

SQL Update

DB2 for i Services

- <https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20Technology%20Updates/page/DB2%20for%20i%20-%20Services>
- List a collection of services available as VIEW, or TABLE Function through SQL.

SQL Services

- http://www.ibm.com/support/knowledgecenter/api/content/ssw_ibm_i_72/rzajq/rzajqservicessys.htm

PTF services

GROUP_PTF_CURRENCY view

- a live comparison of the PTF Groups installed on the partition against the service levels listed on the IBM Preventive Service Planning website.
- The PSP website is:
http://www-912.ibm.com/s_dir/sline003.nsf/PSPbyNumL.xml
- It uses IP Address: 129.42.160.32

```
SELECT * FROM SYSTOOLS.GROUP_PTF_CURRENCY
ORDER BY
    ptf_group_level_available ,
    ptf_group_level_installed
DESC
```

PTF services

GROUP_PTF_DETAILS view

- a live comparison of the PTFs within PTF Groups installed on the partition against the service levels listed on the IBM Preventive Service Planning website.
- The PSP websites used by this service are found based upon the PTF groups that are currently installed on the partition. For each distinct PTF group, a unique PSP XML feed is accessed: http://www-912.ibm.com/s_dir/sline003.nsf/xmlDocs/<PTF-Group-Name>
- *For example, the JAVA PTF group details can be accessed using:*
http://www-912.ibm.com/s_dir/sline003.nsf/xmlDocs/SF99572

```
SELECT * FROM SYSTOOLS.GROUP_PTF_DETAILS
WHERE PTF_STATUS <> 'PTF APPLIED'
ORDER BY PTF_GROUP_NAME
```

PTF Services

GROUP_PTF_INFO view

- information about the group PTFs for the server
- Determine the level of the latest CUM PTF group installed on the system.

```
SELECT MAX(PTF_GROUP_LEVEL) AS CUM_LEVEL
FROM QSYS2.GROUP_PTF_INFO
WHERE PTF_GROUP_NAME IN ('SF99610', 'SF99720')
AND PTF_GROUP_STATUS = 'INSTALLED'
```

PTF Services

PTF_INFO view

- The PTF_INFO view contains information about PTFs for the server.
- Find which PTFs will be impacted by the next IPL.

```
SELECT PTF_IDENTIFIER, PTF_IPL_ACTION, A.*  
FROM QSYS2.PTF_INFO A  
WHERE PTF_IPL_ACTION <> 'NONE'
```

- Find which PTFs are loaded but not applied.

```
SELECT PTF_IDENTIFIER, PTF_PRODUCT_DESCRIPTION,  
A.*  
FROM QSYS2.PTF_INFO A  
WHERE PTF_LOADED_STATUS = 'LOADED'  
ORDER BY PTF_PRODUCT_ID
```

Application Services

- QCMDEXEC procedure

```
CALL QSYS2.QCMDEXC('ADDLIBLE COMMON')
```

Spooled files Services

- **OUTPUT_QUEUE_ENTRIES table function**

- List spooled files from single outq
3 Params : LIB, OUTQ, DETAIL

```
SELECT *
      FROM TABLE(QSYS2.OUTPUT_QUEUE_ENTRIES('*LIBL',
      'QPRINT', '*NO')) S
      WHERE SPOOLED_FILE_NAME like 'Q%'
      AND USER_NAME = 'ROPA'
```

- Find the 100 largest spool files in the QEZJOBLOG output queue. Since no detailed information is needed, specify *NO to avoid the additional processing.

```
SELECT *
      FROM TABLE(QSYS2.OUTPUT_QUEUE_ENTRIES('*LIBL', 'QEZJOBLOG',
      '*NO')) A
      ORDER BY SIZE DESC
      FETCH FIRST 100 ROWS ONLY
```

Spooled files Services

- **OUTPUT_QUEUE_ENTRIES view**

- The OUTPUT_QUEUE_ENTRIES view returns one row for each spooled file in every output queue.

```
SELECT *
      FROM QSYS2.OUTPUT_QUEUE_ENTRIES
      WHERE OUTPUT_QUEUE_NAME = 'QEZJOBLOG'
      ORDER BY SIZE DESC
      FETCH FIRST 100 ROWS ONLY
```

Journal service

- **DISPLAY_JOURNAL** table function

```
SELECT CURRENT_USER, JOB_NAME, JOB_USER ,  
       CAST(PATH_NAME AS VARCHAR(150))  
FROM TABLE (DISPLAY_JOURNAL( 'QSYS', 'QAUDJRN'))  
AS JT  
WHERE JOURNAL_ENTRY_TYPE = 'AF'
```

Library Service

- **LIBRARY_LIST_INFO** View

```
SELECT * FROM QSYS2.LIBRARY_LIST_INFO
```

Objects Service

- OBJECT_STATISTICS table function

- ```
SELECT * FROM
TABLE(QSYS2.OBJECT_STATISTICS('AOFSQL ',
'*FILE *JRNRCV')) AS OB
ORDER BY OBJSIZE DESC
FETCH FIRST 10 ROWS ONLY
```

## Messages service

- JOBLOG\_INFO table function

The JOBLOG\_INFO table function returns one row for each message in a job log.

- Search function for the job log...

```
SELECT MESSAGE_TEXT FROM
TABLE(QSYS2.JOBLOG_INFO('335608/ROPA/QPADEV001L')) as x
WHERE MESSAGE_TEXT like '%File%'
```

- Last request run in a job :

```
SELECT MESSAGE_TEXT
FROM TABLE(QSYS2.JOBLOG_INFO('335608/ROPA/QPADEV001L')) AS LG
WHERE LG.MESSAGE_TYPE = 'REQUEST'
ORDER BY ORDINAL_POSITION DESC
FETCH FIRST 1 ROW ONLY
```

## Product services

- LICENSE\_INFO view
- Like WRKLICINF

```
SELECT * FROM QSYS2.LICENSE_INFO
WHERE
 LICENSE_EXPIRATION <= CURRENT DATE + 14 DAYS
```

## Security Services

- **FUNCTION\_INFO view**
- The FUNCTION\_INFO view contains details about function usage identifiers.
- Which function usage IDs exist and what is the default configuration
- ```
SELECT * FROM QSYS2.FUNCTION_INFO ORDER BY
FUNCTION_ID
```


Security Services

- **FUNCTION_USAGE view**
- The FUNCTION_USAGE view contains function usage configuration details.(WRKFCNUSG)
- Determine what function usage has been granted or revoked.
- ```
SELECT * FROM QSYS2.FUNCTION_USAGE ORDER BY
FUNCTION_ID, USER_NAME
```

## Security services

- **GROUP\_PROFILE\_ENTRIES view**
- The GROUP\_PROFILE\_ENTRIES view contains one row for each user profile that is part of a group profile

- ```
SELECT * FROM GROUP_PROFILE_ENTRIES  
WHERE GROUP_PROFILE_NAME = 'QPGMR'
```

Security Services

- **SET_COLUMN_ATTRIBUTE procedure**
- The SET_COLUMN_ATTRIBUTE procedure sets the SECURE attribute for a column so variable values used for the column cannot be seen in the database monitor or plan cache.
-
- All variable values for any query that references this column will not be visible in a database monitor or plan cache unless the security officer has started the database monitor or the security officer is accessing the plan cache. All host variable values will appear as *SECURE when examined from the monitor and plan cache unless the user is the QSECOFR user.
- `CALL SYSPROC.SET_COLUMN_ATTRIBUTE('PAYROLL', 'EMPLOYEES', 'SALARY', 'SECURE YES')`

Security Services

- **USER_INFO view**
- The USER_INFO view contains information about user profiles.

```
SELECT * FROM QSYS2.USER_INFO  
WHERE SIGN_ON_ATTEMPTS_NOT_VALID > 0
```

Storage Services

- **SYSDISKSTAT view**
- The SYSDISKSTAT view contains information about disks.

```
SELECT * FROM QSYS2.SYSDISKSTAT
```

```
SELECT SUM(UNIT_STORAGE_CAPACITY -  
UNIT_SPACE_AVAILABLE) ,  
SUM(UNIT_STORAGE_CAPACITY) FROM SYSDISKSTAT  
GROUP BY ASP_NUMBER
```

Storage Service

- **SYSTMPSTG view**
- The SYSTMPSTG view contains one row for every temporary storage bucket that is tracking some amount of temporary storage across the system.

```
select * from systmpstg
```

Storage service

- **USER_STORAGE view**
- The USER_STORAGE view contains details about storage by user profile.

- ```
SELECT * FROM QSYS2/USER_STORAGE
 WHERE USER_NAME LIKE '%AOF%'
```

## System Health Services

- **SYSLIMTBL table**
- The SYSLIMTBL table contains information about limits that are being approached. It is maintained by DB2 for i.

```
select * from SYSLIMTBL
 where limit_category= 0 and limit_type = 1
 and system_schema_name = 'AOFSQL'
```

## System Health Services

- **SYSLIMITS view**
- The SYSLIMITS view contains information about limits. This view is built upon QSYS/SYSLIMITBL along with other system information. If a job is still active, it contains information about the job that logged the limit

```
select * from SYSLIMITS where SYSTEM_SCHEMA_NAME
='AOFSQL'
```

## TCP/IP Services

- **ENV\_SYS\_INFO view**
- The ENV\_SYS\_INFO view contains information about the current server.

```
SELECT * FROM SYSIBMADM.ENV_SYS_INFO
```

- **NETSTAT\_INTERFACE\_INFO view**
- The NETSTAT\_INTERFACE\_INFO view returns information about IPv4 and IPv6 interfaces.

```
SELECT * FROM QSYS2.NETSTAT_INTERFACE_INFO
```

## TCP/IP Services

- **NETSTAT\_INFO** view
- The NETSTAT\_INFO view returns information about IPv4 and IPv6 network connections.

```
SELECT * FROM QSYS2.NETSTAT_INFO WHERE
 CONNECTION_TYPE = 'IPV4'
```

## TCP/IP Services

- **NETSTAT\_JOB\_INFO** view
- The NETSTAT\_JOB\_INFO view returns information about jobs using IPv4 and IPv6 network connections.

```
SELECT * FROM QSYS2.NETSTAT_JOB_INFO
 WHERE CONNECTION_TYPE = 'IPV4'
```

## TCP/IP Services

- **NETSTAT\_ROUTE\_INFO view**
- The NETSTAT\_ROUTE\_INFO view returns information about IPv4 and IPv6 routes.

```
SELECT * FROM QSYS2.NETSTAT_ROUTE_INFO
```

- **TCPIP\_INFO view**
- The TCPIP\_INFO view contains TCP/IP information for the current host connection.
- IP address from the job.

```
SELECT * FROM QSYS2.TCPIP_INFO
```

## Work Management Services

- **GET\_JOB\_INFO table function**
- The GET\_JOB\_INFO table function returns one row containing the information about a specific job.

```
SELECT * FROM
TABLE(QSYS2.GET_JOB_INFO('347117/ROPA/Qzdasoinit'))
A
```

## Work Management Services

- **ACTIVE\_JOB\_INFO table function**
- The ACTIVE\_JOB\_INFO table function returns one row for every active job.
- **Example 1:** Looking at only QZDASOINIT jobs, find the top 10 consumers of Elapsed I/O.

```
SELECT JOB_NAME, AUTHORIZATION_NAME,
ELAPSED_TOTAL_DISK_IO_COUNT, ELAPSED_CPU_PERCENTAGE
FROM TABLE(QSYS2.ACTIVE_JOB_INFO(
 JOB_NAME_FILTER => 'QZDASOINIT',
 SUBSYSTEM_LIST_FILTER => 'QUSRWRK')) X
ORDER BY ELAPSED_TOTAL_DISK_IO_COUNT DESC
FETCH FIRST 10 ROWS ONLY
```

- **Note:** The data in the ELAPSED\_xxx columns is updated upon each re-execution of the query.

## Work management Services

- **Example 2:** Find the active jobs using the most temporary storage. Include the most recently executed SQL statement within each target job.

```
WITH TOP_CONSUMERS (Q_JOB_NAME, AUTHORIZATION_NAME,
TEMP_STORAGE_CONSUMED) AS (
 SELECT JOB_NAME, AUTHORIZATION_NAME,
TEMPORARY_STORAGE
 FROM TABLE (QSYS2.ACTIVE_JOB_INFO()) X
 WHERE JOB_TYPE <> 'SYS')
SELECT Q_JOB_NAME, AUTHORIZATION_NAME,
TEMP_STORAGE_CONSUMED, V_SQL_STATEMENT_TEXT, B.*
FROM TOP_CONSUMERS,
TABLE(QSYS2.GET_JOB_INFO(Q_JOB_NAME)) B
ORDER BY TEMP_STORAGE_CONSUMED DESC
```

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## Work management Services

- **MEMORY\_POOL table function**
- The MEMORY\_POOL table function returns one row for every pool.

```
SELECT * FROM
TABLE(QSYS2.MEMORY_POOL(RESET_STATISTICS=>'YES')) X
```

- **MEMORY\_POOL\_INFO view**
- The MEMORY\_POOL\_INFO view returns one row for every active pool.

```
SELECT * FROM QSYS2.MEMORY_POOL_INFO
```

## Work management Services

- **OBJECT\_LOCK\_INFO view**
- The OBJECT\_LOCK\_INFO view returns one row for every lock held for every object on the partition.

```
SELECT * FROM QSYS2.OBJECT_LOCK_INFO WHERE
SYSTEM_OBJECT_NAME LIKE 'AOFARCF%'
```

## Work management Services

- **RECORD\_LOCK\_INFO view**
- The RECORD\_LOCK\_INFO view returns one row for every record lock for the partition.

```
SELECT JOB_NAME, COUNT(*) AS ROWS_UPDATING
FROM QSYS2.RECORD_LOCK_INFO
WHERE FILE_NAME = 'AOFARCF'
 AND LIBRARY_NAME = 'AOFOBJ'
 AND LOCK_STATE = 'UPDATE'
GROUP BY JOB_NAME
ORDER BY ROWS_UPDATING DESC
```

## Work management Services

- **SCHEDULED\_JOB\_INFO view**
- The SCHEDULED\_JOB\_INFO view returns information that can also be seen through WRKJOBSCDE.

```
SELECT * FROM QSYS2.SCHEDULED_JOB_INFO
WHERE STATUS IN ('HELD', 'SAVED')
ORDER BY SCHEDULED_BY
```

## Work management Services

- **SYSTEM\_STATUS table function**
- The SYSTEM\_STATUS table function returns a single row containing details about the current partition.

```
SELECT * FROM
TABLE(QSYS2.SYSTEM_STATUS(RESET_STATISTICS=>'YES'))
X
```

- **SYSTEM\_STATUS\_INFO view**
- The SYSTEM\_STATUS\_INFO view returns a single row containing details about the current partition.

```
SELECT * FROM QSYS2.SYSTEM_STATUS_INFO
```

## Work management Services

- **SYSTEM\_VALUE\_INFO view**
- The SYSTEM\_VALUE\_INFO view contains information about system values.

```
SELECT * FROM SYSTEM_VALUE_INFO WHERE
SYSTEM_VALUE_NAME LIKE '%MAX%'
```

## Work management Services