



IBM AIX 7.2 offers new enhancements for reduced downtime, acceleration, and efficient storage utilization

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At a glance

IBM^(R) is enhancing AIX^(R) 7.2, the IBM strategic UNIXTM operating system for mission-critical, core business applications.

- Reduce planned downtime with AIX Live Update for Technology Levels, Service Packs, and Interim Fixes.
- Accelerate workloads with Active MemoryTM Expansion, now with large page support for IBM POWER8^(R) technology-based servers.
- Utilize storage efficiently with AIX Logical Volume Manager support for thin storage block reclamation.

IBM is also expanding its commitment to supplementary open source software offerings for supported AIX levels. New additions focus on package management and cloud enablement. Packages in the [AIX Toolbox for LinuxTM Applications](#) are available for no charge.

Overview

The AIX operating system is an open standards-based UNIX operating system that has been at the heart of most Fortune 500 companies' UNIX infrastructures for over 25 years. AIX provides these 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.

With the introduction of AIX 7.2, IBM continued its tradition of providing new functions that dramatically improve system availability, performance, and flexibility while maintaining application binary compatibility. AIX 7.2, coupled with POWER8 technology-based systems, delivers a computing platform designed for big data that is optimized, secure, and adapts to changing business demands. Together, they deliver superior cloud economics with secure and open choices and incorporate innovation from a growing ecosystem that broadens application choice and enhances optimization.

Key prerequisites

Any IBM system that includes an IBM POWER7^(R) or POWER8 processor

Planned availability date

Description

The AIX operating system is enhanced with multiple new features.

AIX Live Update for Technology Levels, Service Packs, and Interim Fixes

- Introduced in AIX 7.2, AIX Live Update is extended in Technology Level 1 to support any future update without a reboot, with either the `geninstall` command or NIM.
- The `genld` command is enhanced to list processes that have an old version of a library loaded so that processes can be restarted when needed in order to load the updated libraries.

Active Memory Expansion 64k page support for POWER8

- Gain efficient memory use with Active Memory Expansion, while maintaining the performance benefit of large pages. The 64k pages can be configured/compressed in an LPAR, and the `amepat` command is enabled for 64k page modeling.
- Active Memory Expansion requires POWER8 mode LPARs, hardware compression, an 860 firmware level, and AIX 7.2 TL1.
- These requirements apply to Live Partition migration targets when 64k Active Memory Expansion is enabled.

AIX Logical Volume Manager support for thin storage block reclamation

- AIX now supports returning freed storage blocks back to direct Fibre Channel-connected or NPIV-connected storage controllers. Blocks are returned when AIX logical volumes are removed and when a JFS2 shrink operation results in unused whole logical partitions at the end of the logical volume associated with the JFS2 instance.
- This functionality is verified in AIX 7.2 TL1 with the following storage controllers: IBM DS8000^(R), IBM XIV^(R), and the EMC Symmetrix portfolio.

Expanded commitment to supplementary open source software offerings for supported AIX levels

- To facilitate the installation of supplementary open source software packages for AIX, IBM introduces the yum package management tool for AIX. Along with yum, there is a mandatory update of the RPM Package Manager to version 4.9.1.3. In this update, new function enables yum to perform automatic open source software dependence discovery and update maintenance for RPM-based open source software installed on your system.
- A new policy maintains and addresses open source security vulnerabilities in selected key open source software packages. IBM expands its commitment to keep the key open source packages updated to reasonably current levels. For more information, read the description at the [AIX Toolbox for Linux Applications](#) website.
- The cloud-init utility and all of its dependencies are now available on the AIX Toolbox for Linux Applications website. With yum, you can easily install cloud-init, and licensed AIX users receive support.
- The libusb development library for USB device access is added to the AIX Toolbox for Linux Applications.
- The OpenSSL security library for AIX is updated to version 1.0.2.

The Expansion Pack now includes a new implementation of SHA-256 and SHA-512 for password hashing that is compatible with Linux and BSD.

New hardware enablement

New systems and peripherals have been enabled with the new versions of AIX being announced. IBM Power[®] System E850C and IBM Power Systems[™] I/O announcements contain full details on the new products along with a complete list of AIX/VIOS requisite levels.

- Hardware Announcement [116-104](#), dated October 11, 2016(IBM Power System E850C (8408-44E))
- Hardware Announcement [116-088](#), dated October 11, 2016(IBM Power Systems enhances I/O and server options)
- Software Announcement [216-415](#), dated October 11, 2016

Performance enhancements

- Achieve lower latency with smaller transfer sizes using 16 GB Fibre Channel scaling for flash storage. This enhancement is enabled by default in AIX 7 TL 1 and VIOS 2.2.5.
- Improve application scaling without requiring extensive tuning by using the Watson2 allocator, now including malloc debug enhancements.
- More accessible performance tuning by concurrently changing the queue depth of a SAS, FC, vSCSI, or iSCSI disk, without rebooting. This enhancement requires ODM for the disk.
- Firmware-assisted dump (the 7.2 default method) is enhanced to reduce dump times, providing reduced operating system downtime to large memory configurations.
- UDP Send Performance enhancements optionally cache transmit address information and process transmitted packets by using multiple kernel threads. This enhancement can improve UDP send performance, depending on application workloads.

ProbeVue is a dynamic tracing tool for live analysis of production systems. The following ProbeVue features are added in AIX 7.2 TL1.

- ProbeVue System Statistics Support provides access to system statistics (storage and network I/O) in probe actions. View and analyze statistics across multiple system events and have a better understanding of the system.
- Multi-dimensional Associative Arrays are one of the key dynamic data structures available in the Vue language. The Vue language is enhanced to support multiple keys. This enhancement helps users to better store and analyze the data collected across probe locations.
- Extended Kernel System Trace Probe Manager enables you to dynamically trace any existing system trace hook without the need to turn on AIX System Trace. Also, key features like Associative Arrays and Stacktrace are enabled in kernel system trace probes.

AIX Enterprise Edition V1.2

- AIX Enterprise Edition clients with active SWMA are entitled to update their AIX Standard Edition (AIX 7.1 or AIX 7.2) that is included as a part of AIX Enterprise Edition and can be accessed through the Entitled Systems Support website.
- Clients are also entitled to the new version 1.1.5 of IBM PowerSC[™].

Reference information

- Hardware Announcement [116-088](#), dated October 11, 2016(IBM Power System E850C)
- Hardware Announcement [116-104](#), dated October 11, 2016(IBM Power Systems enhances I/O and server options)

Program number

Description	Machine	Model
AIX Standard Edition V7.x	5765	G98
AIX Enterprise 7.1 edition V1.2	5765	CD1
AIX Enterprise 7.2 edition V1.2	5765	CD3

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld^(R) ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 216-415](#)

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