

# Tricks with spool files using SQL

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# Disclaimer

- All examples use *IBM i* release 7.5 TR1 & 7.4 TR7
  - Both released December 2022
- What is shown may not work for some older releases or TRs
- All examples are deliberately simple to illustrate the point
  - K.I.S.S (Keep It Simple Simon)

# Why does he do that?

- All SQL examples use ACS “Run SQL Scripts”
  - I end every statement with semi-colon
  - ***Time to stop using STRSQL!***
- I use SQL naming convention
  - SQL naming = `library.object`
  - System naming = `library/object`

# Getting spool file data without SQL

- WRKSPLF command
  - List all spool files

```
Work with All Spooled Files

Type options, press Enter.
1=Send 2=Change 3=Hold 4=Delete 5=Display 6=Release 7=Messages
8=Attributes 9=Work with printing status

Opt  File      User      Device or  User Data  Sts  Total  Cur  Copy
     QPDSPJRN   RZKHHOSC  QPRINT    RDY        81   1      1
     A        MKUNTZ    MKUNTZ    RDY         3   1      1
     A        MKUNTZ    MKUNTZ    RDY         3   1      1
     A        MKUNTZ    MKUNTZ    RDY         3   1      1
     A        MKUNTZ    MKUNTZ    RDY         3   1      1
     A        MKUNTZ    MKUNTZ    RDY         3   1      1
     HERBERT  GOETZ     QPRINT    RDY         3   1      1
     QPDZDTALOG GOETZ     QPRINT    RDY         1   1      1
     QPRTOBJD  GOETZ     QPRINT    RDY         1   1      1
                                     More...

Parameters for options 1, 2, 3 or command
==> WRKSPLF SELECT(*ALL)
F3=Exit  F10=View 4  F11=View 2  F12=Cancel  F22=Printers  F24=More keys

MA  A  21/027
```

# Getting spool file data without SQL

- WRKSPLF command
  - Older than a time & date

```
Work with All Spooled Files
Type options, press Enter.
 1=Send  2=Change  3=Hold  4=Delete  5=Display  6=Release  7=Messages
 8=Attributes  9=Work with printing status

  Opt  File          User          Device or  User Data  Sts  Total  Cur  Copy
      QPDSPJRN     RZKHHOSC     QPRINT    RDY        81   1
      A           MKUNTZ       MKUNTZ    RDY         3   1
      A           MKUNTZ       MKUNTZ    RDY         3   1
      A           MKUNTZ       MKUNTZ    RDY         3   1
      A           MKUNTZ       MKUNTZ    RDY         3   1
      A           MKUNTZ       MKUNTZ    RDY         3   1
      HERBERT     GOETZ        QPRINT    RDY         3   1
      QPDZDTALOG  GOETZ        QPRINT    RDY         1   1
      QPRTOBJD    GOETZ        QPRINT    RDY         1   1
                                          More...

Parameters for options 1, 2, 3 or command
==> WRKSPLF SELECT(*ALL) PERIOD(*AVAIL) (000000 01012023))
F3=Exit  F10=View 4  F11=View 2  F12=Cancel  F22=Printers  F24=More keys

MA  A  21/007
```

# Getting spool file data without SQL

- No output from WRKSPLF command

```
Work with Spooled Files (WRKSPLF)

Type choices, press Enter.

Time period:
Start time and date:
Beginning time . . . . . *AVAIL      Time, *AVAIL
Beginning date . . . . . *BEGIN      Date, *BEGIN, *CURRENT
End time and date:
Ending time . . . . . *AVAIL      Time, *AVAIL
Ending date . . . . . *END        Date, *END
ASP device . . . . . *          Name, *, *SYSBAS, *CURASGRP
Output . . . . . *          *, *PRINT

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

Bottom
MA A 07/037
```

# Getting spool file data without SQL

- API = QUSLSPL
  - Output to user space
  - User space APIs to get information
  - Too complicated!

List Spooled Files (QUSLSPL) API			
Last Updated: 2022-05-03			
Required Parameter Group:			
1	Qualified user space name	Input	Char(20)
2	Format name	Input	Char(8)
3	User name	Input	Char(10)
4	Qualified output queue name	Input	Char(20)
5	Form type	Input	Char(10)
6	User-specified data	Input	Char(10)
Optional Parameter Group 1:			
7	Error Code	I/O	Char(*)
Optional Parameter Group 2:			
8	Qualified job name	Input	Char(26)
9	Key for the fields to return	Input	Array(*) of Binary(4)
10	Number of fields to return	Input	Binary(4)
Optional Parameter Group 3:			
11	Auxiliary storage pool	Input	Binary(4)

# Time to K.I.S.S

- SQL makes it a whole lot simpler
  - Views
  - Table functions
  - Scalar functions
- Keeping It Simple for Simon



# SQL spool files

- Learn about spool files in this partition
- Delete spool files *en masse*
- Copy spool files to PDF in IFS
- SQL to extract information from spool files

Learn about spool files in this  
partition

# Learn about spool files in this partition

- Identify spool files...
  - Largest
  - Oldest
  - Who has the most?

# SQL Views lists All spool files

- Two possible Views
  - OUTPUT\_QUEUE\_ENTRIES = “full” results
  - OUTPUT\_QUEUE\_ENTRIES\_BASIC = “basic” results
    - Less columns = faster
    - I always use this View

```
14 -- List all spool files
15 SELECT * FROM QSYS2.OUTPUT_QUEUE_ENTRIES ;
16
17 -- List all spool files with basic view, fewer columns = faster
18 SELECT * FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC ;
19
```

OUTPUT_QUEUE_NAME	OUTPUT_QUEUE_LIBRARY_NAME	CREATE_TIMESTAMP	SPOOLED_FILE_NAME	USER_NAME	USER_DATA	STATUS
QPRINT	QGPL	2022-08-30 15:15:15.498540	QPRTOBJD	GOETZ	<NULL>	READY
QPRINT	QGPL	2022-08-30 15:39:54.120740	QPDZDTALOG	GOETZ	<NULL>	READY
QPRINT	QGPL	2022-10-18 15:45:26.062807	QPRINT	QSECOFR	<NULL>	READY
QPRINT	QGPL	2022-10-27 12:31:16.768056	QSYSPRT	QSECOFR	DSPIPLA	READY

# How many spool files?

```
23 -- How many spool files
24 SELECT TO_CHAR(COUNT(*), '999G999G999') AS "Spool files"
25 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC ;
```

Spool files
563

- How can I do that with WRKSPLF?
- TO\_CHAR format numbers – thousand separator

# How many spool files older than 2 weeks?

```
27 -- How many older than 2 weeks?
28 SELECT TO_CHAR(COUNT(*), '999G999G999') AS "Spool files"
29     FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
30     WHERE CREATE_TIMESTAMP < CURRENT_TIMESTAMP - 14 DAYS ;
31
```

Spool files
47

- Using CURRENT\_TIMESTAMP
  - Timestamp is not hard coded
  - Timestamp calculated every time this statement is run

# Oldest spool files

```
32 -- Oldest spool files
33 SELECT * FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
34 ORDER BY CREATE_TIMESTAMP
35 LIMIT 10 ;
```

OUTPUT_QUEUE_NAME	OUTPUT_QUEUE_LIBRARY_NAME	CREATE_TIMESTAMP	SPOOLED_FILE_NAME
QPRINT	QGPL	2022-05-20 09:20:05.826099	QPDSPJRN
QPRINT	QGPL	2022-06-23 14:14:56.737224	QZSRHTTPTR
QPRINT	QGPL	2022-06-23 19:04:37.876013	QZSRHTTPTR
QPRINT	QGPL	2022-06-23 21:36:26.850313	QZSRHTTPTR
QPRINT	QGPL	2022-06-24 16:04:27.000480	QZSRHTTPTR
QPRINT	QGPL	2022-06-24 22:25:42.462048	QZSRHTTPTR
QPRINT	QGPL	2022-06-27 23:57:01.379467	QZSRHTTPTR
QPRINT	QGPL	2022-06-28 00:45:45.358730	QZSRHTTPTR
QPRINT	QGPL	2022-06-28 02:36:49.085455	QZSRHTTPTR
QPRINT	QGPL	2022-06-28 02:36:50.759841	QZSRHTTPTR

- LIMIT 10 = Only return first 10 results

# Biggest spool files

```
37 -- 10 biggest spool files
38 SELECT TO_CHAR(SIZE, '999G999') AS "Size",
39        TO_CHAR(TOTAL_PAGES, '999G999') AS "Pages",
40        USER_NAME, SPOOLED_FILE_NAME,
41        OUTPUT_QUEUE_LIBRARY_NAME || '/' || OUTPUT_QUEUE_NAME AS "Outq",
42        DATE(CREATE_TIMESTAMP) AS "Date"
43 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
44 ORDER BY SIZE DESC
45 LIMIT 10 ;
```

Size	Pages	USER_NAME	SPOOLED_FILE_NAME	Outq	Date
388	81	RZKHHOSC	QPDSPJRN	QGPL/QPRINT	2022-05-20
148	21	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-29
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-29
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31
44	3	QSECOFR	QPJOBLOG	QUSRSYS/QEZJOBLOG	2022-12-31



# Users with most spool files

```
47 -- Which users have the most spool files
48 SELECT USER_NAME,
49         TO_CHAR(COUNT(*), '999G999') AS "No. splf",
50         TO_CHAR(SUM(SIZE), '999G999') AS "Tot size"
51 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
52 GROUP BY USER_NAME
53 ORDER BY 2 DESC ;
```

USER_NAME	No. splf	Tot size
QUSER	383	11,572
QSYS	72	2,016
QSECOFR	62	2,408
QTMHHTTP	35	1,036
RPGPGM	5	156
GOETZ	4	112
TIMMC	4	120
RZKHHOSC	1	388

# Output queues with most files

- Different View : OUTPUT\_QUEUE\_STATUS

```
55 -- Output queue with most files
56 SELECT OUTPUT_QUEUE_LIBRARY_NAME, OUTPUT_QUEUE_NAME,
57        TO_CHAR(NUMBER_OF_FILES, '999G999') AS "Files",
58        OUTPUT_QUEUE_STATUS,
59        NETWORK_CONNECTION_TYPE, REMOTE_SYSTEM_NAME
60 FROM QSYS2.OUTPUT_QUEUE_INFO
61 ORDER BY NUMBER_OF_FILES DESC ;
```

OUTPUT_QUEUE_LIBRARY_NAME	OUTPUT_QUEUE_NAME	Files	OUTPUT_QUEUE_STATUS
QUSRSYS	QEZJOBLOG	515	RELEASED
QGPL	QPRINT	47	RELEASED
QGPL	RPGPGM	4	RELEASED
QFAX	QFAXOUTQ	0	RELEASED

# Delete spool files *en masse*

# Delete spool files *en masse*

- Having identified spool files we can delete. How to do it?
- SQL procedure to delete spool files
  - Parameters narrow range of spool files selected
  - Preview mode – does not delete anything

# SQL procedure parameters

- Use as many parameters as you want
  - Beware : If you don't use a parameter it has a default
- Preview, preview, preview
  - Always preview before you delete so you can see what will be deleted
    - PREVIEW => 'YES' must be upper case

```
66 -- Delete spool files
67 CALL SYSTOOLS.DELETE_OLD_SPOOLED_FILES(
68     DELETE_OLDER_THAN => CURRENT_TIMESTAMP, -- Default = CURRENT_TIMESTAMP - 3 MONTHS
69     P_OUTPUT_QUEUE_LIBRARY_NAME => '<library-name>', -- Default = '*ALL'
70     P_OUTPUT_QUEUE_NAME => '<output-queue-name>', -- Default = '*ALL'
71     P_USER_NAME => '<user-profile>', -- Default = '*ALL'
72     PREVIEW => 'YES') ; -- Default = 'NO'
```

# Delete spool files in my output queue

```
74 -- Delete all spool files from my *OUTQ
75 CALL SYSTOOLS.DELETE_OLD_SPOOLED_FILES (
76   DELETE_OLDER_THAN => CURRENT_TIMESTAMP,
77   P_OUTPUT_QUEUE_LIBRARY_NAME => 'QGPL',
78   P_OUTPUT_QUEUE_NAME => 'RPGPGM',
79   PREVIEW => 'YES') ;
```

SPOOLED_FILE_NAME	JOB_NAME	FILE_NUMBER	USER_NAME	SIZE	OUTPUT_QUEUE_NAME	OUTPUT
QPDZDTALOG	050633/RPGPGM/QPADEV0001	1	RPGPGM	28	RPGPGM	QGPL
QPDZDTALOG	050633/RPGPGM/QPADEV0001	2	RPGPGM	28	RPGPGM	QGPL
QPQUPRFIL	088130/RPGPGM/QPRTJOB	1	RPGPGM	28	RPGPGM	QGPL
QPRTSPLQ	088130/RPGPGM/QPRTJOB	3	RPGPGM	28	RPGPGM	QGPL

# Delete all my spool files

```
81 -- Delete all spool files I created (all *OUTQ)
82 CALL SYSTOOLS.DELETE_OLD_SPOOLED_FILES (
83     DELETE_OLDER_THAN => CURRENT_TIMESTAMP,
84     P_USER_NAME => CURRENT_USER,
85     PREVIEW => 'YES') ;
```

SPOOLED_FILE_NAME	JOB_NAME	FILE_NUMBER	USER_NAME	SIZE	OUTPUT_QUEUE_NAME	OUTPUT_C
QPDZDTALOG	050633/RPGPGM/QPADEV0001	1	RPGPGM	28	RPGPGM	QGPL
QPDZDTALOG	050633/RPGPGM/QPADEV0001	2	RPGPGM	28	RPGPGM	QGPL
QPQUPR FIL	088130/RPGPGM/QPRTJOB	1	RPGPGM	28	RPGPGM	QGPL
QPRTSPLQ	088130/RPGPGM/QPRTJOB	3	RPGPGM	28	RPGPGM	QGPL
QPJOBLOG	050633/RPGPGM/QPADEV0001	3	RPGPGM	44	QEZJOBLOG	QUSRSYS

## When ready...

- When you are ready to delete change : PREVIEW => 'NO'
- It will delete everything that fits the criteria used.
  - No recovery. When deleted they are gone!
- No reason you cannot put the tested statement into a program & run it periodically



# Copy spool files to PDF in IFS

# Delete existing files from IFS folder

```
6 -- Delete any existing files from my library  
7 CL:DEL OBJLNK ( '/home/RPGPGM/*' ) ;
```

- If you get an error it could be:
  - No files in folder
  - No files, subfolder present

# Create PDF “on the fly”

- IBM i 6.1 onwards, for any spool file

```
9  -- Can create PDF file from any spool file
10 CL: OVRPRTF FILE(QPQUPRFIL) DEVTYPE(*AFPDS) TOSTMF('/home/RPGPGM/runqry.pdf') WSCST(*PDF) OVRSCOPE(*JOB) ;
11
12 CL: RUNQRY QRY(*NONE) QRYFILE((RPGPGM1/TESTFILE)) OUTTYPE(*PRINTER) ;
13
14 CL: DLTOVR FILE(QPQUPRFIL) LVL(*JOB) ;
```

- OVRDBF parms:

- DEVTYPE
- TOSTMF
- WSCST

# Check file created

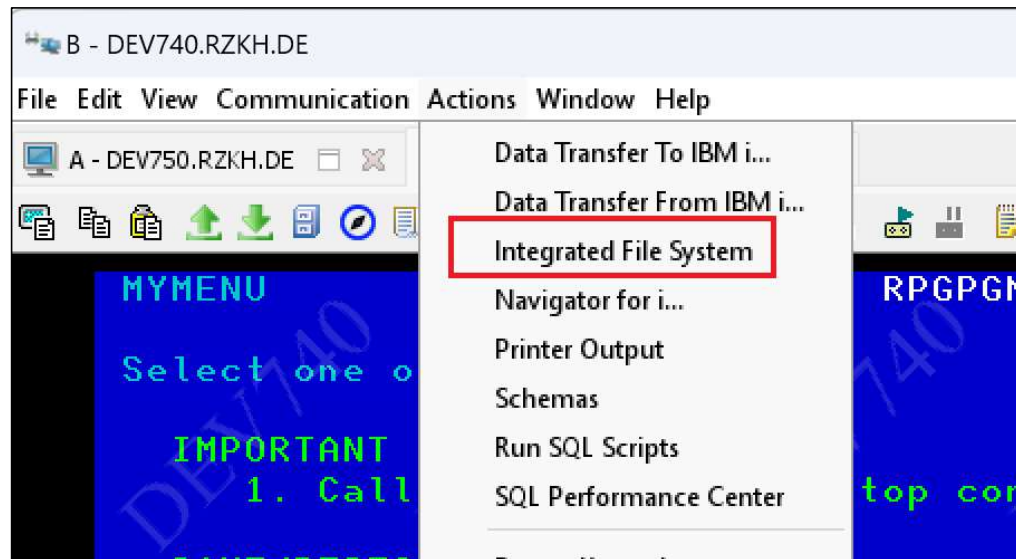
```
20 -- Use SQL to list all files in IFS folder
21 SELECT PATH_NAME,OBJECT_TYPE,CREATE_TIMESTAMP
22 FROM TABLE(QSYS2.IFS_OBJECT_STATISTICS('/home/RPGPGM','NO','*STMF')) ;
```

PATH_NAME	OBJECT_TYPE	CREATE_TIMESTAMP
/home/RPGPGM/runqry.pdf	*STMF	2023-01-05 20:17:47


- Table function = IFS\_OBJECT\_STATISTICS
  - 3 parms
    - Path
    - List subfolders
    - Object type (\*STMF = Stream file)

# Use ACS's IFS viewer

- On 5250 emulator



# Use ACS's IFS viewer


 /home/RPGPGM on DEV740.RZKH.DE

**File Edit View Actions**

DEV740.RZKH.DE Filter

Directory

/home/RPGPGM

Icon	Name	Size (KB)	Last Modified
	runqry.pdf		1 January 5, 2023 at 2:17:47 PM CST

# Copy spool file to PDF in IFS

- All part of the IBM i operating system
  - No third party software needed
- All SQL

# Copy one spool file

- Create spool file

```
27 -- Run a report
28 CL: RUNQRY QRY(*NONE) QRYFILE((RPGPGM1/TESTFILE)) OUTTYPE(*PRINTER) ;
29
30 -- List spool files
31 SELECT SPOOLED_FILE_NAME, JOB_NAME, FILE_NUMBER,
32        USER_DATA, STATUS, TOTAL_PAGES, CREATE_TIMESTAMP
33 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
34 WHERE USER_NAME = 'RPGPGM'
35 ORDER BY CREATE_TIMESTAMP DESC ;
```

SPOOLED_FILE_NAME	JOB_NAME	FILE_NUMBER	USER_DATA	STATUS	TOTAL_PAGES	CREATE_TIMESTAMP
QPQUPRFL	718320/RPGPGM/QPRTJOB	44	<NULL>	READY	2	2023-01-05 20:27:30.118279
QPDZDTALOG	027473/RPGPGM/QPADEV000D	1	<NULL>	READY	1	2023-01-05 14:08:23.557056
QPQUPRFL	718320/RPGPGM/QPRTJOB	44	<NULL>	READY	2	2023-01-05 20:27:30.118279



# Copy one spool file

- Create spool file

```
27 -- Run a report
28 CL: RUNQRY QRY(*NONE) QRYFILE((RPGPGM1/TESTFILE)) OUTTYPE(*PRINTER) ;
29
30 -- List spool files
31 SELECT SPOOLED_FILE_NAME, JOB_NAME, FILE_NUMBER,
32         USER_DATA, STATUS, TOTAL_PAGES, CREATE_TIMESTAMP
33 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
34 WHERE USER_NAME = 'RPGPGM'
35 ORDER BY CREATE_TIMESTAMP DESC ;
```

SPOOLED_FILE_NAME	JOB_NAME	FILE_NUMBER	USER_DATA	STATUS	TOTAL_PAGES	CREATE_TIMESTAMP
QPQUPRFL	718320/RPGPGM/QPRTJOB	44	<NULL>	READY	2	2023-01-05 20:27:30.118279
QPDZDTALOG	027473/RPGPGM/QPADEV000D	1	<NULL>	READY	1	2023-01-05 14:08:23.557056
QPQUPRFL	718320/RPGPGM/QPRTJOB	44	<NULL>	READY	2	2023-01-05 20:27:30.118279

# Create SQL variables vs hard coding

```
39  -- Not hard code my user profile
40  VALUES USER ;
41
42  -- Make job name a variable
43  CREATE OR REPLACE VARIABLE RPGPGM3.MY_JOB_NAME FOR SYSTEM NAME MYJOBNAME VARCHAR(28) ;
44
45  SET RPGPGM3.MY_JOB_NAME = (SELECT JOB_NAME FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
46                             WHERE USER_NAME = USER ORDER BY CREATE_TIMESTAMP DESC LIMIT 1) ;
47
48  VALUES RPGPGM3.MY_JOB_NAME ;
49
50  -- Make file No. a variable
51  CREATE OR REPLACE VARIABLE RPGPGM3.MY_FILE_NUMBER FOR SYSTEM NAME MYFILENBR DEC(6,0) ;
52
53  SET RPGPGM3.MY_FILE_NUMBER = (SELECT FILE_NUMBER FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
54                                WHERE USER_NAME = USER ORDER BY CREATE_TIMESTAMP DESC LIMIT 1) ;
55
56  VALUES RPGPGM3.MY_FILE_NUMBER ;
```

# Copy spool file to IFS as PDF

- Used Variables

- JOB\_NAME
- SPOOLED\_FILE\_NUMBER

- Result

- 1 = Success
- 0 = Failed

```
65 -- Convert one spool file to PDF
66 VALUES SYSTOOLS.GENERATE_PDF
67   (JOB_NAME => MY_JOB_NAME,
68    SPOOLED_FILE_NAME => 'QPQUPRFIL',
69    SPOOLED_FILE_NUMBER => MY_FILE_NUMBER,
70    PATH_NAME => '/home/RPGPGM/one_file.pdf') ;
```

---

```
00001
```

---

```
1
```

# Verify file was copied

```
72 -- Objects in my IFS folder
73 SELECT PATH_NAME,OBJECT_TYPE,CREATE_TIMESTAMP
74    FROM TABLE(QSYS2.IFS_OBJECT_STATISTICS('/home/RPGPGM','NO','*STMF'))
75 ORDER BY CREATE_TIMESTAMP DESC ;
```

PATH_NAME	OBJECT_TYPE	CREATE_TIMESTAMP
/home/RPGPGM/one_file.pdf	*STMF	2023-01-05 21:16:06
/home/RPGPGM/runqry.pdf	*STMF	2023-01-05 20:17:47

# List of all spool files in output queue

```
80 -- List of spool files in my outq
81 SELECT SPOOLED_FILE_NAME, JOB_NAME, FILE_NUMBER,
82        USER_DATA, STATUS, TOTAL_PAGES
83 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
84 WHERE OUTPUT_QUEUE_LIBRARY_NAME = 'QGPL'
85 AND OUTPUT_QUEUE_NAME = 'RPGPGM' ;
```

SPOOLED_FILE_NAME	JOB_NAME	FILE_NUMBER	USER_DATA	STATUS	TOTAL_PAGES
QPRTSPLQ	718320/RPGPGM/QPRTJOB	8	<NULL>	READY	1
QSYSVRT	963525/RPGPGM/QPADEV0003	1	SOMETHING	READY	1
QSYSVRT	963525/RPGPGM/QPADEV0003	2	<NULL>	READY	1
QPQUPRFL	718320/RPGPGM/QPRTJOB	35	<NULL>	READY	2
TESTTABLE	973332/RPGPGM/QPADEV0003	1	SQL	READY	3
GOTO2CL	179238/RPGPGM/QPADEV0003	1	<NULL>	READY	3
GOTO2	179238/RPGPGM/QPADEV0003	2	<NULL>	READY	2
DSPMSGWD	418732/RPGPGM/QPADEV000D	1	<NULL>	READY	4
DSPMSGW1	418732/RPGPGM/QPADEV000D	2	<NULL>	READY	18
DSPMSGW2	418732/RPGPGM/QPADEV000D	3	<NULL>	READY	20

# Make file name – needs to be unique

```
87 -- Make PDF file names
88 SELECT '/home/RPGPGM/' || REPLACE(JOB_NAME, '/', '-') || '_' || SPOOLED_FILE_NAME || '_' || FILE_NUMBER || '_' ||
89     IFNULL(USER_DATA, 'noUSRDTA') || '.pdf' AS "Suggested PDF file name"
90 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
91 WHERE OUTPUT_QUEUE_LIBRARY_NAME = 'QGPL'
92     AND OUTPUT_QUEUE_NAME = 'RPGPGM' ;
```

Suggested PDF file name

/home/RPGPGM/718320-RPGPGM-QPRTJOB\_QPRTSPLQ\_8\_noUSRDTA.pdf

/home/RPGPGM/963525-RPGPGM-QPADEV0003\_QSYSVRT\_1\_SOMETHING.pdf

/home/RPGPGM/963525-RPGPGM-QPADEV0003\_QSYSVRT\_2\_noUSRDTA.pdf

- Job name

- REPLACE changes '/' in job name to '-'
- USER\_DATA if not used = null. Change null to 'noUSRDTA'

# Copy all files to IFS

```
98 -- Generate the PDF
99 SELECT JOB_NAME, SPOOLED_FILE_NAME, FILE_NUMBER,
100        SYSTOOLS.GENERATE_PDF (JOB_NAME, SPOOLED_FILE_NAME, FILE_NUMBER,
101                               '/home/RPGPGM/' || REPLACE (JOB_NAME, '/', '-') || '_' ||
102                               SPOOLED_FILE_NAME || '_' || FILE_NUMBER || '_' ||
103                               IFNULL (USER_DATA, 'noUSRDTA') || '.pdf')
104        AS "Return code"
105 FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
106 WHERE OUTPUT_QUEUE_LIBRARY_NAME = 'QGPL'
107        AND OUTPUT_QUEUE_NAME = 'RPGPGM'
108        AND STATUS = 'READY' ;
```

JOB_NAME	SPOOLED_FILE_NAME	FILE_NUMBER	Return code
718320/RPGPGM/QPRTJOB	QPRTSPLQ	8	1
963525/RPGPGM/QPADEV0003	QSYSVRT	1	1
963525/RPGPGM/QPADEV0003	QSYSVRT	2	1

# Check for files in IFS

```
110  -- Objects in my IFS folder
111  SELECT PATH_NAME,OBJECT_TYPE,CREATE_TIMESTAMP
112  FROM TABLE(QSYS2.IFS_OBJECT_STATISTICS('/home/RPGPGM','NO','*STMF')) ;
113
```

PATH_NAME	OBJECT_TYPE	CREATE_TIMESTAMP
/home/RPGPGM/718320-RPGPGM-QPRTJOB_QPQUPRFILE_44_noUSRDTA.pdf	*STMF	2023-01-05 21:48:29
/home/RPGPGM/027473-RPGPGM-QPADEV000D_QPDZDTALOG_1_noUSRDTA...	*STMF	2023-01-05 21:48:28
/home/RPGPGM/718320-RPGPGM-QPRTJOB_QPQUPRFILE_43_noUSRDTA.pdf	*STMF	2023-01-05 21:48:28
/home/RPGPGM/469551-RPGPGM-QPADEV000D_ERRJOB_1_noUSRDTA.pdf	*STMF	2023-01-05 21:48:28
/home/RPGPGM/445983-RPGPGM-QPADEV000D_QPDZDTALOG_2_noUSRDTA...	*STMF	2023-01-05 21:48:27
/home/RPGPGM/445983-RPGPGM-QPADEV000D_WHERE_AM_I_1_noUSRDTA...	*STMF	2023-01-05 21:48:26



# SQL to extract information from spool files

# See contents of spool file

```
123 -- Display contents of spool file
124 SELECT * FROM TABLE(SYSTOOLS.SPOOLED_FILE_DATA(
125     JOB_NAME => MY_JOB_NAME,
126     SPOOLED_FILE_NAME => 'QPRTSPLQ',
127     SPOOLED_FILE_NUMBER => MY_FILE_NUMBER)) ;
```

ORDINAL_POSITION	SPOOLED_DATA					
1	5770SS1	V7R5M0	220415		Work With All Output Q...	
2	Queue	Library	Files	Writer	Status	...
3	QFAXOUTQ	QFAX	0		RLS	...
4	QFQOUTQ	QFAX	0		RLS	...
5	MKUNTZ	QGPL	5		RLS	...
6	MKUNTZ2	OGPL	0		RLS	...

# Find “uniqueness”

- Need to find “uniqueness”
  - Used to identify rows of data

```
129 -- Find uniqueness. Pages (pos 33) always numeric
130 SELECT * FROM TABLE(SYSTOOLS.SPOOLED_FILE_DATA(MY_JOB_NAME, 'QPRTSPLQ', MY_FILE_NUMBER))
131 WHERE SUBSTR(SPOOLED_DATA, 33, 1) BETWEEN '0' AND '9' ;
```

ORDINAL_POSITION	SPOOLED_DATA					
3	QFAXOUTQ	QFAX	0	RLS	...	
4	QFQOUTQ	QFAX	0	RLS	...	
5	MKUNTZ	QGPL	5	RLS	...	
6	MKUNTZ?	QGPL	0	RLS	...	

# Identify columns

```
133 -- Use substring to make columns
134 SELECT SUBSTR(SPOOLED_DATA,2,10) AS "Outq",
135         SUBSTR(SPOOLED_DATA,15,10) AS "Library",
136         DEC(SUBSTR(SPOOLED_DATA,29,5),6,0) AS "No. files",
137         SUBSTR(SPOOLED_DATA,52,3) AS "Status"
138 FROM TABLE(SYSTOOLS.SPOOLED_FILE_DATA(MY_JOB_NAME, 'QPRTSPLQ', MY_FILE_NUMBER) )
139 WHERE SUBSTR(SPOOLED_DATA,33,1) BETWEEN '0' AND '9' ;
```

Outq	Library	No. files	Status
QFAXOUTQ	QFAX	0	RLS
QFQOUTQ	QFAX	0	RLS
MKUNTZ	QGPL	5	RLS
MKLINTZ2	QGPL	0	RLS

# Create SQL View

```
141 -- Create view
142 CREATE OR REPLACE VIEW QTEMP.WORK_OUTPUT_QUEUE
143 (LIBRARY,OUTPUT_QUEUE,FILES,STATUS) AS
144 (SELECT SUBSTR(SPOOLED_DATA,15,10),SUBSTR(SPOOLED_DATA,2,10),
145         DEC(SUBSTR(SPOOLED_DATA,29,5),6,0),SUBSTR(SPOOLED_DATA,52,3)
146  FROM TABLE(SYSTOOLS.SPOOLED_FILE_DATA(MY_JOB_NAME,'QPRTSPLQ',MY_FILE_NUMBER))
147  WHERE SUBSTR(SPOOLED_DATA,33,1) BETWEEN '0' AND '9') ;
```

# Delete, create new, SQL View still works

```
151 CALL QSYS2.QCMDEXC('DLTSPLF FILE(QPRTSPLQ) JOB(' || MY_JOB_NAME || ') SPLNBR(*LAST)') ;
152 CL:WRKOUTQ OUTPUT(*PRINT) ; -- Create a new spool file
153
154 -- Change variables to contain details for last spool file
155 SET MY_JOB_NAME = (SELECT JOB_NAME FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
156                    WHERE USER_NAME = USER ORDER BY CREATE_TIMESTAMP DESC LIMIT 1) ;
157
158 SET MY_FILE_NUMBER = (SELECT FILE_NUMBER FROM QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC
159                       WHERE USER_NAME = USER ORDER BY CREATE_TIMESTAMP DESC LIMIT 1) ;
160
161
162 SELECT * FROM QTEMP.WORK_OUTPUT_QUEUE ; -- View works for new spool file too!
```

# You need time to play


- Take time to play with this stuff
- Free *IBM i* partition
  - PUB400.COM
    - <https://pub400.com>
    - Version = **7.5**
- Free 5250 client
  - IBM ACS (Access Client Solutions)
    - [https://ibm.biz/IBMi\\_ACS](https://ibm.biz/IBMi_ACS)
    - Need free IBM id
    - Lot more than just 5250 emulation
    - Latest = **1.1.9.1**
    - Requires Windows 7 or higher, Java 8 or higher

# Looking for something = Search

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