IBM i 7.4 Overview

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IBM i Chief Architect

IBM i Roadmap

2014   2016   **2019**

7.2   7.3   **7.4**   **i Next**   **i Next+1**

Technology
Refreshes

7.3 TR6

** All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
** Arrows indicate "ongoing status" and do not imply any specific dates.

IBM i 7.4 & More
Cornerstone Announcements

IBM i 7.4 Suite – Addressing the Needs of the Community

Continuous Availability
- IBM Db2 Mirror for i

Security
- Authority collection - object based control
- Latest industry standards

Application Development
- From Db2 to RPG and COBOL
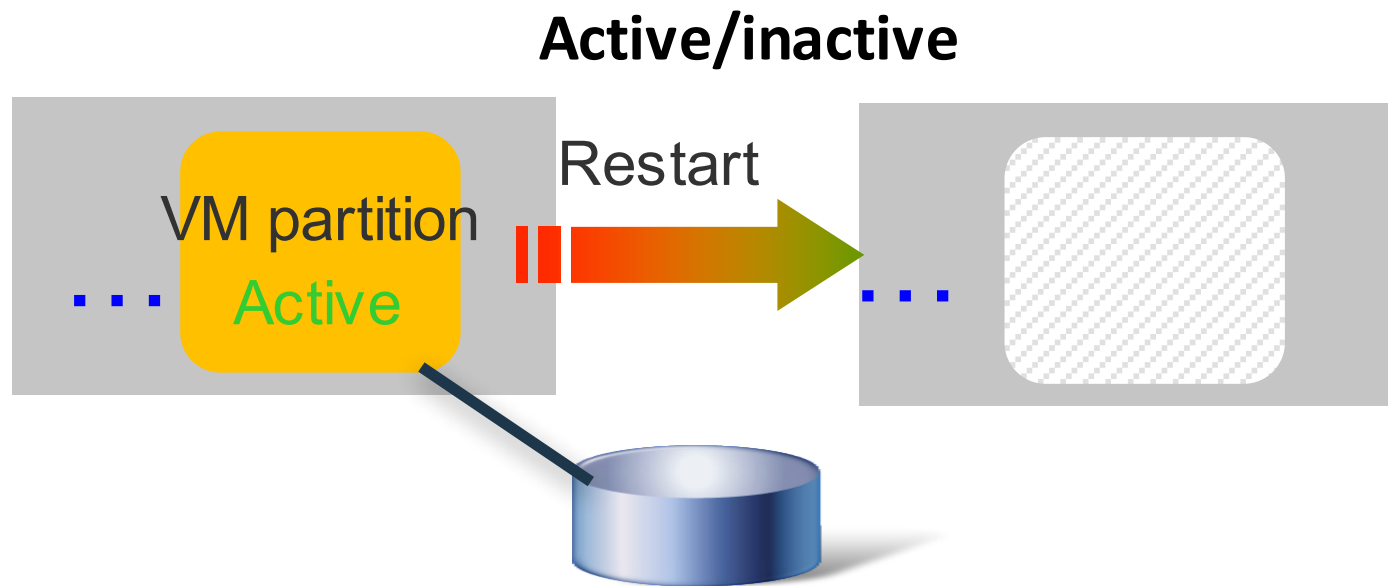- Open Source and REST

Accessing IBM i
- Access Client Solutions (ACS)
- Services

POWER; Workload Groups; Cloud options and More!

Continuous Availability
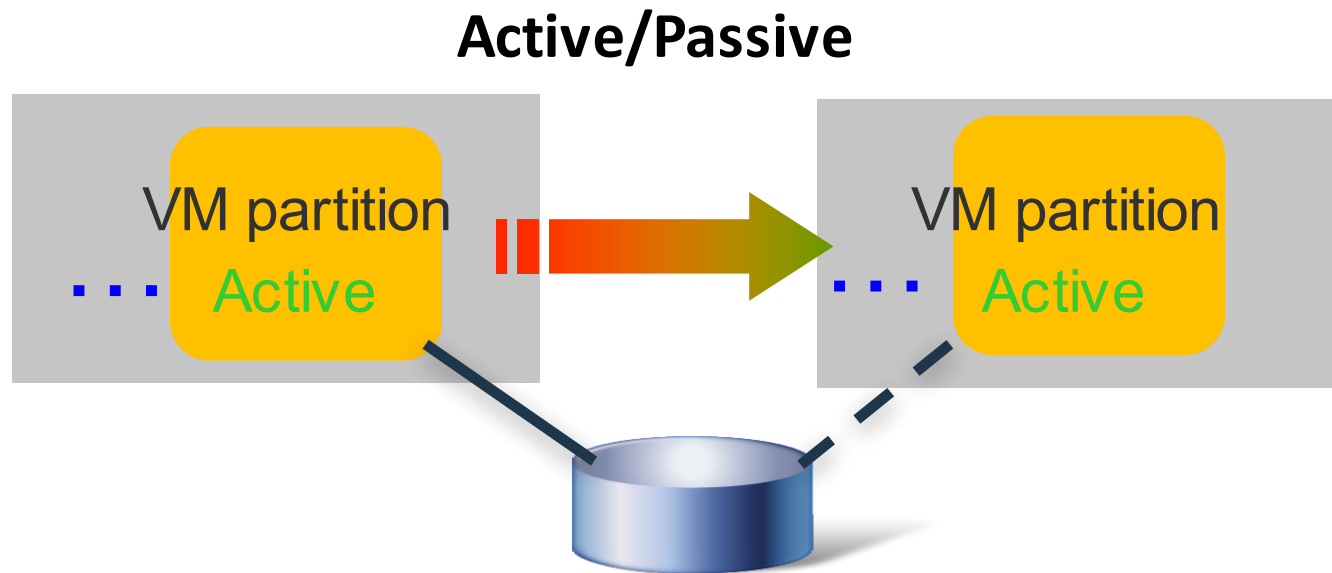# IBM Db2 Mirror for i

Availability Topologies

Active/inactive

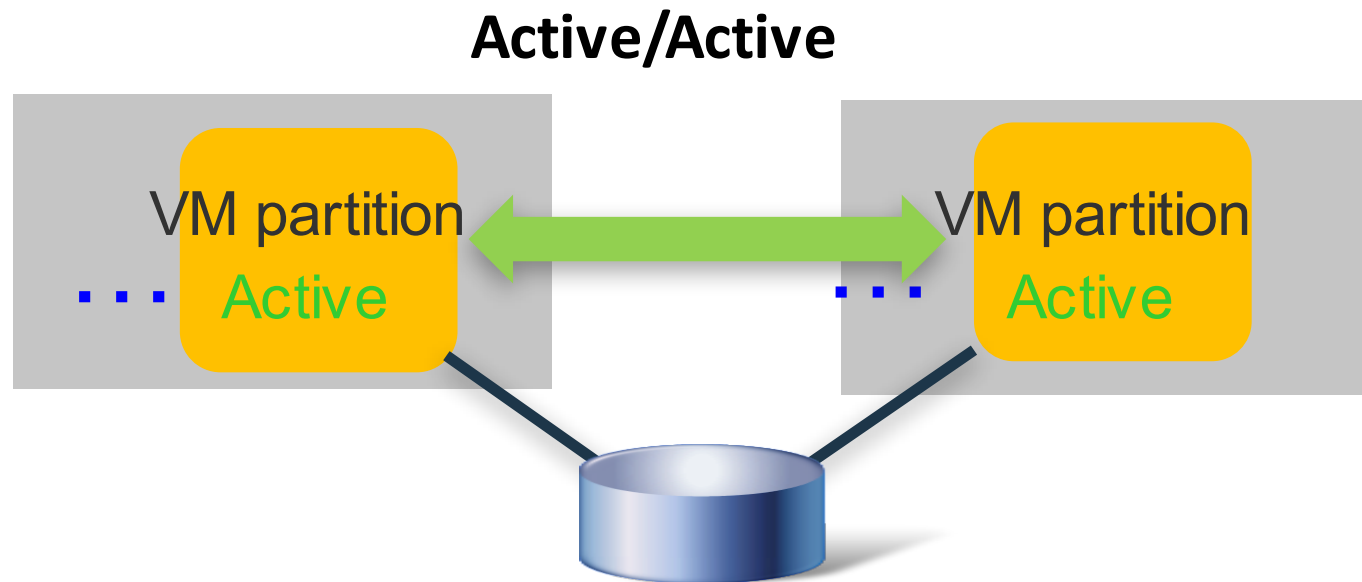RTO significantly greater than 0.
RPO allows for a relatively long period of no data processing.

Availability Topologies

Active/Passive

RTO could be small but still greater than 0.
RPO still allows for a break in data processing.

Availability Topologies

Active/Active

RTO 0 in most cases; very close to 0 at maximum.
RPO does not allow data processing gaps.

IBM Db2 Mirror for i
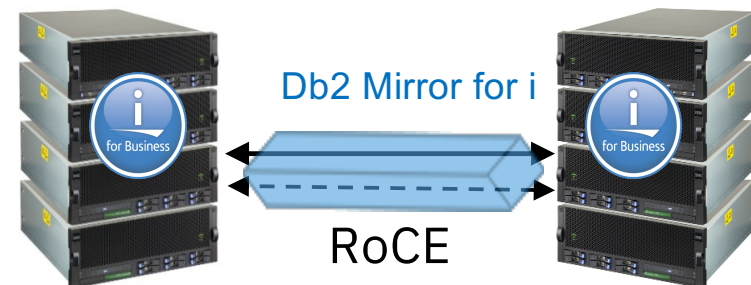
Operating System Synchronous Replication

Continuous Availability
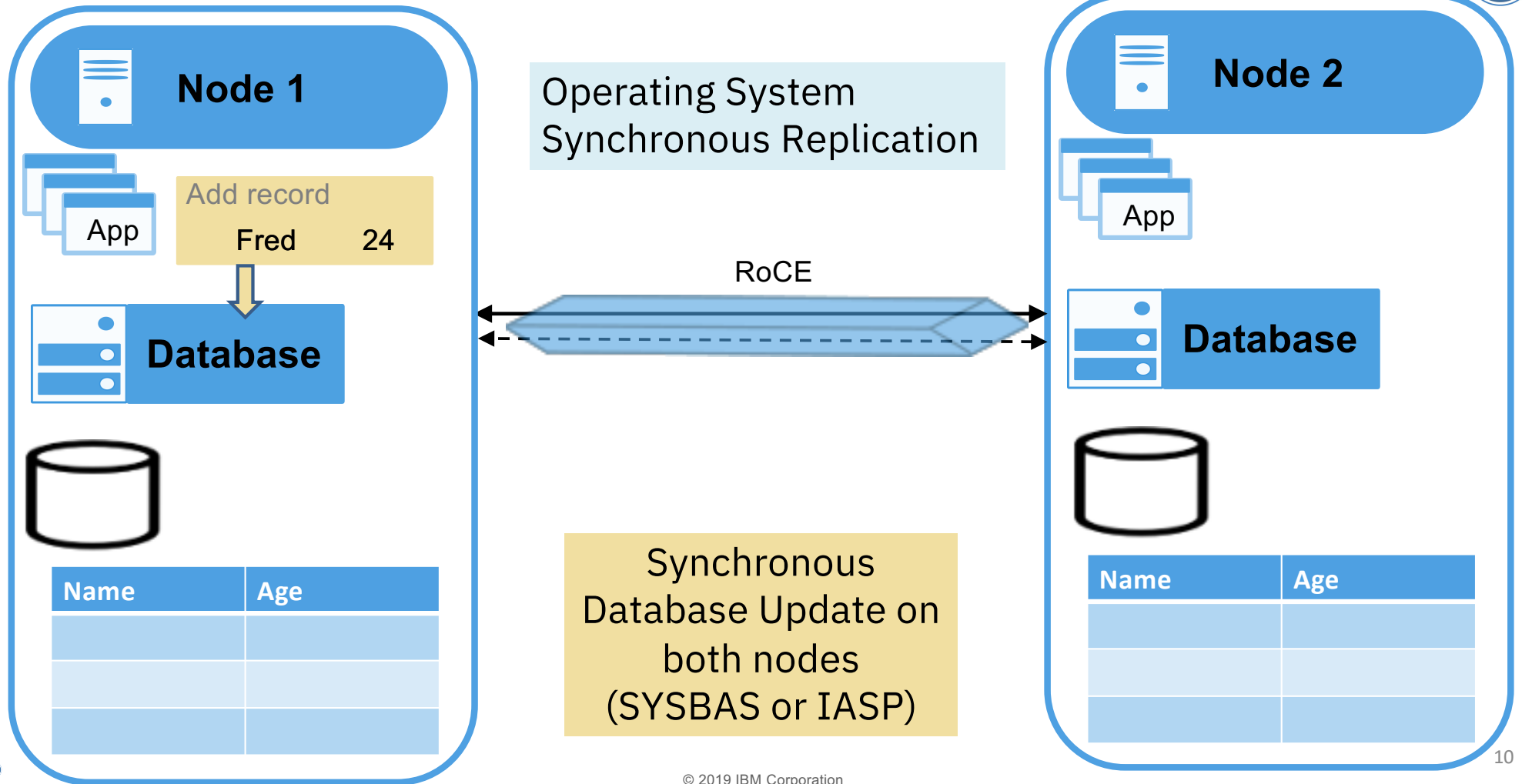
24 x 7 Up Time

Rolling Upgrades

RTO/RPO Near Zero

IBM Db2 Mirror for i (5770-DBM)

Db2 Mirror for i

RoCE

POWER8 or later & IBM i 7.4
+ External Storage

Db2 Mirror – Active Active

Node 1

App

Add record

Fred   24

Database

Name	Age

Operating System Synchronous Replication

RoCE

Synchronous Database Update on both nodes (SYSBAS or IASP)

Node 2

App

Database

Name	Age

Db2 Mirror – Database Supported Objects

Database replication eligible objects

Native:
• Database Physical & Logical File

SQL:
• Alias
• Function
• Global Variable
• Index
• Procedure
• Schema
• Sequence

• SQL Package
• Table
• Trigger
• User Defined Type
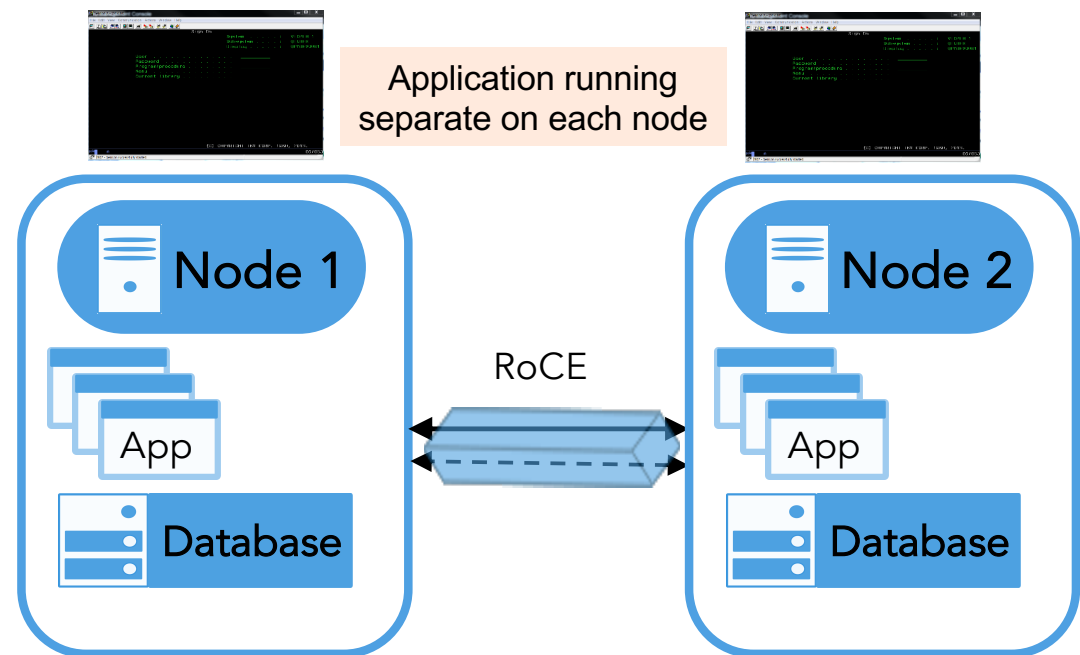• View
• XML Schema Repository

Included with File support:
• Row Permission
• Column Mask
• Temporal Table
• Constraint
• Etc…

✓ DDS / Record Level Access
✓ SQL / Set Based Access

Application running separate on each node

Node 1

App

Database

RoCE

Node 2

App

Database

Db2 Mirror – Other Supported Objects

Other Objects
- User profile
- Authority
- Ownership
- Security
- PGM/SRVPGM
- Data Area
- Data Queue (DDL Only)
- System Values
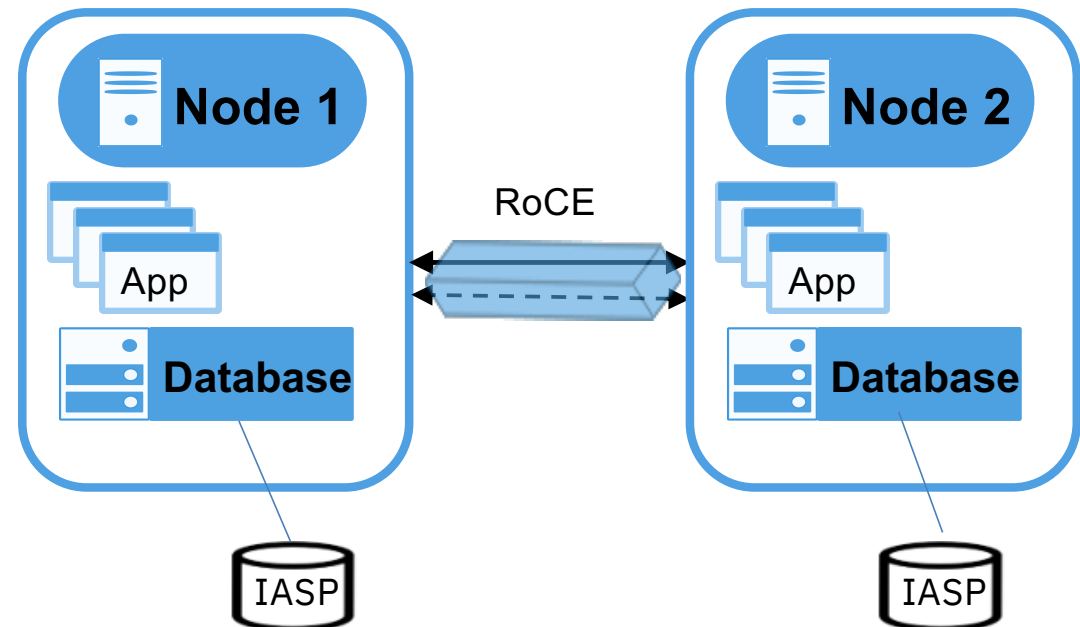- Environment Variable LEVEL(*SYS)
- Library
- Job Description
- Journal

Special Handling
- o Output Queue & Spool
- o Job Queue

Exceptions
- User Space
- User Index
- User Queue
- Journal Receiver

✓ SYSBAS
✓ Database IASPs

Node 1

RoCE

Node 2

App

App

Database

Database

IASP

IASP

Db2 Mirror – Active Active, Green Screen Application

Wrkactjob
Call PGM1

Wrkactjob
Call PGM1

Wrkactjob
Call PGM1

Node 1

App

Database

Application need to be restarted on Node 2

RoCE

Node 2

App

Database

Db2 Mirror – Active Active

Active "Less Active"

Web Clients
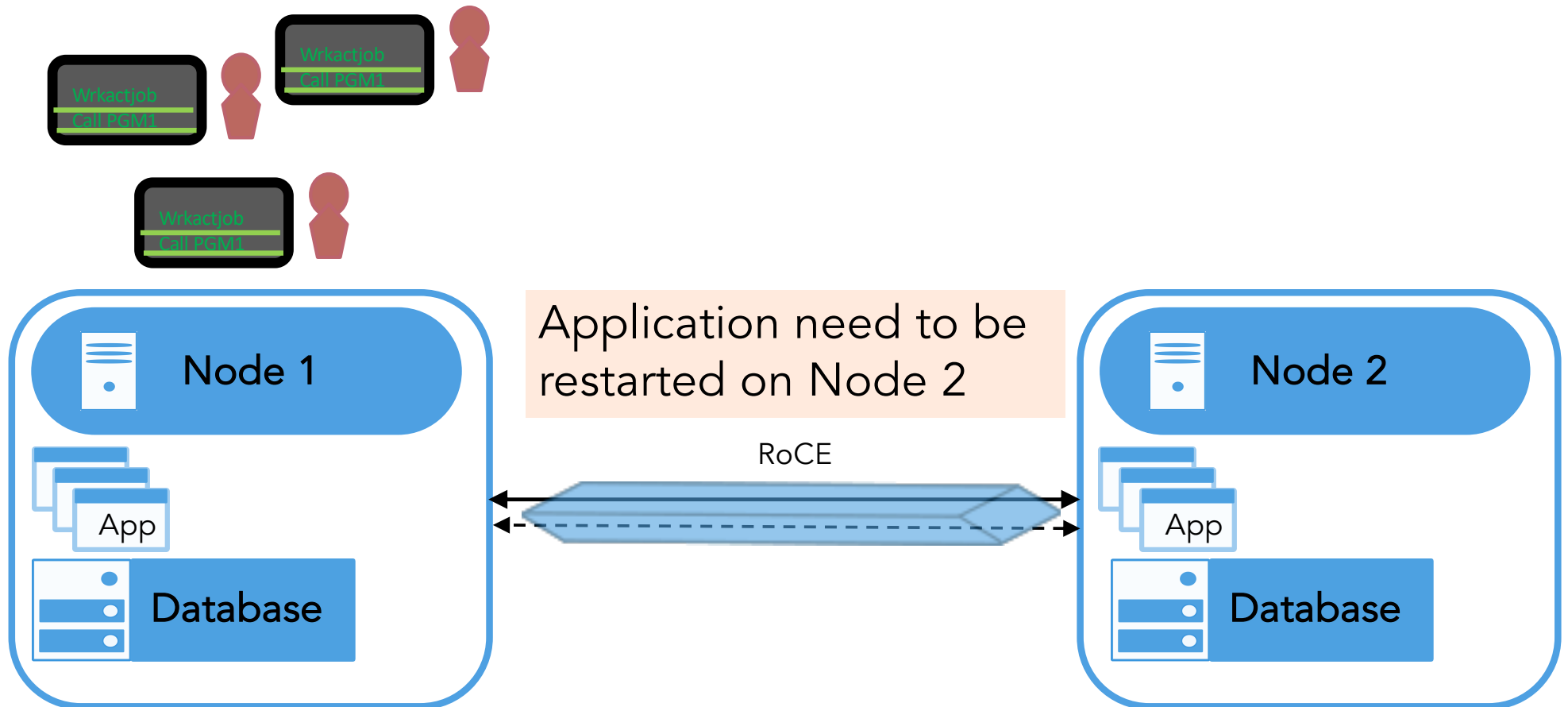
Application layer connects with either JDBC or Load Balancer

Node 1

App

Database

RoCE

Node 2

App
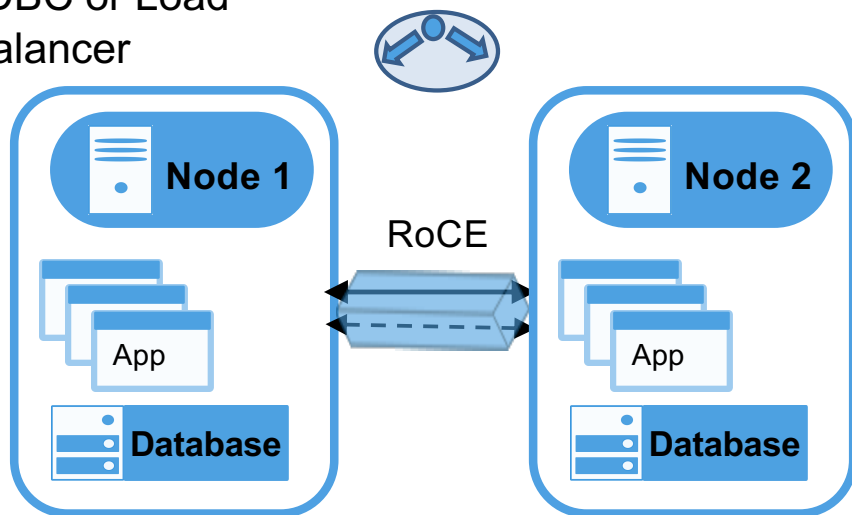
Database
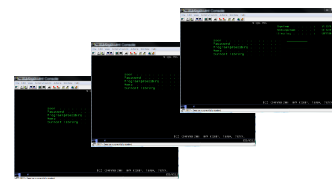
Run Production Workloads

Run Queries and reports

Node 1

App

Database

RoCE

Node 2

App

Database
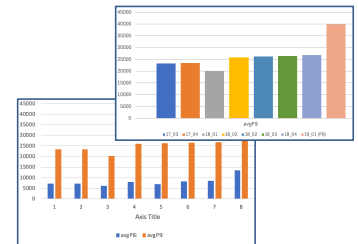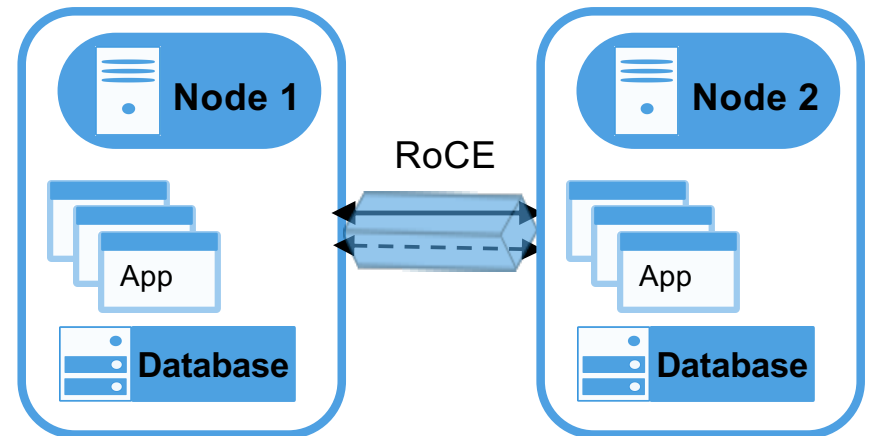
Db2 Mirror – Where to get more information

http://www-01.ibm.com/support/knowledgecenter/ssw_ibm_i_74/db2mi/db2mintro.htm

Home > IBM i 7.4 > Availability >

Db2 Mirror

☰ Table of Contents   Change version or product ⌄

IBM® Db2® Mirror for i is a continuous availability solution which offers the ability to keep database files synchronized between two nodes an

- **PDF file for Db2 Mirror**
  Use this to view and print a PDF of this information.

- **Intro and architecture**
  IBM Db2 Mirror for i enables a continuous availability solution for data on IBM i. This solution allows for the availability of Db2 content acr
  or eliminate common downtime windows.

- **Db2 Mirror concepts**
  This section describes the basic concepts you need to understand when working with Db2 Mirror.

- **Application considerations**
  The design of your production applications will affect the response time objective possible with IBM Db2 Mirror for i. Changes to your app
  Mirror environment.

- **Planning and setup**
  Many decisions need to be made as you prepare and step through the Db2 Mirror setup process. Db2 Mirror configuration concepts shoul
  decisions for your business.

- **Managing and monitoring Db2 Mirror**
  To facilitate continuous availability of your applications, it is necessary to understand how to monitor the Db2 Mirror environment, how to
  maintain your Db2 Mirror environment as your production environment evolves.

- **Db2 Mirror services**
  There are many SQL services that you can use to work directly with the Db2 Mirror environment.

Security Enhancements with IBM i 7.4

Continuous Security - Topics

- Authority Collection – Objects

- TLS

- SMB3

Authority Collection by User Profile

Concept

- Capture detail related to authority checks for a specific **user**

Benefits

- ❖ **Safely reduce** excess authorization
- ❖ **Review** authorization model prior to deploying new solutions
- ❖ **Train** your IBM i security officers
- ❖ **Diagnose** authorization failures

Acquisition Cost

- <u>None</u> - included in IBM i 7.3

Authority Collection by Object

Concept

- Capture detail related to authority checks for a specific **object**

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Acquisition Cost

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Authority Collection by Object

- As of IBM i 7.4 authority collection support allows the collection of authority information for **specific objects** when accessed by **any user**

- The authority collection value for an object set with the new **Change Authority Collection (CHGAUTCOL) command**

- Object types:
  - QSYS file system
  - "root" (/)
  - QOpenSys
  - User-Defined File Systems
  - Document Library Objects

Authority Collection – Capturing the detail

- **Change Authority Collection**
  - Point to specific objects to opt IN or OUT
  - Optionally include dependent objects
  - Change Authority Collection (CHGAUTCOL) or Navigator for i

1

- **Start Authority Collection**
  - Point to a specific user profile or *OBJAUTCOL
  - To monitor objects, this is the ON / OFF switch
  - Start Authority Collection (STRAUTCOL) or Navigator for i

2

- **End Authority Collection**
  - Point to a specific user profile or end all object collection
  - End Authority Collection (ENDAUTCOL) or Navigator for i

3

Authority Collection by Object – All activity

Change your included columns

Authority Collection - Columns

Available Columns: Filter

	Title

Current Columns:

	Title
	Authorization Name
	Detailed Current Authority
	Detailed Required Authority
	Current Authority
	Required Authority

Add >

< Remove

Display Authority Collection - Localhost

Actions ▼

| Permissions |
| Columns... |
| Save as Favorite |

... No filter applied

Search

|	Authorization Name	Detailed Current Authority	Detailed Required Authority
	Scottf	*OWNER *OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECU	*READ
	Scottf	*OWNER *OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECU	*OBJOPR
	Scottf	*OWNER *OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECU	*OBJOPR
	Frankdba	*OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECUTE	*DLT
	Frankdba	*OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECUTE	*ADD
	Frankdba	*OBJEXIST *OBJMGT *OBJALTER *OBJREF *OBJOPR *READ *ADD *DLT *UPD *EXECUTE	*READ

MARYSEC

TLS - Transport Layer Security v1.3

- Newest and most secure version of the TLS/SSL protocols replacing TLSv1.2
  - All key negotiation protected by elliptical curve algorithms
  - Majority of handshake messages are encrypted
  - Fixed or removed features susceptible to existing named vulnerabilities
  - Used at IBM i 7.4 when QSSLPCL is set to *OPSYS

SSLv2.0	TLSv1.0 RFC 2246		TLSv1.2 RFC 5246	SSLv3.0 Prohibited RFC 7568	

1995 1996   1999   2006   2008   2011   2015   2018 ....

| | SSLv3.0 | | TLSv1.1 RFC 4346 | SSLv2.0 Prohibited RFC 6176 | | TLSv1.3 RFC 8446 |

23
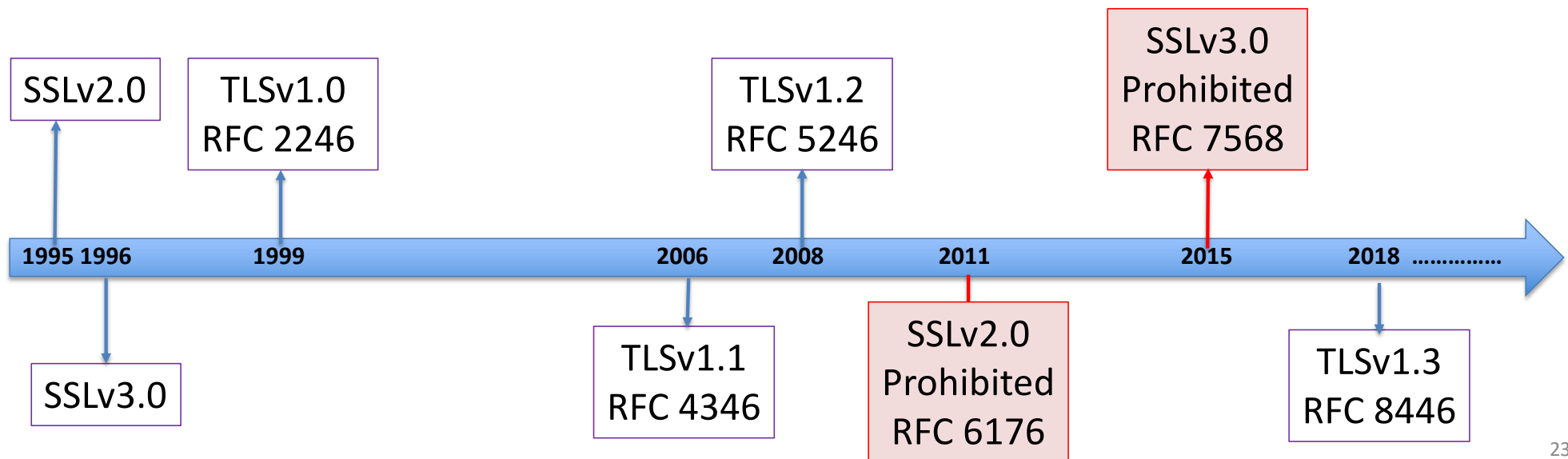
Server Message Block Version 3 - SMB 3

- **Supported by both NetServer and QNTC**

- Support for larger read and write sizes (512 Kb, in our case) to improve performance in high latency networks

- End to end data encryption for entire client/server conversations or just on access to specific shares

Source: http://aka.ms/smb3
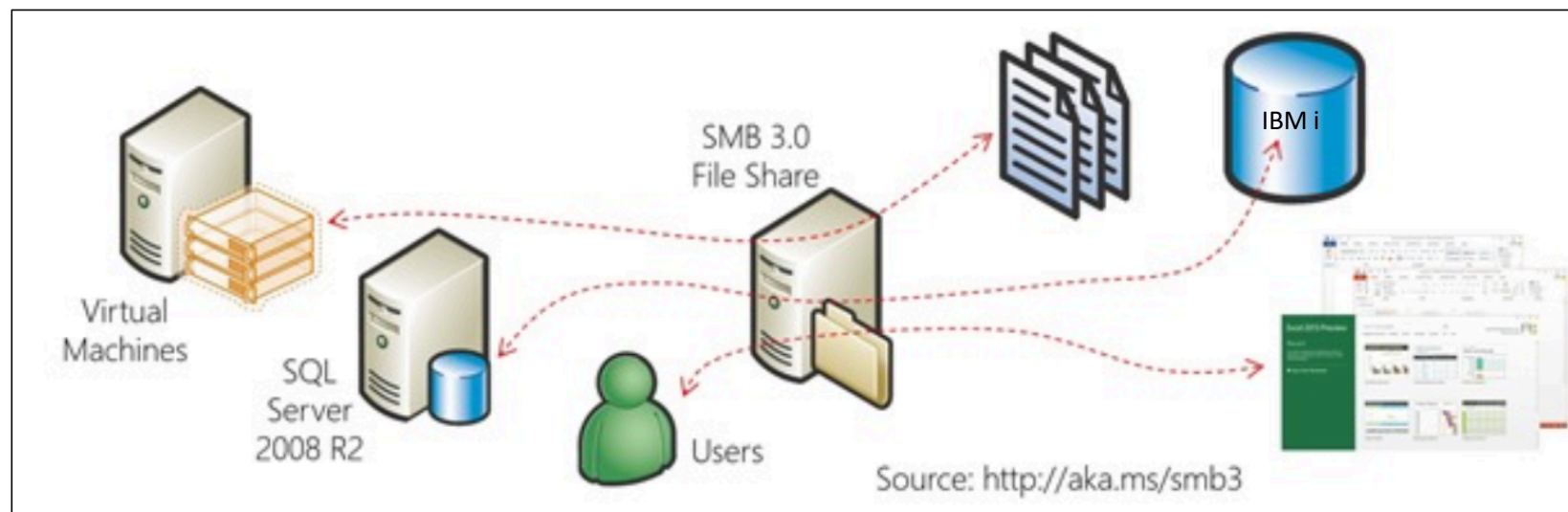
Application Development

Application Development Enhancements

Traditional Language Updates

- RPG IV
  - Varying dimension arrays
  - Same position subfields
- COBOL
  - COPY Enhanced
  - Conditional Compilation
  - FREE and ALLOCATE statements
  - INITIALIZE statement
  - EXIT statement
  - Inline comments
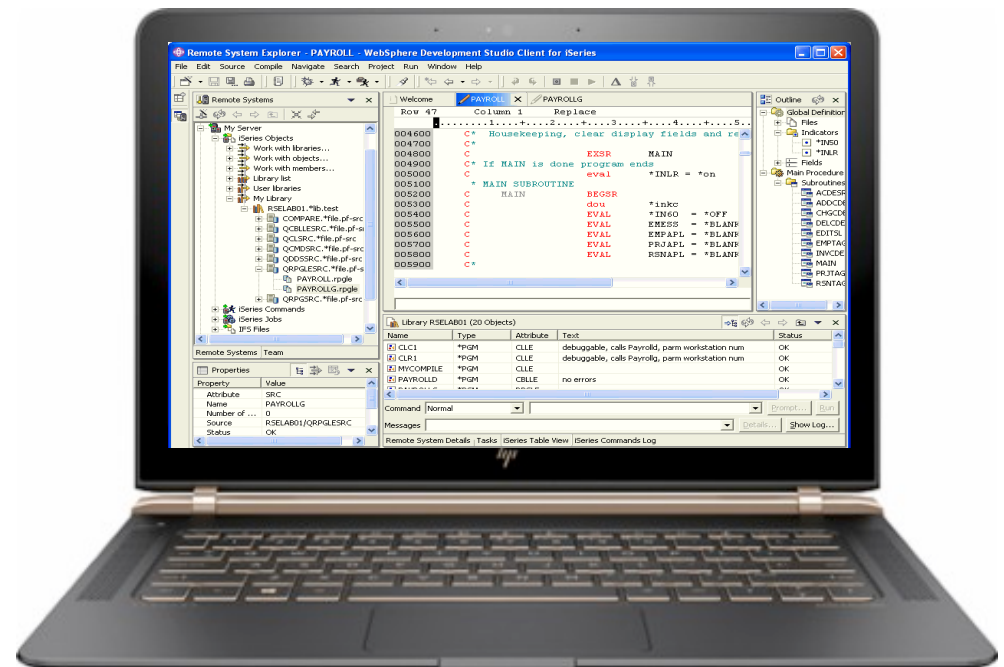
R: a new programming language on IBM i!

- Great for:
  - Data analysis
  - Statistical computing
  - Data mining
  - Big Data

- Ranked #7 by IEEE
  https://spectrum.ieee.org/at-work/innovation/the-2018-top-programming-languages

Language Rank	Types	Spectrum Ranking
1. Python	🌐 🖥 ▮	100.0
2. C++	📱 🖥 ▮	99.7
3. Java	🌐 📱 🖥	97.5
4. C	📱 🖥 ▮	96.7
5. C#	🌐 📱 🖥	89.4
6. PHP	🌐	84.9
7. R	🖥	82.9
8. JavaScript	🌐 📱	82.6

Tools

Rational Developer for i - 9.6.06

- *Modern*

- Supports RPG, COBOL, CL, C, C++, SQL, DDM

What's New:

- New PDM View

- Refactoring Updates – extract constants

- Improved SQL Formatting

- 7.4 RPG & COBOL updates

- ILE Parser finds anomalies

- Quick Zoom with command keys

- Code Coverage updates

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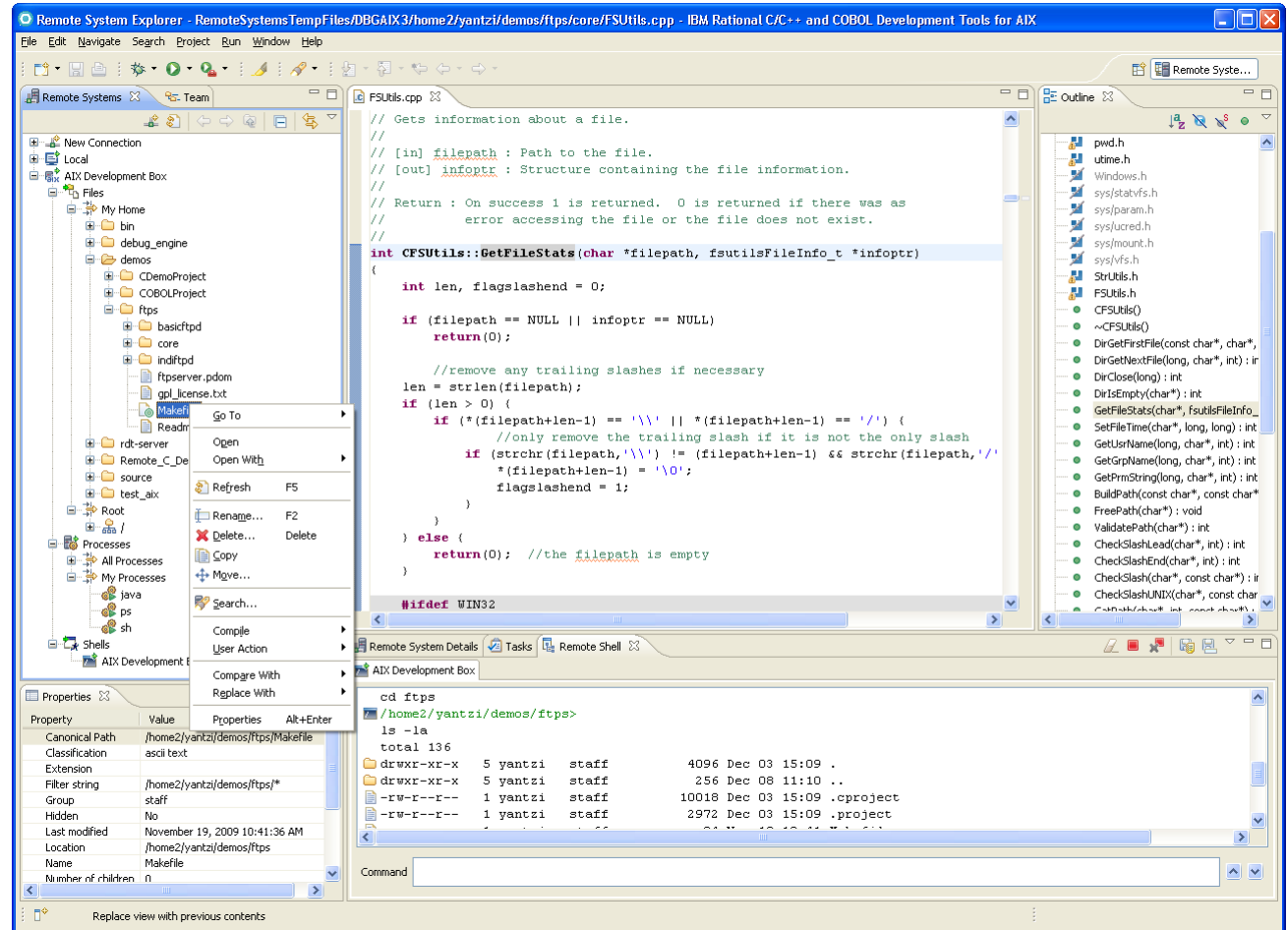
Open Source RPMs

- 5733-OPS is sunset, and no longer needed!

- Now delivered with RPMs

- To get started:
  - http://ibm.biz/ibmi-rpms

ACS – Open Source Package Manager
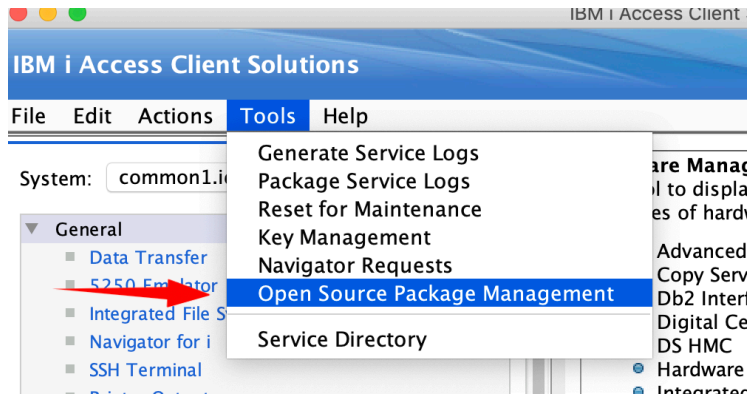
View and Update packages easily

Easily update packages in a
CHROOT
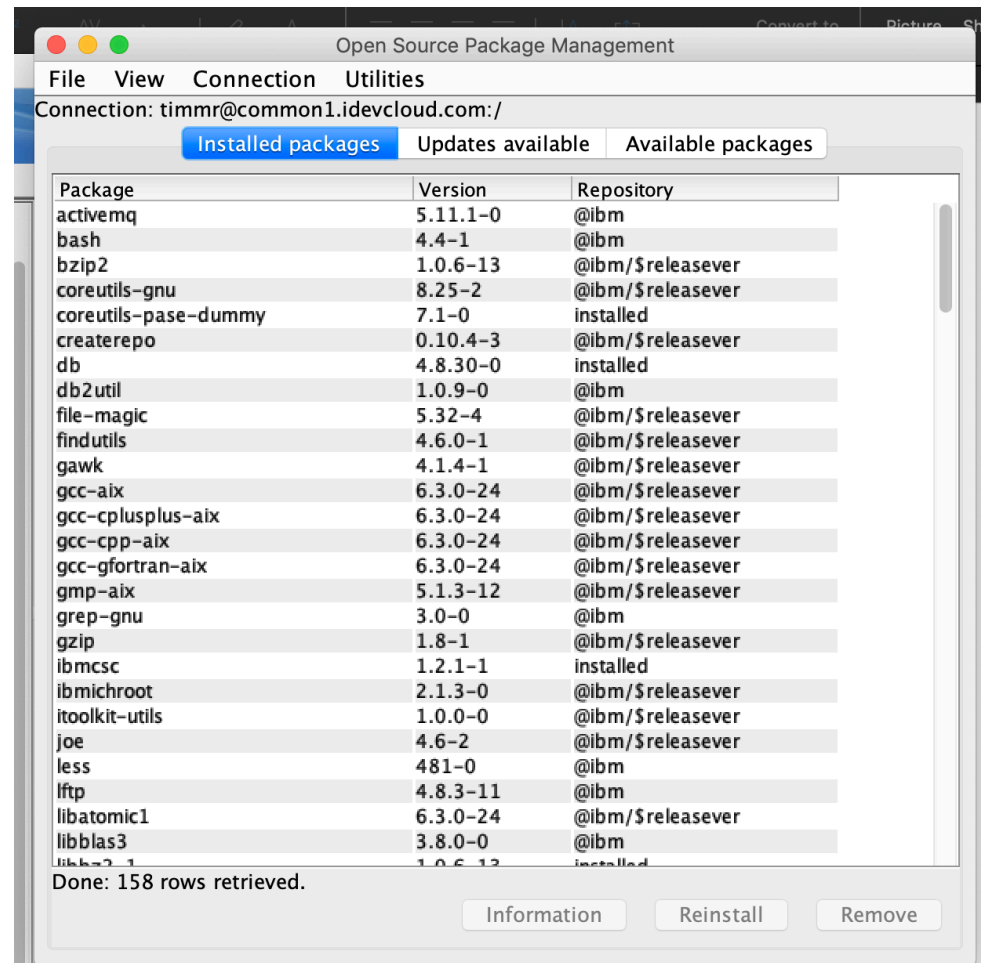
Python Machine Learning and Data Science

- Either available via RPM or buildable with Python "pip3" command
  - NumPy, Pandas
    - data processing
  - Scipy, Scikit-Learn
    - Machine Learning (ML) and scientific analysis
  - ipython
    - interactive python language support
  - nltk,
    - natural language toolkit for ML
  - matplotlib, jupyter notebook
    - visual/interactive ML/data analysis

ODBC Driver

- IBM i Access ODBC driver now supported on:
  - Windows
  - Linux
  - IBM i

ODBC Components

Application

ODBC Interface

Driver Manager

ODBC Driver | ODBC Driver | ODBC Driver

Data Source | Data Source | Data Source

RV3W364-1

- Why ODBC on IBM i?
  1. Develop on Windows/Linux, deploy on IBM i
  2. Use standard ODBC libraries from various languages (PHP, Python, Node.js, Ruby, R, etc)
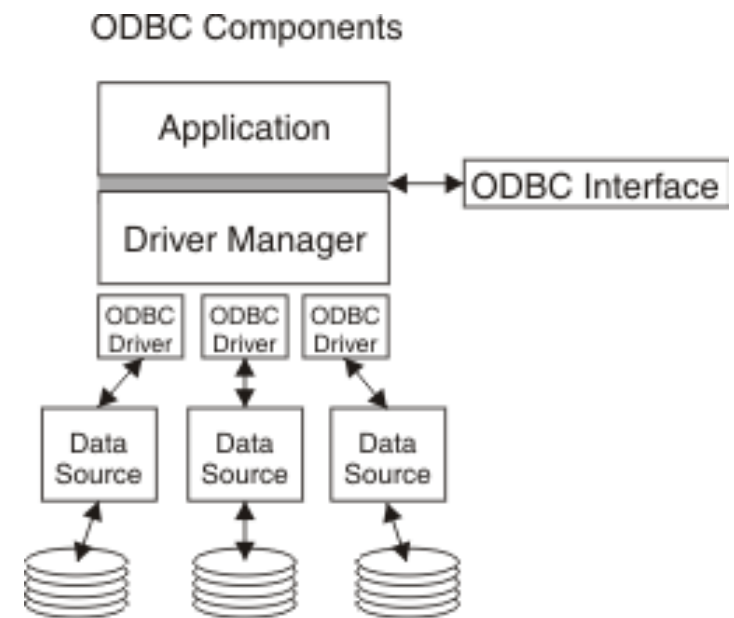
IBM i Application Connectivity Improvements

- JTOpen JDBC

  – Previously - when connection lost, a new
    connection had to be re-established with the
    backup server

  – IBM i 7.4 – Connection is NOT lost in the
    application, the 'backup' server just takes over

  – Also can choose to delay and retry to the same IBM
    i
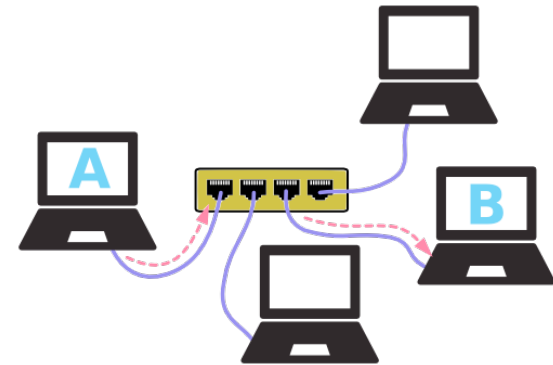
Loopback support

- Easily create REST APIs with a popular Node.js framework

IWS & Db2 Connections – IBM i 7.4

Use 1 connection from Web to IBM i – All HTTP based

Rest Connection

RPG PGM / SRVPGM

COBOL PGM / SRVPGM

IWS Server

Java / C / C++

Db2 Server Jobs

Db2 for i

IWS server handles the connection to the database. Use SQL directly from a REST connection

IWS Wizard Updated

Database

Enhancements delivered via Db2 PTF Groups

2018	**7.2 – TR8** **7.3 – TR4**	**7.2 – TR9** **7.3 – TR5**	**2019**	**7.3 – TR6** **7.4 – GA**

SF99702 Level 20
SF99703 Level 8

SF99702 Level 23
SF99703 Level 11

SF99703 Level 15
SF99704 Level 1
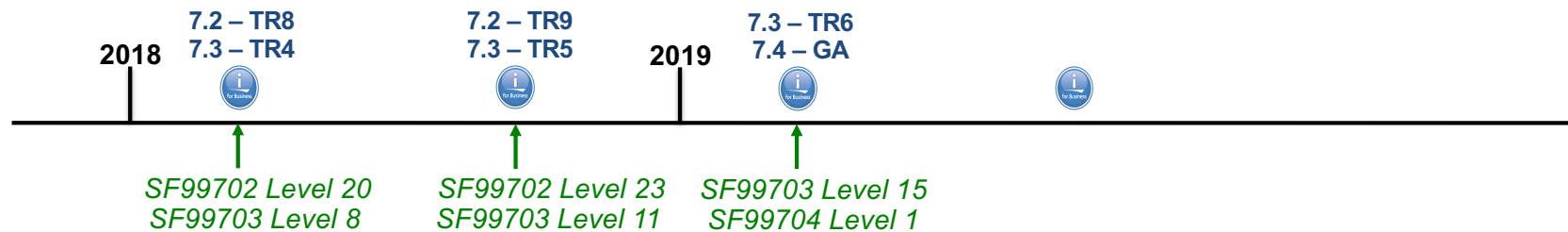
Enhancements timed with TR5 & TR9

- RPG Embedded SQL Enhancements
- New and Enhanced SQL built-in functions
- New and Enhanced IBM i Services
- Additional Database features in ACS
- SQL Language Improvements
- OmniFind Text Search enhancement
- And more…

Enhancements timed with IBM i 7.4 GA & TR6

- **IBM Db2 Mirror for i**
- **Authority Collection for objects**
- **RPG Embedded SQL Enhancements**
- **New and Enhanced IBM i Services**
- **Additional Database features in ACS**
- **SQL Language Improvements**
- **And more…**

www.ibm.com/developerworks/ibmi/techupdates/db2/groupptf

IBM i Services – Timeline

2018

7.2 – TR8
7.3 – TR4

7.2 – TR9
7.3 – TR5

2019

7.3 – TR6
7.4 – GA

SF99702 Level 20
SF99703 Level 8

SF99702 Level 23
SF99703 Level 11

SF99703 Level 16
SF99704 Level 1
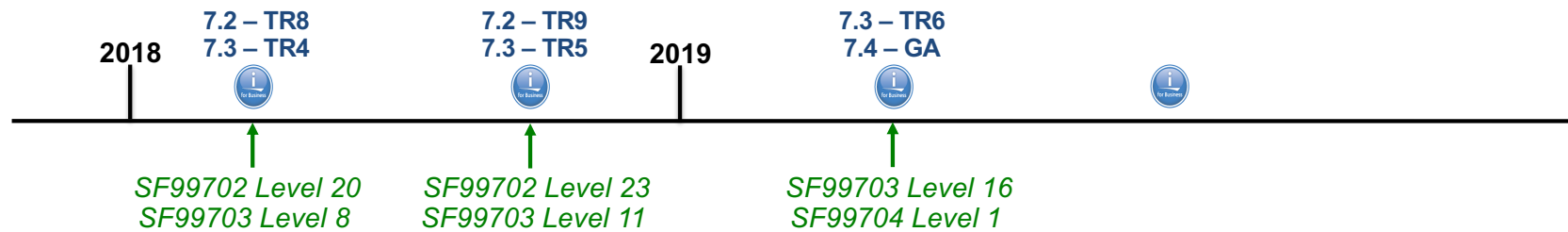
Services in 4Q/2017:

- Syslog detail returned from DISPLAY_JOURNAL & HISTORY_LOG_INFO
- ASP_INFO
- ASP_VARY_INFO
- JOB_QUEUE_INFO
- STACK_INFO
- And more…

Services in 3Q/2018:

- JOB_DESCRIPTION_INFO
- ACTIVE_JOB_INFO enhancements
- NETSTAT_INFO & NETSTAT_JOB_INFO enhancements
- And more…

Services in 2Q/2019:

- **DATA_AREA_INFO**
- **ASP_JOB_INFO**
- **MESSAGE_FILE_DATA**
- **SYSTOOLS.FIRMWARE_CURRENCY**
- **SYSTOOLS.SPLIT**
- **SYSTOOLS.SPOOLED_FILE_DATA**
- **IBM i 7.4 only services**
- **And many enhanced services**

http://ibm.biz/Db2foriServices

SYSTOOLS – A trifecta of enhancements

- **SYSTOOLS – Home of Db2 for i provided tools and examples**
  - **SPOOLED_FILE_DATA() – Query spooled files**
  - SPLIT() – LISTAGG() builds a list of values, SPLIT() deconstructs the list into single values
  - FIRMWARE_CURRENCY – **F**ix **L**evel **R**ecommendation **T**ool (FLRT) consumable with SQL

```
select * from table(systools.spooled_file_data(
            job_name => '083866/QSYS/SCPF',
        spooled_file_name => 'QPJOBLOG',
        spooled_file_number => '*LAST'));
```

ORDINAL_POSITION	SPOOLED_DATA
1	5770SS1 V7R4M0 190621 Job Log SYNC18 04
2	Job name . . . . : SCPF User . . . . : QSYS Number . .
3	Job description . . . . . . : *SYS Library . . . . . :
4	MSGID TYPE SEV DATE TIME FROM PGM LIBRARY INST
5	CPF1124 Information 00 03/28/19 20:53:03.667160 QWCISCFR QSYS 238F
6	Message . . . . : Job 000000/QSYS/SCPF started on 03/28/1
7	subsystem *NONE in *NONE. Job entered system on 03/28/19
8	CPC2609 Completion 00 03/28/19 20:53:20.109928 QDCVRC QSYS 0984
9	Message . . . . : Vary on completed for controller OCTL.

DATA_AREA_INFO

- Alternative to the Retrieve Data Area (RTVDTAARA) command
- **Logical and Character types, Decimal types, QTEMP, and more…**

> **select * from qsys2.data_area_info**
> **where data_area_library = 'GONZO333';**

DATA_AREA_LIBRARY	DATA_AREA_NAME	DATA_AREA_TYPE	LENGTH	DECIMAL_POSITIONS	DATA_AREA_VALUE
GONZO333	MYBOOLEAN	*LGL	1		-1
GONZO333	MYPLACE	*CHAR	100		-Place holder : 555

MESSAGE_FILE_DATA

- **Returns one row for each message in a message file**
- **SQL Alternative to the Display Message Description (DSPMSGD) CL command and the Retrieve Message (QMHRTVM) API**

```
select * from qsys2.MESSAGE_FILE_DATA
 where message_file_library = 'QSYS' and
     message_file        = 'QSQLMSG' and
     message_id like 'SQ20%';
```

MESSAGE_ID	MESSAGE_TEXT	Message Second Level Text		MESSAGE _DATA_C OUNT	Message Data
SQ20038	Clauses not valid in same definition.	Cause . . . . . :	&1 and &2 cannot be spe...	2	&1 *CHAR *VARY 2
SQ20054	File &1 in &2 has DataLinks in link ...	Cause . . . . . :	The accessed file &1 ha...	3	&1 *CHAR *VARY 2
SQ20055	Result column not compatible with co...	Cause . . . . . :	The data type of a resu...	1	&1 *CHAR *VARY 2
SQ20058	Subselect for materialized query tab...	Cause . . . . . :	&1 in &2 cannot be crea...	3	&1 *CHAR *VARY 2
SQ20073	Attribute not valid for function &1 ...	Cause . . . . . :	Function &1 in &2 canno...	2	&1 *CHAR *VARY 2

IBM® i Services

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.DRDA_AUTHENTICATION_ENTRY_INFO – VIEW
QSYS2.FUNCTION_INFO – VIEW
QSYS2.FUNCTION_USAGE – VIEW
QSYS2.GROUP_PROFILE_ENTRIES – VIEW
QSYS2.OBJECT_PRIVILEGES – VIEW
QSYS2.SQL_CHECK_AUTHORITY – UDF
QSYS2.USER_INFO – VIEW
SYSPROC.SET_COLUMN_ATTRIBUTE – PROCEDURE

Spool Services

QSYS2.OUTPUT_QUEUE_ENTRIES – VIEW
QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC – VIEW
QSYS2.OUTPUT_QUEUE_ENTRIES – UDTF
QSYS2.OUTPUT_QUEUE_INFO – VIEW
SYSTOOLS.SPOOLED_FILE_DATA – UDTF

Storage Services

QSYS2.ASP_INFO – VIEW
QSYS2.ASP_JOB_INFO – VIEW
QSYS2.ASP_VARY_INFO – VIEW
QSYS2.MEDIA_LIBRARY_INFO – VIEW
QSYS2.SYSDISKSTAT – VIEW
QSYS2.SYSTMPSTG – VIEW
QSYS2.USER_STORAGE – VIEW

Journal Services

QSYS2.DISPLAY_JOURNAL – UDTF
QSYS2.JOURNAL_INFO – VIEW

Java Services

QSYS2.JVM_INFO – VIEW
QSYS2.SET_JVM – PROCEDURE

Librarian Services

QSYS2.LIBRARY_LIST_INFO – VIEW
QSYS2.OBJECT_STATISTICS – UDTF

System Health Services

QSYS2.SYSLIMITS – VIEW
QSYS2.SYSLIMTBL – TABLE

■ — *Added in IBM i 7.4*

■ — *Added or Enhanced @ IBM i 7.3 TR6*

http://ibm.biz/Db2foriServices
http://www.ibm.com/developerworks/ibmi/techupdates/db2/landscape

IBM® i Services

Product Services

QSYS2.LICENSE_INFO – VIEW
SYSTOOLS.LICENSE_EXPIRATION_CHECK – PROCEDURE

Application Services

QSYS2.DATA_AREA_INFO – UDTF & VIEW
QSYS2.ENVIRONMENT_VARIABLE_INFO – VIEW
QSYS2.QCMDEXC – PROCEDURE
QSYS2.SERVICES_INFO – TABLE
QSYS2.SET_PASE_SHELL_INFO – PROCEDURE
QSYS2.STACK_INFO – UDTF
SYSTOOLS.SPLIT – UDTF

Communication Services

QSYS2.ADD_TIME_SERVER – PROCEDURE
QSYS2.NETSTAT_INFO – VIEW
QSYS2.NETSTAT_INTERFACE_INFO – VIEW
QSYS2.NETSTAT_JOB_INFO – VIEW
QSYS2.NETSTAT_ROUTE_INFO – VIEW
QSYS2.REMOVE_TIME_SERVER – PROCEDURE
QSYS2.SERVER_SBS_ROUTING – VIEW
QSYS2.SET_SERVER_SBS_ROUTING – PROCEDURE
QSYS2.TCPIP_INFO – VIEW
QSYS2.TIME_PROTOCOL_INFO – VIEW
SYSIBMADM.ENV_SYS_INFO – VIEW

Message Handling Services

QSYS2.HISTORY_LOG_INFO – UDTF
QSYS2.JOBLOG_INFO – UDTF
QSYS2.MESSAGE_FILE_DATA – VIEW
QSYS2.MESSAGE_QUEUE_INFO – VIEW
QSYS2.REPLY_LIST_INFO – VIEW

PTF Services

QSYS2.GROUP_PTF_INFO – VIEW
QSYS2.PTF_INFO – VIEW
SYSTOOLS.FIRMWARE_CURRENCY – VIEW
SYSTOOLS.GROUP_PTF_CURRENCY – VIEW
SYSTOOLS.GROUP_PTF_DETAILS – VIEW

Work Management Services

QSYS2.ACTIVE_JOB_INFO – UDTF
QSYS2.GET_JOB_INFO – UDTF
QSYS2.JOB_DESCRIPTION_INFO – VIEW
QSYS2.JOB_INFO – UDTF
QSYS2.JOB_QUEUE_INFO – VIEW
QSYS2.MEMORY_POOL – UDTF
QSYS2.MEMORY_POOL_INFO – VIEW
QSYS2.OBJECT_LOCK_INFO – VIEW
QSYS2.RECORD_LOCK_INFO – VIEW
QSYS2.SCHEDULED_JOB_INFO – VIEW
QSYS2.SYSTEM_STATUS – UDTF
QSYS2.SYSTEM_STATUS_INFO – VIEW
QSYS2.SYSTEM_VALUE_INFO – VIEW

— *Added in IBM i 7.4*

— *Added or Enhanced @ IBM i 7.3 TR6*

Accessing IBM i

Access Client Solutions – What's New

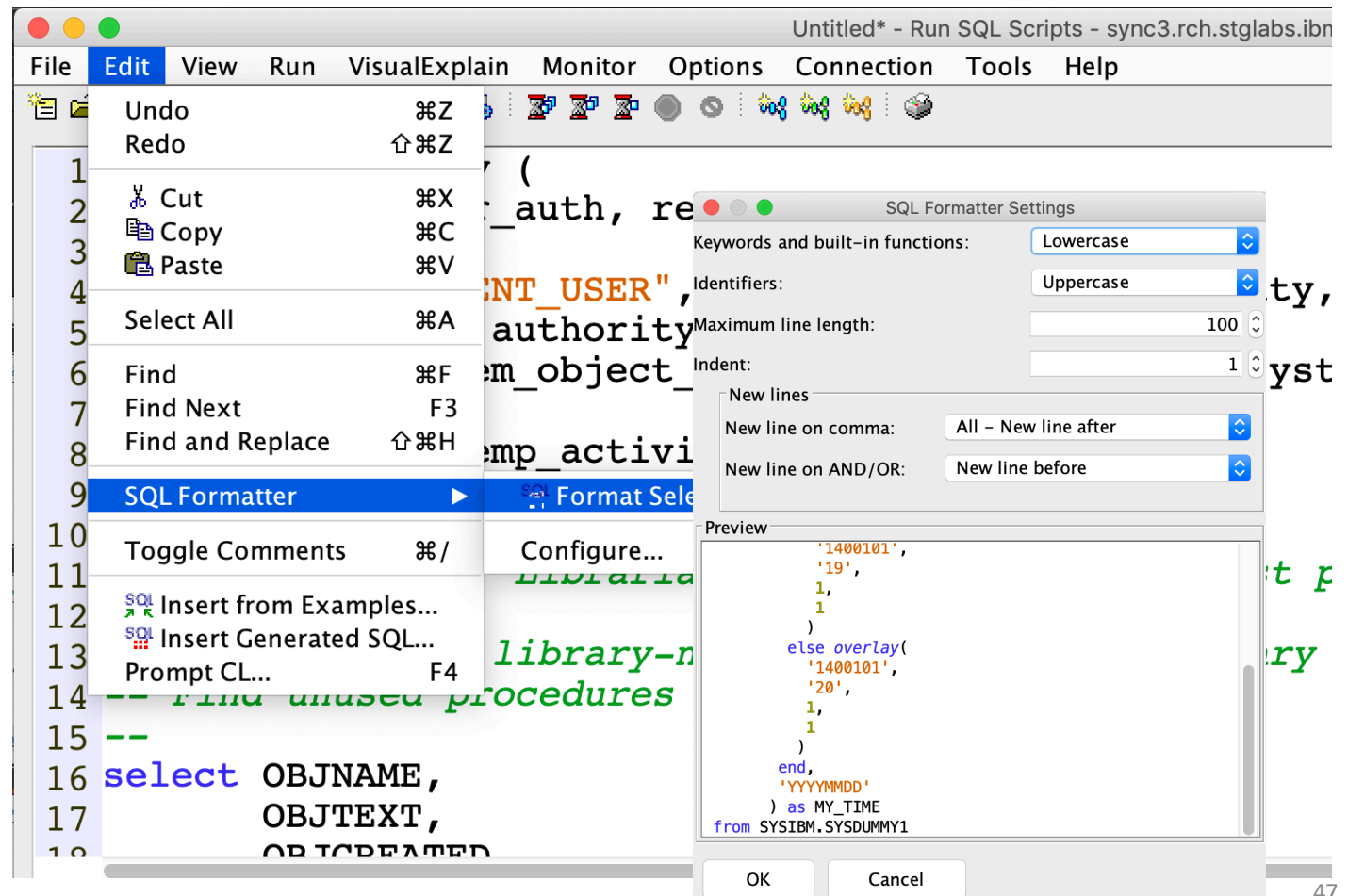New Formatter!
- It works ☺

Syntax Validation
- No extra charge

IASP and DB
Connections
Remembered

IBM® i Services – ACS Run SQL Scripts!

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.DRDA_AUTHENTICATION_ENTRY_INFO – VIEW
QSYS2.FUNCTION_INFO – VIEW
QSYS2.FUNCTION_USAGE – VIEW
QSYS2.GROUP_PROFILE_ENTRIES – VIEW
QSYS2.OBJECT_PRIVILEGES – VIEW
QSYS2.SQL_CHECK_AUTHORITY – UDF
QSYS2.USER_INFO – VIEW
SYSPROC.SET_COLUMN_ATTRIBUTE – PROCEDURE

Spool Services

QSYS2.OUTPUT_QUEUE_ENTRIES – VIEW
QSYS2.OUTPUT_QUEUE_ENTRIES_BASIC – VIEW
QSYS2.OUTPUT_QUEUE_ENTRIES – UDTF
QSYS2.OUTPUT_QUEUE_INFO – VIEW
SYSTOOLS.SPOOLED_FILE_DATA – UDTF

Storage Services

QSYS2.ASP_INFO – VIEW
QSYS2.ASP_JOB_INFO – VIEW
QSYS2.ASP_VARY_INFO – VIEW
QSYS2.MEDIA_LIBRARY_INFO – VIEW
QSYS2.SY...
QSYS2.SY...
QSYS2.USER...

Journal Se...

QSYS2.DISPLAY_...
QSYS2.JOUR...

Java Serv...

QSYS2....
QSYS2.SET_JV...

Librarian Se...

QSYS2.LIBRARY_...
QSYS2.OBJECT_ST...

System Health...

QSYS2.S...
QSYS2.SY...

All in ACS!
No more posters required

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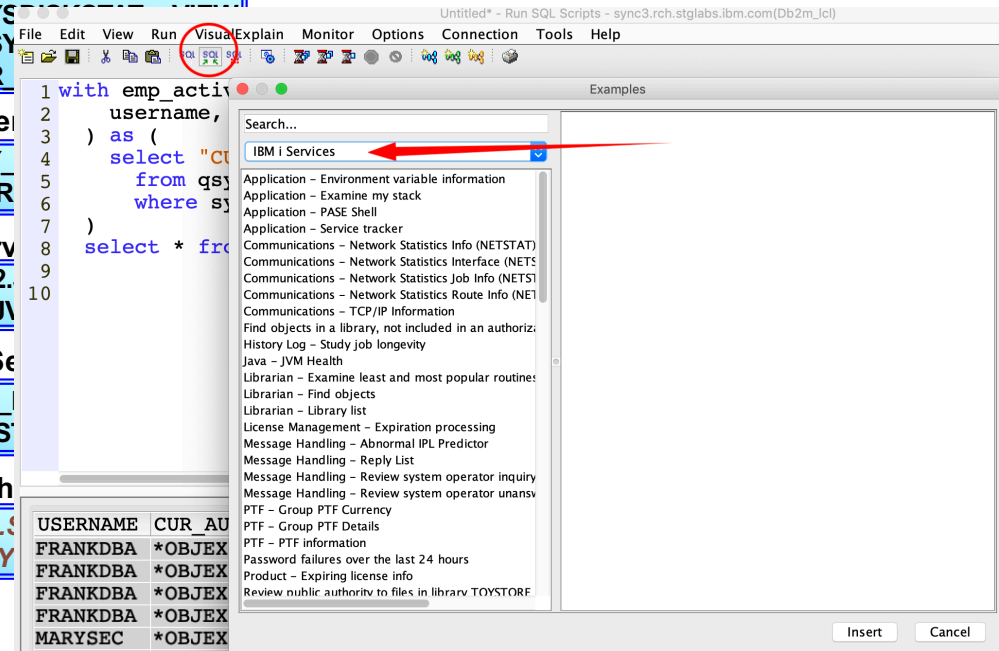
Access Client Solutions – IFS

Include - Only bring into the IFS interface the files & directories that match the include value

Filter – Contextual filter of displayed content

ACS Version 1.1.8.2 (released 4/24/19)

- Updated several times per year (stay current)
- Something for every user
- Database features and much more

Download site:

ibm.biz/IBMi_ACS
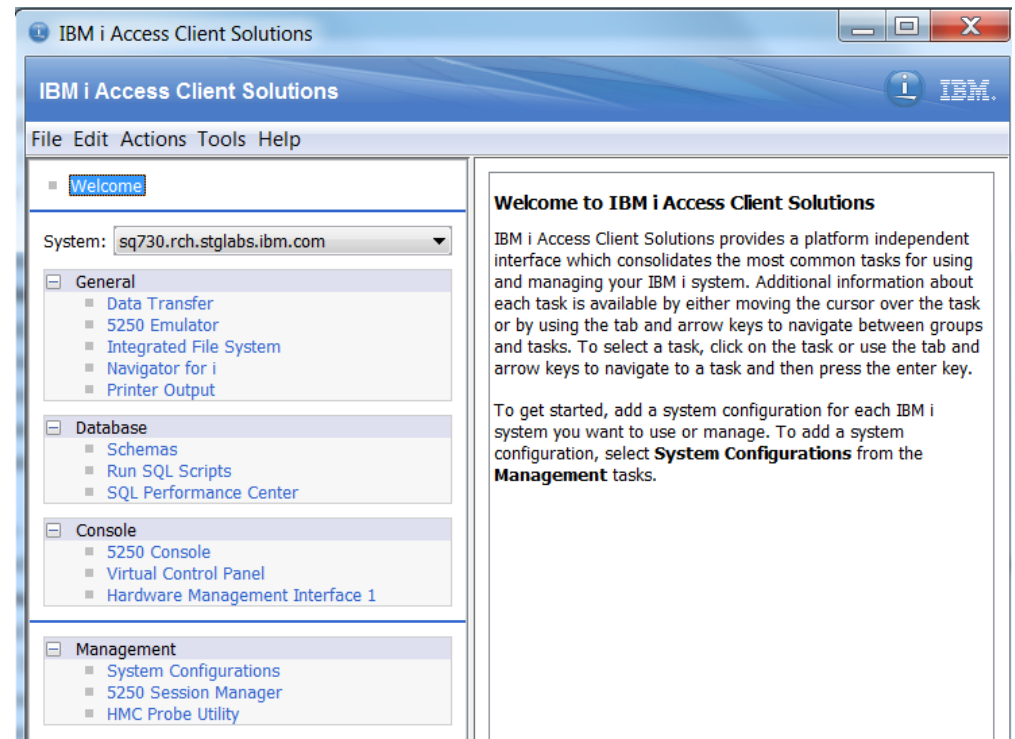
Integrated Capabilities

IBM i 7.4

Workload groups before 7.4

- Prior to 7.4, configure by **Subsystem** only (CRTSBSD, CHGSBSD)
- Every job in the subsystem runs in same group
- Must split workloads into separate subsystems for each workload group

QUSRWRK SBS

WLCGRP(*NONE)

SBS1
WLCGRP(GRP1)

SBS2
WLCGRP(GRP2)

SBS3
WLCGRP(GRP3)
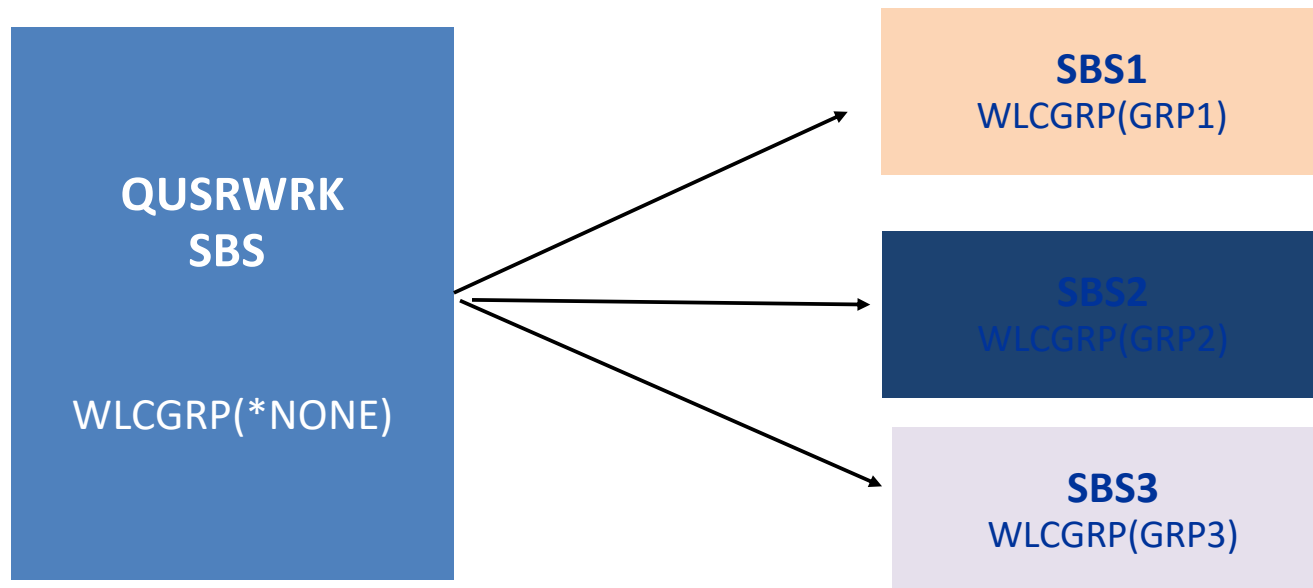
Workload groups on JOBD in 7.4

- Configure by Job description – CRTJOBD, CHGJOBD
- Workloads can now run in different groups within same subsystem

QUSRWRK SBS
WLCGRP(*NONE)

JOBD1
WLCGRP(GRP1)

JOBD2
WLCGRP(GRP2)

JOBD3
WLCGRP(GRP3)
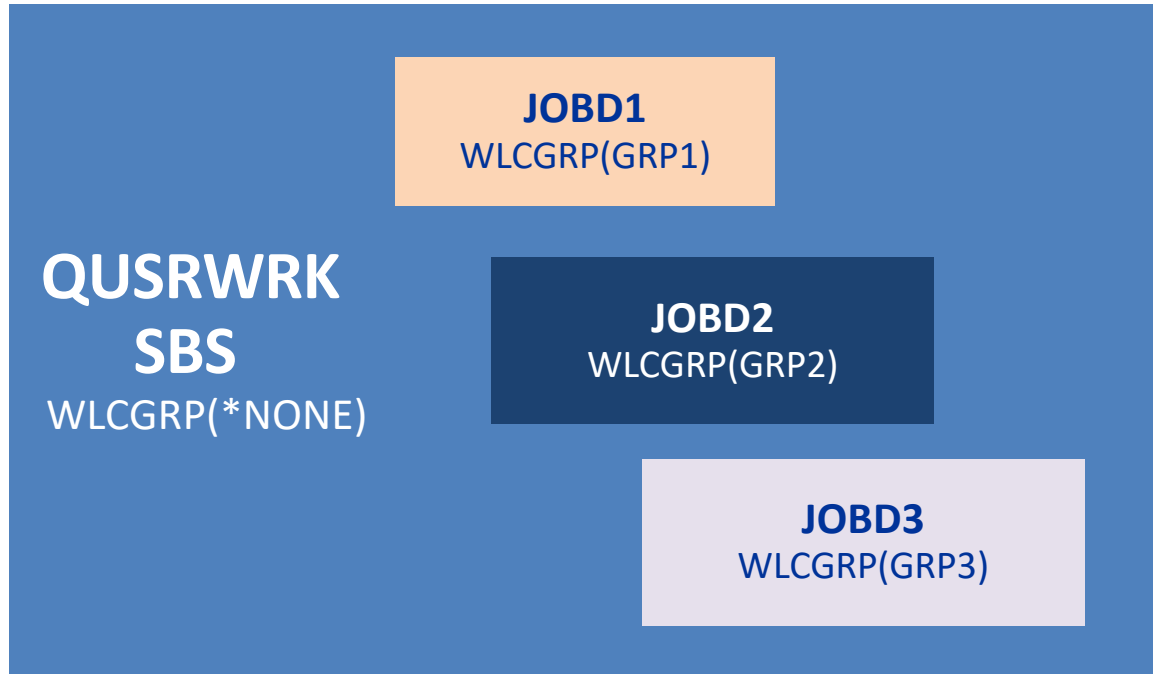
Easy to set up, just create a group and then CHGJOBD to use the workload group.

No need to restart the subsystem!

IBM i Cores/Partition – SMT – Threads

Processor	Limit	IBM i 7.1	IBM i 7.2	IBM i 7.3	IBM i 7.4
POWER7	Max Cores/Partition (Lab Services RPQ only)	64 (SMT4)	96 (SMT4)	96 (SMT4)	---
POWER7	Max Threads	256	384	384	---
POWER8	Max Cores/Partition (Lab Services RPQ only)	64 (SMT4) 32 (SMT8)	96 (SMT8)	192 (SMT4) 96 (SMT8)	192 (SMT4) 96 (SMT8)
POWER8	Max Threads	256	768	768	768
POWER9	Max Cores/Partition (Lab Services RPQ only)	---	96 (SMT8)	192 (SMT4) 96 (SMT8)	**192 (SMT8)**
POWER9	Max Threads	---	768	768	**1536**

IBM i System Support

Servers	IBM i 7.2	IBM i 7.3	IBM i 7.4
POWER9 **S914, S922 (VIOS only), H922 (VIOS only), S924, H924, E980**	✔	✔	✔
POWER8 **S812, S814, S822 (VIOS only), S824, E870, E870C, E880, E880C**	✔	✔	✔
POWER7/7+ **710, 720, 730, 740, 750, 760, 770, 780, 795**	✔	✔	
POWER7 BladeCenter **PS700/701/702/703/704 (all VIOS only)** **POWER7/7+ Flex** **p260/270/460 (all VIOS only)**	✔		
POWER6+ **520, 550, 560, 570, JS23/43 (VIOS only)** **POWER6** **520, 550, 570, 595, JS12/22 (VIOS only)**	✔1		Current as of 2019-04-23

1 – no IOP or HSL support

http://www-01.ibm.com/support/docview.wss?uid=ssm1platformibmi

Cloud Options

Modernization and Cloud Journey for POWER Customers

- **Seamless management** of IT infrastructure, multiple clouds and applications

Manage Cloud Infrastructure
PowerVC Cloud

+

Create and Manage Cloud Native Apps
Red Hat OpenShift
+ Cloud Automation Mgr.

+

Manage Hardware and Ops
HMC

Traditional IT Infrastructure

✓ Build on existing PowerVM and KVM hypervisors

✓ Use PowerVC to manage Power Cloud infrastructure

✓ Modernize existing, build new apps on POWER and x86

✓ Securely connect to business critical data and apps

✓ Provide cloud automation and single self-service portal for AIX and IBM i VMs plus Linux containerized apps

IBM Power Systems Virtual Server on IBM Cloud

Offering Description:

A user can purchase an AIX or IBM i PowerVM-based Virtual Machine-as-a-Service on IBM Cloud. IBM manages up to OS deployment and the client self-manages the OS and up. Our users can purchase the offering through Cloud consumption-based pricing plans available through IBM Cloud Catalog.

MVP Offering:

|	
Systems:	**S922 or E880**
Compute:	**0.25-143 cores (15 for S922, 143 for E880/980), Dedicated or Shared option**
Memory:	**8-64 GB per core**
Storage Type:	**Type: Tier 3 (HDD) or Tier 1 (SSD)**
Storage Quantity	Quantity: **10 GB minimum, 2 TB maximum per disk, 10 GB increments**
Network:	**Public and/or Private IP**
OS:	**AIX / IBM i**

IBM Power Systems Virtual Server on IBM Cloud

Offering Summary:

- S922 and E880/E980 based virtual systems with v7K based storage
    - Power compute as-a-service
    - Located in existing IBM Cloud datacenters
- AIX/IBM i as a service in the IBM Cloud

Offering Logistics:

- Delivered as an integrated piece of the IBM Cloud and available as-a-service (including the OS license)
- Client purchases through the IBM Marketplace w/ UI or via scripts for larger/internal contracts – extend geographical reach and scale of existing partner solutions built on IBM Power Systems
- Flexible offering – Client selects # cores, type of cores, storage, Operating System, etc.
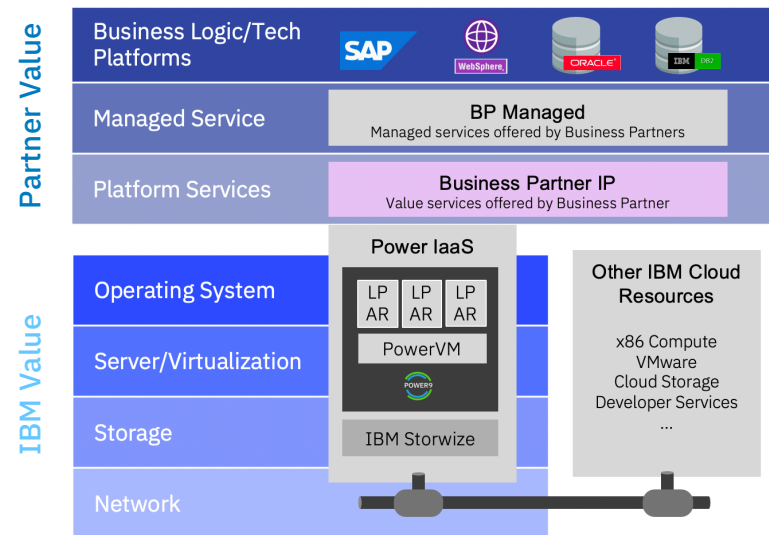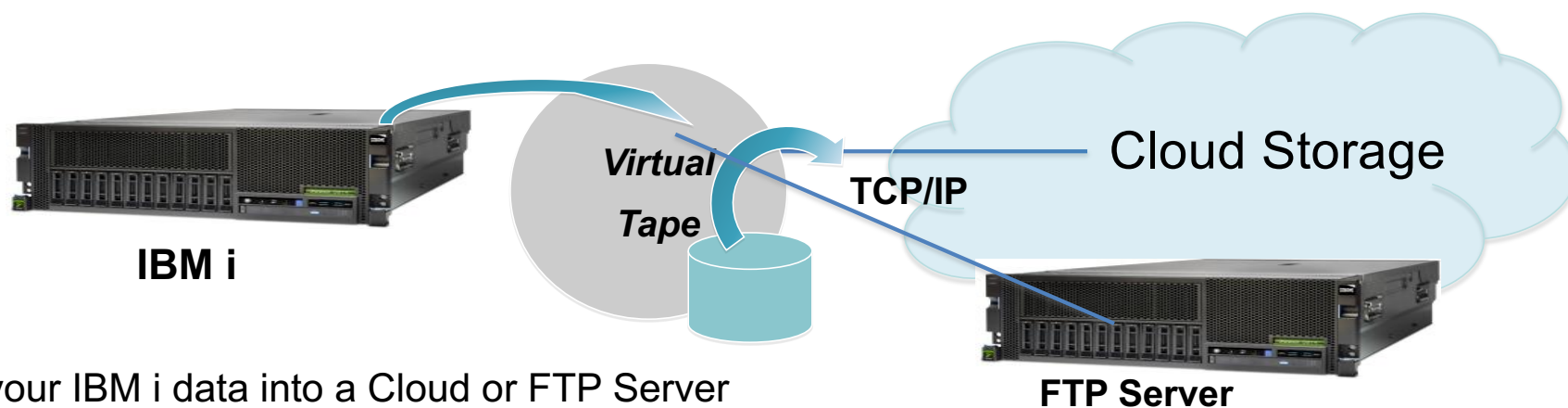
IBM Cloud Storage Solutions (5733ICC)

- Today
  - Tape Drives
  - Tapes are then shipped to offsite location
  - Disaster Recovery
  - Tapes need to be shipped back

- Why not remove the tape drive from the equation

- Send the backup 'directly' to an off site location

60

IBM Cloud Storage Solutions for i (5733ICC)

IBM i

Virtual Tape

TCP/IP

Cloud Storage

FTP Server

Save your IBM i data into a Cloud or FTP Server

- Two modes
    1. BRMS to Cloud for backup operations
    2. GUI dashboard for storing files in the Cloud (think of BOX-like usage cases)

http://www.ibm.com/support/knowledgecenter/ssw_ibm_i_73/icc/topics/iccuoverview.htm

… and More!

Domino V10.0.1 for i

- Released on Feb 5, including Traveler V10.0.1

- Supports IBM i 7.2 and later releases

- Product ID: 5733D10, first release to support double digit VRM, please use 100001 when vvrrmm format VRM is required

- A significant release, including

  - Automatic Notes client updates

  - MarvelClient Essentials for IBM Notes Management solution

  - Publishing statistics to external services

  - Larger database(256GB) and folders

  - Apache Tika conversion filter for attachments searches

  - Features that save your time, such as Indexing/clusters/database replicas management

  - …

#dominoforever

DOMINO V10

… and More Innovations!

- PowerHA
- IFS
- Apache 2.4.36
- SMTP
- Service Tools
- System Limits
- More Cores & Threads per partition
- LUN Sizes
- …

Important Dates and Links

- **IBM i 7.3 TR6 and IBM i 7.4 – Announce: April 23, 2019**
  - Books updated in IBM Knowledge Center
  - Enhancement fact pages added to the IBM i Technology Updates wiki

- **IBM i 7.3 TR6 – GA: May 10, 2019**

- **IBM i 7.4 – GA: June 21, 2019**

- **Enhancement Landing pages…**
  http://www.ibm.com/developerworks/ibmi/techupdates/i73-TR6
  and
  http://www.ibm.com/developerworks/ibmi/techupdates/i74

- **IBM i 7.2 → No further enhancements**