

## IBM i 7.4

### A platform for innovators, by innovators

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#### Highlights

- Enables continuous availability with Db2 Mirror for i
  - Provides exceptional security and resiliency for critical business data
  - Grows IBM i solutions options with open source languages and applications
  - Leverages the latest POWER9 hardware and technology
  - Transforms clients' business applications with cognitive, mobile and IoT
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In today's era of cloud, digital reinvention, artificial intelligence (AI), mobile computing and analytics, IT decisions are more critical than ever before. Choosing IBM i running on an IBM Power Systems™ server as the foundation for a modern infrastructure means delivering on the promise of these key technologies. Companies need to know that their systems and business processes will meet the highest service levels defined by their business units while being adaptable to handle new business requirements and opportunities.

IBM i running on Power Systems servers allows companies to focus on innovation and delivering new value to their business, rather than diverting money and people to manage their data center operations. When paired with POWER9, IBM i applications perform at the highest levels of speed and agility while providing infrastructure flexibility, and modern capabilities with the opportunity to lower operations costs. These key benefits – reliability, availability and flexibility have allowed many clients to day to gain critical business advantage by tying in cognitive technologies such as AI, IoT and machine learning.

IBM develops, fully tests and preloads the core middleware components of IBM i together upfront, whereas on other platforms, operating system, database and middleware integration is done by clients in their own the data center. The factory integration and testing of IBM i is a key factor in enabling companies to deploy applications faster and maintain them with fewer staff. The built-in virtualization, including workload management, enables clients to run multiple applications together in a single instance of IBM i, driving up system utilization, simplifying the IT environment and delivering a better return on IT investments. Clients cite the low Total Cost of Ownership (TCO) as a significant factor in their choice to run their businesses on IBM i and Power.

## **High Availability**

Just as there are a variety of clients who run their businesses on IBM i, there are a number of options for maintaining high availability. Used by many clients today, IBM provides IBM PowerHA SystemMirror for i and Backup, Recovery and Media Services (BRMS).

With IBM i 7.4, IBM is introducing a new LPP, IBM Db2 Mirror for i (Db2 Mirror), which is designed to address environments requiring continuous application availability, with a recovery time objective (RTO) of zero and a recovery point objective (RPO) of zero. The foundational technology is based on integrated IBM i operating system function which enables two copies of the IBM i integrated Db2 database to synchronously replicate inserts, updates and deletes across two systems in a tightly coupled active-active configuration at the database level. Applications using the database can be deployed in an active-active configuration or in an active-passive configuration. Both options will enable a near-zero RTO. With the most recent Technology Refresh, IBM i 7.4 TR2, Db2 Mirror supports direct attach storage and NVME storage. This combination provides a lower entry point for clients in the small and mid-tiers.

IBM PowerHA provides a disk clustering solution for IBM i. PowerHA is an easy-to-manage clustering solution that makes it simple to switch between systems. It is easy to maintain and is supported directly by IBM. As more IBM i clients transition to SANs, PowerHA also offers the advantage of a resiliency solution that is tightly integrated with both the IBM i operating system and IBM storage servers and software.

## **Security**

The simple-to-deploy, object-based security model of the IBM i operating environment provides comprehensive capabilities for deploying and managing a highly secure system environment. Its object-based architectural design provides virus resistance by protecting the operating system code from modification (via hardware storage protection) and by preventing the running of executable instructions stored in a file, a common source of viruses. IBM i also helps safeguard data against hackers with built-in intrusion detection and prevention and has an audit journal to track security changes and breaches to help with compliance and auditing.

IBM i 7.2 added row and column security into the database allowing clients to secure critical business data to only those who “need to know”. IBM i 7.3 and IBM i 7.4 included the authority collection capabilities which allow the tracking and monitoring of who is using which objects and how. This is critical not only for determining your security policies and rules, but also for monitoring who is using them.

IBM i 7.4 has added the latest in industry security protocols such as TLS 1.3 and TLSv1.2 to the operating system. Additionally, for clients that need specific TLS environments, IBM i 7.4 delivers TLS\_ECDHE\_RSA\_WITH\_CHACHA20\_POLY1305\_SHA256 and TLS\_ECDHE\_ECDSA\_WITH\_CHACHA20\_POLY1305\_SHA256 as well as ChaCha20 Poly1305 cipher suites.

## Application Development and Open Source

Today's applications are created as a blend of technologies, using the languages and techniques most suited for the task. IBM i offers an integrated language environment that supports a broad range of open application options, such as C, RPG, COBOL and C++. In IBM i 7.4, IBM will continue to provide enhancements to these more traditional environments, allowing clients to develop and run state-of-the-art business applications. When combined with web-based and open source applications such as Java, PHP, Python, Node.js and R, traditional business solutions can be refreshed as they are extended to the web or to other graphical or cognitive devices and applications. The applications that run the business can include integration of modern workloads and business requirements. This enhances the business value of the applications and IBM i.

Over the last few years, IBM has been continuously enhancing the suite of open source languages and environments available on IBM i. The announcement of IBM i 7.4 adds R, vim, and midnight commander to the long list of open source components available for download. It is possible for developers on IBM i to use Git, Orion, PHP, Ruby, Python, Node.js, GCC or Samba alongside more traditional languages such as RPG or COBOL. Clients continue to request additional new functions in both environments. In the most recent Technology Refresh for IBM i, TR2, the team has once again added more open source function and new functions to operations in RPG.

Metrics	Platinum Continuous Availability <sup>1</sup>	Gold High Availability	Silver Moderate Availability	Bronze Standard Availability
Availability Objective (Uptime)	99.999%	99.99%	99.9%	99.5%
Planned Downtime	Near 0	Outage Required	Outage Required	Outage Required
Availability	Always On	Almost Always On	Usually On	
Solution	Db2 Mirror for i	Logical or Physical Replication	Disaster Recovery Reboot Required	

*Which level of availability do you need for your business?*

Servers	IBM i 6.1 <sup>1</sup>	IBM i 7.1	IBM i 7.2	IBM i 7.3	IBM i 7.4
POWER9 S914, S922, S924, H914, H922, H924, E980			✓	✓	✓
POWER8 S814, S822, S824, E870, E880		✓ <sup>2</sup>	✓	✓	✓
POWER7/7+ P5700/701/702/730/704, Power 710, 720, 730, 740, 750, 760, 770, 780, 795, Pureflex p260/460	✓ <sup>1</sup>	✓	✓	✓	
POWER6+ JS23/43, 550*, 560 POWER6 JS12/22	✓	✓	✓ <sup>3</sup>		
POWER6+ 520* POWER6 520*, 550*, 570, 595	✓	✓	✓ <sup>3</sup>		
POWER5/5+ 515, 520, 525, 550, 570, 595	✓	✓			
800, 810, 825, 870, 890	✓				

<sup>1</sup> – POWER7+ 750/760 do not support native I/O. IBM i 6.1 on PureFlex must be client of IBM i 7.1 or later  
<sup>2</sup> – Requires IBM i 7.1 Technology Refresh 8

## Why IBM?

For over a century, IBM has pioneered technologies and provided services that help companies manage and mine their valuable business data. And for 25 consecutive years, IBM has topped the annual list of US patent recipients—receiving a record-breaking 9,043 patents in 2017. 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 i 7.4 here](#)

[Get started with continuous availability for your business with Db2 Mirror for i](#)

[Read stories of other customers innovating with IBM i and Power Systems here](#)

## For more information

To learn more about IBM i 7.4, please contact your IBM representative or IBM Business Partner, or visit the following website:

<https://www.ibm.com/it-infrastructure/power/os/ibm-i>

To learn more about IBM Db2 Mirror for i, please contact your IBM representative or IBM Business Partner, or visit the following website:

<https://www.ibm.com/us-en/marketplace/db2mirroribmi>

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: [ibm.com/financing](http://ibm.com/financing)

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