

AIX

IBM AIX

An executive guide to the strategy and roadmap for the AIX operating system for IBM Power Systems

2021

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Dear Clients and Business Partners,

Almost every business today recognizes that digital transformation is critical to better serving its customers, reducing costs and improving operational efficiency, while also stepping up environmental sustainability. To that end, businesses are embarking on both infrastructure and application modernization to help drive these improvements – developing or moving more applications to the cloud and adopting new technologies such as Linux containers. The most successful of these companies also recognize that this journey requires a hybrid cloud approach.

Over the last two years IBM Power Systems has introduced new offerings to help businesses accelerate this transformation – Power Hybrid Cloud capability featuring on-premises Power Private Cloud with consumption pricing and Power Virtual Server. We've also continued to expand our focus on open-source technologies, bringing popular open-source tools to AIX and creating a collection of Ansible automation packages and playbooks to make managing AIX easier than ever, all with consistent skills and processes as on x86-based platforms.

AIX and IBM Power Systems have been the foundation of mission-critical workloads and databases for tens of thousands of customers over the last 35 years, leading the industry in performance, scalability, resiliency, flexibility and security. We remain committed to sustaining that platform leadership and will continue to evolve and extend AIX to help you capitalize on new capabilities, including running Red Hat OpenShift containers adjacent to AIX in order to reduce latency or embedding AI inference capability in enterprise applications on AIX.

This paper will provide you with a look into the strategy and roadmap for the future of AIX. You'll hear stories from the community of businesses transforming their work with AIX and IBM Power Systems, discover the latest upgrades to our software stack, learn how to modernize your existing AIX environment through co-location of cloud-native applications with Red Hat® OpenShift®, and view the roadmap (including a new AIX 7.3 release) that shows IBM's continued innovation and commitment to AIX and Power Systems through 2035 and beyond.

We are excited to share our ongoing commitment and strategy for the AIX platform, and we hope to build on the trust you have in the AIX community to take your business well into the future.



Stephen Leonard
General Manager
IBM Power Systems

Introduction

In the era of hybrid cloud, there is increased demand for enhanced computing capabilities, flexible infrastructure, continuous availability, and security. As companies navigate these dynamic market conditions and develop plans to satisfy their customers while growing their business, they require an operating system they can rely on to adapt and grow when needed.

To address market needs around varying consumption and deployment models, AIX and IBM Power Systems are delivering Power Hybrid Cloud, comprised of on-prem Power Private Cloud with consumption pricing and Power Virtual Server (Power VS). IBM Power Hybrid Cloud delivers a consistent hybrid technical architecture and commercial integration across on-prem and Power environments.

As IBM Power Systems expands its portfolio to deliver value-driven offerings for the hybrid cloud era, we remain committed to delivering a roadmap of innovation for both Power Systems hardware and AIX. The strategic direction of AIX® is to continue innovating for the needs of the AIX community today while embracing new industry technologies and IT landscape trends for tomorrow. IBM® Power Systems™ with AIX is well-positioned to meet the demands of your most crucial data and business production workloads.

The business world on AIX

AIX is deployed today across a variety of industries such as finance, manufacturing, retail, telecommunications, healthcare, travel, and government, along with many others. It's no secret that businesses like these are experiencing massive data growth. Fortunately, AIX is and will continue to be built to meet such growing demands for its community.

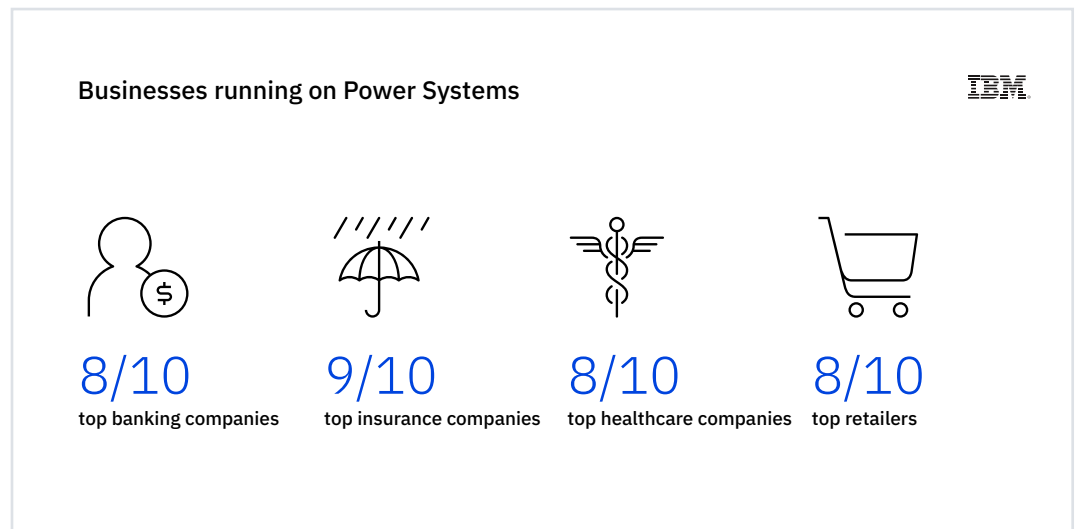
As IT infrastructure expands into new workloads, the ability of Power Systems and PowerVM® allows AIX, IBM i and Linux® to run side by side for efficient consolidation and optimization of data exchange and processing between these environments. Power Systems is unique in its capabilities to host this wide range of solutions efficiently at scale so that customers can naturally extend their existing IT infrastructure landscapes across their hybrid cloud. In addition, customers can now co-locate their new, cloud-native applications with existing workloads, thanks to Red Hat® OpenShift®.

Industry leaders trust IBM Power Systems

Why do industry leaders trust Power? IBM Power Systems continues to fuel innovation and extend Power's leadership in performance, scale and security, while maintaining our longstanding position as the most reliable server in the industry. Another reason customers value AIX is the investment protection offered by a proven binary compatibility guarantee and long release life spans.

AIX offers unique security features to protect client data that can verify the integrity of the system and implement advanced security policies to enhance the trust level of the complete system. For example, PowerSC™ hardens AIX environments against security threats and misconfiguration, simplifies administration, and accelerates compliance.

As Power Systems expands its reach into new markets and workloads such as AI and cloud-native applications, AIX will continue to be a strategic, foundational component of the portfolio with a roadmap and support plan that extends beyond 2035.



Innovation in the AIX community

Today, thousands of AIX users around the globe are running their core business on the AIX platform and leveraging it to drive business growth and innovation. Here are a few of their stories.

DataVision transforms rural economies with digital banking

“After intense research, we concluded that running Oracle on IBM Power Systems offered the best combination of price, performance, flexibility, resilience and scalability. We could replace all eight legacy servers with just two IBM Power Systems servers for the entire banking workload.”

— Sujit Chattaraj, Technical Director, DataVision Software Solutions

Farmers and remote communities in India struggle to access full-service banking, slowing much-needed economic development. Regional and state banks are key to rural development in India, but serving remote communities can be difficult and cost-prohibitive. By moving its Oracle-based core and digital banking applications to IBM Power Systems servers and storage, DataVision has transformed the economic model, enabling full-service, mobile and branchless banking. Furthermore, DataVision is now able to resolve key issues for mid-market banks that serve rural development needs. The new private cloud infrastructure enables DataVision to onboard new customers to a standard platform, complete with full-service banking capabilities. [Learn more about its story here.](#)

Clarks lays the foundation for omni-channel retail

“With our SAP solutions running on a responsive, high-performance private cloud platform, we are in a strong position to build value-added services, integrate our data with new applications, and ultimately bring our products to market faster.”

— Zoe Jones, Service Manager – SAP Applications, Clarks

To convert fleeting fashion trends into sales, Clarks needed to activate new channels and digital services rapidly — but found that existing systems could not support the volume and pace of change. Clarks migrated their SAP Business Suites to the SAP HANA database running alongside AIX on IBM Power Systems to enable rapid creation of multiple digital routes to market, maximizing sales and ensuring that every boot fits. Migrating to SAP HANA on IBM Power Systems alongside AIX, Clarks boosted its available compute resources by almost 50 percent while keeping costs flat, creating the headroom to launch innovative digital channels more quickly and drive new sales. [Learn more about its story here.](#)

Modernizing businesses with AIX on IBM Power Systems in the hybrid cloud era

We understand that many AIX users are shifting to a hybrid cloud strategy and have requirements to access AIX in their cloud service. Today, customers can continue to modernize their AIX applications by deploying them in a hybrid cloud environment and automating common IT operations with Ansible®. They can also modernize their AIX business applications by extending to containerized Linux application components on the same co-resident system using micro-services.

AIX is available on POWER9™ on IBM Power Systems Virtual Server. AIX customers can leverage greater workload scalability, better automation with Ansible, enhanced security, and flexible licensing models. They can also run AIX workloads in a hybrid or public cloud without having to re-factor or re-write them.

Integration with Red Hat OpenShift

Customers can modernize their existing environment and develop new cloud-native applications with Red Hat® OpenShift® Container Platform. IBM Power Systems remains committed to supporting the modernization of your existing applications and building new cloud-native workloads required for transformation and business growth. Red Hat OpenShift on Power Virtual Server allows customers to deploy highly available OpenShift clusters between containers and AIX applications on Power Virtual Servers. In addition, you can now co-locate AIX and IBM i apps with containerized Red Hat OpenShift apps.

Automation with Ansible

Manage your entire hybrid cloud datacenter with a single interface using Ansible modules built for AIX. Red Hat Ansible Certified Content for IBM Power Systems helps you manage workloads on Power Systems infrastructure as part of your wider enterprise automation strategy through the Red Hat Ansible Automation Platform ecosystem. It is delivered as a fully supported enterprise-grade solution and is designed to provide easy-to-use modules that can accelerate the automation of operating system patching, upgrades and configuration management tasks. This also helps address the AIX skills gap, since admins can leverage their existing Ansible skills to automate these environments. Lastly, customers can take advantage of additional community provided open-source Ansible modules in Ansible Galaxy (that is, no enterprise support available) to automate hybrid cloud operations on IBM Power Systems. With Ansible, you can manage your IBM Power Systems easily with consistent tools, processes, and skills.

Enterprise AI on AIX

AIX runs some of the world's most critical and data-intensive workloads for businesses around the world. Businesses today are looking for ways to infuse AI directly into their workstream and leverage their vast amounts of data to unlock valuable insights using AI.

By bringing your own models and co-locating them with transactional workloads on AIX, businesses can gain valuable insights from the vast amounts of valuable data already residing on their Power Systems without having to move the data off of the system. AI inferencing can occur on an Openshift-enabled Linux VM (for example, IBM Cloud Pak for Data) running adjacent to the AIX-based transactional or analytical workload on the same Power Systems server or directly on the AIX VM with models generated from products such as H2o Driverless AI.

For customers that prefer open-source machine learning packages, AIX open-source technologies are supported with the AIX Toolbox for Linux Applications. AIX toolbox has many open source packages compiled for AIX including Python along with a set of package components such as pandas for data preparation and scikit-learn for machine learning. Math libraries such as OpenBLAS are also supported that form the basis for math packages such as numpy and scipy.

No matter your preference, AIX and Power provide the tools needed to help you get your AI models up and running quickly so you can start seeing the benefits of AI for your business.

AIX and the IBM Power Systems software portfolio

<p>PowerVM</p> <p>Every POWER9-based server workload is virtualized, mobile and fully cloud-enabled with PowerVM hypervisor built into firmware</p> <p>Mobile workloads compressed and encrypted for improved security and acceleration</p> <p>Extreme scalability with VMs up to 32TB</p> <p>Live migration of VMs between POWER7, POWER8 and POWER9 servers</p>	<p>PowerSC</p> <p>Simplified management of security & compliance across AIX and LoP</p> <p>Improved real-time malware detection</p> <p>Enhanced compliance automation with support for GDPR, PCI, CIS and more</p> <p>Scalability enhancements including REST APIs</p> <p>Improved audit support (end-to-end) including a new interactive timeline</p>
<p>PowerHA</p> <p>Provides high-availability for both software and hardware running business-critical operations</p> <p>Monitor and manage PowerHA clusters from the UI included at no additional cost</p> <p>Policy-based incremental and full backups</p> <p>GLVM for IP-based replication</p>	<p>PowerVC</p> <p>Graphical lifecycle management of VMs</p> <p>Scalable management up to 10,000 VMs</p> <p>Web-based private cloud management</p> <p>Export/import VMs between data centers and hybrid cloud deployments</p> <p>Comprehensive API for integration and automation of private cloud operations</p>
<p>PowerSC MFA</p> <p>Enhanced support covering AIX and Linux on Power</p> <p>Additional factors in addition to RSA SecurID and certificate-based smart cards — such as TOTP on your phone, Yibikey, Radius protocol and more</p>	<p>VMR HA/VMR DR</p> <p>VM Recovery Manager replicates and automates VM restart operations</p> <p>Designed for highly automated disaster recovery data center HA restart operations</p> <p>UI for monitoring and managing</p> <p>Application monitoring agents for DB2, Oracle and SAP HANA</p>

AIX is highly integrated with the IBM Power Systems family of software offerings. With flexible integration at multiple levels within the hardware and software stack, the AIX platform provides the dependability AIX users have come to expect for their mission-critical workloads.

High availability and disaster recovery with PowerHA® System Mirror and VM Recovery Managers

Simplified management of security and compliance with PowerSC Standard Edition and PowerSC Multi-Factor Authentication (MFA)

Simplified cloud management, workload optimization and scaling capacity on demand with PowerVM and PowerVC

IBM Power Systems Enterprise Cloud Editions





More and more customers are taking advantage of the full portfolio of Power Systems software offerings to deliver all of the IT capabilities they need across their datacenter. AIX is available as a standalone operating system or can be bundled with products in the Power Systems Software portfolio through the Enterprise Edition or Enterprise Cloud Edition, which deliver a ready-to-deploy private cloud infrastructure and replace the need to purchase individual software components.

IBM Power Systems Enterprise Cloud Edition

Includes:

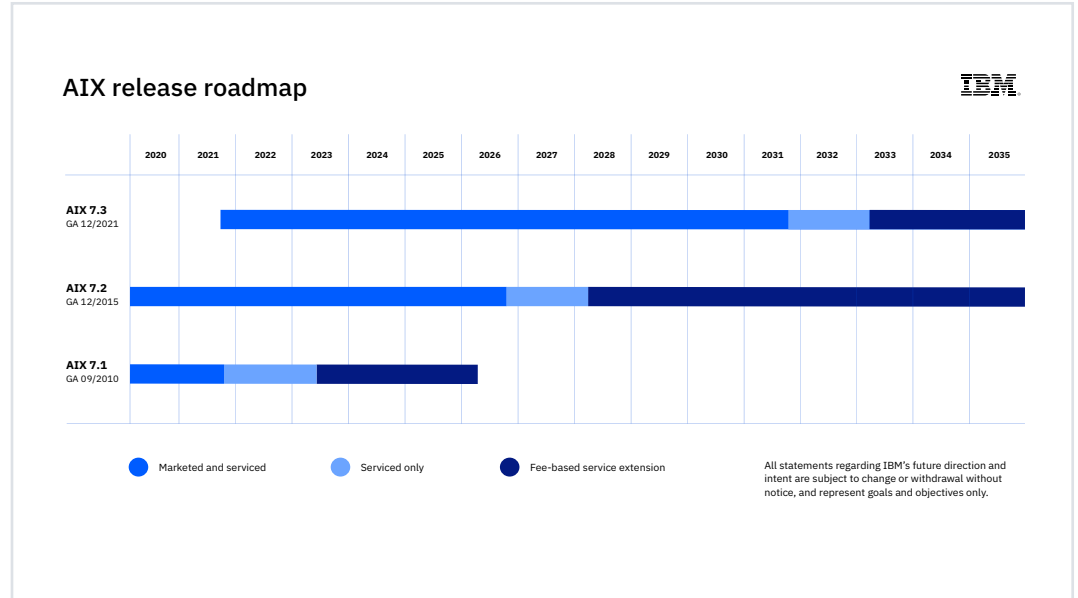
- PowerVC for Private Cloud
- Cloud Management Console
- IBM Tivoli Monitoring
- PowerSC Standard Edition
- PowerSC MFA
- VM Recovery Manager DR
- Aspera High-Speed Endpoint Management
- *AIX 7.2 Standard Edition (optional addition)*

Benefits:

-  Rapidly deploy and easily manage private cloud
-  Simplify security and compliance management
-  Simplify high availability
-  Accelerate large file transfers across clouds

AIX roadmap beyond 2035

IBM remains committed to AIX and Power, beginning with our long-term roadmap to continue delivering high levels of performance, reliability and security alongside new technical innovations and modernizations. In Q4 2021, AIX 7.3 will bring enhanced capabilities that deliver the resiliency, security and scale needed to get your IT environment hybrid-cloud ready. The long-term POWER processor roadmap is a key element in the AIX ecosystem investment protection story. IBM has already unveiled our next-generation Power 10 processor at the Hot Chips industry event in 2020. As presented at Hot Chips, Power 10 will deliver compelling value to AIX customers around increased capacity, energy efficiency, security, and enterprise AI.



In order to provide the investment protection our customers need, there are always at least two versions of AIX marketed and supported at any given time. The current versions of AIX in marketing are AIX 7.1 and AIX 7.2, with AIX 7.3 coming in Q4 2021. Customers with active Software Maintenance Agreements (SWMA) can upgrade to newer versions of AIX at any time through the Entitled Systems Support (ESS) site.

AIX support for Power processor compatibility modes



Power Platform	AIX 7.1	AIX 7.2	AIX 7.3*
POWER6	Supported in Native mode	Not supported	Not supported
POWER7	Supported in Native mode	Supported in Native mode	Not supported
POWER8	Supported in Native mode	Supported in Native mode	Not supported
POWER9	Supported in POWER8 mode	Supported in Native mode	Not supported

* AIX 7.3 will be available 4Q21

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice and represent goals and objectives only.

Both AIX 7.1 and AIX 7.2 are in full support mode. Earlier versions of AIX that are no longer marketed can be supported through a paid extended support period so that customers can continue getting fixes. The availability and duration of extended support options is dependent on several variables such as length of the product in the lifecycle, upcoming releases, and associated Power Systems hardware lifecycle durations. For more information, contact your TSS representative.

Conclusion

IBM is committed to the thousands of AIX users running their core, mission-critical business applications and databases on AIX. Because of this, AIX leads the market for scalable, distributed operating environments in many key industries including banking, insurance, telecommunications, retail distribution, healthcare, and the federal sector.

Our community of users select AIX based on the leadership it continues to deliver in performance, scale, availability, and security to run their most critical workloads. With the release of the 10+ year roadmap and ongoing support, IBM proves its commitment to delivering new innovations in hybrid cloud, AI and wherever AIX users plan to go next.

AIX is here to support the emerging technologies your future work depends on. With new technologies, innovations, and business changes – including the current transition to hybrid cloud – come new growth for the platform. AIX will continue to thrive because the nature of AIX workloads is durable. AIX is here for enterprises and their demand for secure, reliable, efficient processing of traditional structured data on systems of record.

IBM is strongly committed to AIX. Keeping up a 35-year history of innovation, AIX continues to deliver on its robust roadmap with every release, and our 10+ year roadmap shows how AIX and Power are there to support your next step – or giant leap – forward.

References:

- [AIX Marketplace Page](#)
- [AIX Client Success Stories](#)
- [AIX Toolbox for Linux Applications](#)
- [AIX Lifecycle and Support](#)

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