Tags

ibm_i 7.1 integrated_server iscsi 6.1 windows sf99357 esx vmware system_x bladecenter sf99369 blade 5.4 save pdi error sf99348 swa db2 performance collection i perspective ibm chart navigator endtcpsvr group ptfs mc mgtc performance_tools performance_data_investigator target switch ha gui web clone database enhancements director for requirements product required install level products

IBM i 7.2 - TR7 Enhancements

 | Updated 10/12/17, 5:06 PM by Nancy US | Tags: *None*

Note: The announcement materials for IBM i 7.3 TR3 can be found here: http://ibm.biz/IBMi_72_TR7

The remainder of this landing page intends to make it easy to see the supporting detail for these enhancements, and more.

Db2 for i Enhancements

Db2 for i - Functional Enhancements

- JSON Publishing Functions
- JSON Scalar Functions
- Full LIMIT and OFFSET support
- DELETE and UPDATE pagination

Db2 for i - Security Enhancements

- Db2 for i generated syslog history and audit journal
- GRANT or REVOKE SCHEMA

IBM i Services (new and enhanced)

- QSYS2.JOB_QUEUE_INFO
- QSYS2.ASP_INFO
- QSYS2.ASP_VARY_INFO
- QSYS2.STACK_INFO()
- QSYS2.DISPLAY_JOURNAL()
- QSYS2.HISTORY_LOG_INFO()
- Alerts for IBM i System Limits

Db2 Web Query V2.2.1

- https://www.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=POF03099USEN&

General Operating System

- New installation process for LIC using USB 3.0 media

Hardware

Platform

- IBM HMC Virtual Appliance
- IBM Power technology-based HMC

I/O

- 931 GB / 1.86 TB / 3.72 TB Mainstream SAS 4k SSDs
- 283 GB / 571 GB / 300 GB/ 600 GB 15K RPM SAS 4k SFF-2 HDDs
- LTO-8 Tape Drives
- IBM TS1155 Tape Drive
- IBM TS4300 Tape Library

Virtualization

- Increase in max LUNs per port for NPIV configurations
- Automation for Cloud Init

Functional Enhancements

- Increase in max LUNs per port for Fibre Channel configurations
- IBM i system back-up saves LAN console configuration as part of the LIC data
- Automatic sorting of volumes in optical container media
- Maximum disk and load source size increase to 4 TB for 4160-byte sectors
- No maximum for USB flash drive capacity
- Improved debug for storage IOAs
- Improved performance for some IBM DS8000 storage configurations

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System Management & Access

IBM i Access Client Solutions

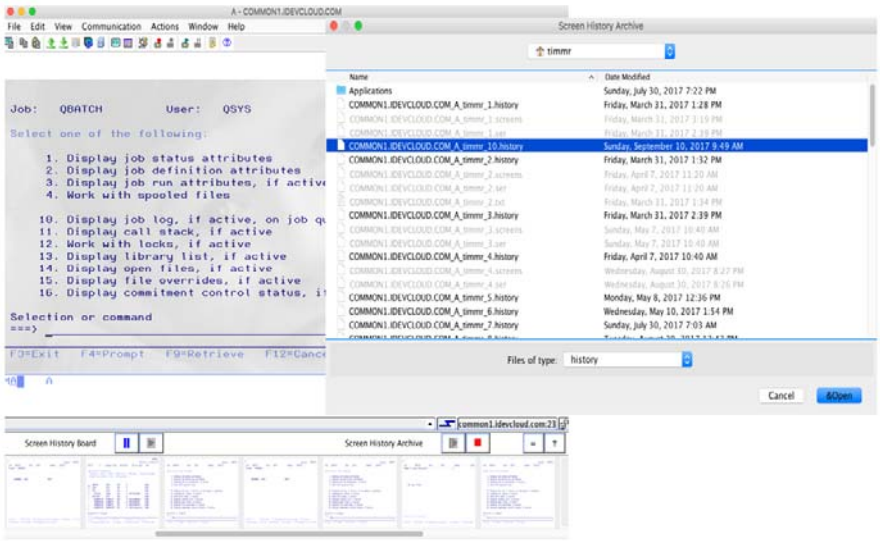
IBM i Access Client Solutions (ACS) continues its path for being the IBM i tool of choice for administrators, programmers or database engineers. In this TR, ACS has addressed the needs and concerns of the IBM i user community, providing many requested updates and enhancements.

General updates

- Option to disable end users from accepting "trusted" signers
- Option to enable SSL by default
- Enable "Check for updates" from command line
- New SSH client emulator. If an SSH client is already installed on the PC device, ACS will launch the installed client providing ready access to the open source work on IBM i.

5250 Emulator

- Screen History has been enhanced to now allow an unlimited number of screens to be collected and those screens can now be archived. This support allows a user to track each screen that is displayed and save it for a number of purposes, such as audit, problem recreation, capture screens for documentation and more.

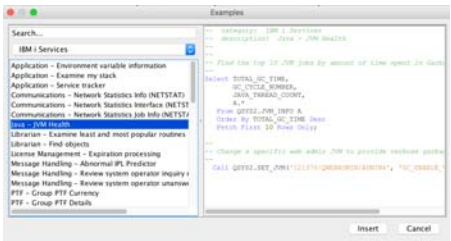


Printer Output

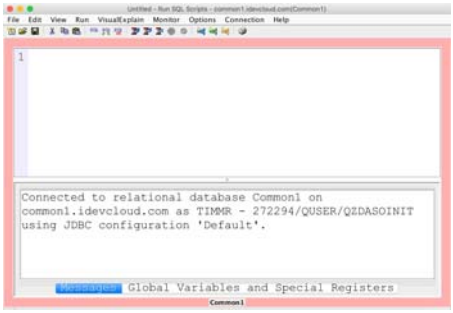
- Date and time have been combined into a single column to allow for more accurate sort and filter capability

Database specific enhancements in ACS:

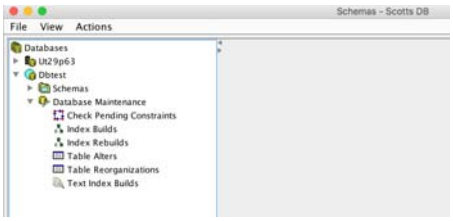
- The Schemas dialog is extended to include the Database Health Center, the ability to view Data and Audit Journals
- Run SQL Scripts is enhanced to include direct launch buttons into built in examples, the SQL formatter



- Run SQL Scripts now supports the ability to easily identify to which system a connection has been made by leveraging the user customizable identification boarder



- The SQL Performance Center is enhanced to avoid having to cross-launch into Navigator for i
- Database Maintenance now under Schema in ACS



ACS can easily be obtain from the Access family product web page -

https://www-03.ibm.com/systems/power/software/i/access/solutions.html

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Application Development

IBM i Integrated Web Services Server

Integrated web services now supports a deployment topology where the integrated web service server is on one IBM i system and the web service implementation code (i.e. ILE programs and/or service programs) resides on a different IBM i system. This is a key enhancement for companies that wish to leverage a multi-tier network providing the ability to have multiple layers of security.

To get the updates, it will be necessary to load the latest HTTP Group PTF.

Details can be found in the Integrated Web Services Server Administration and Programming Guide and the Technology Updates web page, which may be found on the Integrated Web Services Product page:
http://www.ibm.com/systems/power/software/i/iws/

IBM i Integrated Web Services Client

The client transport support of the integrated web services client has been enhanced to support TLS when connecting to a proxy server. The new support includes:
-- The ability to use a secure channel (TLS) when connecting to a proxy server.
-- The ability to perform TLS tunneling when connecting to a proxy server over an unsecure channel. In TLS tunneling, encrypted data is passed through the proxy server unaltered. This will happen automatically if the web service endpoint uses the 'https' protocol.

In addition, the client transport has been enhanced to allow the toleration of validation failures due to expired certificate or certificate not in key store, which are referred to as soft validation failures.

Details can be found in the Web Services Client for ILE Programming Guide and the Technology Updates web page, which may be found on the Integrated Web Services Product page: http://www.ibm.com/systems/power/software/i/iws/

Rational Development Studio for i

Rational Development Studio for i is providing enhancements to the key languages extending developer capabilities and increasing productivity

RPG

The RPG IV language continues to be enhanced with significant new function. Available in March 2017:

- Code nested data structures directly in free format RPG
- New built-in functions %MAX and %MIN to return the maximum or minimum of the operands
- ALIGN(*FULL) to define the length of a data structure as a multiple of its alignment

Available with PTFs delivered later in 2017:

- New built-in function %PROC to return the name of the current procedure
- Allow fully-qualified names in more places such as %ELEM and the DEALLOC opcode

For more information about the features, visit https://www.ibm.com/developerworks/ibmi/rpg/welcome.

Code Coverage

Initially delivered only in the Rational Developer for i desktop tools, today the code coverage engine is now being delivered as part of the Rational Development Studio, callable only from the command line. This new support will allow code coverage to be a part of the build process in order to get solid measurement of the effectiveness of tests being executed.

Details on leveraging code coverage from the command line can be found on the Modernization page of developerWorks - **https://www.ibm.com/developerworks/ibmi/techupdates/modernization**

Rational Developer for i

Rational Developer for i V9.6 has been updated to continue to provide enhancements to help IBM i application developers better react to the needs of their business, while writing higher quality code the fist time. Code quality has been a recent theme of additions to RDi and this release is no exception. The following key features are part of this new release:

- Rational Developer for i 9.6 is now compatible with Eclipse 4.6. This brings new base functionality and additionally allows better integration with other modern application development tools.
- Error reporting has been enhanced to use annotations that will highlight the columns within the line that have caused compile errors. This location information will be maintained even as lines are added and deleted from the source. As the cursor hovers over an error, the message will appear along with a link to second-level help.
- Hovering over variables will now show the containing data structure or external file and record as well as any other contributors to the definition of this field and allows a hyperlink to them.
- The hovers have also been enhanced to show the associated documentation for the given RPG declaration, encouraging better comments as they are even more useful with greater visibility.
- Any unused declarations can now optionally be flagged within the source.
- Pressing the enter key within free form RPG will now intelligently split the line and position the cursor.
- Building of i Projects can now be invoked with a shortcut and conveniently allows the setting of IBM i connections and libraries for all the selected i Projects in one action.
- RDi also ships with the current version of Access Client Solutions (1.1.7.1) and the Java Toolbox (9.3).
- RDi has been updated to support the syntax for the very latest updates to the RPG language
- Code coverage has been updated to now support headless code coverage. Quality assurance has received a big boost with the ability to analyze exactly which lines or procedures have been executed. This has been available through Rational Developer for i (RDi), but now the analysis can be done on the IBM i from any command line invocation and RDi is only required to view the results. This will allow code coverage to be a part of the build process in order to get solid measurement of the effectiveness of tests being executed.

Additional updates can be found at **http://ibm.biz/rdi_fix_list**

Rational Developer for i, V9.6 is Generally Available (GA) on November 21, 2017.

Open Source

Nginx

- https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20Technology%20Updates/page/Nginx
- http://ibmsystemsmag.com/blogs/open-your-i/may-2017/a-tale-of-two-web-servers/

Eclipse Orion

Eclipse Orion is a cloud-based IDE with rich integration with git and IBM Bluemix. It is shipped in option 8 of 5733-OPS and has been updated the version to version 13, which brings interface and stability improvements. It also supports more languages, including:

- Node.js
- Python
- HTML
- CSS
- bash
- coffeescript
- json
- less
- properties
- sql
- COBOL
- CL
- DDS
- UIM
- Free-form RPG
- Fixed-form RPG

Eclipse Orion still has rich integration with git, an open source change control tool (shipped in 5733-OPS option 6). Also, with just a few simple configuration steps, you

can deploy your application to IBM BlueMix!

For more information, visit https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20Technology%20Updates/page/Orion

Application portability enhancements

https://bitbucket.org/litmis/portlibfori - Many enhancements have been added to allow more applications to be ported to PASE on IBM i. 5733-OPS delivers a shared library called libutil, which adds support for openpty, forkpty, and getopt_long() API's.
Delivered industry-standard libraries in 5733-OPS option 7:

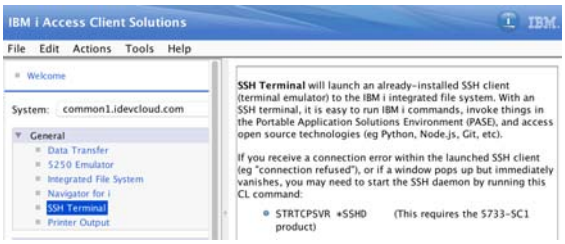
- libjpeg
- libxml2
- libxslt
- libpng
- libfreetype
- libpcre.

Ability to customize user's SSH shell

- https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20Technology%20Updates/page/QSYS2.SET_PASE_SHELL_INFO%20Procedure
- https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20Technology%20Updates/page/QSYS2.USER_INFO%20catalog

SSH Terminal integration with IBM i Access Client Solutions (ACS)

SSH has become an important tool for accessing the IBM i. If you already have an SSH client installed on your device, ACS will detect it. With a single click, it will open an SSH terminal emulator to your system.



Open Source PASE database driver

In an open source effort, IBM has created a new database driver designed to allow for easier Db2 integration in an asynchronous model. It also aims to replace previous XMLService technology and provide another avenue for integrating with ILE programs, service programs, CL commands, and more. It provides seamless replacement of the previous CLI API's, while adding superior debug capability, UTF-16 support, and more. The project is expected to be in a stable state before the end of 2017. For the latest status and information (or to contribute), visit the project page at https://bitbucket.org/litmis/db2sock

Other Open Source Contributions

IBM has contributed to other open source projects that may benefit the open source user on IBM i. Some examples include:

- mama - Apache FastCGI module to manage standalone web server applications like Node.js - https://bitbucket.org/litmis/mama
- borgi - A chroot safe 'system' utility with user expandable helper scripts for ILE Makefiles (crtrpgmod, crtpgm, etc.) - https://bitbucket.org/litmis/borgi
- db2util - A command line utility similar to STRSQL - https://bitbucket.org/litmis/db2util
- nodejs - Best practice node examples for db2 pooling, toolkit calls using REST, and more - https://bitbucket.org/litmis/nodejs
- python-for-IBM-i-examples – Small, containable examples of integrating Python with IBM i. There is a simple active jobs dashboard, a tool to convert SQL or Db2 tables to Excel format, and a utility which provides netstat-like functions, allowing you to see status of active connections on the system. https://github.com/Club-Seiden/python-for-IBM-i-examples