

IBM AIX 7 delivers continued enhancements to security, availability, and cloud enablement; IBM Power Systems provides ideal platform for private clouds

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Overview

The IBM^(R) AIX^(R) operating system provides clients with an enterprise-class IT infrastructure that delivers the reliability, availability, performance, and security that is required for clients to be successful in the global economy. IBM AIX 7.2 Technology Level 2 provides the following enhancements:

- AIX Live Update is more accessible for clients who use Power^(R) Enterprise Pools. AIX Live Update also supports performing live updates in an IBM PowerVC managed environment.
- Performance continues to be transparently enhanced by exploiting advanced technologies such as Shared Memory Communications over RDMA.
- Integration with emerging cloud environments is continually improved through IBM contributions to open source cloud automation tools like chef and ansible.

In addition to AIX 7.2 TL2, IBM Power SystemsTM provide an ideal platform for simple, secure, and reliable private clouds.

A cloud focused on increased flexibility lets clients place critical workloads where they can be run most effectively:

- IBM PowerVC V1.4.0, announced in Software Announcement [217-494](#), dated October 10, 2017, delivers the ability to import and export images from on-premises to off-premises, to solutions like IBM Cloud for Skytap Solutions.
- IBM Cloud for Skytap Solutions delivers AIX virtual machines in the IBM Cloud.
- IBM PowerVM^(R) V2.2.6, announced in Software Announcement [217-494](#), dated October 10, 2017, delivers software-defined networking for faster, more flexible system configurations with higher network isolation.

Newly enhanced offerings enable clients to protect, monitor, and efficiently manage updates to their infrastructure in order to ensure maximum security and compliance:

- IBM PowerSCTM V1.1.6, announced in Software Announcement [217-001](#), dated August 8, 2017, delivers malware intrusion detection and alerting, all configurable from the user interface.
- IBM PowerSC MFA 1.1.0, announced in Software Announcement [217-462](#), dated October 10, 2017, delivers highly secure multi-factor authentication that runs natively on AIX and IBM Power Systems platforms.
- IBM Cloud Management Console now includes a patch planning application that enables users to view current code levels, select available updates, and then share that update plan for collaborative input.

Simpler management and smarter troubleshooting of HA clusters, as well as more streamlined OS updates, minimize the management overhead required to guarantee critical system availability:

- IBM PowerHA^(R) SystemMirror^(R) V7.2.2, announced in Software Announcement [217-487](#), dated October 10, 2017, delivers the ability to manage clusters from a GUI and applies analytics to the current log troubleshooting function.
- IBM AIX 7.2 TL2 enhances the AIX Live Update capability by enabling users to use Enterprise Pools to satisfy required resources.

IBM PowerVM V2.2.6 announced in Software Announcement [217-494](#), dated October 10, 2017, enables SSP Flash caching technology across virtualized environments and transparently accelerates AIX, Linux^(R), and IBM i workloads.

Key prerequisites

Any IBM system that includes an IBM POWER7^(R), or later, processor.

Planned availability date

October 27, 2017

Description

Shared Memory Communications over RDMA (SMC-R)

SMC-R is a new communication protocol solution that is based on sockets over RDMA and the Internet Engineering Task Force (IETF) Request for Comments (RFC) 7609 publication. SMC-R enables TCP socket applications to transparently use RDMA, which enables direct, high-speed, low-latency communications. It is confined to applications using Transmission Control Protocol (TCP) sockets over IPv4 or IPv6.

Recent AIX Toolbox updates

The following new packages were added to the AIX Toolbox within the last six months. These packages are available in the toolbox repository, and you can install the packages by using YUM. These packages can also be downloaded from the [AIX Toolbox](#) web page:

- ansible, gnuTLS, nettle, libgcrypt, python-s3transfer, python-pyasn1, python-passlib, python-nose, python-mock, python-keyczar, python-jmespath, python-jinja2, python-httpplib2, python-cryptography, python-botocore, and python-babel

The following packages were updated in the AIX Toolbox due to security fixes or new versions within the last six months:

- gcc v6, httpd, bind, sudo, curl, python, tar, perl, file, gdb, php, tcpdump, sqlite, zlib, subversion, cpio, libpng, and libpcap

The introduction of new packages, updates to existing packages, and notifications of security updates are announced on the AIX open source software developerWorks^(R) forum. Users can also interact with the IBM open source team and with other users to post questions about packages on this forum.

AIX Open Source Toolbox packages are compiled for versions AIX 6.1, and later.

Ansible playbooks

Ansible playbooks for AIX are now available at [aixoss](#) github. Ansible playbooks automate system configuration and tasks in a data center. Playbooks have been

provided for tasks such as automating the download of technology levels and service packs from a fix server, updating targets from a NIM server, checking target systems for vulnerabilities against available fixes, applying fixes to targets, as well as updating and patching the Virtual I/O Server.

AIX 7.2 migration support for versioned WPARs

AIX versioned WPARs enable clients to run an AIX 5.2 or AIX 5.3 environment on an AIX 7.1 or AIX 7.2 system. This new support enables rootvg versioned WPARs created on an AIX 7.1 system to use the migwpar command to enable that rootvg versioned WPAR to work on an AIX 7.2 system. If you are unsure whether your versioned WPAR is "rootvg" type or not, you can use the lswpar command to determine the type. Also, the migwpar command lists any versioned WPARs that do not require further action.

AIX transparent CAPI Flash performance enhancements

CAPI Flash disk and adapter drivers have been updated to reduce good I/O path length, by consolidating these two drivers into one driver. The reduced path length extends previous offerings with CAPI to lower CPU utilization further for CAPI Flash transparent mode I/O requests.

OpenSSH updates

The OpenSSH file set has been updated to the open source community level 7.1p1 release for both AIX 7.1 and AIX 7.2. The update includes the patch for GSS-API Key Exchange and has been compiled with openssl version 1.0.2k. The compatibility between openssl 1.0.1 and 1.0.2 enables the OpenSSH fileset to be installed on either version of openssl. Reported vulnerability patches for OpenSSH have been included up to the 7.5p1 release.

National Language Support updates

AIX Unicode has been updated to version 9.0, which includes 7,500 new characters. Common Locale Data Repository locales have also been updated to enable users to have consistent culture conversions across multiple operating systems (AIX, macOS, iOS, Android, IBM i, IBM z^(R)/OS, MicrosoftTM WindowsTM, and so on).

ProbeVue enhancements

ProbeVue system statistics access capabilities have been enhanced to support both system memory-related statistics and per logical CPU and total CPU statistics. The ProbeVue interval probe manager has been enhanced to provide support for specifying multiple CPUs and to access stack trace and other special built-in data types.

Tprof enhancements

Tprof has been enhanced to provide consolidated views of application processor utilization across different address spaces (kernel, shared library, and so on), along with utilization of application binaries. A new sub-option "pdetail" has been added for the option "-O" to enable this reporting.

Enhanced resiliency with transient SAN errors

The AIX Active-Active PCM has been updated to better detect storage paths or devices that are experiencing recurring, intermittent SAN errors. With these enhancements, the PCM path selection algorithms are better able to detect and avoid using the paths that are experiencing errors and to concentrate the I/O operations on the paths that are still functioning without error.

The "lsmPIO" command was updated to provide more information about the errors that have occurred, using the command "lsmPIO -are". This command displays error counts per AIX Fibre Channel adapter and per remote port. The "lsmPIO -are" command also breaks down the error counts during the last 10 minutes, last hour, and last day, to show if the errors are ongoing.

Watson2 malloc allocator improvements

Watson2 is an existing malloc option that provides out-of-the-box scalability. This latest release includes Watson2 enhancements to reduce memory usage for some workloads.

Program number

Product number	V.R.M.	Program Name
5765-G98	7.1.0	AIX 7.1 Standard Edition
5765-G98	7.2.0	AIX 7.2 Standard Edition
5765-CD1	1.1.0	AIX 7.1 Enterprise Edition
5765-CD3	1.1.0	AIX 7.2 Enterprise Edition

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