

# Dicer

Enhancement Summary

Licensed Program 2A55DCR V2R1M0



Spooled File Conversion

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## **Edition**

### **Tenth Edition (August 2017)**

This edition applies to the licensed program Dicer (Program 2A55DCR), Version 2 Release 1 Modification 0.

This summary is available through option 1 of the DICER menu, in PDF format in directory /Gumbo/Proddata/2A55DCR/doc on your system, and on the web at [www.gumbo.com](http://www.gumbo.com)

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Cover image: Structure of RNaseIIIb and dsRNA binding domains of mouse Dicer as provided by RCSB. (Wikimedia Commons)

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## Contents

<b>Edition .....</b>	<b>ii</b>
<b>Contents.....</b>	<b>iii</b>
<b>Installation Instructions.....</b>	<b>5</b>
<b>Enhancements For Dicer V2R1M0 ....</b>	<b>7</b>
What's In This Section.....	7
New MRGSPLF Special Value Added.....	7
Spool Interface Rewritten .....	7
Source Access Option Added To Menu.....	7
AFP Processor Changes .....	7
Encryption Changes .....	7
Font Processor Changes.....	7
Integrated File System Changes .....	8
MODCA Processor Changes.....	8
Print Data Stream Changes .....	8
Program Distribution Changes.....	9
Spool Indexing Changes .....	9
Space Management Changes.....	9
Spool User Interface Changes .....	9



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## Installation Instructions

Follow these instructions to install Dicer V2R1M0 on IBM i using physical media or a virtual image:

### Prepare

If you are upgrading a previous release (if Dicer is currently installed), 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 are installing from a save file downloaded as an executable zip (.exe), use the save file specific "readme.htm" instructions included in the download.

1. Sign on to the system as the security officer (QSECOFR).
2. Verify that your machine is at IBM i V7R2M0 or later by running:

```
WRKLICINF
```

**Note:** If you are running a version of IBM i earlier than V7R2M0 you cannot install Dicer V2R1M0 on your machine. You must install an earlier version of Dicer or upgrade the operating system.

3. Verify that user domain objects are allowed in the libraries DICER 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 DICER 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 physical media or virtual image on the appropriate device.
6. Submit the Restore Licensed Program (RSTLICPGM) command to batch:

```
RSTLICPGM  LICPGM(2A55DCR) DEV(device-name) LNG(2924)
```

**Note:** Where "device-name" is the device where the media or image was mounted 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 or four times.

## Finish

When the RSTLICPGM command completes, library DICER and directory '/Gumbo/ProdData/2A55DCR' contain the new software. To complete the installation:

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

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

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

```
DICER/RTVGSIPTF
```

**Note:** **GUMBO** recommends downloading the current cumulative PTF package after installing the software.

3. Visit our PTF page at [www.gumbo.com](http://www.gumbo.com) and check the **Additional IBM i PTF Information** section for IBM PTFs you may need to install.
4. You can access the Dicer menu by running the following command:

```
GO MENU(DICER/DICER)
```

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## Enhancements For Dicer V2R1M0

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### What's In This Section

This section provides information on Dicer enhancements for release V2R1M0, notes any customer code implications by marking them with a **COMPATIBILITY WARNING**, and describes where to find more information when applicable.

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### New MRGSPLF Special Value Added

The Merge Spooled File (MRGSPLF) command's Merge input list (MRGFILE) parameter now supports specifying spooled file name \*LASTCRT. \*LASTCRT selects the last spooled file created by the current job or thread, using the QSPRILSP API, for processing. This is useful for jobs that create spooled files under other user profiles, which consequently end up in the user's QPRTJOB. When \*LASTCRT is specified, the job name/user/number spooled file number, job system name, creation date and creation time are ignored.

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### Spool Interface Rewritten

Our WRKGSISPLF and WRKGSIOUQ commands have been rewritten to employ newer and speedier APIs from IBM. They now more closely emulate the IBM analogues. Performance improvement is particularly noticeable with very large lists. See additional enhancements listed below.

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### Source Access Option Added To Menu

Dicer menu option 68 was added to provide access to examples and source code included in the product.

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### AFP Processor Changes

- SPLNBR(\*ANY) processing corrected for EXTAFPRSC command. Previously specifying \*ANY generated an error and processing stopped.

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### Encryption Changes

- Replaced RSA MD5 implementation with IBM's built-in API, removing RSA copyright statements and acknowledgements. The product's Export Control Classification Number (ECCN) remains EAR99-NLR i.e. innocuous and exportable anywhere.

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### Font Processor Changes

- Previously when producing unicode mappings when code page \*FNTRSCs were missing from the system, CPGID=37 was used as a default. Now the implied CPGID is used and accuracy increased for non CPGID=37 code pages.
- Test for equal character sets enhanced to look at the underlying \*FNTRSC and not the references, decreasing the number of false negatives.
- Processing enhanced to produce a unicode character map even in the absence of a code page \*FNTRSC object.
- New export allows retrieval of a font stack entry's opinion on the current effective ccsid.

- New export key Font Unique ID(FSUID), compliments the existing Font Stack Handle(FSH). The existing FSH is the key to information of a font that is currently on the stack. The new FSUID is the key to the same information about any font that is/was ever on the stack. The FSUID are valid for the duration of the Font Stack. The FSUID grants easy access to exported information of all the fonts used.
- Unicode value is now the communication method for Glyph names. A Unicode equivalent array is available for each font used. A new export, FntGlyphGetForUnicode, returns the Unicode Glyph name for the Unicode value.
- Corrected font size in cases where the same font was referenced multiple times, with different 'height's.
- Enabled accurate Text Length for TrueType fonts.
- Improved handling of TrueType fonts given with data as Unicode, and no corresponding codepage.
- Resolving TrueType fonts failed to check for existing resolved reference resulting in a stack overflow and failed processing.
- Retrieving font file names using QGSLRSC failed when processing a spooled file that has a duplicate on the system. QGSLRSC is now called using the system's internal IDs for the job and spooled file and the problem avoided.
- The font size derived from \*SCS spooled file which specifies a scalable font was incorrect.
- Missing code page font resource no longer causes the process to fail, a substitute is used instead. This restores the previous behavior.
- Default code page selection enhanced to be sensitive to the spooled file's encoding.
- Improved internal handling of TrueType fonts.
- Malformed codepage \*FNTRSC caused MCH3601 after parsing. The malformed codepage is now treated as if it does not exist.
- Font processing was sending message id FNT0013, FNT0016, CPF9801 and CPF33CF when a code page font resource could not be found for a grid specified font. Now the message is postponed until the missing code page is needed and thus avoiding the messages when the missing code page doesn't matter.

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## Integrated File System Changes

- New internal version V1R5M0 of service program created to position for future enhancements.

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## MODCA Processor Changes

- Missing return code processing corrected. It was exposed during testing of another component.
- Incorrect processing of Begin Page's Page Position Information triplet resulted in wrong overlay applied to page in some instances.

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## Print Data Stream Changes

- New export added to improve space/memory management between service program and clients.
- Page buffering enhanced to handle DBCS data with encoding schemes other than x1301.



- Uninitialized variable causes \*TXTxxx conversion failure when splitting the spooled file with PAGDTA() parameter.
- Internal modifications to increase modularity.
- Page buffer concept and supporting functions added. Page buffers allow out of sequence print data to be processed correctly by sequence oriented transforms such as txt, html, etc.

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## Program Distribution Changes

- RTVGSIPTF anonymous logon updated to include @gumbo.com.
- A new object signing certificate, to replace the previously used and expiring one, was placed into service on our development systems. If you are using CHKOBJTG to verify the integrity of objects in our software, load the new certificate into the \*SIGNATUREVERIFICATION certificate store.

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## Spool Indexing Changes

- Two new parameters, JOBSYSNAME() and CRTDATE(), have been added to the DMPIP, DSPPSGDTA and RTVPAGDTA commands. These have the same meaning and usage as those found on IBM's spooled file related commands and allow you to select specific spooled files when file/job/user/jobnbr/splfnbr are not unique.
- New types, functions and exports supporting larger page key data specification were added. Previous limit of 16 was raised to 256.
- SPLNBR(\*ANY) processing corrected for DMPPIP, DSPPAGDTA, and RTVPAGDTA commands. Previously specifying \*ANY generated an error and processing stopped.

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## Space Management Changes

- New String Space functions SpcSspGetNextVs2() and SpcSspLoadCurrentVs2() added.

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## Spool User Interface Changes

- Selection check at the wrong point in the code resulted in poor performance on systems with many spooled files.
- Holding a spooled file from WRKGSIOUQT panel using option 3 failed to update the status to \*HLD. The status is now updated.
- WRKGSISPLF command's SELECT() parameter has been extended and enhanced. Generic processing has been added for the User and User data elements. New elements have been added for ASP and Spooled file.
- WRKGSISPLF command has been extended to include a JOB() parameter and a PERIOD() parameter mirroring changes in IBM's WRKSPLF command.
- Holding a spooled file from WRKGSIOUQT panel using option 3 failed to update the status to \*HLD. The status is now updated.