

## IBM AIX

### Modernizing your mission-critical workloads with AIX on IBM Power Systems

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#### Highlights

- Resiliency: World class high availability, security, performance and scale
  - Modernize traditional AIX environments with open source toolbox
  - Better cloud automation with Ansible
  - Facilitates cloud deployments for AIX in private or public clouds
  - Support for latest NVMe storage offerings
  - Artificial Intelligence: Utilize AI capabilities for AIX workloads
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*Secure, scalable and robust open standard based UNIX operating system*

In the era of cloud, the the internet of things (IoT) and AI, the demand for elastic computing capabilities, flexible infrastructure, continuous availability and security is essential. As companies navigate these dynamic market conditions and transform their businesses for growth, they need an operating system they can depend on as a reliable foundation with the flexibility and capabilities to adapt and bridge to new technologies.

One of the advantages of Power Systems is the ability to run various workloads across AIX, IBM i and Linux on the same Power Systems which is key for consolidation purposes. Beyond that it provides an important bridge to a new ecosystem of traditional enterprise workloads like SAP HANA, containerized Cloud native solutions like IBM Cloud Private or Redhat Openshift and breakthrough AI applications – all running side by side with the mission-critical applications required for core business.

Power Systems with AIX is the foundation for many core business applications and database environments. The IBM AIX operating system remains a cornerstone of mission-critical computing while evolving to introduce a wealth of new hybrid multicloud and open source capabilities. In addition to the industry leading reliability, AIX customers can now leverage greater workload scalability, better cloud automation with Ansible, enhanced security, flexible licensing models, and more than 300 open source packages. IBM Power Systems remains committed to delivering an AIX release roadmap of further improvements in terms of its core capabilities around performance, scale and resiliency, but also innovation and modernization.

## **AIX 7.2**

AIX 7.2 is the most current AIX release in the market and builds atop a strong history by providing new functions/capabilities that further improve performance, scale, availability, and security, all while maintaining application binary compatibility to protect existing IT investments in AIX. AIX 7.2, coupled with IBM POWER9® processor-based Power Systems™, delivers an optimized and even more resilient computing platform designed to adapt to changing business demands, including new cloud use cases and improved economics. Lastly, AIX is available in either Enterprise Edition or Enterprise Cloud Edition Bundles with PowerVC, VM Recovery Manager, and more to provide a ready to deploy private-cloud.

AIX version 7.2 is binary compatible with previous versions of the AIX OS, including AIX 6™, AIX 5L™ and even earlier versions of AIX. In other words, applications that ran on earlier versions of AIX will continue to run on AIX 7.2—which makes sure clients' investments are protected.

## **Live Update**

AIX offers some unique features such as AIX Live Kernel Update, which was introduced with AIX 7.2 (TL0) in December 2015 to allow for general application and activation of any interim fix without a required reboot. Subsequent AIX 7.2 TL updates added support to also do live updates of the AIX kernel with service packs and new TLs, again without the requirement to reboot in order to activate the changes. Enhancements continue with AIX live update to support new use cases so that clients can broadly apply and use them. This includes recent enhancements to support live update in PowerVC managed landscapes and to automate the use of Power Enterprise Pools for CPU and memory resource management. Recently, we enabled clients to leverage Live Partition Mobility (LPM) to do a live update across frames or bring down the overall resources needed in case LPM is not an option.

## **Open Source**

AIX Toolbox for Linux Applications contains a collection of open source software built for IBM Power Systems. These tools provide the basis of the development environment of choice for many Linux application developers. All the tools are packaged using the easy to install RPM format. There is a strong affinity between Linux and AIX for applications. The AIX operating

system (OS) has a long history of standards compliance and it is generally straightforward to rebuild Linux applications for AIX. The AIX Toolbox for Linux Applications demonstrates the strong affinity between Linux and AIX operating systems. The AIX Toolbox for Linux applications provide important pre-requisite technologies such as Python and YUM for solutions such as Ansible Automation. More information about AIX and Ansible can be found [here](#).

## NVMe

AIX introduced support for internal direct attached Non-Volatile Memory Express (NVMe) devices in version AIX 7.2 TL3 providing access to the latest storage technologies to significantly accelerate access to critical data. The trend around evolving NVMe storage has continued as support has been extended to additional U.2 and PCIe add in card storage options on the POWER9 platform including up to 14 6.4TB PCIe Gen4 internal NVMe devices on the most recent S924 platform. AIX is now also thinking outside of the box as it introduces support for Fibre Channel NVMe (FC-NVMe) in the latest version 7.2 TL5 release. Traditional SAN infrastructure can now be used to connect AIX systems to some of the latest SAN based storage systems running new FC-NVMe protocols.

## Artificial Intelligence

AIX workloads are a natural source for AI as these systems host a tremendous amount of high-quality data on customer behavior and transactional information that could be further leveraged for AI. When clients combine historical data with emerging technologies such as machine and deep learning, all on the same platform, leveraging all kinds of sources and trained systems appropriately, they will get new insights. This is core to our mission as an IT provider for enterprise businesses and true investment protection.

## Hybrid Cloud Integration

AIX is helping over 5,000 clients transform their IT infrastructure into a private, on-premises cloud with PowerVC. Just this year, we announced new hybrid cloud functionality, including the ability to easily import and export AIX VMs between clouds, as well as new Software Defined Infrastructure capabilities allowing you to spin up SAN-less clouds for DevOps environments.

AIX is now available on POWER9 in the IBM Cloud through the IBM Power Systems Virtual Server on IBM Cloud. AIX customers have always counted on to support mission-critical databases, they can now leverage greater workload scalability, better cloud automation with Ansible, enhanced security, and flexible licensing models. They can also run AIX workloads in hybrid or public cloud without having to re-factor or re-write them. IBM has embarked on hybrid on-prem to IBM Cloud integration in terms of production, non-production, and disaster recovery use cases. Sign-up for a Lite account to start building your applications and exploring services with select free Lite plans in the IBM Cloud console with the [IBM Cloud free tier](#).

## Security Enhancements

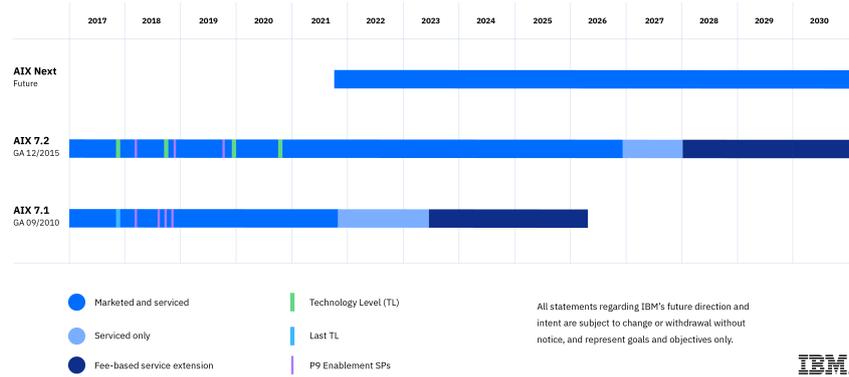
The IBM Power Systems security portfolio was improved as well with significant enhancements to PowerSC with the primary focus being AIX providing new malware intrusion detection and alerting capabilities, integration with IBM Cloud PowerVC Manager, reporting capabilities to support security audits and more. Additionally, we released PowerSC Multi-Factor Authentication (PowerSC MFA) that provides the highest level of capability around the emerging requirement for two or more authentication factors for system administrators to meet mandatory regulations.

## Disaster and Recovery Protections

Data center, and service availability are some of the most important topics for IT infrastructure. Natural disasters not only affect normal operations, but human errors and terrorist acts may affect business continuity and even with fully redundant infrastructure, services are vulnerable to such disasters. Replication of data between sites is a good way to minimize business disruption since backup restores can take too long to meet business requirements, or equipment may be damaged depending on disaster extent and not available for restoring data. High availability software is intended to minimize downtime of services by automating recovery actions when failures are detected on the various elements of the infrastructure.

PowerHA for AIX is the premier HA/DR solution with years of continuous enhancements it is the solution of choice for mission-critical operations where all outage types both planned and unplanned are covered. PowerHA minimizes planned and unplanned outage events, simplifies HA administration, provides multi-site solutions and minimizes operating expenses. Lastly, Power HA and VM Recovery Manager provide solutions to address client concerns around for high availability and disaster recovery on AIX.

### AIX release roadmap



### AIX Release Roadmap



*AIX Support Phase*

## Why IBM?

For over a century, IBM has pioneered technologies and provided services that help companies manage and mine their valuable business data. In addition, IBM Power Systems are trusted by 78 percent of the Fortune 100. Further, every one of the top 10 banking firms have Power Systems, as do 80 percent of the top insurance and retail companies.

## Next steps

- [Learn more and get started on your upgrade journey to POWER9 and IBM AIX 7.2](#)
- [Bridge to and extend your IBM AIX workloads to the cloud](#)

## For more information

To learn more about IBM AIX, please contact your IBM representative or IBM Business Partner, or visit the following website:  
<https://www.ibm.com/it-infrastructure/power/os/aix>

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