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## Highlights

- Complete, ready-to-run database platform
  - Designed and tuned specifically for transactional data workloads
  - Enables database deployment in minutes
  - Capable of running multiple database software versions
  - Can consolidate more than 100 databases onto one system<sup>1</sup>
  - Scaling up to 30x<sup>2</sup>
  - Enables database node recovery in seconds<sup>3</sup>
  - Requires no planned downtime for firmware and OS upgrades<sup>4</sup>
  - Single point of support
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# IBM PureData System for Transactions

*A highly reliable and scalable transactional data system*

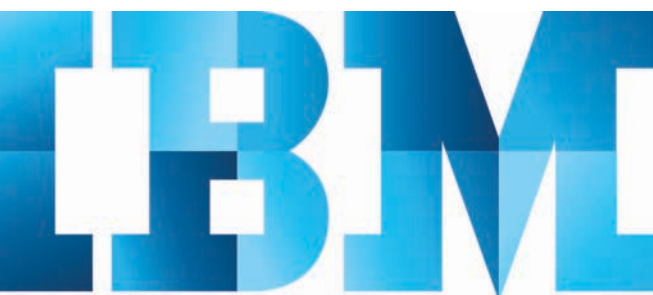
Today's users expect instantaneous response and 100 percent uptime from their information systems. At the same time, the volume, velocity and variety of enterprise data is creating unprecedented information management challenges. Businesses across all industries are looking to their IT organizations to help them quickly and affordably capture and unlock the value of their data for improved operations and competitive advantage.

But for IT departments supporting these data-intensive workloads, meeting these expectations can be difficult. Deploying new systems, managing hardware and software upgrades, tuning for performance, managing backup and recovery processes and expanding databases as workloads grow all require significant time, effort and expertise to accomplish—and all of them come with a risk of system outages.

Research shows that less-efficient data centers can spend up to 65 percent of their IT budgets managing and maintaining existing infrastructure.<sup>4</sup> And when it comes to new projects, 23 percent deploy late and are over budget.<sup>5</sup> To successfully and sustainably use data to improve operations, organizations need a new approach to delivering data services.

## IBM PureData System for Transactions: A smarter approach

The IBM PureData System for Transactions—part of the IBM PureSystems family—is a highly reliable and scalable database platform designed to help reduce complexity, accelerate time-to-value and lower data management costs. The system enables IT departments to



easily deploy, optimize and manage data-intensive workloads. These expert integrated systems set a new standard in workload-optimized systems, delivering value with:

- **Built-in database management expertise** that enables the system to do many ongoing administration tasks automatically, freeing up database staff from routine work
- **Integration by design** that results in a factory-optimized system designed for high reliability and scalability out of the box, streamlining system integration efforts
- **A simplified experience** from design to purchase to maintenance, which helps reduce total cost of operations

The PureData System for Transactions combines the simplicity of a workload-optimized appliance with the flexibility of tailor-made systems, providing both fast time-to-value and customization for specific business needs.

### Optimized for data-intensive workloads

The PureData System for Transactions contains factory-integrated and optimized server, storage, network and software resources selected specifically for online transactional processing (OLTP) workloads. The hardware and software are designed, integrated and tuned to support high-volume transactional processing applications with high scalability, high reliability and consistent response time with high throughput.

At its foundation, the system leverages years of IBM expertise in resource deployment, workload management, automation and optimization to create an efficient, automated system infrastructure that companies can implement and maintain with less effort and risk. In addition, data management best practices are embedded into the system, covering everything from data availability and disaster recovery to lifecycle management, database monitoring, compression and database tuning for optimal performance, helping organizations to more easily deploy, run and manage data-intensive workloads.



### High performance for high-value workloads

Tuning data systems to meet application performance requirements is an ongoing process that requires a great deal of effort and expertise. The PureData System for Transactions helps simplify performance management through:

- **Self-tuning:** Automatically allocating resources
- **Self-balancing:** Automatically load balancing data access requests
- **Self-optimizing:** Remembering usage statistics and automatically selecting the most efficient data access plan

- **Self-monitoring:** Improving performance through threshold-based alerts
- **Smart storage management:** Automatically managing hot, warm and cold data across storage devices for optimized performance
- **Storage optimization:** Adaptive Compression features can help save storage space as well as improve performance by compressing data into smaller sets that can be moved faster
- **Single, integrated console:** Monitoring and managing all system components from a single dashboard, making it easier to identify and address performance bottlenecks

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## Key capabilities

### Database management

IBM® DB2® 10 Enterprise Server Edition with DB2 pureScale® feature  
 IBM InfoSphere® Optim™ Query Workload Tuner 3  
 IBM InfoSphere Optim pureQuery Runtime 3.1  
 IBM InfoSphere Optim Performance Manager 5  
 IBM InfoSphere Optim Configuration Manager 2  
 IBM Tivoli Storage Manager Client

### Additional tools

IBM InfoSphere Data Architect 8  
 IBM Data Studio 3

### Operating system

Red Hat Enterprise Linux 6

### Storage

IBM Storwize® V7000 with IBM Easy Tier® automatic storage tiering

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## The power of patterns

At the heart of the PureData System for Transactions is a new capability that delivers data management know-how and expertise directly into the system. Called patterns of expertise,

this innovative approach captures best practices into reusable, deployable packages. The system makes use of two types of platform patterns to accelerate deployment of data services:

- **Topology patterns:** These patterns are used to quickly and easily deploy database clusters. A cluster instance is a set of database nodes that work together to provide higher levels of scalability, availability and throughput. Using topology patterns, administrators can create database clusters in minutes, eliminating the time, effort and expertise required to do so manually. These patterns offer flexible options to create clusters of different sizes to best fit the application's needs.
- **Database patterns:** These patterns are used to quickly and easily deploy DB2 databases on the system. The system includes a default OLTP transactional database pattern that can be used to create databases that are pre-tuned and pre-configured specifically for high-performance transaction processing. IT departments can also create their own database patterns by cloning existing databases. In both cases, database patterns enable quick, simple and consistent database deployment as well as provide a user-friendly, self-service environment for application development.

Patterns help create a standardized infrastructure, reducing the risk of errors by encouraging optimized database configurations, reducing IT operational overhead and improving productivity for application developers.

## High-availability features out of the box

The PureData System for Transactions is a highly reliable and resilient data system. It has automatic failure detection and recovery functions that enable high data availability without constant attention from operations staff. And when system maintenance is required, fixes are delivered in a pre-integrated stack that contains all necessary operating system and firmware updates that can be installed without downtime, supporting continuous OLTP operations.

## Increased simplicity streamlines IT management tasks

The PureData System is designed to simplify the entire system lifecycle from acquisition to retirement. The system comes fully assembled. The use of patterns enables simplified deployment of cluster infrastructure and production-ready databases in minutes, with minimal expertise required. The system supports existing DB2 applications with no change and Oracle Database applications with minimal changes, through open-standard access. In addition, the entire system can be administered with an integrated management console and a single line of support from IBM.

The integrated, optimized design of the PureData System for Transactions helps to streamline IT administration in several ways:

- Fast time-to-value with a setup time in hours, helping companies focus on their business instead of their IT infrastructure
- Lower costs by consolidating work from multiple, siloed database servers onto a single system for improved resource utilization and simplified management
- Storage space savings to help reduce costs; clients have experienced cases of 10x storage space savings via Adaptive Compression<sup>6</sup>
- Easy scalability helps to facilitate business growth without expensive application changes
- Support for DB2 applications with no change, and support for Oracle Database applications with minimal changes
- A single, integrated console to monitor and manage administration tasks, simplifying the operational burden on IT staff
- A single line of support for all system components

With these highly sophisticated features, IT staff can focus on strategic initiatives rather than infrastructure administration and maintenance.

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## Integration with the IBM PureApplication System

The IBM PureData System is a perfect companion to the IBM PureApplication™ System. While both systems provide data services, the PureApplication System provides standard database availability and performance. If an application requires higher levels of scalability and availability, the PureApplication System can automatically deploy the database to the PureData System to meet higher levels of service. This policy-driven, cross-system integration simplifies database management by placing databases on the system best able to meet the application's needs. To learn more, go to [ibm.com/puresystems](http://ibm.com/puresystems)

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## Data expertise, ready to run

The system comes in three sizes, enabling IT staff to select the compute and storage capacity that meets their business needs (see Table 1). As the business and workload grows, organizations can expand capacity by upgrading to the next-size system easily. The PureData System for Transactions is designed to expand from the small to the medium configuration and from the medium to the large configuration with no planned system downtime required.

The IBM PureData System is supported by a wide range of market-leading business partners including: complementary technology partners, resellers, systems integrators, and service providers. For a complete list or to find out if a particular company or solution is part of our program, please visit: [ibm.com/partnerworld](http://ibm.com/partnerworld) or contact your IBM representative.

IBM PureData System for Transactions configurations	Small (Quarter rack)	Medium (Half rack)	Large (Full rack)
IBM Flex System™ Enterprise Chassis	1	1	2
IBM Flex System x240 Compute ITEs - Two Intel Xeon E5-2670 8C 2.6 GHz - One IBM Flex System EN4132 2-port 10 Gb Ethernet Adapter with RoCE support - One IBM Flex System FC3172 2-port 8 Gb FC Adapter	6	12	24
IBM System Networking RackSwitch™ G8264 - BNT 48 ports SFP+, 4 ports QSFP+	2	2	2
Total cores	96	192	384
Memory	1.5 TB	3.1 TB	6.2 TB
IBM Storwize V7000 disk units	1	2	4
IBM Storwize V7000 disk expansion units	1	2	4
Raw SSD storage capacity	4.8 TB (12 × 400 GB)	9.6 TB (24 × 400 GB)	19.2 TB (48 × 400)
Raw HDD storage capacity (900 GB drives)	32 TB (36 × 900 GB)	64 TB (72 × 900 GB)	128 TB (144 × 900 GB)
Total user capacity—uncompressed	18.6	37.2	74.4
Power supply (US)	4 × 60 amp 3 phase	4 × 60 amp 3 phase	4 × 60 amp 3 phase
Power supply (Europe)	4 × 32 amp 3 phase	4 × 32 amp 3 phase	4 × 32 amp 3 phase
Power	5.6 KW	9.0 KW	16.6 KW
Cooling (BTU/hour)	19K BTU	31K BTU	57K BTU
Weight	530.6 kg	636.1 kg	964.9 kg
Dimensions	644 mm (width) × 1181 mm (depth) × 2015 mm (height)		

Table 1: IBM PureData System for Transactions standard configurations.

## See for yourself—take a test drive at no charge

Data systems need to always be on, fast and affordable to support the demands of today's business environments. The PureData System for Transactions provides a smarter approach to meeting these demands.

Organizations can try out the PureData System for Transactions through the IBM PureExperience™ Program. This program is available at no charge to allow you to test drive the system with your own data. The program offers onsite installation and demonstration of business value, education and data migration services, use of the system for a specified period and a single line of support. For details on this program and to see what is available in your area, please visit: [ibm.com/PureExperience](http://ibm.com/PureExperience) or contact your IBM representative.

## Why IBM?

The PureData System for Transactions leverages years of IBM expertise in resource deployment, workload management, automation and optimization to create an efficient, automated system infrastructure that companies can implement and maintain with less effort and risk. In addition, data management best practices are embedded into the system, helping organizations to more easily deploy, run and manage data-intensive workloads.

## For more information

To learn more about the IBM PureData System for Transactions, please contact your IBM representative or IBM Business Partner, or visit: [ibm.com/puredata](http://ibm.com/puredata)

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.



Please Recycle

<sup>1</sup> Based on one large configuration.

<sup>2</sup> Designed scalability for processing power and memory resources required for a single database.

<sup>3</sup> As designed for normal operations and typical transaction workloads.

<sup>4</sup> Ibid.

<sup>5</sup> Results of a commissioned study conducted by Forrester Consulting on behalf of IBM.

<sup>6</sup> Based on client testing in DB2 Early Access Program.