

IBM Cloud Pak for Data with MongoDB Enterprise Advanced

Gaining modern data insights in a virtualized,
hybrid, and multicloud environment



Executive summary

To support new use cases, organizations are faced with multiple data sources found in various databases. Artificial intelligence (AI) and machine learning (ML) are becoming part of the application development lifecycle. MongoDB enables data to change, grow and deliver value in such environments. IBM® Cloud Pak for Data (formerly IBM Cloud Private for Data) is a data and AI platform built on an open cloud-native architecture that integrates MongoDB to address challenges around developer experience, insight activation and application management.

Challenges for application developers

Companies increasingly need to support modern-day use cases, such as the Internet of Things (IoT), mobile access and more, to deliver operational and insight applications that leverage data residing in multiple, relational and nonrelational data sources while harnessing the power of ML and AI. As such, ML and AI models have become an integral part of the application development lifecycle.

However, three challenges remain when delivering these applications from a developer's standpoint:

- 1. Development experience:** There's an unprecedented need for collaboration across team members and roles, such as data engineers, data scientists, business analysts and application developers, working on ML, streaming and visual analytics. Furthermore, developers need to work with rapidly changing and variable data models—one of the main characteristics of modern-day applications.
- 2. Insight activation:** Developers need comprehensive, integrated tools for activating insights from analytics and AI.
- 3. Application management:** The requirements driving the delivery of insight applications are rapidly changing business needs, resulting in a continual reduction of cycle times. Application developers need to easily and quickly test and migrate applications from development to production environments.

Modern applications that are built for cloud-ready paradigms often have many, different data sources. Data is changing faster than ever and becoming less structured as data environments grow and extend. One of the fastest growing databases in the market, [MongoDB Enterprise Advanced](#), is designed to provide data processing and deliver insights from easily accessible and modifiable JSON documents. This database enables data to change, grow and deliver value in these high-velocity environments.

Cloud Pak for Data overview

Cloud Pak for Data is a seamless, governed, data analytics platform that helps customers address their application development challenges. This fully governed team platform shortens the time to value of analytics by integrating the entire data lifecycle—data management, data governance and analytics.

Cloud Pak for Data provides a library of modular, cloud-native data and analytics services, allowing customers to flexibly spin up or spin down individual services based on their workloads and use cases. It supports a collaborative, project-based framework and has an open application programming interface (API) architecture.

Cloud Pak for Data features and benefits –

Enhanced development experience

- Integrated, hardened, role-based workflows with analytics personas
 - Data management across different data services and data types, and data virtualization to govern and untether the data management from the underlying data stores
- Support for insight activation
- Integrated insight development frameworks
 - Data and AI model governance
 - AI scoring service scalability and outage-free, rolling upgrade
- Faster, simplified application management
- Robust development-to-production workflows
 - Automated, cloud-native service provisioning with seamless performance engineering
 - API lifecycle management and governance

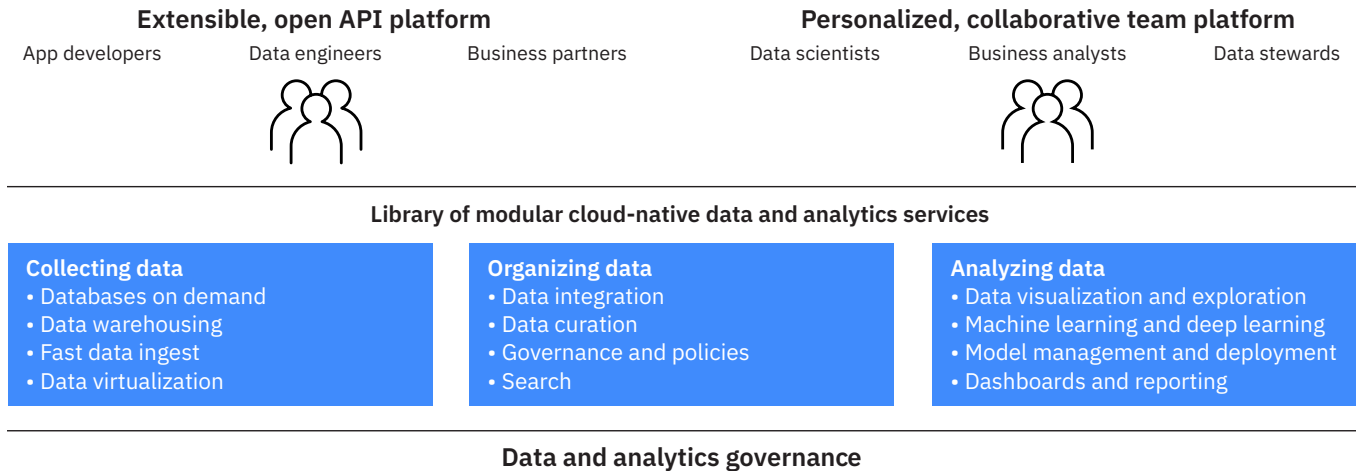


Figure 1. Cloud Pak for Data architecture diagram.

Cloud Pak for Data with MongoDB Enterprise Advanced overview

To help customers manage and gain insights from many data sources or a hybrid, multicloud environment, IBM has accelerated integration of end-to-end scenarios with Cloud Pak for Data with the MongoDB Enterprise Advanced add-on.

This add-on extends the ability for users to explore and use JSON data with MongoDB's powerful tools, natively on Cloud Pak for Data. These capabilities help users better cope with rapidly changing data models or schemas and support modern-day use cases.

When customers provision MongoDB Enterprise Advanced, they have the option to integrate the database automatically with the governance capabilities of the Cloud Pak for Data platform, allowing analytics users access to self-service data stored on MongoDB.

Technically, this delivery is enabled by an administrative environment that supports:

- Rapid, multinode MongoDB server deployments
- A Kubernetes and Docker infrastructure, controlling repeatable, container-driven processes
- Management tools, including integration with MongoDB Ops Manager

Cloud Pak for Data with MongoDB Enterprise Advanced features and benefits

1. Enhance MongoDB Enterprise Advanced powered applications with always-current analytics across distributed databases. Data virtualization enables customers to experience distributed, heterogeneous databases as a single data repository.
2. Infuse MongoDB Enterprise Advanced applications with data science and AI. Build, deploy, manage and govern ML models to help improve business outcomes. For example, personalized recommendations, customer churn, cross-sell and upsell, and predictive maintenance.
3. Shift to cloud-native architecture and deploy MongoDB Enterprise Advanced virtually anywhere:
 - Provision and scale in minutes
 - Build once, deploy essentially anywhere with multicloud support
 - Built-in automation and collaboration to increase productivity
4. Leverage smart governance to enable self-service analytics and accelerate time to value with MongoDB Enterprise Advanced. Autodiscover metadata and manage and enforce governance rules and policies to mitigate risk and accelerate compliance.

Figure 2 illustrates the end-to-end process for governing data from various sources to achieve analytic insights. MongoDB Enterprise Advanced database can be used as one of the data sources that feeds data through a curation process.

Data is subjected to the policies, rules and business terms defined by the enterprise and put into an intelligent metadata catalog by a data steward. This process allows data scientists or engineers to use this data to develop dashboards and analytics applications.

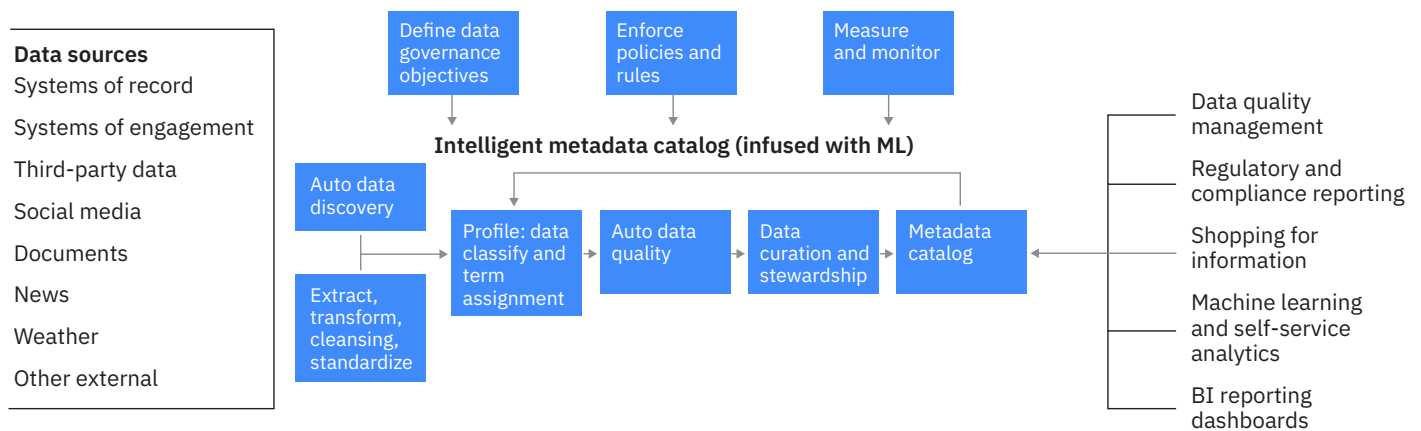


Figure 2. This system diagram shows the path to governed data and analytics using Cloud Pak for Data.

Conclusion

IBM Cloud Pak for Data with MongoDB Enterprise Advanced add-on helps companies more rapidly deliver insights to applications and unlock business potential by leveraging a hybrid, multidatabase environment. Clients can:

- Accelerate data monetization
- Operationalize data science, AI and ML
- Shift to next-generation workloads
- Enforce smarter governance

Why IBM?

IBM offers the following capabilities:

- Support for **clients around the world**
- Commitment to **open source requirements**
- Support for **hybrid cloud** architectures and solutions
- **Integration** of virtually all data repositories
- Tools needed to manage **heterogeneous** data environments

For more information

To try IBM Cloud Pak for Data today, visit:

www.ibm.com/account/reg/us-en/signup?formid=urx-34120

Learn more about [MongoDB Enterprise Advanced](#).

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