The Omni User

An Association of Chicagoland
Computer Professionals

IBM i Updates in 60 Minutes (more or less)

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IBMCHAMPION

Disclaimers

Mike Pavlak does NOT work for IBM, nor does he represent IBM in any way

All information provided is cited and available via public channels

Mike may offer thoughts and opinions which will be labeled like this

Mike's Thoughts

A LOT of people are talking about COVID-19. We've heard enough so the focus is on tech!

Most of the images seen are taken DIRECTLY from IBM presentation materials or Mike's LPAR

Any examples shown are from IBM's 7.4 demo or built on a current "PTF'd" 7.3 partition as of 5/23/2020

Some features are only available on IBM i 7.4. This should be indicated with: **IBM i 7.4 only**

Every effort was made to ensure technical accuracy, no warranties written or implied…

Agenda

THINK (CEO/President)

IBM i
◦ OS Updates
◦ HA
◦ Db2
◦ App Dev & Open Source
◦ Systems Management

Miscellaneous

IBM THINK Virtual Conference

Messaging from the CEO, Arvind Krishna

Two dominant forces: Hybrid Cloud and AI

- Hybrid Cloud
  - 4 imperatives
    - History, choice, physics and law
  - Big bets
    - Red Hat acquisition
- Promises a more entrepreneurial culture to innovate faster
- Major announcements
  - AI for IT – Automate infrastructure and reduce costs WatsonAIOps
    - Built on the latest release of Red Hat OpenShift (run across any hybrid cloud environment)
  - Financial Services ready Public Cloud (New program for ISV's to adopt)
  - Tech Preview: IBM Cloud Satellite – Delivered as Service, on prem or at the edge
  - 5G and edge computing – edge and telco network cloud solutions
    - Built on Red Hat OpenStack & OpenShift

Edge computing

Edge computing is a distributed computing paradigm that brings computation and data storage closer to the location where it is needed, to improve response times and save bandwidth. Wikipedia

Every company will become an AI company

What is Edge computing?

Edge computing

Edge computing is a distributed computing paradigm that brings computation and data storage closer to the location where it is needed, to improve response times and save bandwidth. Wikipedia

Edge computing acts on data at the source

Edge computing is a distributed computing framework that brings enterprise applications closer to data sources such as IoT devices or local edge servers.   IBM

https://www.ibm.com/cloud/what-is-edge-computing

Edge Computing
Edge computing is where compute resources, ranging from credit-card-size computers to micro data centers, are placed closer to information-generation sources, to reduce network latency and bandwidth usage generally associated with cloud computing… Microsoft - 2008

https://www.microsoft.com/en-us/research/project/edge-computing/

Lambda@Edge
Run your code closer to your users

https://aws.amazon.com/lambda/edge/

IBM President Jim Whitehurst

Was president and CEO of Red Hat

◦ Fostered turnaround of major companies like Delta

◦ Author: The open Organization: Igniting Passion and Performance

Hybrid Cloud Keynote:

◦ Current cloud deployments are messy, fragmented, disassociated

◦ To be successful, Hybrid Cloud must be aligned with business strategy

◦ Red Hat software at the heart of only Hybrid Cloud platform

◦ Red Hat Marketplace – acquire and run solutions

◦ Red Hat will continue to be a stand alone company

◦ IBM Edge Computing Application Manager (AI & Analytics to IT Workload)

◦ IBM Telco Network Cloud Manager

◦ Orchestration is the new product

"Data is the fuel,
Hybrid Cloud is the platform,
AI is the accelerant and
Insight is the outcome"

THE OPEN ORGANIZATION
IGNITING PASSION AND PERFORMANCE
JIM WHITEHURST
CEO, RED HAT
WITH A FOREWORD BY GARY HAMEL
HARVARD BUSINESS REVIEW PRESS

Open Organization by Jim Whitehurst (2015-06-02)
by Jim Whitehurst | Jan 1, 1800

Unknown Binding
$40⁴²

https://www.crn.com/slide-shows/cloud/5-things-to-know-about-ibm-s-new-president-jim-whitehurst

Other keynotes

Ginny Rometti and will.i.am on inclusivity and AI

Dario Gil on Quantum

Tom Rosamilia on Leadership through change

Mary O'Brien on Cybersecurity Risks

Sadly, not much on IBM i but…
◦ IBM is FINALLY indicating that legacy platforms can be
   ◦ Local
   ◦ Valuable
   ◦ Essential
◦ Hybrid Cloud embraces legacy..

Mike's Thoughts

COMMON Virtual Updates

Tue April 14 – Latest on 7.3 & 7.4 with Steve Will and Sibley

Thu April 16 – HA/DR and Continuous Availability with Steve Finnes

Mon April 20 – Db2 & Web Query with Scott Forstie & Doug Mack

Wed April 22 – Application Development and open Source with Tim Rowe and Jesse Gorzinski

Fri April 24 – Systems Management with Tim Rowe

https://learn.common.org/products/april-2020-ibm-i-virtual-updates

Operating System, etc.

COMMON IBM ANNOUNCEMENTS

Steve Sibley: Clear vision for the future

An underlying focus on systems management during the pandemic

2020
iSight

IBM Cognitive Systems Strategy
◦ Hybrid Cloud
◦ Resilient, scalable & secure
◦ Application modernization

Announcements (April 14, 2020)
◦ IBM i 7.4 TR2 and 7.3 TR8
    ◦ (Notice 7.2 has no TR…hint-hint)

Mike's Thoughts

◦ Db2 Mirror for small to medium business
    ◦ Support for internal storage, NVMe and new entry price

Hardware (ish)

IBM i Virtualization for tape libraries (RFE 127631)
◦ Share tape libraries across partitions without VIOS
◦ Supports disparate version from 7.2 thru 7.4
◦ SAS, Fibre Channel, and SAN supported

https://www.ibm.com/support/pages/node/1108539

TLS 1.3, 'nuff said…
◦ 7.4 and 7.3
◦ System value enablement
◦ Modern DCM Interface

Db2 Mirror Application Evaluation Standalone Mode
◦ Starting at source partition, point to target (7.2, 7.3 or 7.4) and discover issues

https://www.ibm.com/support/knowledgecenter/ssw_ibm_i_74/db2mi/db2mipdf.pdf

RDi 9.6.0.7

Refactoring – Extract Procedure
◦ Reengineering - Highlight code, right click, "Refactor"

Realtime SQL Validation & Formatting

Conditional Set Entry Point

120 day free trial

https://www.ibm.com/us-en/marketplace/rational-developer-for-i

Mike's Thoughts
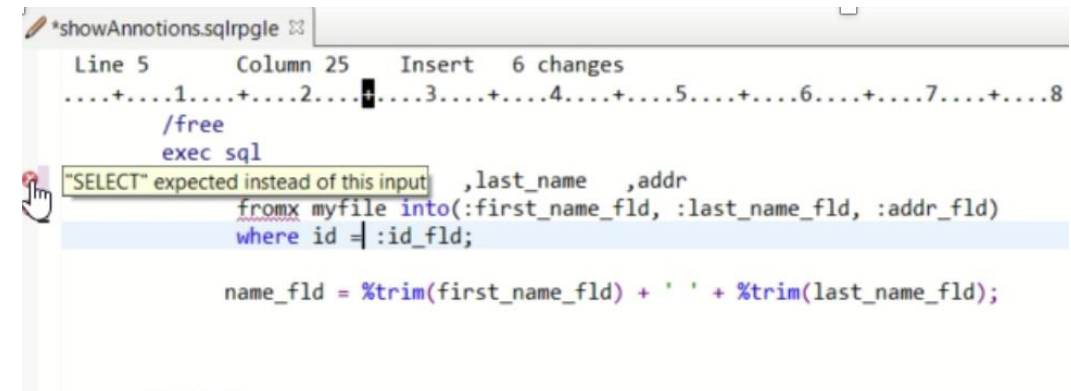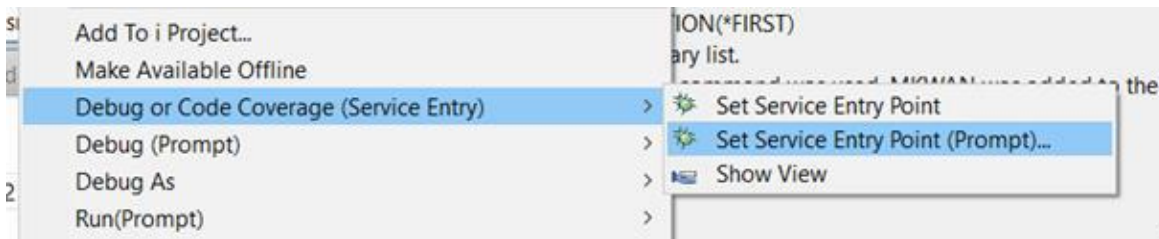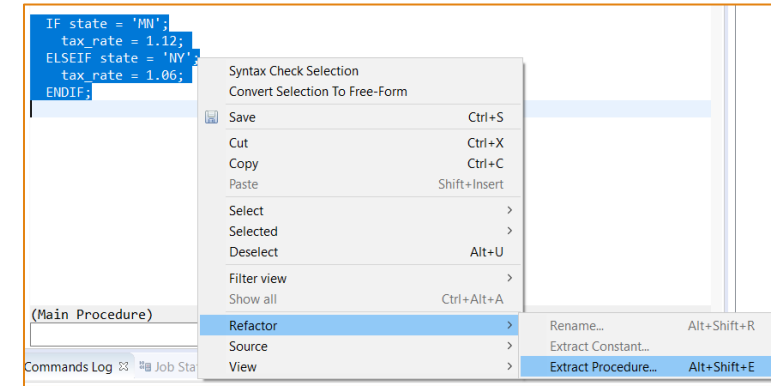
Db2 Web Query for i

EZ-Install Package
- ◦ Test drive
- ◦ Learn through tutorials
- ◦ Query/400 Discovery Tool
- ◦ System Admin Reports
- ◦ Developer Workbench
- ◦ Data Migrator ETL
- ◦ Data Dimension Table

HOW TO ACQUIRE THE EZ-INSTALL PACKAGE

Send an email to QU2@us.ibm.com requesting the DB2 Web Query EZ-Install Package. Be sure to include your:

- • Name
- • Company Name
- • Serial Number (of where you intend to install DB2 Web Query)

Auto Generate Synonym and Report from SQL

Wiki: https://www.ibm.com/support/pages/node/1274632

Post Installation: https://www.ibm.com/support/pages/db2-web-query-ez-install

Misc Links from First presentation

IBM i Home Page: http://bit.ly/ibm_i_home   or the long version:

- https://www.ibm.com/it-infrastructure/power/os/ibm-i

TR Updates: https://www.ibm.com/support/pages/node/1119129

Specific TR Pages:

- 7.3 TR 8: https://supportcontent.ibm.com/support/pages/ibm-i-73-tr8-enhancements
- 7.4 TR 2: https://supportcontent.ibm.com/support/pages/ibm-i-74-tr2-enhancements
- 7.2 TR ?: Got Nothing Here! Consider upgrading!!!

Mike's Thoughts

IBM i 7.2 life cycle

Release life cycle

Release	Announce date*	GA date*	Announce End of Marketing date*	Effective End of Marketing date*	End of Program Support*	Program Support Extension Available*
7.1	04/13/2010	04/23/2010	04/11/2017	09/30/2017	04/30/2018	04/30/2021 Note 3
7.2	04/28/2014	05/02/2014	09/10/2019	04/30/2020	04/30/2021	Note 4
7.3	04/12/2016	04/15/2016			Note 1	
7.4	04/23/2019	06/21/2019			Note 1	

Note 1: End of program support date will be announced with at least 12 months notice prior to the effective termination date.

Note 2: For 6.1, includes both Machine Code Level V6R1M0 and V6R1M1.

Note 3: IBM Service Extension Offering for IBM i 6.1 and 7.1 (33KB) is available for customers.

Note 4: IBM will announce the IBM i 7.2 Service Extension Offering prior to the End of Program Support date for IBM i 7.2.

https://www.ibm.com/support/pages/release-life-cycle

HA & BRMS

COMMON IBM ANNOUNCEMENTS

PowerHA

PowerHA for i 7.2+

- ◦ Security compliance automation that detects and disables inactive profiles across all nodes in a PowerHA environment.
- ◦ Real-time Recovery Point Objective (RPO) information.
- ◦ PowerHA is now leveraging the IBM i provided SQL services to monitor admin domain and cluster
- ◦ Automated management of the administrative domain when clustering is inactive or partitioned (7.4 only)
- ◦ More info
  - ◦ https://ibm.biz/ibmi-powerha or
  - ◦ https://helpsystemswiki.atlassian.net/wiki/spaces/IWT/pages/163577866/Welcome+to+PowerHA+SystemMirror+for+i

BRMS

Announcements
- Setting to verify that there is enough storage available for a restore operation before submitting the restore.
- Setting to log related backup and restore operations into the BRMS log file
- Tracing has moved to allow start up jobs to clear temporary space without losing BRMS tracing.
- Additional authority options
- Reclaim Media (Q1ARCLMED) API to reclaim tape volumes
- Support DRDA/DDM Conjoined Mutual Authentication
- The STRRCYBRM command now orders *IBM and *ALLUSR libraries by ascending tape sequence order
- Turnkey virtual support when using media classes named QAVVRTTAP or QAVVRTOPT

More info
- https://ibm.biz/ibmi-BRMS or
- https://helpsystemswiki.atlassian.net/wiki/spaces/IWT/pages/165642461/Welcome+to+IBM+Backup+Recovery+Media+Services+BRMS+for+i

Db2

COMMON IBM ANNOUNCEMENTS

Db2 Updates Page

Db2 for i - Technology Updates

News

Abstract

Db2 for i - Technology Updates Main Landing Page

Content

You are in: IBM i Technology Updates > Db2 for i - Technology Updates

Db2 for i updates by PTF Group and year
Db2 for i PTF Groups - 2020
Db2 for i PTF Groups - 2019
Db2 for i PTF Groups - 2018

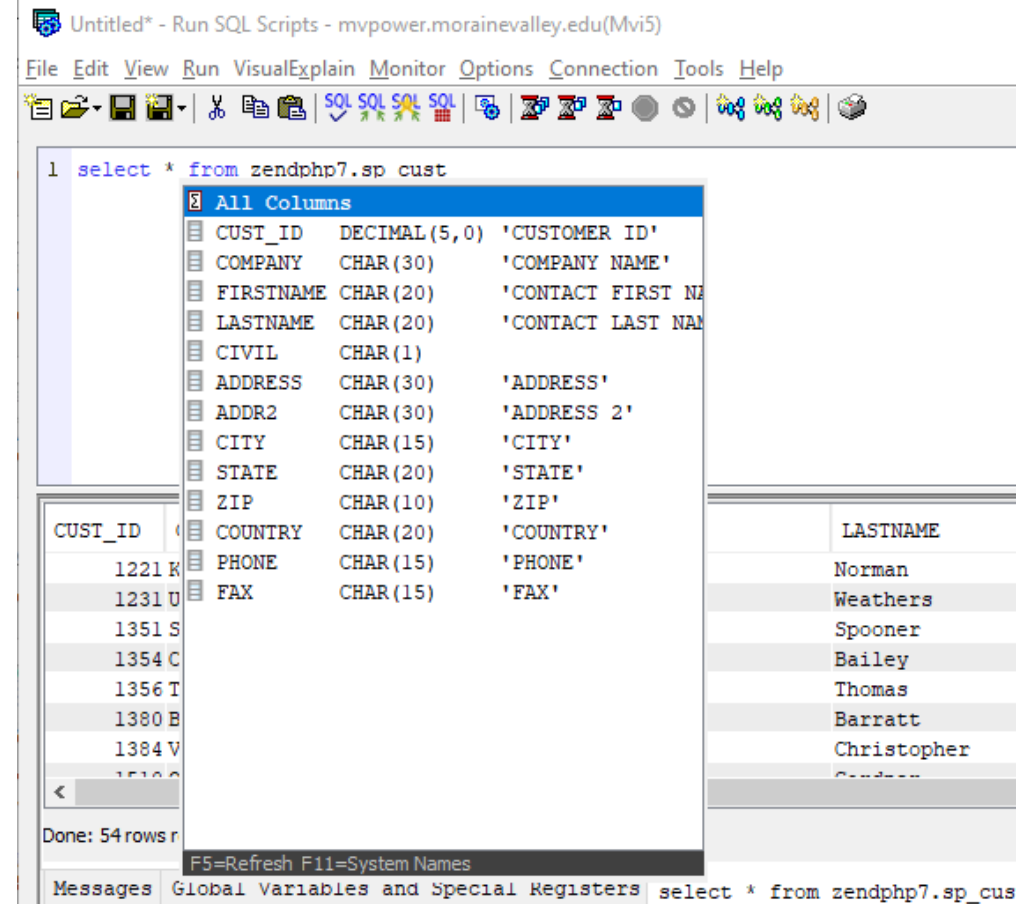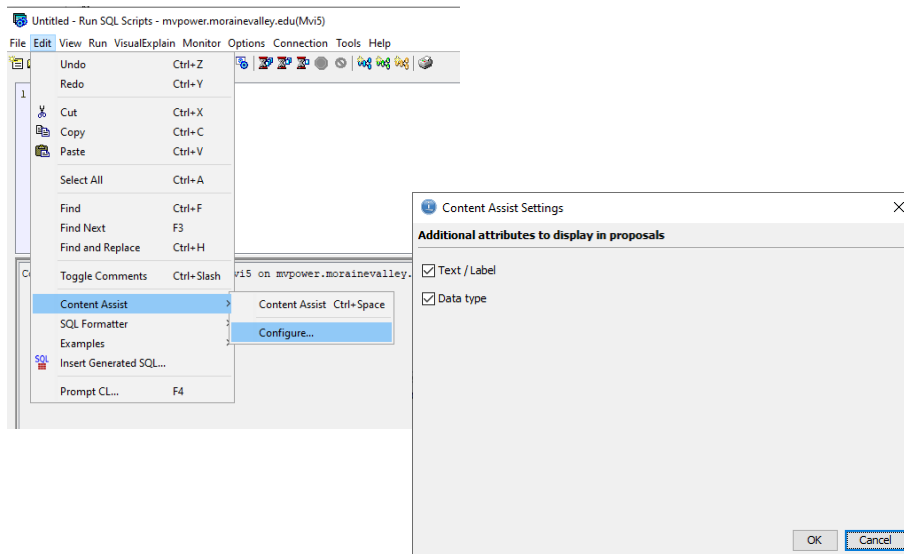| Db2 for i updates by category |
| --- |
| Db2 for i Functional Enhancements |
| Db2 for i Security Enhancements |
| Db2 for i Performance Enhancements |
| Db2 for i Database Management Enhancements |
| OmniFind for IBM i |
| IBM i Services (SQL) |

https://www.ibm.com/support/pages/node/1116645/

ACS & Db2

Content Assist

◦ (like F4 in iSQL)

◦ Last reason for using the green screen: GONE!

Mike's Thoughts

SQL

JSON_TABLE enhanced to work directly against JSON arrays (Reduces run time errors)

Weakly typed

Extended indicators in embedded SQL & PL

INTERPRET bif transforms IBM i internal data types

COMPARE_FILE efficient tool compares 2 files

SYSTOOLS features (examples & SP's)
- VALIDATE_DATA if your data is suspect
- DELETE_OLD_SPOOLED_FILES

```
-- Preview removal of any spooled file older than 30 days
call systools.delete_old_spooled_files(
    delete_older_than => current date - 30 days,
    preview => 'YES');
```

```
CREATE TYPE SURNAME VARCHAR(100) CCSID 1208
  WITH WEAK TYPE RULES;


CREATE TABLE CUSTOMER (CUSTNO INT,
                       LAST_NAME SURNAME,
                       ADDRESS VARCHAR(100));
```

```
select * from table (
  qsys2.compare_file(
      library1 => 'BIZ',  file1 => 'EMPLOYEE',
      library2 => 'BUZZ', file2 => 'EMPLOYEE',
      parallel_degree   => '2',
      compare_attributes => 'NO',
      compare_data      => 'YES'));
```

IBM i 7.4 only

ATTRIBUTE_NAME	FILE1	FILE2
Unmatched DATA for MEMBER EMPLOYEE	RRN 4	RRN 4

SQL – IBM i Services

SQL alternative to APIs and CL Commands: 15 new, 9 enhanced, 4 new tools in SYSTOOLS

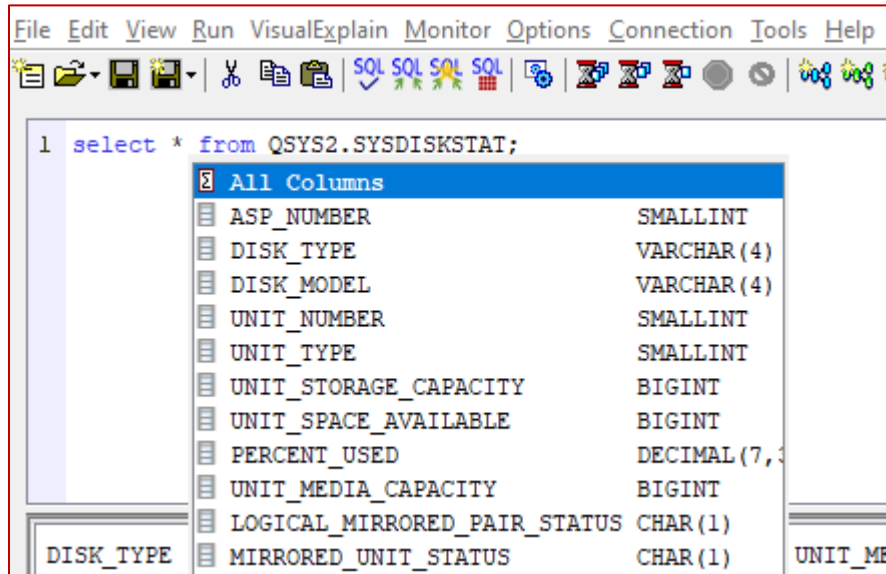- IFS_OBJECT_PRIVILEGES – row for IFS object's public & private privileges
- Access syslog audit journal
- CERTIFICATE_INFO – Alternative to the API
- DB_TRANSACTION_INFO – row for every pending DB transaction
- SYSDISKSTAT – View with info about disks   **IBM i 7.4 only**
- LIBRARY_INFO – row with library # objects & Size, etc.
- HTTP_SERVER_INFO – Real time admin server stats
- SUBSYSTEM_INFO – row for each susbsystem with real time stats
- PRESTART_JOB_INFO & PRESTART_JOB_STATISTICS
- Enhanced: USER_INFO, ACTIVE_JOB_INFO, JOBLOG_INFO
- JOB_LOCK_INFO – List of locks held by a job
- SYSTEM_STATUS_INFO – WRKSYSSTS in an API

Work Management Services

QSYS2.ACTIVE_JOB_INFO – UDTF
QSYS2.AUTOSTART_JOB_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.PRESTART_JOB_INFO – VIEW
QSYS2.PRESTART_JOB_STATISTICS – UDTF
QSYS2.RECORD_LOCK_INFO – VIEW
QSYS2.ROUTING_ENTRY_INFO – VIEW
QSYS2.SCHEDULED_JOB_INFO – VIEW
QSYS2.SUBSYSTEM_INFO – VIEW
QSYS2.SUBSYSTEM_POOL_INFO – VIEW
QSYS2.SYSTEM_STATUS – UDTF
QSYS2.SYSTEM_STATUS_INFO – VIEW
QSYS2.SYSTEM_VALUE_INFO – VIEW
QSYS2.WORKSTATION_INFO – VIEW

http://ibm.biz/Db2foriServices or **https://www.ibm.com/support/pages/node/1119123**

ACS 1.1.8.4 Services: Disk Status
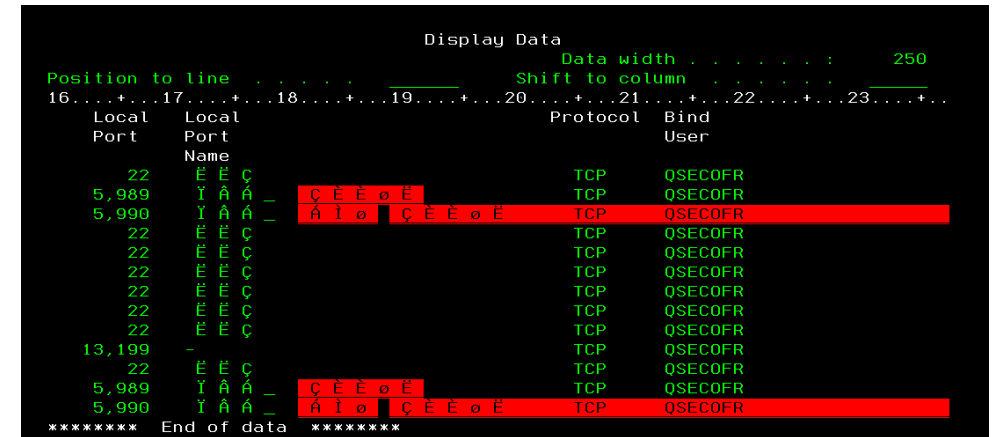
Java Threads

SELECT JOB_NAME,
    PROCESS_ID,
    START_TIME,
    JAVA_THREAD_COUNT,
    USER_DIRECTORY
  FROM QSYS2.**JVM_INFO**;

JOB_NAME	PROCESS_ID	START_TIME	JAVA_THREAD_COUNT	USER_DIRECTORY
754656/QSYS/QSRVMON	10	2020-05-23 19:41:12.184000	28	/
754717/QYPSJSVR/QYPSJSVR	34	2020-05-23 19:41:23.154000	43	/
754730/QWEBADMIN/ADMIN4	47	2020-05-23 19:41:27.659000	73	/QIBM/UserData/OS/ADMININST/admin4/wlp/usr/servers/admin4
754731/QLWISVR/ADMIN1	50	2020-05-23 19:41:27.640000	66	/QIBM/UserData/OS/ADMININST/admin1/wlp/usr/servers/admin1
754734/QLWISVR/ADMIN2	51	2020-05-23 19:41:27.645000	85	/QIBM/UserData/OS/ADMININST/admin2/wlp/usr/servers/admin2
754733/QLWISVR/ADMIN3	48	2020-05-23 19:41:27.660000	65	/QIBM/UserData/OS/ADMININST/admin3/wlp/usr/servers/admin3
754732/QLWISVR/ADMIN5	49	2020-05-23 19:41:27.640000	64	/QIBM/UserData/OS/ADMININST/admin5/wlp/usr/servers/admin5
754804/QLWISVR/QINAVMNSRV	81	2020-05-23 19:43:45.501000	32	/home/QLWISVR

Netstat by user

SELECT CONNECTION_TYPE,
    REMOTE_ADDRESS, REMOTE_PORT,
    REMOTE_PORT_NAME, LOCAL_ADDRESS,
    LOCAL_PORT, LOCAL_PORT_NAME,
    PROTOCOL, BIND_USER,
    BYTES_SENT_REMOTELY
FROM QSYS2.NETSTAT_INFO
WHERE **BIND_USER = 'QSECOFR'**;

CONNECTION_TYPE	REMOTE_ADDRESS	REMOTE_PORT	REMOTE_PORT_NAME	LOCAL_ADDRESS	LOCAL_PORT	LOCAL_PORT_NAME	PROTOCOL	BIND_USER	BYTES_SENT_REMOTELY
IPV4	0.0.0.0	0	-	0.0.0.0	22	ssh	TCP	QSECOFR	0
IPV4	0.0.0.0	0	-	0.0.0.0	5989	wbem-https	TCP	QSECOFR	0
IPV4	0.0.0.0	0	-	0.0.0.0	5990	wbem-exp-https	TCP	QSECOFR	0
IPV4	49.233.195.154	35882	-	10.1.1.131	22	ssh	TCP	QSECOFR	1101
IPV4	127.0.0.1	8473	as-file	127.0.0.1	13199	-	TCP	QSECOFR	23709
IPV6	::	0	-	::	22	ssh	TCP	QSECOFR	0

Objects by Owner

SELECT AUTHORIZATION_NAME,
    OBJECT_TYPE,
    OBJECT_LIBRARY,
    OBJECT_NAME,
    OBJECT_ATTRIBUTE,
    TEXT_DESCRIPTION
  FROM QSYS2.OBJECT_OWNERSHIP
  WHERE AUTHORIZATION_NAME = 'MPAVLAK';

Careful: this could run a while…

AUTHORIZATION_NAME	OBJECT_TYPE	OBJECT_LIBRARY	OBJECT_NAME	OBJECT_ATTRIBUTE	TEXT_DESCRIPTION
MPAVLAK	*FILE	MPAVLAK	QAUOOPT	PF	Model option file for PDM
MPAVLAK	*USRPRF	QSYS	PHPGRP	-	Group profile for PHP class
MPAVLAK	*FILE	PHP00	VIDEOPF1	PF	Video File for Movies.
MPAVLAK	*FILE	MVCCOLD	SOPR14	SAVF	MIS146 STUDENT LIBRARY
MPAVLAK	*FILE	MVCCOLD	SMASTEJTIR	SAVF	titan production library
MPAVLAK	*FILE	MPAVLAK	CLASSIC	SAVF	Classic Models Database

Active Subsystems with jobs

```
SELECT SUBSYSTEM_DESCRIPTION_LIBRARY,
    SUBSYSTEM_DESCRIPTION,
    STATUS,
    MAXIMUM_ACTIVE_JOBS,
    CURRENT_ACTIVE_JOBS
  FROM QSYS2.SUBSYSTEM_INFO
  WHERE CURRENT_ACTIVE_JOBS > 0;
```

SUBSYSTEM_DESCRIPTION_LIBRARY	SUBSYSTEM_DESCRIPTION	STATUS	MAXIMUM_ACTIVE_JOBS	CURRENT_ACTIVE_JOBS
QHTTPSVR	QHTTPSVR	ACTIVE	–	8
QSYS	QCMN	ACTIVE	–	7
QSYS	QCTL	ACTIVE	–	1
QSYS	QINTER	ACTIVE	–	1
QSYS	QSERVER	ACTIVE	–	15
QSYS	QSYSWRK	ACTIVE	–	91

Memory Pools

SELECT SYSTEM_POOL_ID,
    POOL_NAME,
    CURRENT_SIZE,
    CURRENT_THREADS,
    DESCRIPTION,
    ELAPSED_DATABASE_FAULTS,
    ELAPSED_NON_DATABASE_FAULTS
FROM QSYS2.MEMORY_POOL_INFO;

SELECT SUM(CURRENT_SIZE) as Total_Memory
    FROM QSYS2.MEMORY_POOL_INFO;

TOTAL_MEMORY
62207.98

SYSTEM_POOL_ID	POOL_NAME	CURRENT_SIZE	CURRENT_THREADS	DESCRIPTION	ELAPSED_DATABASE_FAULTS	ELAPSED_NON_DATABASE_FAULTS
1	*MACHINE	2861.02	196	Used by internal machine functions	0.0	0.0
2	*BASE	52504.11	733	Default system pool	0.0	11.0
3	*INTERACT	6220.78	1	Used for interactive work	0.0	0.0
4	*SPOOL	622.07	0	Used for printing	0.0	0.0

Who's got *ALLOBJ?

SELECT AUTHORIZATION_NAME, PREVIOUS_SIGNON, STATUS,
SPECIAL_AUTHORITIES
    FROM QSYS2.USER_INFO
    WHERE SPECIAL_AUTHORITIES LIKE '%*ALLOBJ%';

AUTHORIZATION_NAME	PREVIOUS_SIGNON	STATUS	SPECIAL_AUTHORITIES						
ITECHSOL	2018-07-18 10:34:16.000000	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SPLCTL	*SAVSYS	*SERVICE	*AUDIT	*IOSYSCFG
MPAVLAK	2020-05-25 15:59:36.000000	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SPLCTL	*SAVSYS	*SERVICE	*AUDIT	*IOSYSCFG
PETEM	2018-07-17 15:40:49.000000	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SPLCTL	*SAVSYS	*SERVICE	*AUDIT	*IOSYSCFG
QLPAUTO	-	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SAVSYS	*IOSYSCFG		
QLPINSTALL	-	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SAVSYS	*IOSYSCFG		
QSECOFR	2020-05-23 19:42:47.000000	*ENABLED	*ALLOBJ	*SECADM	*JOBCTL	*SPLCTL	*SAVSYS	*SERVICE	*AUDIT	*IOSYSCFG

Scott Forstie on Twitter & Gist

@Forstie_IBMi

https://gist.github.com/forstie/

Open Source

COMMON IBM ANNOUNCEMENTS

Open Source Updates

5733-OPS is DEAD! Move to RPM

Hundreds of packages

New command line is YUM

http://ibm.biz/ibmi-rpms or
https://www.ibm.com/support/pages/node/687869

https://kadler.github.io/2020/05/20/apr-oss-updates.html#
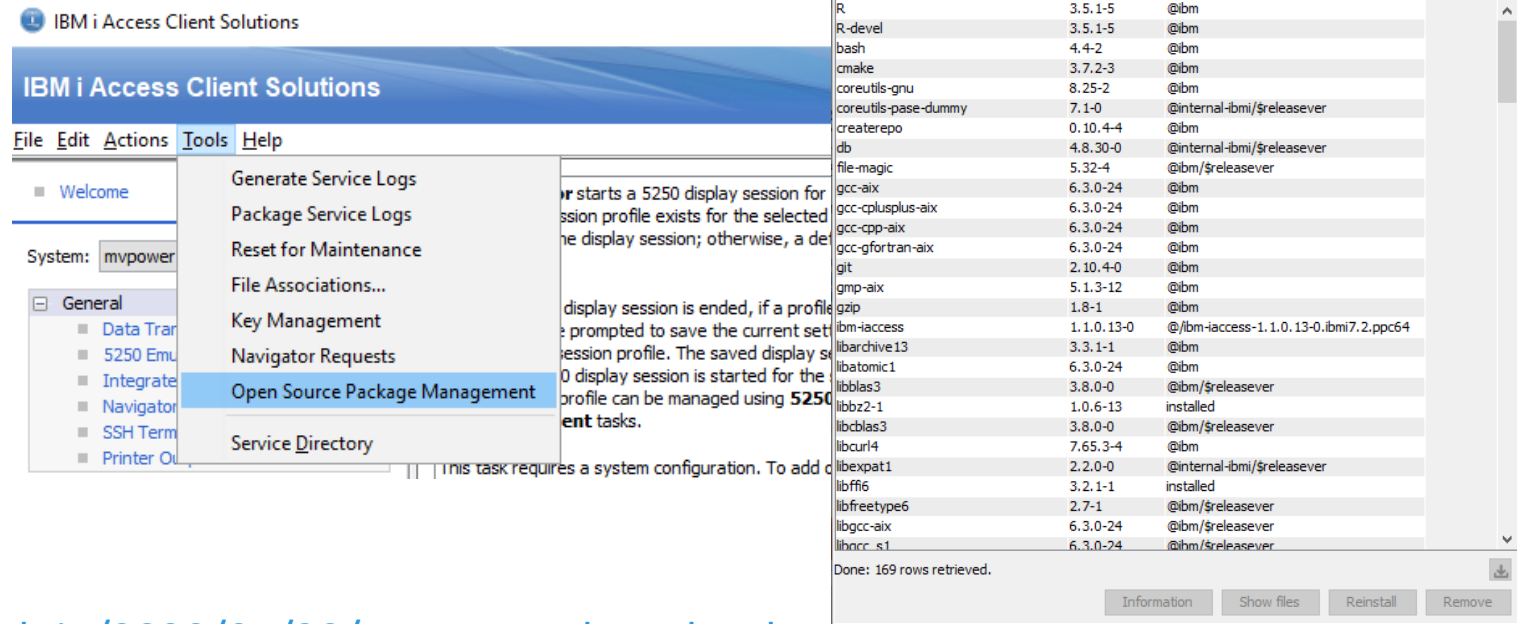
Packages

jq – lightweight & flexible JSON command line processor

SQL Alchemy – Python SQL DB tookit and ORM

pyodbc – delivered as RPM

Packages using newest OpenSSL libraries

ACS Open Source "fix-it" tools & SSH Tunneling

https://bitbucket.org/ibmi/opensource/src/master/docs/yum/

Support options for IBM i OSS

RPM installation & problems are covered under SWMA
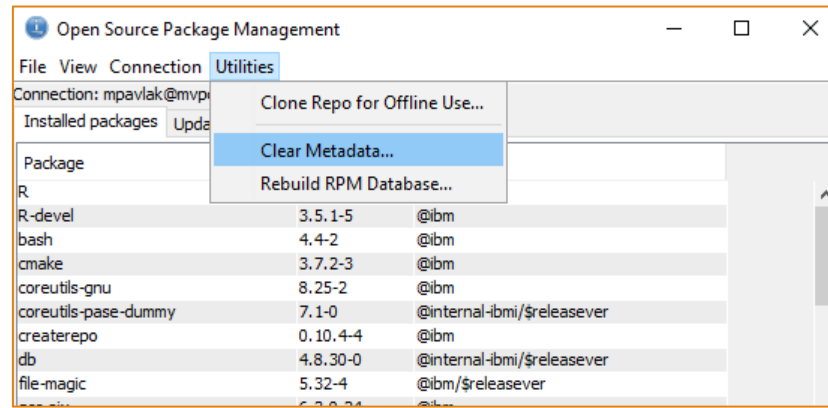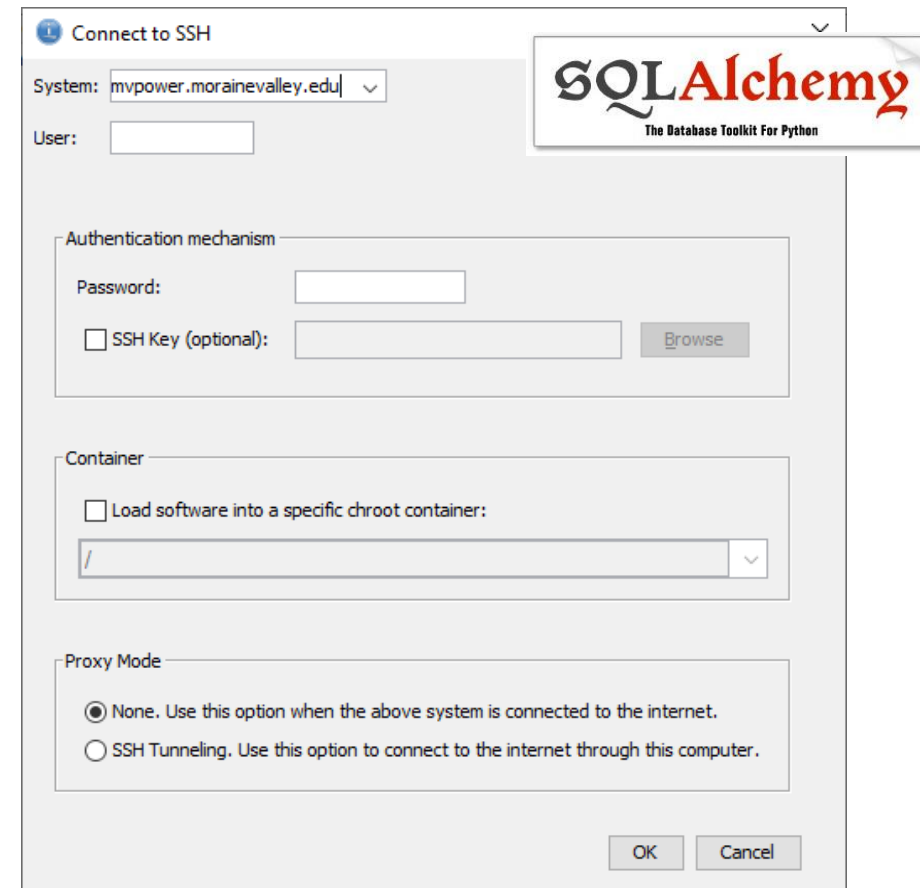
Using and troubleshooting Python and libraries is TSS (Extra charge)

Zend Server Basic is going away, Zend will support for $$$ & TSS will support community for $

TSS:
http://ibm.biz/ibmi-oss-support or
https://www.ibm.com/support/pages/node/876818

Zend/PerForce:
https://www.zend.com/blog/zend-perforce-announcement-ibm-i-users

Seiden Group
https://www.seidengroup.com/php-ibm-i-production-support/

389DirectoryServer	CephFS	GNU sed	Maven	Python
ActiveMQ	Chef	GNU Wget	MongoDB	QEMU
Ansible	CoreOS	Grafana	MySQL	R
Apache Ant	Couchbase	Graylog	Nagios	Rabbit MQ
Apache Camel	CVS: Concurrent Versions System	gVim	Nagios Plugin	Redis
Apache Cassandra	Debian - x86 & Power only	HAProxy	Nginx	Relax and Recover (ReaR)
Apache CouchDB	DHCP (ISC DHCP)	Hibernate	Nmap	rsync
Apache Derby	Docker Engine	HornetQ	Node.js	Samba
Apache HttpServer	Docker Registry	iptables	OpenJDK	SELinux
Apache Maven	Docker Swarm	Java	OpenLDAP	Sendmail
Apache ServiceMix	Drupal	Jenkins	OpenSSL	Spring
Apache Solr	Elasticsearch (ELK)	Joomla!	OpenVPN	Subversion
Apache Spark	FluentD	Kafka	oVirt	SugarCRM
Apache Tomcat	Galera	Kibana	Perl	Vim
ApacheCXF	Gawk	Kubernetes	PhantomJS	vsftpd
Apigility	Git	KVM	PHP	WildFly
Artifactory	GitLab	lighttpd	Postfix	Wireshark
Atomic OS	GlassFish - 9x5 only	Logrotate	PostgreSQL	WordPress
BIND	Gluster / GlusterFS	Logstash (ELK)	Prometheus	Zookeeper
Celiometer	GNU Make	lsof	Puppet	
CentOS	GNU Privacy Guard	MariaDB	PuTTY	

Free PHP? Really?

Yes, really!

Available in RPM from Zend Repo.

Complete instructions here: https://odbcphp.k3s.com/

Mike's Thoughts

IBM i PHP / PDO / ODBC Setup

These are setup instructions and examples of how to run PHP on your IBM OR connect your PHP application to an IBM i

View on GitHub

Having trouble selling Open Source?

Classy 2 page info-sheet on why IBM I is "The Best Platform for Open Source"

- Integration
- Security
- Reliability
- Cist-effectiveness
- Ecosystem
- Support options

IBM i: the Best Platform for Open Source

i for Business

In today's era of cloud, digital reinvention, artificial intelligence (AI), mobile computing and analytics, IT decisions are more critical than ever before. Choosing IBM i running on an IBM Power Systems™ server as the foundation for a modern infrastructure means delivering on the promise of these key technologies.

FULLY INTEGRATED, BEST-IN-CLASS DATABASE

With IBM i, you get a uniquely valuable database that is embedded into the operating system. This database, Db2 for i, can handle billions of transactions. As such, it powers many data-driven industries, such as banking/finance, manufacturing, logistics, retail, and health care.

In addition, IBM Db2 Mirror for i enables continuous availability for mission-critical applications. This technology supports multiple topologies with flexibility to choose between active-active and active-passive configurations for the application layer

SECURITY

IBM i is the platform of choice for keeping business data and applications secure. Because the operating system has security as a foundational aspect of its design, it has been significantly fewer vulnerabilities when compared to other

CVSS SEVERITY LEVEL	Windows Server			Red Hat Enterprise Linux Server (RHEL)		SUSE Linux Enterprise Server (SLES)		Oracle Linux (OL)		IBM i			
Version Release date	2008 Feb '08	2012 Oct '12	2016 Oct '16	6 Nov '10	7 Apr '14	11 Mar '09	12 Oct '14	6 Feb '11	7 Jul '14	6.1 Apr '08	7.1 Apr '10	7.2 May '14	7.3 Apr '16
Critical	2	4	1	11	9	1	2	12	10	0	0	0	0
High	725	296	66	76	50	10	34	51	65	1	1	0	0

https://ibm.ent.box.com/v/ibmi-best-oss-platform

Systems Management

COMMON IBM ANNOUNCEMENTS

PSA: Update ACS – Option 1

https://www.ibm.com/support/pages/ibm-i-access-client-solutions
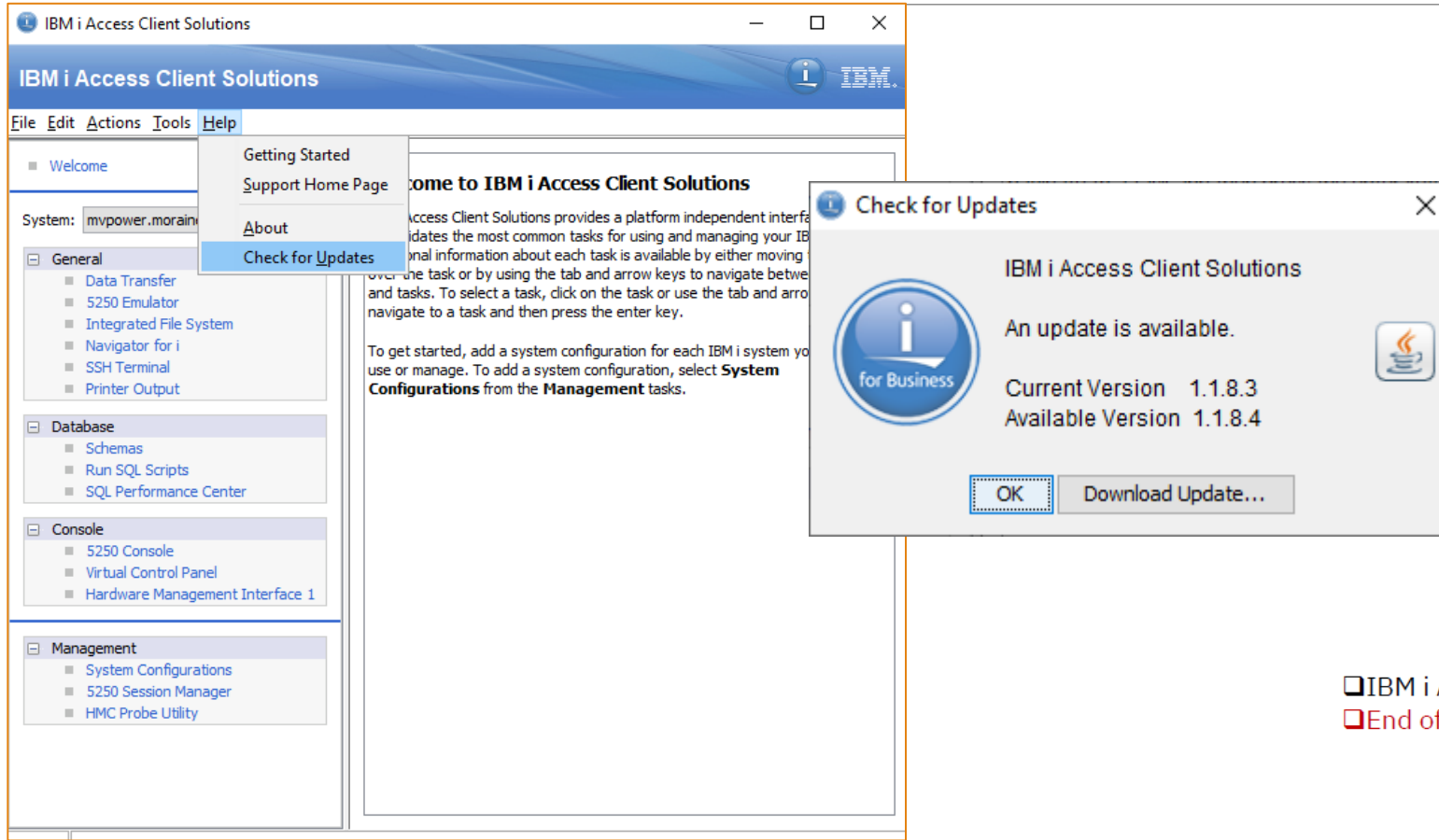
PSA: Update ACS – Option 2

IBM including ACS as part of PTF distribution of the HTTP group as of 1.1.8.3

◦ Target Directory: /QIBM/proddata/Access/Base

```
                          Work with Object Links

Directory  . . . . :      /QIBM/proddata/Access/ACS/Base

Type options, press Enter.
  2=Edit    3=Copy    4=Remove    5=Display    7=Rename    8=Display attributes
  11=Change current directory ...


Opt    Object link            Type      Attribute    Text
___      acsbundle.jar          STMF
___      AcsConfig.properti >   STMF
___      Documentation          DIR
___      Fonts                  DIR
___      Icons                  DIR
___      IBMiAccess_v1r1.zi >   STMF
___      Linux_Application      DIR
___      Mac_Application        DIR
___      QuickStartGuide.ht >   STMF
                                                                    More...
Parameters or command
===> _____
F3=Exit    F4=Prompt    F5=Refresh    F9=Retrieve    F12=Cancel    F17=Position to
F22=Display entire field            F23=More options
```
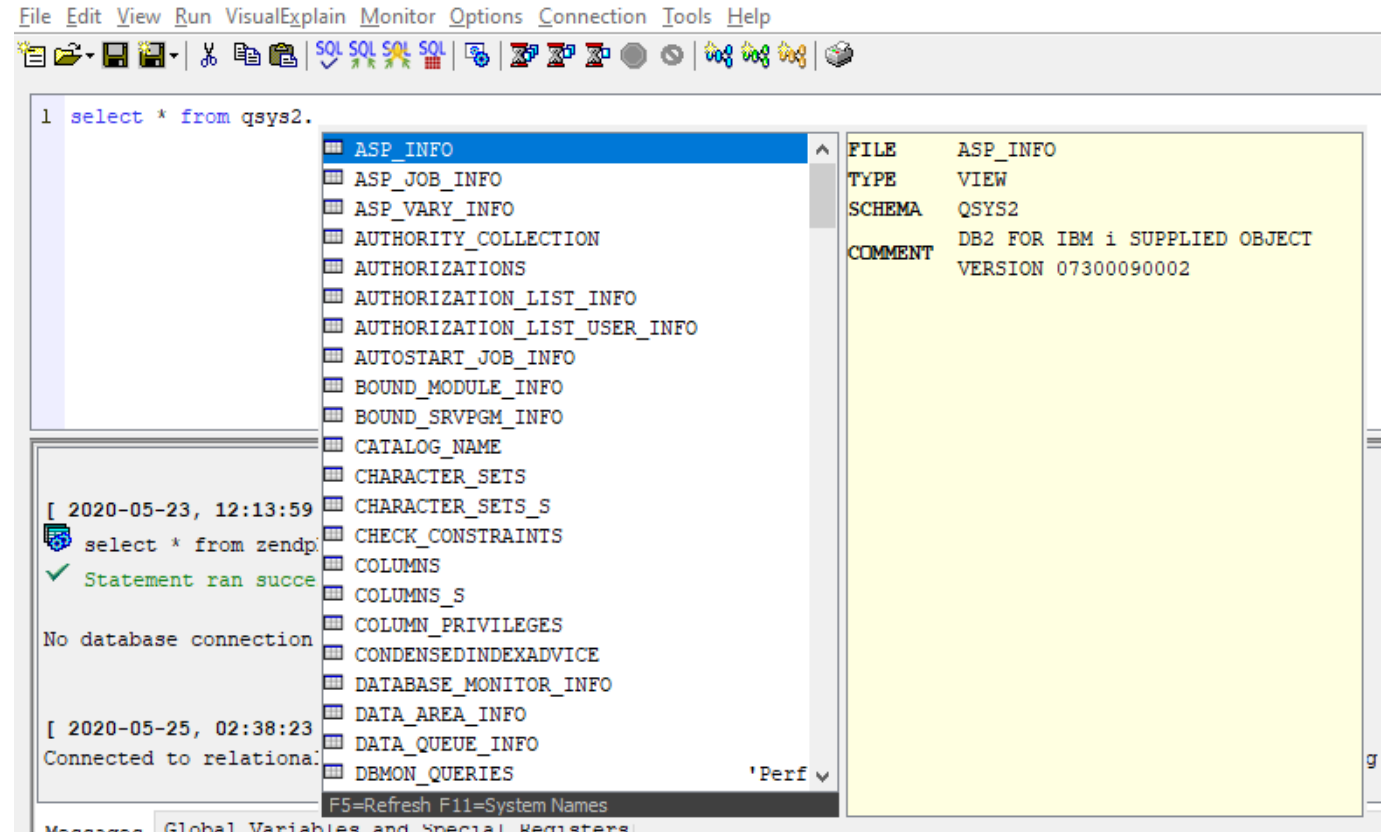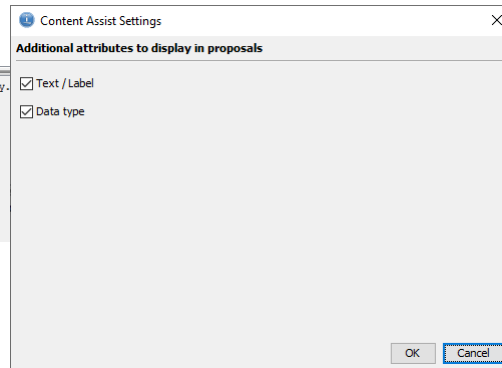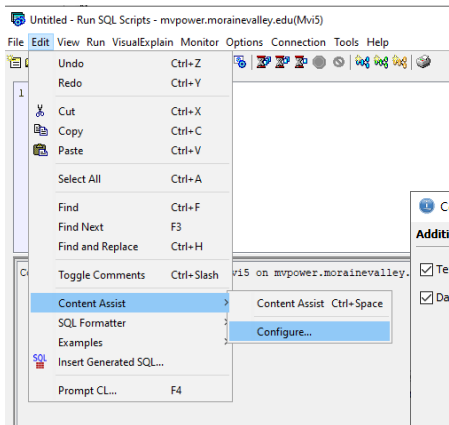
ACS & Db2 for services list

Content Assist
- (like F4 in iSQL)
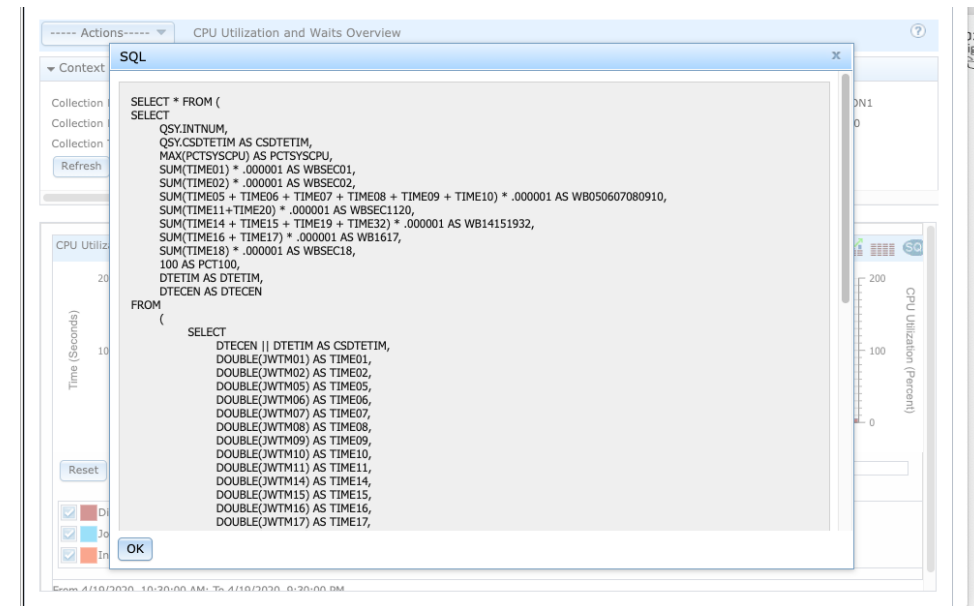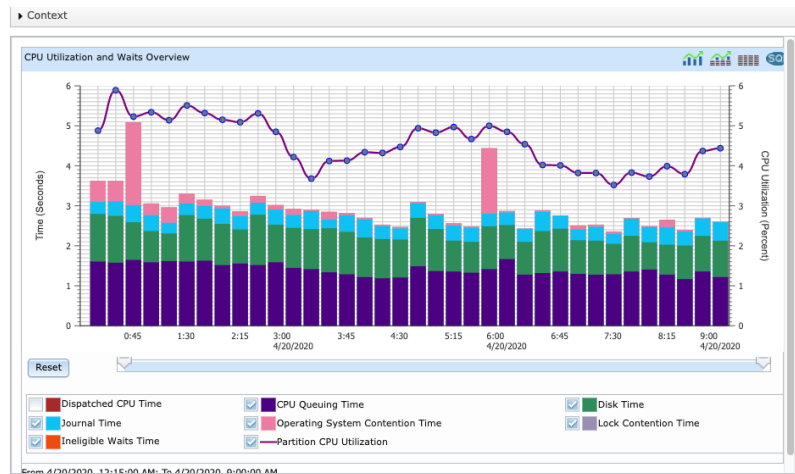- Insane productivity
- No toolkit required?

Mike's Thoughts

https://www.ibm.com/support/pages/ibm-i-access-client-solutions-1184

IBM Navigator for i

Performance Data Investigator graphics updated from ILOG to Dojo.

- ◦ More modern & better controls (Features AND looks)
- ◦ View SQL used to generate the data for the charts

Mike's Thoughts

New UI for DCM, back-leveled to 7.3

Administration Runtime Expert:5733 ARE

Administration Runtime Expert: 5733 ARE

- Multiple System Management
- Compare, load & Distribute PTFs across systems

Datacenter Monitoring

- Had IBM Systems Director
- Leverage Open Source (Nagios)
- Core Server then plug ins for NGIOS
  - JTOpen Support
  - nothing to install on endpoints
  - Plugin to Access & Monitor SQL Services
  - Pre & post command for events…

Metric	Via SNMP	Via JTOpen
CPU utilization	Support	Support
CPU usage for job	Customized	Support
CPU overload job number	Customized	Support
Temp storage check	Customized	Support
Number of logon users	Support	Support
Disk utilization check	Customized	Support
Disk status check	Customized	Support
ASP usage percentage	Customized	Support
List job information in a sub system	Customized	Support
Long running SQL	Customized	Support
Number of active jobs	Customized	Support
Page faults check	Customized	Support
Message check	Customized	Support
Specific message check	Customized	Support
Basic info check	Support	Support
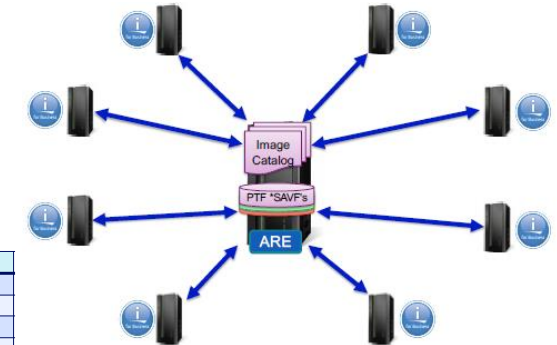
Miscellaneous

COMMON IBM ANNOUNCEMENTS

TR8 and TR2 have no hardware:No group

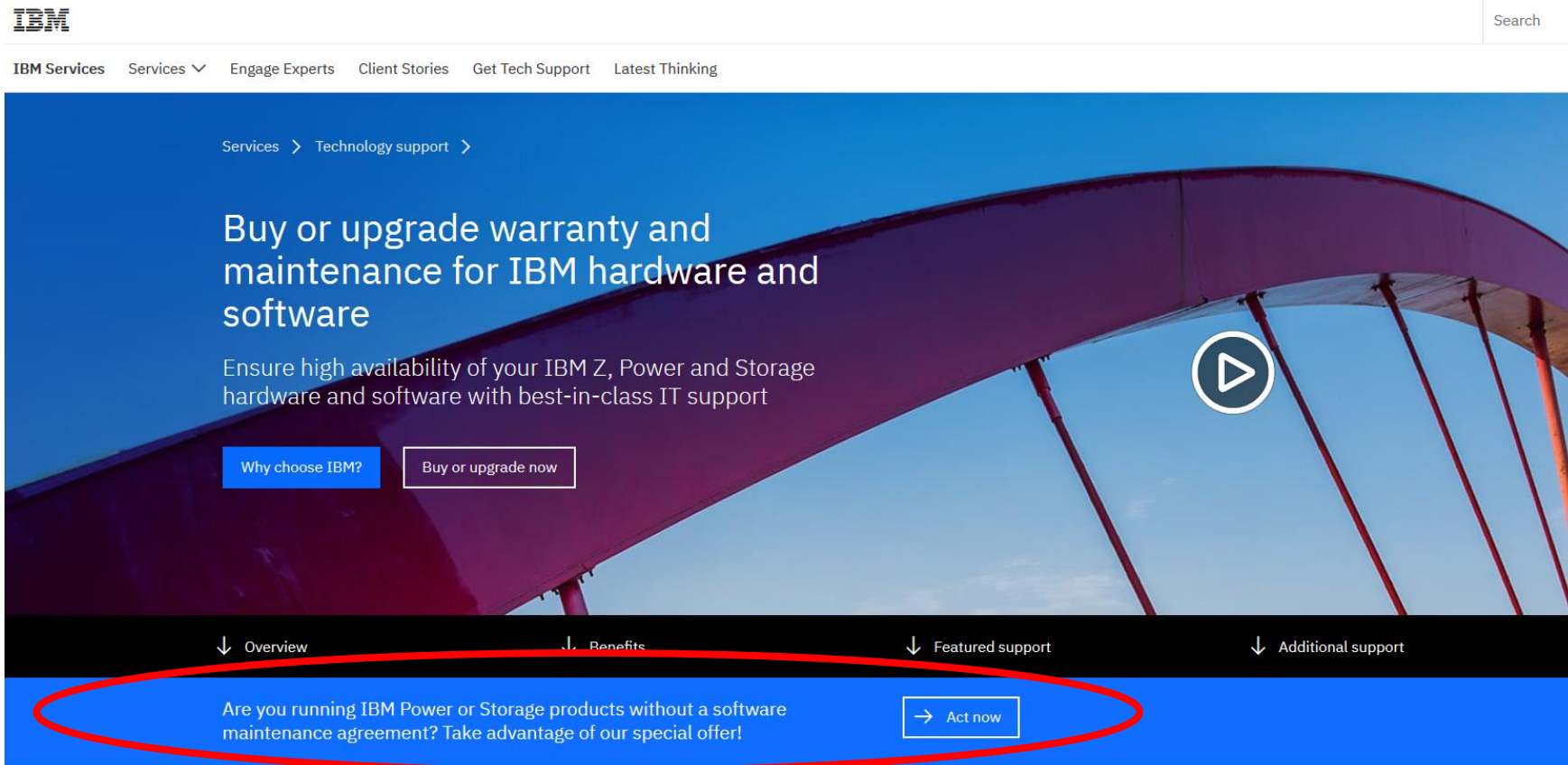Steve Will's blog does a good job explaining…

Steve Will @Steve_Will_IBMi · May 19
Blog topic: Confused about why there's no TR PTF Group for #IBMi 7.4 TR2 & 7.3 TR8? I explain:

You and i

Confusion About IBM i 7.4 TR2 and 7.3 TR8
Steve Will explains the latest IBM i Technology Refresh.
⬙ ibmsystemsmag.com

💬 3   ↻ 14   ♡ 16   ⬆

2020
iSight

IBM i TR Announcements – Enhancements & TR Confusion

- Since 2010, IBM i has had two major announcements each year, which contain:
    - Enhancements throughout the operating system, Db2, and other related products
    - Plus IBM i TR PTF Groups which align with major Power Systems hardware announcements

- On April 14, 2020, 7.4 TR2 and 7.3 TR8 announcements happened
    - Announcements covered new content, most of which became available in May 2020
    - Note that IBM i TR PTF Groups themselves were not part of that content

- May GA - Neither of the new hardware-related functions required a new TR PTF Group
    - IBM i tape virtualization is delivered via individual PTFs
    - IBM i Hybrid Network Virtualization uses earlier TR levels (IBM i 7.4 TR 1 or IBM i 7.3 TR 7)

SWMA Amnesty

https://www.ibm.com/services/technology-support/hardware-software

Some details

Most support issues are due to downlevel code. For a limited time, IBM will waive any After License Fees when you re-instate your IBM Software Maintenance Agreement.

Program details:

- Offer Valid from April 1, 2020 to August 31, 2020 through IBM Direct and IBM Business Partners.
- Executed contract must be submitted to IBM on or before August 31, 2020.
- Effective service(s) start date must be on or before August 31, 2020.

Deadline!

Offer limitations:

- Offer valid only for IBM Power or Storage software maintenance contracts which expired prior to 3/31/2020.
- IBM Software Maintenance agreements with lapsed coverage of less than 90 days do not qualify.
- Offer does not include: ProtecTIER Enterprise Edition, ProtecTIER Appliance Edition and ProtecTIER Entry Edition.

Check with your friendly ISV or reseller!

https://www.ibm.com/services/technology-support/hardware-software

iSee Video Blog (Scott & Tim)

https://ibmsystemsmag.com/Power-Systems/03/2020/i-see-acs-video

https://ibmsystemsmag.com/tags/isee-video-blog

Resources

Follow Kevin Adler on Twitter for monthly Open Source updates @kadler_ibm or
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◦ https://twitter.com/TimRowe_IBMi

Follow Scott Forstie on Twitter for perpetual messaging on Db2 for i @Forstie_IBMi or
◦ https://twitter.com/Forstie_IBMi

Next month!!!

Group By, Having and multi-dimensional Grouping

Abstract: An SQL SELECT can be much more than a simple SELECT * FROM query. Among others it includes with the GROUP BY clause a powerful data aggregation capability…

Learning Objectives:

In this session you'll learn the basic use of the GROUP BY and HAVING clauses as well as the use of multiple aggregate functions...

Audience: Programmers, Database Administrators and Engineers who quite often need to run queries or built reports that include sub-totals and grand totals. Everybody who is interested in what can be done with an SQL SELECT statement.

Level: Beginner / Average

IBM Spring Announcements for IBM i

THANK YOU

2020
iSight

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