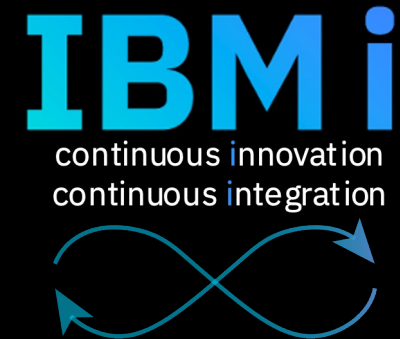


Migrate While Active and Other Fun Things

Tim Rowe
STSM – IBM i Business Architect
timmr@us.ibm.com

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The IBM logo, consisting of the letters "IBM" in a bold, sans-serif font, is positioned in the bottom right corner of the black rectangular area.

Db2 for i – PTF Groups



Best practice... stay current

Db2 for i

Db2 for IBM i 7.5

PTF Group	Enhancements in this DB PTF Group	Level	External Availability	Status
SF99950		6	3/11/2024	Released
SF99950	IBM i 7.5 - TR4 timed enhancements	7	6/13/2024	Released
SF99950		8	12/13/2024	Planned

Db2 for IBM i 7.4

PTF Group	Enhancements in this DB PTF Group	Level	External Availability	Status
SF99704		27	3/11/2024	Released
SF99704	IBM i 7.4 - TR10 timed enhancements	28	6/13/2024	Released
SF99704		29	12/13/2024	Planned

<https://www.ibm.com/support/pages/db2-ibm-i-2024-ptf-group-schedule>


Db2 for i – Enhancements

- Enhancing **Db2 for i**, twice per year

Db2 for i

Db2 for i Enhancements

Note: The following Db2 for i enhancements are delivered by Db2 for i PTF Group SF99950 Level 8.



Db2 for i - Functional enhancement

- [GENERATE_UUID and GENERATE_UUID_BINARY scalar functions](#)

Db2 for i - Database Engineer (DBE) enhancement

- [SQL table function cursor name improvement](#)

IBM i Services (new)

- [QSYS2.SERVICE_TOOLS_SERVER_INFO](#)

<https://www.ibm.com/support/pages/ibm-i-75-tr5-enhancements>

IBM i Technology Refreshes (TR)



Technology Refreshes for IBM i 7.4 and 7.5 available December 13th, 2024

- IBM i 7.4: Database PTF Group SF99704 Level 29 (TR11)
- IBM i 7.5: Database PTF Group SF99950 Level 8 (TR5)

IBM i Technology Refreshes (TR)



Technology Refreshes for IBM i 7.4 and 7.5 available December 13th, 2024

- IBM i 7.4: Database PTF Group SF99704 Level 29 (TR11)
- IBM i 7.5: Database PTF Group SF99950 Level 8 (TR5)

Contains a variety of database enhancements:

9 – IBM i Ideas delivered by Db2 for i

Enhancement Landing Pages:

IBM i 7.4 TR11: <https://www.ibm.com/support/pages/ibm-i-74-tr11-enhancements>

IBM i 7.5 TR5: <https://www.ibm.com/support/pages/ibm-i-75-tr5-enhancements>

Migrate While Active





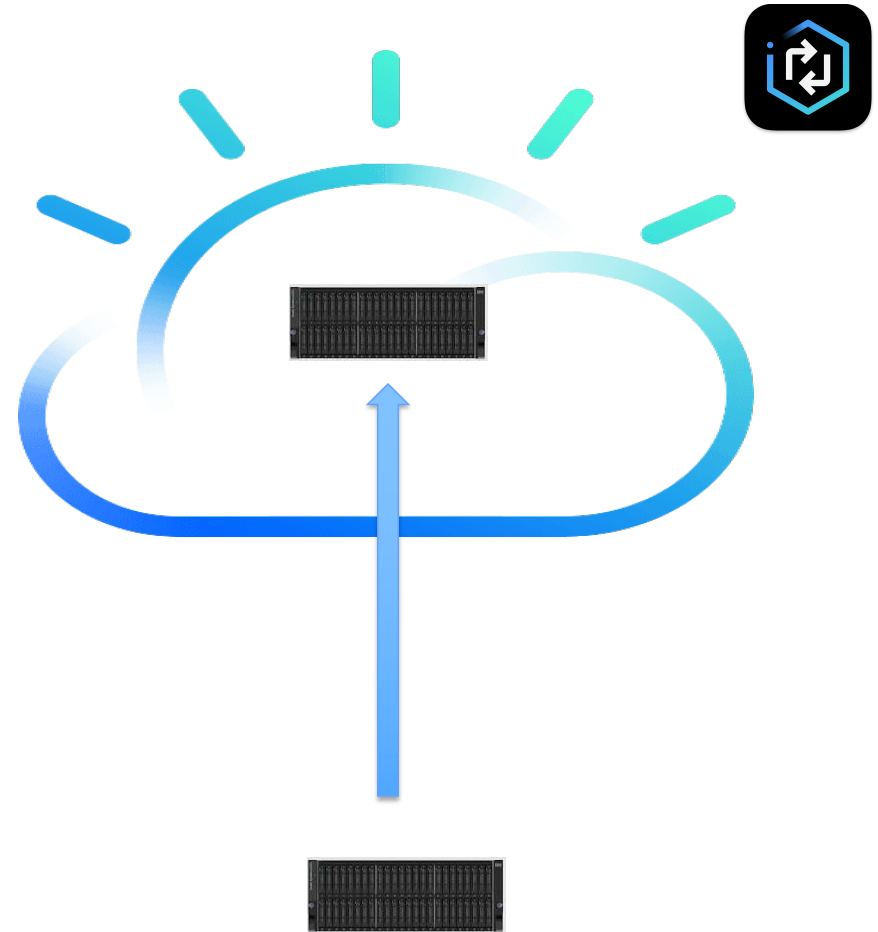
Understanding the Challenge

- Number 1 most asked question:
Can I send you my tapes?
- Answer:
No, there are no physical tape drives in PowerVS



Understanding the Challenge

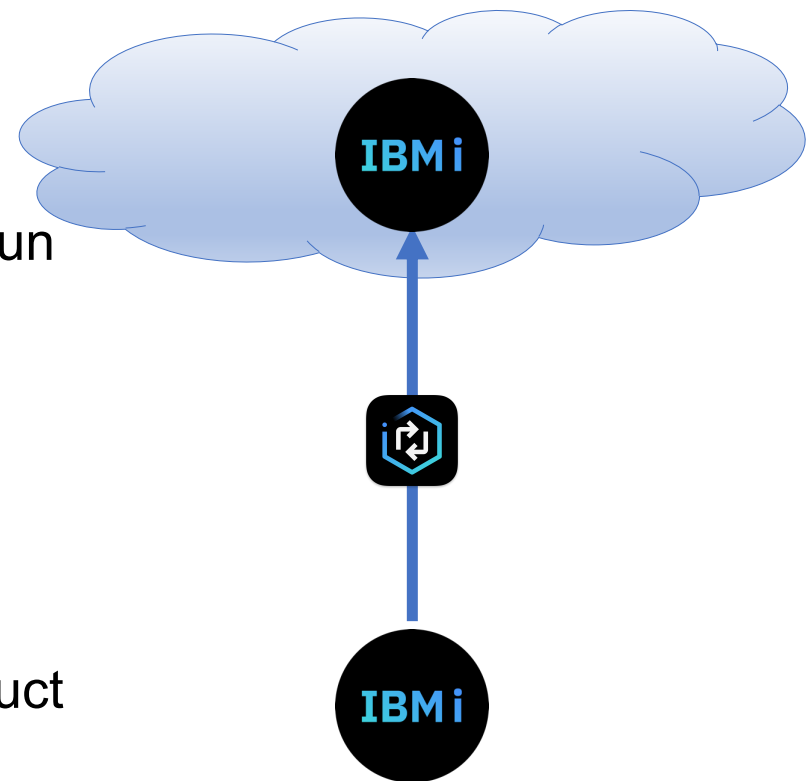
- Number 2 most asked question:
Can I replicate my storage controller to PowerVS?
- Answer:
No, currently there is no support to replicate from on-prem to PowerVS at the storage controller layer.



IBM i Migrate While Active (GA 12/2024)



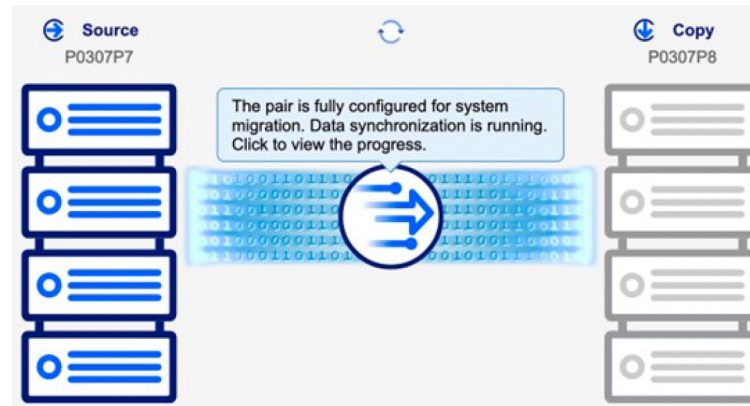
- Guided migration to save, transfer, and restore your base system
- Track and sync data changes from the production system while it continues to run
- Cutover to new system with minimal downtime
- Does not require RoCE adapters
- New feature on the Db2 Mirror for i product
 - Licensed only on the source node
 - 90 day, 1, 2, 3, 4, and 5 Year license



IBM i Migrate While Active (Announced Today!)



- **Announcement Letter:**
[here](#)



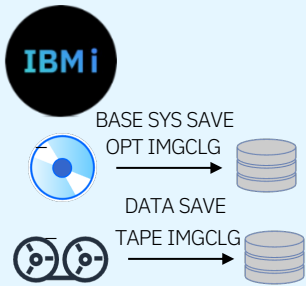
- **Product Page:**
<https://www.ibm.com/support/pages/ibm-i-migrate-while-active>
- **Coming to IBM i 7.4 and 7.5, software GA date → 12/13/2024**
- **New Book:**
<https://www.ibm.com/docs/en/i/7.4?topic=availability-i-migrate-while-active>
<https://www.ibm.com/docs/en/i/7.5?topic=availability-i-migrate-while-active>

IBM i Migrate While Active (GA 12/2024)

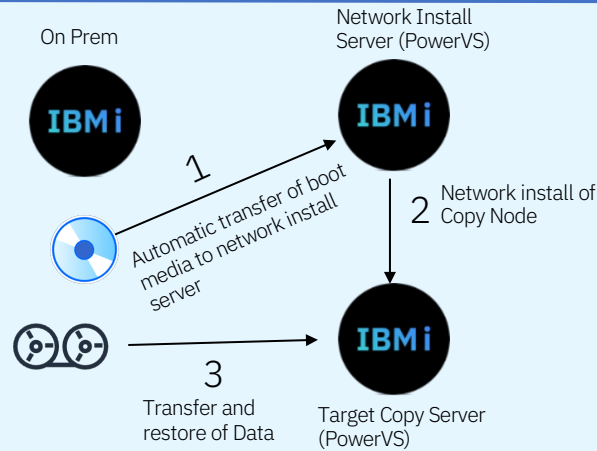


Step 1: Initial System Save

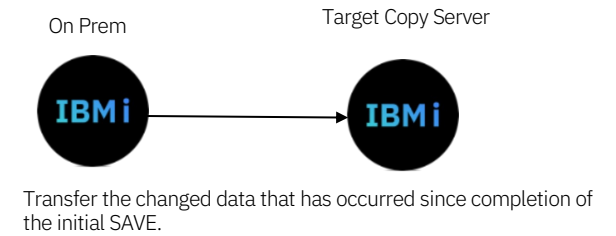
Pattern 1. Using IBM i Local Storage



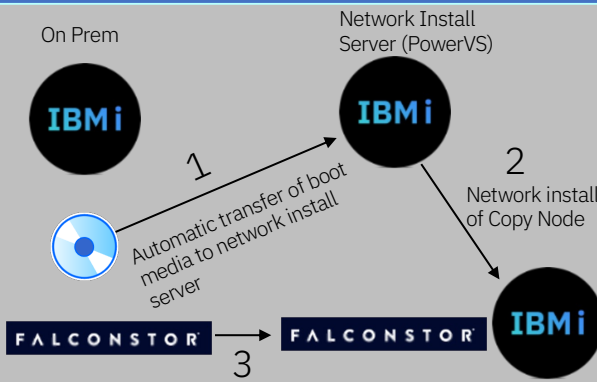
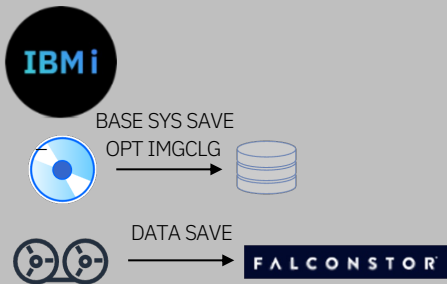
Step 2: Transfer SAVE to PowerVS



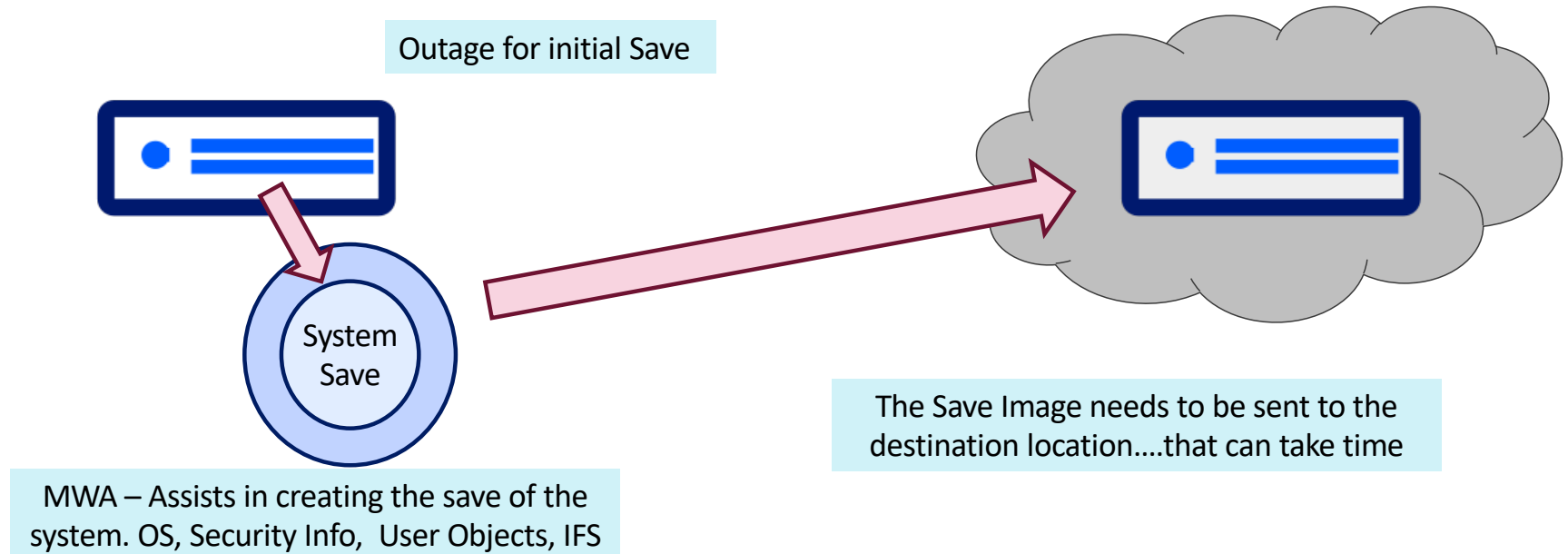
Step 3: Transfer Changed Data



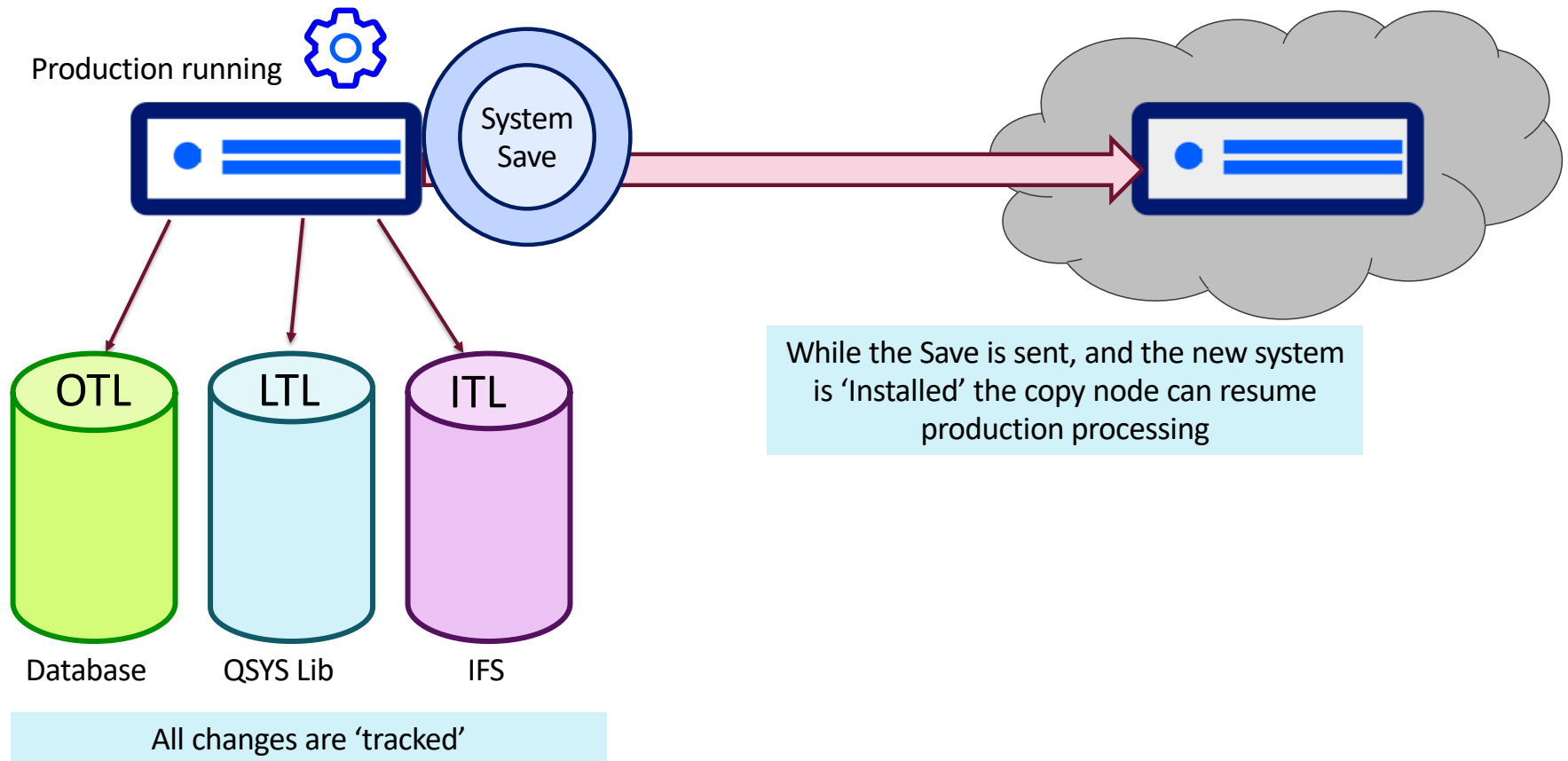
Pattern 2. Use VTL for DATA SAVE



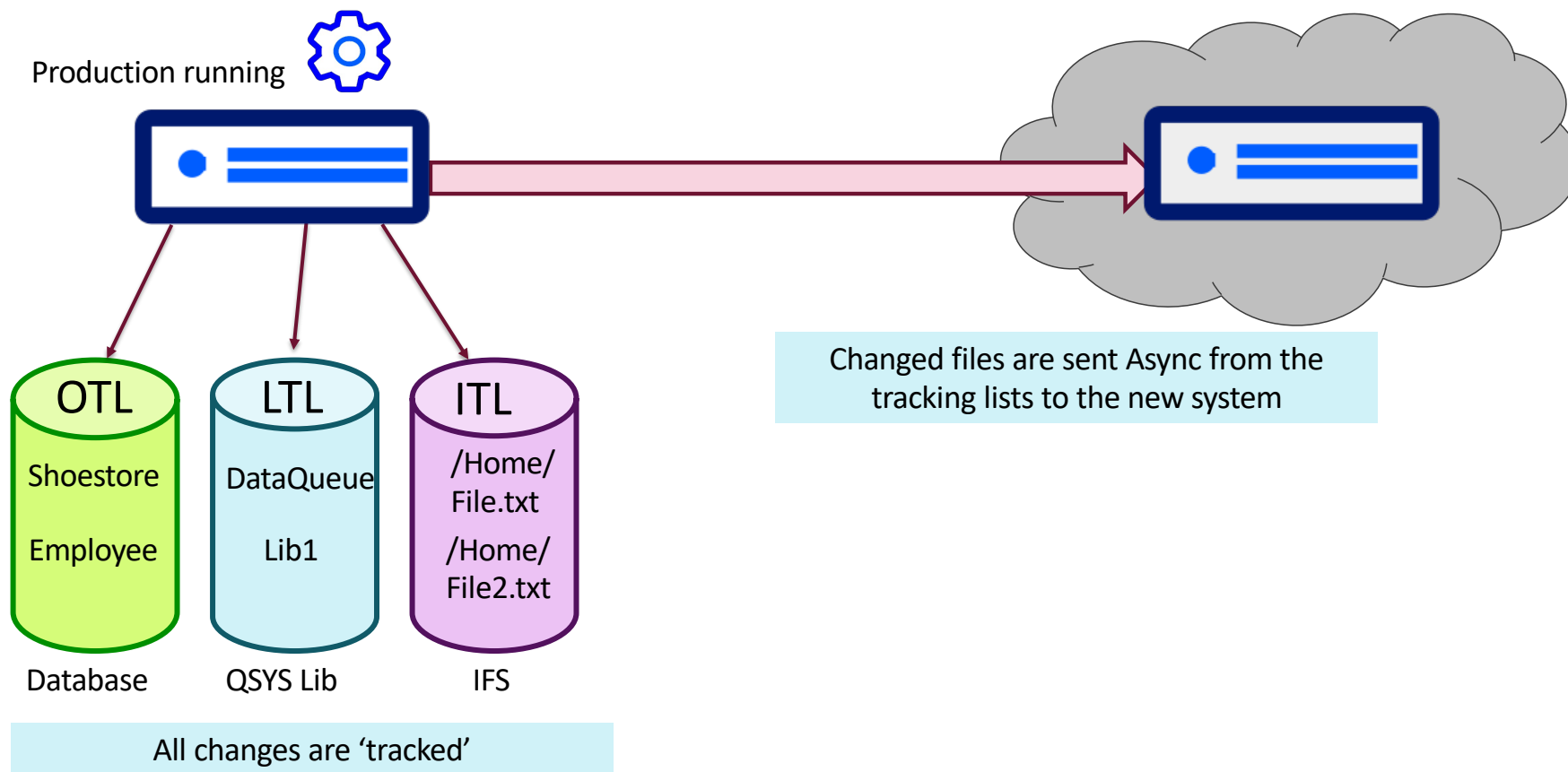
Migrate While Active



Migrate While Active



Migrate While Active



Migrate While Active



Once you are ready...the final switch over is processed. Now Production is running on the new node

SQL Built-in Functions

- December 2024 – [GENERATE UUID](#) & [GENERATE UUID BINARY](#)
- June 2024 – [ANY VALUE](#)
- November 2023 – [ENCRYPT AES256](#),
[HTML ENTITY DECODE](#), and [HTML ENTITY ENCODE](#)
- May 2023 – [More HTTP functions based in QSYS2](#)
[ADD DAYS](#), [ADD HOURS](#),
[ADD MINUTES](#), [ADD SECONDS](#), & [ADD YEARS](#)
- November 2022 – [FIRST DAY](#), [JSON UPDATE](#), & [TIMESTAMPDIFF BIG](#)
- May 2022 – [TRY CAST](#)
- October 2021 – [New HTTP functions based in QSYS2](#)
- July 2020 – [INTERPRET built-in function](#) & [HASH ROW built-in function](#)

GENERATE_UUID

The GENERATE_UUID function returns the formatted string representation of a Universally Unique Identifier (UUID) using the version 4 algorithm

The result of the function is a CHAR(36) value formatted like
xxxxxxxx-xxxx-4xxx-xxxx-xxxxxxxxxxxx.

The CCSID of the result is the default SBCS CCSID at the current server

```
VALUES GENERATE_UUID();
```

```
0720C69F-6855-49BD-8EE3-8252872710CE
```

GENERATE_UUID_BINARY

The `GENERATE_UUID_BINARY` function returns the formatted string representation of a Universally Unique Identifier (UUID) using the version 4 algorithm

The result of the function is a `BINARY(16)`

```
VALUES GENERATE_UUID_BINARY();
```

```
1A934D9A1ACF49948CA4034304EA9CFB
```

New SQL Services



IBM i Services (new)

- [QSYS2.SERVICE_TOOLS_SERVER_INFO](#)
- [SYSTOOLS.ADD_VALIDATION_LIST_ENTRY\(\)](#)
- [SYSTOOLS.AUDIT_JOURNAL_VP\(\)](#)
- [SYSTOOLS.CHANGE_VALIDATION_LIST_ENTRY\(\)](#)
- [SYSTOOLS.CONFIGURATION_STATUS](#)
- [SYSTOOLS.END_JOBS](#)
- [SYSTOOLS.IFS_ACCESS\(\)](#)
- [SYSTOOLS.POWER_SCHEDULE_INFO](#)
- [SYSTOOLS.REMOVE_VALIDATION_LIST_ENTRY\(\)](#)

Enhanced SQL Services



IBM i Services (enhanced)

- [QSYS2.ACTIVE_JOB_INFO\(\)](#)
- [QSYS2.AUDIT_JOURNAL_DATA_MART_INFO](#)
- [QSYS2.COMPARE_IFS\(\)](#)
- [QSYS2.MANAGE_AUDIT_JOURNAL_DATA_MART\(\)](#)
- [QSYS2.SYSTEM_STATUS\(\)](#)
- [QSYS2.SYSTEM_STATUS_INFO](#)
- [QSYS2.SYSTEM_STATUS_INFO_BASIC](#)
- [SYSTOOLS.FIRMWARE_CURRENCY](#)
- [SYSTOOLS.LPRINTF\(\)](#)
- [SYSTOOLS.SEND_EMAIL\(\)](#)
- [Tracking Important System Limits - Improved Alerting](#)

Audit Journal Data Mart

- In June 2024 the support for [Audit Journal Data Marts](#) was added
- In December 2024, the data marts can be as granular as needed via new filtering capability!

```
cl: crtlib aj_deetz;

--
-- Only capture authority failures for Tim's pseudonyms
--
CALL QSYS2.MANAGE_AUDIT_JOURNAL_DATA_MART(
  JOURNAL_ENTRY_TYPE => 'AF',
  DATA_MART_LIBRARY  => 'AJ_DEETZ',
  DATA_MART_FILTER   => ' user_profile_name in ('TIMMR', 'TIM', 'NOTIME') ');
```

Audit Journal Data Mart

Supports a filter to limit the rows added to the data mart table

```
CALL QSYS2.MANAGE_AUDIT_JOURNAL_DATA_MART(  
    JOURNAL_ENTRY_TYPE => 'GR',  
    DATA_MART_LIBRARY => 'DMARTLIB',  
    STARTING_TIMESTAMP => CURRENT DATE - 5 DAYS,  
    ENDING_TIMESTAMP   => CURRENT_TIMESTAMP,  
    DATA_MART_FILTER  => 'ENTRY_TYPE = ''F'' AND  
        FUNCTION_REGISTRATION_OPERATION = ''USAGE FAILURE'' ' );
```

Audit Journal Data Mart



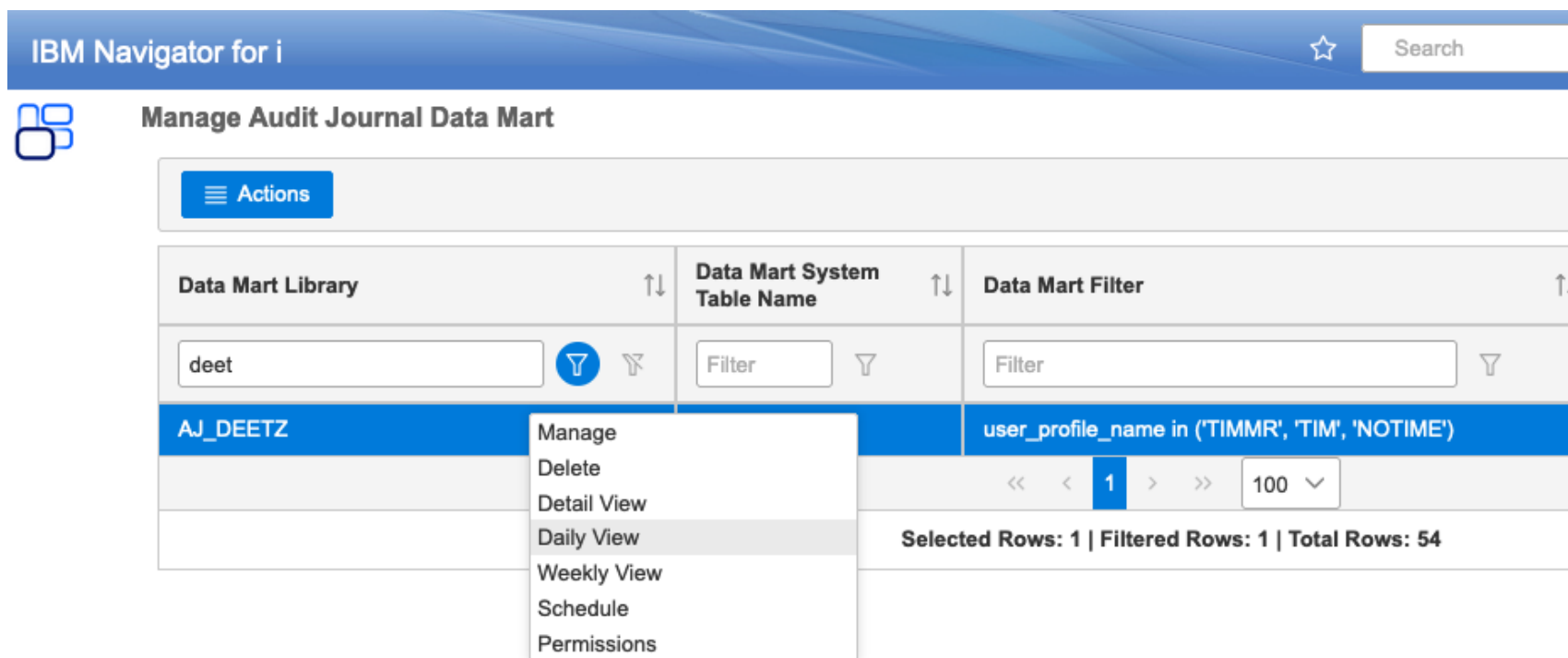
Filter value returned by AUDIT_JOURNAL_DATA_MART_INFO view

```
SELECT * FROM QSYS2.AUDIT_JOURNAL_DATA_MART_INFO  
WHERE JOURNAL_ENTRY_TYPE = 'GR';
```

DATA_MART_LIBRARY	DATA_MART_TABLE	JOURNAL_ENTRY_TYPE	DATA_MART_FILTER
DMARTLIB	AUDIT_JOURNAL_GR	GR	ENTRY_TYPE = 'F' AND FUNCTION_REGISTRATION_OPERATION = 'USAGE FAILURE'
SPHDMART	AUDIT_JOURNAL_GR	GR	<null>

Audit Journal Data Mart

- Administer the data mart from Navigator



IBM Navigator for i

Manage Audit Journal Data Mart

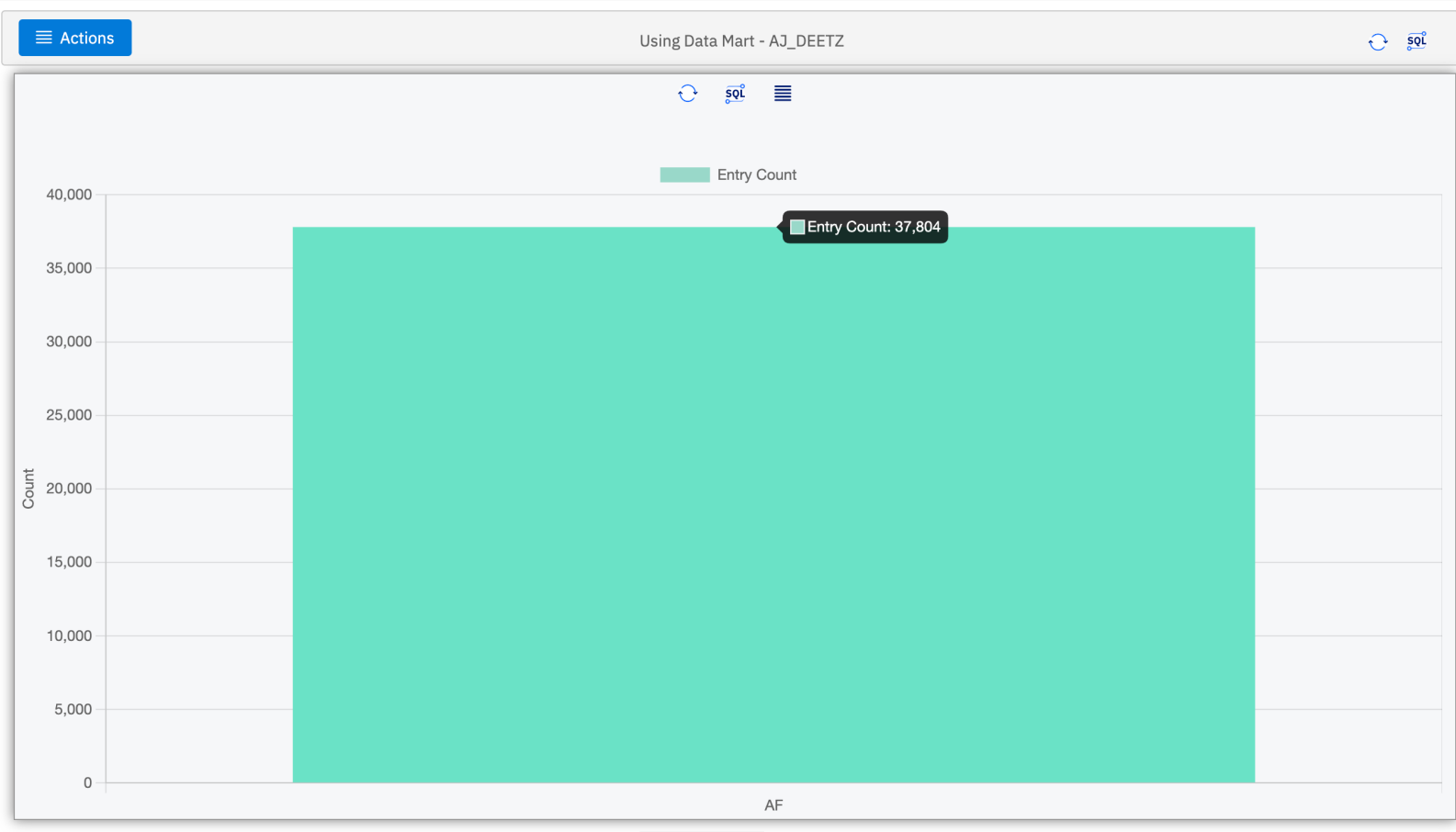
Actions

Data Mart Library	Data Mart System Table Name	Data Mart Filter
deet	Filter	Filter
AJ_DEETZ		user_profile_name in ('TIMMR', 'TIM', 'NOTIME')

Selected Rows: 1 | Filtered Rows: 1 | Total Rows: 54



Audit Journal Entries - Summary View



Audit Journal Data Mart

Manage

Data Mart Library:
AJ_DEETZ

Journal Entry Type:
Authority Failure (AF) ▾

Action:
Append new data to the existing data mart ▾
Append new data to the existing data mart
Delete the existing data mart and create a new one
Delete entries from the data mart table

09/12/2024 09:05 PM 🗑️

Data Mart Filter:
user_profile_name in ('TIMMR', 'TIM', 'NOTIME')

Manage this data mart

📄 OK ✕ Cancel

FIRMWARE_CURRENCY

- Is the firmware level of your Power system up to date?
- Enhanced to return two new columns with information about fixpack versions

```
SELECT * FROM  
SYSTOOLS.FIRMWARE_CURRENCY;
```

FW_CURRENCY	FW_CURRENTFIXPACK	FW_RELEASE_DATE	FW_MACHINE_TYPE_MODEL	FW_RECOMMENDED_UPDATE
UPDATE AVAILABLE	SC860_180	2018-10-31	9119-MHE	SC860_246
FW_UPDATE_ACCESS_KEY_EXPIRATION	FW_SERVICE_PARTITION	FW_UPDATE_POLICY	FW_IPL_SOURCE	
2028-12-31	NO	HMC	TEMPORARY	
FW_IPL_REQUIRED	FW_PRODUCT_ID	FW_PRODUCT_RELEASE	FW_TEMPFIXPACK	FW_PERMFIXPACK
NO	5733908	V1R4M0	SC860_180	SC860_180

<https://www.ibm.com/support/pages/node/1119279>

MTI_INFO

- Maintained Temporary Indexes are great, but can cause performance headaches
 - Disappear on IPL, must be rebuilt
- View which queries are using MTIs, along with various metrics:
 - Number of plans using MTI
 - Size of MTI

TABLE_SCHEMA	TABLE_NAME	REFERENCE_COUNT	KEY_DEFINITION	MTI_SIZE	MTI_NAME	QRO_HASH_JSON
SQPLCRT1	PARMTEST	5	LOCATION	162456	MTI(295)(184786)	{"QRO_HASH_LIST": ["445C83AB", "818F1523"]}
DBCRC07QV	FLD_TYPES	4	ZFLD	166552	MTI(15)(181464)	{"QRO_HASH_LIST": ["480FA738"]}
DBCRC07QV	FLD_TYPES	6	PFLD	166552	MTI(11)(181445)	{"QRO_HASH_LIST": ["39B57C53"]}
DBCRC07QV	FLD_TYPES	6	BFLD	162456	MTI(7)(181425)	{"QRO_HASH_LIST": ["9D4C0DC2"]}
QUGDT	QUGDTP0001	2	VGDT_1	178840	MTI(156)(181265)	{"QRO_HASH_LIST": ["7F434274"]}
SQTEST	PARS4	7	TESTNAME, VARNAME	203416	MTI(7)(178090)	{"QRO_HASH_LIST": ["4F141927", "F45D1DB6"]}
SQPARLIB54	T3	14	C1	162456	MTI(181)(178069)	{"QRO_HASH_LIST": ["D436888", "8DBF7B34", "8725389C"]}
SQTEST	CPPCRESULT	30	TESTNAME, VARNAME	170648	MTI(9)(178036)	{"QRO_HASH_LIST": ["22F35C09", "8725389C"]}
SQTEST	CALLRESULT	18	TESTNAME, VARNAME	174744	MTI(9)(177940)	{"QRO_HASH_LIST": ["179B5D0B", "96C8053D"]}
SQCPTST	EDTAB	10	EDNAME, EDEMPLOC, EDSEX, EDDEPTNO	162456	MTI(22)(177813)	{"QRO_HASH_LIST": ["A29F7458", "DB869C6E", "5704E51E"]}
SQNPCTST	EDTAB	10	EDNAME, EDEMPLOC, EDSEX, EDDEPTNO	162456	MTI(22)(175660)	{"QRO_HASH_LIST": ["2CC45A64", "5704E51E", "8D129701"]}
QUNUL	NULLNUM5	2	PACKED1	162456	MTI(95)(175076)	{"QRO_HASH_LIST": ["8D129701"]}
QUNUL	NULALLC19D	2	INEX	162456	MTI(95)(175027)	{"QRO_HASH_LIST": ["6E8640B7"]}
SQTEST	QDTRESULTS	2	TESTNAME, VARNAME	166552	MTI(9)(174779)	{"QRO_HASH_LIST": ["18765635"]}
NPMRDB	EMP	8	DEPTNO	162456	MTI(22)(173827)	{"QRO_HASH_LIST": ["1417E8CB", "6EC232EB", "A2641549"]}
SQLIB510	GR80CRSLTS	11	TESTNAME, VARNAME	162456	MTI(7)(173427)	{"QRO_HASH_LIST": ["8F0DBF2F", "A2641549"]}
QWCOLIB8	QWCOT02	6	FLD4, FLD2	182936	MTI(180)(173413)	{"QRO_HASH_LIST": ["D43DC304", "EA609523", "75C931E6", "AEBAA871"]}
SQTEST	NPMRESULT	20	TESTNAME, VARNAME	162456	MTI(7)(173407)	{"QRO_HASH_LIST": ["75C931E6", "AEBAA871"]}
SQSCR220	SQSCR00R3	11	ICOL, COL1	162456	MTI(17)(173143)	{"QRO_HASH_LIST": ["64E917F9", "ADE44EEE"]}

MTI_INFO

- New [QSYS2.MTI_INFO\(\)](#) return column for the **partition or member name**



Table returned to invoking statement				
Columns:				
Name	Data Type	Length	CCSID	Locator
TABLE_SCHEMA	VARCHAR	128		
TABLE_NAME	VARCHAR	128		
TABLE_PARTITION	VARCHAR	128		
REFERENCE_COUNT	BIGINT			
"KEYS"	INTEGER			
KEY_DEFINITION	DBCLOB	10 KB	1200	
STATE	VARCHAR	20		
MTI_SIZE	BIGINT			
CREATE_TIME	TIMESTAMP			
LAST_BUILD_START_TIME	TIMESTAMP			
LAST_BUILD_END_TIME	TIMESTAMP			
REUSABLE	VARCHAR	3		
SPARSE	VARCHAR	3		
SPARSE_DEFINITION	DBCLOB	10 KB	1200	
QRO_HASH	VARCHAR	8		
PLAN_IDENTIFIER	DECIMAL	20,0		
USER_NAME	VARCHAR	10		
QUALIFIED_JOB_NAME	VARCHAR	28		
JOB_NAME	VARCHAR	10		
JOB_USER	VARCHAR	10		
JOB_NUMBER	VARCHAR	6		
MTI_NAME	VARCHAR	128		
LIBRARY_NAME	VARCHAR	10		
FILE_NAME	VARCHAR	10		

Memorandum To User (MTU)

It's time to check out these books!

[https://ibm.biz/IBMi 72 MTU](https://ibm.biz/IBMi_72_MTU)
[https://ibm.biz/IBMi 73 MTU](https://ibm.biz/IBMi_73_MTU)
[https://ibm.biz/IBMi 74 MTU](https://ibm.biz/IBMi_74_MTU)
[https://ibm.biz/IBMi 75 MTU](https://ibm.biz/IBMi_75_MTU)



- The MTU is a living document
- Updated twice per year, aligned with IBM i Technology Refreshes (TR)
- Client's can avoid disruption related to behavior changes

Start with the “What's new” section



What's new

The updates for each Memo to Users entry were made at the specified time frame for the section. The actual release date of some changes documented may not be until the next Technical Refresh (TR) date. Check dates on the PTF specified for each entry to verify release dates.

October 2024

- New entries added:
 - [‹ Transform Services \(5770-TS1\) ›](#).
 - [‹ DRDA/DDM connection first attempt with more secure AES encryption algorithm ›](#)
 - [‹ Authority requirement change for CREATE OR REPLACE SQL statements ›](#)
 - [‹ Authority requirement change for CREATE VIEW SQL statement ›](#).

END_JOBS procedure

- Find and end all the active jobs in the QBATCH subsystem that ANGELA is running with a job name of RUNAWAY. End 20 jobs at a time, with a 15 second delay in between requests to end groups of 20 jobs. For every job, end using the immediate option, do not save any spooled files, and do not generate a job log.

```
CALL SYSTOOLS.END_JOBS (
  JOB_NAME_FILTER           => 'RUNAWAY',
  CURRENT_USER_LIST_FILTER => 'ANGELA',
  SUBSYSTEM_LIST_FILTER    => 'QBATCH',
  END_OPTION                => 'IMMEDIATE',
  DELETE_SPOOLED_FILES     => 'YES',
  MAXIMUM_JOBLOG_ENTRIES   => 0, -- No joblog
  JOB_END_ITERATION_COUNT  => 20,
  JOB_END_ITERATION_DELAY  => 15);
```







SEND_EMAIL Scalar Function


Addition of the BODY_TYPE parameter


The content type for *body*. Accepted values are *PLAIN, *HTML, and *XML
The default is *PLAIN


```
VALUES SYSTOOLS.SEND_EMAIL (
    TO_EMAIL => 'forstie@us.ibm.com',
    SUBJECT => 'send_email body_type enhancement',
    BODY =>
    '<html> <body><h1>SQL can be used to send Emails</h1>
    <p>SQL is wonderful!</p> </body> </html>'
    , body_type => '*HTML');
```

SEND EMAIL Scalar Function

send_email body_type enhancement    

 **SCOTT@B3P3.RCH.STGLABS.IBM.COM <SC...** Today at 10:45 AM

To:  Scott Forstie

 Retention: 1-Year Expires: 11/03/2025.

SQL can be used to send Emails

SQL is wonderful!

IBM® Db2® for i Catalogs



Catalogs

SYSCATALOGS

INFORMATION_SCHEMA_CATALOG_NAME

Schemas

SYSSCHEMAS

SQLSCHEMAS

SCHEMATA

Database Support

SQL_FEATURES
SQL_LANGUAGES
SQL_SIZING
CHARACTER_SETS

Tables Views Indexes

SYSCOLUMNS
SYSCOLUMNS2
SYSCOLUMNS2_SESSION
SYSFILES
SYSFIELDS
SYSINDEXES
SYSKEYS
SYSTABLEDEP
SYSTABLES
SYSVIEWDEP
SYSVIEWS

SQLCOLUMNS
SQLSPECIALCOLUMNS
SQLTABLES

COLUMNS
TABLES
VIEWS

Constraints

SYSCHKCST
SYSCST
SYSCSTCOL
SYSCSTDEP
SYSKEYCST
SYSREFCST

SQLFOREIGNKEYS
SQLPRIMARYKEYS

CHECK_CONSTRAINTS
REFERENTIAL_CONSTRAINTS
TABLE_CONSTRAINTS

Privileges

SYSCOLAUTH
SYSCONTROLS
SYSCONTROLSDEP
SYSPACKAGEAUTH
SYSROUTINEAUTH
SYSSCHEMAAUTH
SYSSEQUENCEAUTH
SYSTABAUTH
SYSUDTAUTH
SYSVARIABLEAUTH
SYSXSROBJECTAUTH

SQLCOLPRIVILEGES
SQLTABLEPRIVILEGES

AUTHORIZATIONS
ROUTINE_PRIVILEGES
UDT_PRIVILEGES
USAGE_PRIVILEGES
VARIABLE_PRIVILEGES

Triggers

SYSTRIGCOL
SYSTRIGDEP
SYSTRIGGERS
SYSTRIGUPD

Routines

SYSFUNCS
SYSJARCONTENTS
SYSJAROBJECTS
SYSPARMS
SYSPROCS
SYSROUTINEDEP
SYSROUTINES

SQLFUNCTIONCOLS
SQLFUNCTIONS
SQLPROCEDURECOLS
SQLPROCEDURES

PARAMETERS
ROUTINES

XML Schemas

XSRANNOTATIONINFO
XSROBJECTCOMPONENTS
XSROBJECTHIERARCHIES
XSROBJECTS

Statistics

SYSCOLUMNSTAT
SYSINDEXSTAT
SYSMEMBERSTAT
SYSMQTSTAT
SYSPACKAGESTAT
SYSPACKAGESTMTSTAT
SYSPARTITIONDISK
SYSPARTITIONINDEXES
SYSPARTITIONINDEXDISK
SYSPARTITIONINDEXSTAT
SYSPARTITIONMQTS
SYSPARTITIONSTAT
SYSPROGRAMSTAT
SYSPROGRAMSTMTSTAT
SYSTABLEINDEXSTAT
SYSTABLESTAT

SQLSTATISTICS

Miscellaneous Objects

SYSPACKAGE
SYSSEQUENCES
SYSTYPES
SYSVARIABLEDEP
SYSVARIABLES

SQLTYPEINFO
SQLUDTS

USER_DEFINED_TYPES
SEQUENCES

- Db2 for i catalog views (QSYS2)
- ODBC and JDBC™ catalog views (SYSIBM)
- ANS and ISO catalog views (QSYS2)

New or Enhanced @ IBM i 7.5 TR5 or IBM i 7.4 TR11

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<http://ibm.biz/db2fori>

IBM® Db2® for i Services



Health Center Procedures

QSYS2.HEALTH_ACTIVITY
QSYS2.HEALTH_DATABASE_OVERVIEW
QSYS2.HEALTH_DESIGN_LIMITS
QSYS2.HEALTH_ENVIRONMENTAL_LIMITS
QSYS2.HEALTH_SIZE_LIMITS
QSYS2.RESET_ENVIRONMENTAL_LIMITS

Plan Cache Procedures

QSYS2.CHANGE_PLAN_CACHE_SIZE
QSYS2.CLEAR_PLAN_CACHE
QSYS2.DUMP_PLAN_CACHE
QSYS2.DUMP_PLAN_CACHE_PROPERTIES
QSYS2.DUMP_PLAN_CACHE_TOPN
QSYS2.DUMP_SNAP_SHOT_PROPERTIES
QSYS2.END_ALL_PLAN_CACHE_EVENT_MONITORS
QSYS2.END_PLAN_CACHE_EVENT_MONITOR
QSYS2.IMPORT_PC_EVENT_MONITOR
QSYS2.IMPORT_PC_SNAPSHOT
QSYS2.REMOVE_PC_EVENT_MONITOR
QSYS2.REMOVE_PC_SNAPSHOT
QSYS2.REMOVE_PERFORMANCE_MONITOR
QSYS2.START_PLAN_CACHE_EVENT_MONITOR



New or Enhanced @ IBM i 7.5 TR5 or IBM i 7.4 TR11

IBM® Db2® for i Services



Utility Services

QSYS2.ANALYZE_CATALOG – UDTF
QSYS2.CANCEL_SQL – PROCEDURE
QSYS2.COMPARE_FILE – UDTF
QSYS2.DUMP_SQL_CURSORS – PROCEDURE
QSYS2.END_IDLE_SQE_THREADS – PROCEDURE
QSYS2.EXTRACT_STATEMENTS – PROCEDURE
QSYS2.FIND_AND_CANCEL_QSQSRVR_SQL – PROCEDURE
QSYS2.FIND_QSQSRVR_JOBS – PROCEDURE
QSYS2.GENERATE_SQL – PROCEDURE
QSYS2.GENERATE_SQL_OBJECTS – PROCEDURE
QSYS2.RESTART_IDENTITY – PROCEDURE
QSYS2.SWAP_DYNUSRPRF – PROCEDURE
SYSTOOLS.CHECK_SYSCST – PROCEDURE
SYSTOOLS.CHECK_SYSROUTINE – PROCEDURE
SYSTOOLS.RELATED_OBJECTS – UDTF
SYSTOOLS.VALIDATE_DATA – UDTF

Performance Services

QSYS2.ACTIVE_QUERY_INFO – UDTF
QSYS2.ADD_QUERY_THRESHOLD – PROCEDURE
QSYS2.CONDENSEDINDEXADVICE – VIEW
QSYS2.DATABASE_MONITOR_INFO – VIEW
QSYS2.MTI_INFO – UDTF
QSYS2.QUERY_SUPERVISOR – VIEW
QSYS2.REMOVE_QUERY_THRESHOLD – PROCEDURE
QSYS2.RESET_TABLE_INDEX_STATISTICS – PROCEDURE
QSYS2.SYSIXADV – TABLE
SYSTOOLS.ACT_ON_INDEX_ADVICE – PROCEDURE
SYSTOOLS.HARVEST_INDEX_ADVICE – PROCEDURE
SYSTOOLS.REMOVE_INDEXES – PROCEDURE

Application Services

QSYS2.DELIMIT_NAME – UDF
QSYS2.OVERRIDE_QAQQINI – PROCEDURE
QSYS2.OVERRIDE_TABLE – PROCEDURE
QSYS2.PARSE_STATEMENT – UDTF
SYSIBMADM.SELFCODES – GLOBAL VARIABLE
QSYS2.SQL_ERROR_LOG – VIEW
SYSIBMADM.VALIDATE_SELF – UDF
SYSPROC.WLM_SET_CLIENT_INFO – PROCEDURE
SYSTOOLS.SQLCODE_INFO – UDTF

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Security Services

QSYS2.AUTHORITY_COLLECTION – VIEW
 QSYS2.AUTHORITY_COLLECTION_DLO – VIEW
 QSYS2.AUTHORITY_COLLECTION_FSOBJ – VIEW
 QSYS2.AUTHORITY_COLLECTION_LIBRARIES – VIEW
 QSYS2.AUTHORITY_COLLECTION_OBJECT – VIEW
 QSYS2.AUTHORIZATION_LIST_INFO – VIEW
 QSYS2.AUTHORIZATION_LIST_USER_INFO – VIEW
 QSYS2.CERTIFICATE_INFO – UDTF
 QSYS2.CHECK_PASSWORD – UDTF
 QSYS2.DRDA_AUTHENTICATION_ENTRY_INFO – VIEW
 QSYS2.FUNCTION_INFO – VIEW
 QSYS2.FUNCTION_USAGE – VIEW
 QSYS2.GROUP_PROFILE_ENTRIES – VIEW
 QSYS2.OBJECT_OWNERSHIP – VIEW
 QSYS2.OBJECT_PRIVILEGES – UDTF & VIEW
 QSYS2.SECURITY_INFO – VIEW
 QSYS2.SQL_CHECK_AUTHORITY – UDF
 QSYS2.SQL_CHECK_FUNCTION_USAGE – UDF
 QSYS2.SQL_CHECK_SPECIAL_AUTHORITY – UDF
 QSYS2.USER_INFO – VIEW
 QSYS2.USER_INFO_BASIC – VIEW
 SYSPROC.SET_COLUMN_ATTRIBUTE – PROCEDURE
 SYSTOOLS.ADD_VALIDATION_LIST_ENTRY – UDF
 SYSTOOLS.CHANGE_USER_PROFILE – UDTF
 SYSTOOLS.CHANGE_VALIDATION_LIST_ENTRY – UDF
 SYSTOOLS.REMOVE_VALIDATION_LIST_ENTRY – UDF
 SYSTOOLS.SPECIAL_AUTHORITY_DATA_MART – TABLE

Storage Services

QSYS2.ADD_DEVICE_LOCKING_POLICY – PROCEDURE
 QSYS2.ASP_INFO – VIEW
 QSYS2.ASP_JOB_INFO – VIEW
 QSYS2.ASP_VARY_INFO – VIEW
 QSYS2.CHANGE_DEVICE_LOCKING_POLICY – PROCEDURE
 QSYS2.CHANGE_DISK_PATHS – PROCEDURE
 QSYS2.CREATE_LOCKING_POLICY – PROCEDURE
 QSYS2.DELETE_LOCKING_POLICY – PROCEDURE
 QSYS2.FACTORY_RESET_DEVICE – PROCEDURE
 QSYS2.LOCKING_POLICY_INFO – VIEW
 QSYS2.NVME_INFO – VIEW
 QSYS2.REMOVE_DEVICE_LOCKING_POLICY – PROCEDURE
 QSYS2.SYSDISKSTAT – UDTF & VIEW
 QSYS2.SYSTMPSTG – VIEW
 QSYS2.UNLOCK_DEVICE – PROCEDURE
 QSYS2.USER_STORAGE – VIEW

Backup and Recovery Services

QSYS2.MEDIA_LIBRARY_INFO – VIEW
 QSYS2.SAVE_FILE_INFO – VIEW
 QSYS2.SAVE_FILE_OBJECTS – UDTF & VIEW
 QSYS2.TAPE_CARTRIDGE_INFO – VIEW

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IFS Services

QSYS2.COMPARE_IFS – UDTF
 QSYS2.IFS_JOB_INFO – UDTF
 QSYS2.IFS_OBJECT_LOCK_INFO – UDTF
 QSYS2.IFS_OBJECT_PRIVILEGES – UDTF
 QSYS2.IFS_OBJECT_REFERENCES_INFO – UDTF
 QSYS2.IFS_OBJECT_STATISTICS – UDTF
 QSYS2.IFS_READ – UDTF
 QSYS2.IFS_WRITE – PROCEDURE
 QSYS2.SERVER_SHARE_INFO – VIEW
SYSTOOLS.IFS_ACCESS – UDF
 SYSTOOLS.IFS_RENAME – UDF
 SYSTOOLS.IFS_UNLINK – UDF

Java Services

QSYS2.JVM_INFO – UDTF & VIEW
 QSYS2.SET_JVM – PROCEDURE

Librarian Services

QSYS2.JOURNAL_INHERIT_RULES – VIEW
 QSYS2.LIBRARY_INFO – UDTF
 QSYS2.LIBRARY_LIST_INFO – VIEW
 QSYS2.OBJECT_STATISTICS – UDTF
 QSYS2.SYSTEM_OBJECT_TYPES – TABLE

Communication Services

QSYS2.ACTIVE_DB_CONNECTIONS – UDTF
 QSYS2.ADD_TIME_SERVER – PROCEDURE
 QSYS2.CHANGE_OBJECTCONNECT – PROCEDURE
 QSYS2.DNS_LOOKUP – UDTF
 QSYS2.DNS_LOOKUP_IP – UDF
 QSYS2.HTTP_SERVER_INFO – VIEW
 QSYS2.NETSTAT_INFO – VIEW
 QSYS2.NETSTAT_INTERFACE_INFO – VIEW
 QSYS2.NETSTAT_JOB_INFO – VIEW
 QSYS2.NETSTAT_ROUTE_INFO – VIEW
 QSYS2.NETWORK_ATTRIBUTE_INFO – VIEW
 QSYS2.OBJECTCONNECT_INFO – VIEW
 QSYS2.RDB_ENTRY_INFO – VIEW
 QSYS2.REMOVE_TIME_SERVER – PROCEDURE
 QSYS2.SERVER_SBS_CONFIGURATION – VIEW
 QSYS2.SERVER_SBS_ROUTING – VIEW
 QSYS2.SET_SERVER_SBS_ROUTING – PROCEDURE
 QSYS2.TCPIP_INFO – VIEW
 QSYS2.TELNET_SERVER_ATTRIBUTES – VIEW
 QSYS2.TIME_PROTOCOL_INFO – VIEW
 SYSIBMADM.ENV_SYS_INFO – VIEW
 SYSTOOLS.PING – UDTF

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Work Management Services

QSYS2.ACTIVE_JOB_INFO – UDTF
QSYS2.ADD_TRACKED_JOB_QUEUE – PROCEDURE
QSYS2.AUTOSTART_JOB_INFO – VIEW
QSYS2.CLEAR_TRACKED_JOB_INFO – PROCEDURE
QSYS2.COMMUNICATIONS_ENTRY_INFO – VIEW
QSYS2.GET_JOB_INFO – UDTF
QSYS2.JOB_DESCRIPTION_INFO – VIEW
QSYS2.JOB_INFO – UDTF
QSYS2.JOB_LOCK_INFO – UDTF
QSYS2.JOB_QUEUE_INFO – VIEW
QSYS2.MEMORY_POOL – UDTF
QSYS2.MEMORY_POOL_INFO – VIEW
QSYS2.OBJECT_LOCK_INFO – VIEW
QSYS2.OPEN_FILES – UDTF
QSYS2.PRESTART_JOB_INFO – VIEW
QSYS2.PRESTART_JOB_STATISTICS – UDTF
QSYS2.RECORD_LOCK_INFO – VIEW
QSYS2.REMOVE_TRACKED_JOB_QUEUE – UDTF
QSYS2.ROUTING_ENTRY_INFO – VIEW
QSYS2.SCHEDULED_JOB_INFO – VIEW
QSYS2.SUBSYSTEM_INFO – VIEW
QSYS2.SUBSYSTEM_POOL_INFO – VIEW
QSYS2.SYSTEM_ACTIVITY_INFO – UDTF
QSYS2.SYSTEM_STATUS – UDTF

Work Management Services (continued)

QSYS2.SYSTEM_STATUS_INFO – VIEW
QSYS2.SYSTEM_STATUS_INFO_BASIC – VIEW
QSYS2.SYSTEM_VALUE_INFO – VIEW
QSYS2.TRACKED_JOB_INFO – UDTF
QSYS2.TRACKED_JOB_QUEUES – VIEW
QSYS2.WORKLOAD_GROUP_INFO – VIEW
QSYS2.WORKSTATION_INFO – VIEW
SYSTOOLS.END_JOBS – PROCEDURE
SYSTOOLS.ENDED_JOB_INFO – UDTF
SYSTOOLS.JOB_QUEUE_ENTRIES – VIEW
SYSTOOLS.POWER_SCHEDULE_INFO – VIEW

System Health Services

QSYS2.PROCESS_SYSTEM_LIMITS_ALERTS – PROCEDURE
QSYS2.SYSLIMITS – VIEW
QSYS2.SYSLIMITS_BASIC – VIEW
QSYS2.SYSLIMITBL – TABLE

Configuration Services

QSYS2.HARDWARE_RESOURCE_INFO – UDTF & VIEW
QSYS2.SERVICE_TOOLS_SERVER_INFO – VIEW
SYSTOOLS.CONFIGURATION_STATUS – VIEW

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Application Services

QSYS2.ACTIVATION_GROUP_INFO – UDTF
 QSYS2.ADD_USER_INDEX_ENTRY – PROCEDURE
 QSYS2.BINDING_DIRECTORY_INFO – VIEW
 QSYS2.BOUND_MODULE_INFO – VIEW
 QSYS2.BOUND_SRVPGM_INFO – VIEW
 QSYS2.CHANGE_USER_SPACE – PROCEDURE
 QSYS2.CHANGE_USER_SPACE_ATTRIBUTES – PROCEDURE
 QSYS2.CLEAR_DATA_QUEUE – PROCEDURE
 QSYS2.COMMAND_INFO – VIEW
 QSYS2.CREATE_USER_INDEX – PROCEDURE
 QSYS2.CREATE_USER_SPACE – PROCEDURE
 QSYS2.DATA_AREA_INFO – UDTF & VIEW
 QSYS2.DATA_QUEUE_ENTRIES – UDTF
 QSYS2.DATA_QUEUE_INFO – VIEW
 QSYS2.DB_TRANSACTION_INFO – VIEW
 QSYS2.DB_TRANSACTION_JOURNAL_INFO – UDTF
 QSYS2.DB_TRANSACTION_OBJECT_INFO – UDTF
 QSYS2.DB_TRANSACTION_RECORD_INFO – UDTF
 QSYS2.ENVIRONMENT_VARIABLE_INFO – VIEW
 QSYS2.EXIT_POINT_INFO – VIEW
 QSYS2.EXIT_PROGRAM_INFO – VIEW
 QSYS2.PROGRAM_EXPORT_IMPORT_INFO – VIEW
 QSYS2.PROGRAM_INFO – VIEW
 QSYS2.QCMDXC – PROCEDURE & UDF
 QSYS2.RECEIVE_DATA_QUEUE – UDTF
 QSYS2.REMOVE_USER_INDEX_ENTRY – UDTF

Application Services (continued)

QSYS2.SEND_DATA_QUEUE – PROCEDURE
 QSYS2.SERVICES_INFO – TABLE
 QSYS2.SET_PASE_SHELL_INFO – PROCEDURE
 QSYS2.STACK_INFO – UDTF
 QSYS2.USER_INDEX_ENTRIES – UDTF
 QSYS2.USER_INDEX_INFO – VIEW
 QSYS2.USER_SPACE – UDTF
 QSYS2.USER_SPACE_INFO – VIEW
 QSYS2.WATCH_DETAIL – UDTF
 QSYS2.WATCH_INFO – VIEW
 SYSTOOLS.ERRNO_INFO – UDF
 SYSTOOLS.GENERATE_SPREADSHEET – UDF
 SYSTOOLS.GETENV – UDF
 SYSTOOLS.LPRINTF – PROCEDURE
 SYSTOOLS.PUTENV – UDF
 SYSTOOLS.SEND_EMAIL – UDF
 SYSTOOLS.SPLIT – UDTF

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Product Services

QSYS2.LICENSE_INFO – VIEW
 QSYS2.SOFTWARE_PRODUCT_INFO – VIEW
 SYSTOOLS.CHECK_PRODUCT_OPTIONS – UDTF
 SYSTOOLS.LICENSE_EXPIRATION_CHECK – PROCEDURE

Spool Services

QSYS2.OUTPUT_QUEUE_ENTRIES – UDTF & VIEW
 QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC – VIEW
 QSYS2.OUTPUT_QUEUE_INFO – VIEW
 QSYS2.SPOOLED_FILE_INFO – UDTF
 SYSTOOLS.DELETE_OLD_SPOOLED_FILES – PROCEDURE
 SYSTOOLS.GENERATE_PDF – UDF
 SYSTOOLS.PRINTER_FILE_INFO – VIEW
 SYSTOOLS.SPOOLED_FILE_DATA – UDTF

PTF Services

QSYS2.ELECTRONIC_SERVICE_AGENT_INFO – VIEW
 QSYS2.GROUP_PTF_INFO – VIEW
 QSYS2.PTF_INFO – VIEW
 SYSTOOLS.DEFECTIVE_PTF_CURRENCY – VIEW
 SYSTOOLS.FIRMWARE_CURRENCY – VIEW
 SYSTOOLS.GROUP_PTF_CURRENCY – VIEW
 SYSTOOLS.GROUP_PTF_DETAILS – VIEW
 SYSTOOLS.PTF_COVER_LETTER – UDTF

Journal Services

QSYS2.ASSOCIATE_JOURNAL_RECEIVER – UDTF
 QSYS2.AUDIT_JOURNAL_DATA_MART_INFO – VIEW
 QSYS2.DISPLAY_JOURNAL – UDTF
 QSYS2.JOURNAL_INFO – VIEW
 QSYS2.JOURNAL_RECEIVER_INFO – VIEW
 QSYS2.JOURNALED_OBJECTS – VIEW
 QSYS2.MANAGE_AUDIT_JOURNAL_DATA_MART – PROCEDURE
 QSYS2.REMOTE_JOURNAL_INFO – VIEW
 QSYS2.SMAPP_ACCESS_PATHS – VIEW
 SYSTOOLS.AUDIT_JOURNAL_nn – UDTFs

Message Handling Services

QSYS2.HISTORY_LOG_INFO – UDTF
 QSYS2.JOBLOG_INFO – UDTF
 QSYS2.MESSAGE_FILE_DATA – VIEW
 QSYS2.MESSAGE_QUEUE_INFO – UDTF & VIEW
 QSYS2.REPLY_LIST_INFO – VIEW
 QSYS2.SEND_MESSAGE – PROCEDURE
 SYSTOOLS.REPLY_INQUIRY_MESSAGES – UDF


Performance Services

QSYS2.COLLECTION_SERVICES_INFO – VIEW

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Stay Current – #SQLcandoit



Scott Forstie
forstie
Db2 for i Business Architect

forstie / Stay Current.sql
Created 6 months ago

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The age old problem is this... IBM recommends that IBM i clients stay up to date on software updates... but how does a client get current and stay current? This confluence of technologies highlights one approach to consider.

```
1 --
2 -- Subject: Stay Current
3 -- Author: Scott Forstie
4 -- Date : April, 2024
5 -- Features Used : This Gist uses SQL PL, systools.group_ptf_currency, sysibmadm.env_sys_info, SYST
6 --
7 -- The age old problem is this... IBM recommends that IBM i clients stay up to date
8 -- on software updates... but how does a client get current and stay current?
9 --
10 -- This confluence of technologies highlights one approach to consider.
```

<https://gist.github.com/forstie/94d68082e34c822609864e8aa6bf983d>

iSee

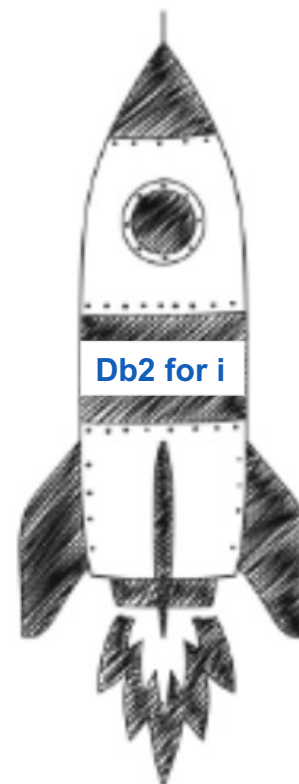
Video blog with examples of use SQL and other modern techniques to solve real everyday problems and tasks

With over 70 entries and growing!


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Thank You!



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