all of the spooled files on the PRT01 output queue.

Example 2:
```
WRKGSIOUTQ  OUTQ(QGPL/QPRINT)
```

This command allows you to work with all of the spooled files on the QPRINT output queue in library QGPL.

Error messages

*ESCAPE messages

SUI3002   Command processing failure.

Work with Gumbo Spooled Files (WRKGSISPLF)

Where allowed to run: All environments (*ALL)
Threadsafe: No

The Work with Gumbo Spooled Files (WRKGSISPLF) command works like IBM i's Work with Spooled Files (WRKSPLF) command but provides additional options to access the functions of Dumpster.

Parameters

Keyword	Description	Choices	Notes
SELECT	Select files for	*Element list*	Optional, Positional 1
	Element 1: User	*Name*, ***CURRENT**, *ALL	
	Element 2: Print device	*Name*, ***ALL**, *OUTQ	
	Element 3: Form type	*Character value*, ***ALL**, *STD	
	Element 4: User data	*Character value*, ***ALL**	
OUTPUT	Output	*****, *PRINT	Optional, Positional 2

Select files for (SELECT)

Specifies the criteria used to further select spooled files for display. Selection criteria consist of 4 elements. Only spooled files that match each of the values are selected.

Element 1: User

*CURRENT	Spooled files created by the user of the current job are selected.
*ALL	All spooled files are selected regardless of the user creating them.
name	Specify a user name. Only spooled files created by the user are selected.

Element 2: Print device

*ALL	All spooled files are selected regardless of the device or output queue.
*OUTQ	All files on any user-created output queue are selected. A user-created output queue is any output queue that is not automatically created by a device. A user-created output queue does not generally have the same name as a device, but if it does, it does not reside in library QUSRSYS.
name	Specify a device name. Only files on the device created output queue for that device are selected. A device created output queue is one that has the same name as a device and resides in the QUSRSYS library. Unless it already exists, it will automatically be created by the system when the device is created. A device created output queue cannot be deleted.

Element 3: Form type

*ALL	All spooled files are selected regardless of their form type.
*STD	Only files that specify the standard form type are selected.
character-value	Specify the form type to select the file.

Element 4: User data

*ALL	All spooled files are selected regardless of their user data.
character-value	Specify the user data to select the file.

Output (OUTPUT)

Specifies where the output from the command is sent. CHAR(10)

*	The output is displayed (if requested by an interactive job) or printed with the job's spooled output (if requested by a batch job).
*PRINT	The output is printed with the job's spooled output.

Examples

Example 1:

```
WRKGSISPLF  SELECT(*ALL *ALL *ALL *ALL)
```

This command allows you to work with all of the spooled files on the system.

Example 2:

```
WRKGSISPLF  SELECT(CASMITH *ALL *ALL MEMO)
```

This command allows you to work with all of the spooled files on the system for the user named CASMITH that have MEMO specified in the user data for the spooled file.

Error messages

*ESCAPE messages

SUI3002   Command processing failure.

Chapter 6 Trouble-Shooting

What's In This Chapter

This chapter provides information and procedures useful for correcting or reporting Dumpster problems. The chapter:

- Describes general trouble-shooting.
- Describes software installation problems.
- Describes how to create a spool save file.
- Describes how to email a spool save file.

General Trouble-Shooting

If a command from Dumpster fails to run to completion or if the results you receive are different from those expected, perform these items:

- Check the detailed messages in your job log:
    1. Run the DSPJOBLOG command.
    2. Press F10 to display detailed messages.
    3. Locate the messages related to the error.
    4. Place your cursor on each message in turn and press F1.
    5. Take any corrective actions suggested by the messages.
- Download the current cumulative PTF package from www.gumbo.com.
- Check the bottom of the PTF page at www.gumbo.com for IBM PTFs that may be required.
- Review the detailed trouble shooting procedures in this chapter for solutions related to your problem.

If you are unable to correct the problem, prepare a problem report and contact your service provider.

Software Installation Problems

This section describes problems, causes, and solutions specific to software installation.

- Installation Generates "Directory not registered. (C G)"

Symptom	During installation inquiry message id CPA3DE4 "Directory not registered. (C G)" is issued.
Cause	IBM i has lost the relationship between the product and the directory and hence the message.
Solution	You can safely take a "G" to this message. You will receive the message 3 times.

- Installation Fails

Symptom	Installation fails and diagnostic message id CPF9898 "Unable to clear old release. Is the software being used?" appears in the job log. Or, when the installation verification option is run, verification fails with diagnostic message id CPD0C2E appearing in the job log.
Cause	This usually arises from attempting to install a new release over an old release while objects in the old release are in use.
Solution	End the jobs that are holding locks on (using) objects from the old release and perform the installation again.

- Installation Fails or Installation Verification Fails

Symptom	Installation or installation verification fails and messages in the job log do not help in recovering.

Cause	The software is not installed correctly or the installation is damaged. This can be caused for a variety of reasons including renaming of libraries, directories, or objects that make up the product.
Solution	Get the system to a stable consistent state by completely removing the product then re-installing it by performing the following:

1. Delete the licensed program by running:
   ```
   DLTLICPGM  LICPGM(2A55DMP) RLS(*ALL)
                  OPTION(*ALL)
   ```

   Note: It is okay if this fails with diagnostic CPD3D91 "Product 2A55DMP option *ALL release *ALL not installed."

2. Delete the product's library by running:
   ```
   DLTLIB  LIB(DUMPSTER)
   ```

   Note: It is okay if this fails with escape CPF2110 "Library DUMPSTER not found."

3. Delete the product's directories by running:
   ```
   RMVDIR  DIR('/Gumbo/ProdData/2A55DMP/doc') SUBTREE(*ALL)
   RMVDIR  DIR('/Gumbo/ProdData/2A55DMP/tmp') SUBTREE(*ALL)
   RMVDIR  DIR('/Gumbo/ProdData/2A55DMP') SUBTREE(*ALL)
   ```

   Note: It is okay if these fail with escape CPFA0A9 "Object not found. ...". But if any of these fail because a directory is not empty, delete the contents using WRKLNK.

   If there are no other **GUMBO** products installed:

   ```
   RMVDIR  DIR('/Gumbo/ProdData')
   RMVDIR  DIR('/Gumbo')
   ```

4. Rebuild IBM i's internal licensed program information by running:
   ```
   CALL  PGM(QSYS/QSZRECOV)
   ```

   Note: This takes several minutes depending on machine size.

5. Install the product according to the instructions in the Installation chapter.
6. Enter your authorization code.

Creating a Spool Save File

A save file containing all the information needed to transport and reproduce a spooled file on a **GUMBO** development system can be produced using the Create Spool Save File (CRTSPLSAVF) command. To create a spool save file:

- Determine the identity of the spooled file to be saved. A spooled file's identity consists of the file's name, the name/user/number of the job that created it, and the spooled file's number within the job. You can find this information using option 8 from the Work with Spooled Files (WRKSPLF) or Work with Output Queue (WRKOUTQ) commands among others.
- Determine a library to contain the save file. Typically this is your test library. If you do not have a test library, QGPL can be used.
- Determine a name for the save file. It must be a file name that does not exist in the library determined above.
- Run the Create Spool Save File (CRTSPLSAVF) command entering the information from the preceding steps.

   Note: The command allows for a short message to be included in the save file. Use this to describe the reason for the save file and to include contact information such as your name and phone number.

In saving the spooled file the command creates a temporary library. It retrieves the contents and attributes of the spooled file and stores these in a user space. Any resources used (such as page segments or overlays) are duplicated to the temporary library. Data areas containing various system values and the message are placed in the library. After creating the requested save file, the library is saved to it and finally the temporary library is deleted.

Emailing A Spool Save File

Once a spool save file has been created using the Create Spool Save File (CRTSPLSAVF) command you can download it to your PC and email it to **GUMBO** by following these steps:

1. [i] Insure the FTP server is active by running:

    ```
    STRTCPSVR SERVER(*FTP)
    ```

2. [PC] Choose Start > Programs > Accessories > Command Prompt to open a command prompt.
3. [PC] Create a temporary directory and change to it:

    ```
    md c:\gumbo [Enter]
    cd c:\gumbo [Enter]
    ```

4. [PC] Open an FTP connection to the System i by substituting your system's host name and running:

    ```
    ftp host_name [Enter]
    ```

5. [PC] Enter a user name and password as prompted.
6. [PC] Change to binary (image) mode by running:

    ```
    binary [Enter]
    ```

7. [PC] Change to library/file/member mode by running:

    ```
    cd /qsys.lib/qgpl.lib [Enter]
    quote site namefmt 0 [Enter]
    ```

8. [PC] Download the spool save file by running (in this example the save file's name is QGPL/TEST):

    ```
    get qgpl/test [Enter]
    ```

9. [PC] End the ftp session and the command prompt by running:

    ```
    quit [Enter]
    exit [Enter]
    ```

10. [PC] Send email to support@gumbo.com after attaching file c:\gumbo\test.

Include in your email a description of the problem encountered and the command parameter values you were using when it happened.

Appendix A Notices

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