

Accelerate digital transformation

Harness your data and put it to work with Red Hat and Couchbase

“Application developers and enterprise architects rely on Couchbase to enable agile application development on a platform that performs at scale – from the public cloud to the edge – and provides operational simplicity and reliability.”

Matt Cain
President and CEO,
Couchbase

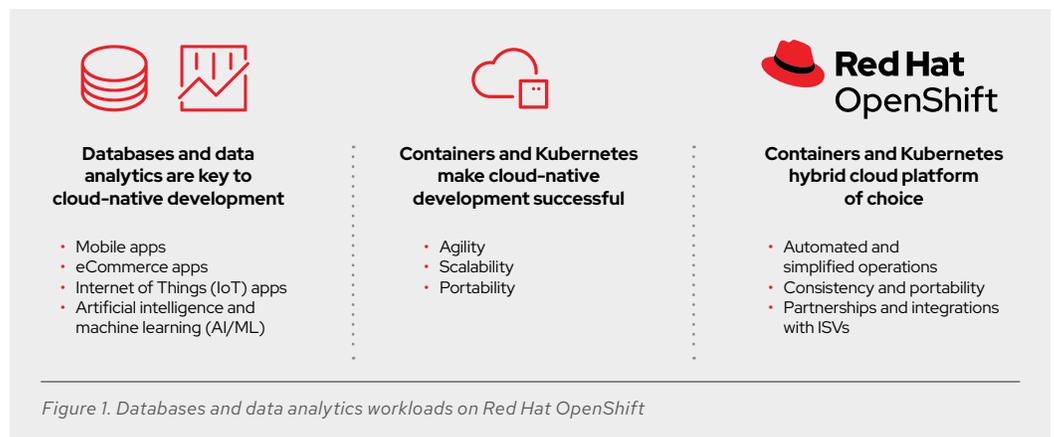
Introduction

Digital transformation begins with data and the ability to see it, access it, make sense of it, and then use it effectively in modern applications. Data no longer resides in one place – now organizations have critical information in varying formats stored in multiple locations, both on-premise and in the cloud.

Legacy data management tools and isolated databases are often unable to support the demands of public sector organizations. And without access to complete, accurate, and clean data, IT leaders and information analysts lack the visibility they need.

Making data available for incorporation into a comprehensive data layer is essential for accurate decision-making. Thus, the ability to gain control of data and use it effectively is the key to success for today’s digital institutions and government agencies.

This overview examines how Red Hat and Couchbase help you harness your data and put it to work to accelerate your digital transformation.



The modern database for today’s public sector applications

Couchbase is an open source, distributed, NoSQL document-oriented engagement database. A modern database for enterprise applications, Couchbase exposes a fast key-value store with managed cache for submillisecond data operations, purpose-built indexers for fast queries, and a query engine for executing SQL-like queries. For mobile and Internet of Things (IoT) environments, Couchbase also runs natively on-device.

Meeting the challenge of a modern data architecture

As organizations modernize their application architectures and move into containerized and cloud environments, their data strategy needs to align with their application strategy. Undertaking such a transformation is not without challenges, however. Organizations are faced with the operational complexity of deploying hybrid data architectures, balancing performance tradeoffs, protecting against downtime and data loss, and getting enough vendor support and documentation, as well as overcoming skills gaps. Together Red Hat and Couchbase can help to address these challenges.

Databases and data analytics are integral to transformative cloud-native applications, providing the intelligence necessary for critical applications and emerging technologies like artificial intelligence and machine learning (AI/ML). Containers and Kubernetes are critical for successful and efficient cloud-native application development because they can deploy a variety of workloads, scale based on business requirements, offer agility to deploy workloads and respond quickly, and provide the portability to deploy across hybrid cloud environments.

Red Hat OpenShift for containers and Kubernetes

Red Hat has a proven track record of helping organizations globally operationalize database solutions on Red Hat® OpenShift®. Our comprehensive solution portfolio helps complete the requirements of cloud-native application architecture.

Red Hat OpenShift is an enterprise-ready Kubernetes container platform that supports enterprise application development and deployment.

A Kubernetes operator is a method of packaging Kubernetes applications to extend Kubernetes capabilities to automate application management. Using operators can reduce operations effort and cost and increase service reliability by automating monitoring, updates from one version to another, failure recovery, and scaling the application up and down depending on some scenarios.

Many customers either explicitly require Red Hat certification for the software they purchase or strongly prefer to buy certified software. IDC found that customers are 19% more likely to buy a product when it has a Red Hat certification. The same report found certification also increases customer confidence, as they know they are getting a secure vendor-tested, marketplace-certified product that is ready for their use. Customers can trust that the product's capabilities for their use cases because the ISV has a relationship with Red Hat to make sure that the product works.¹

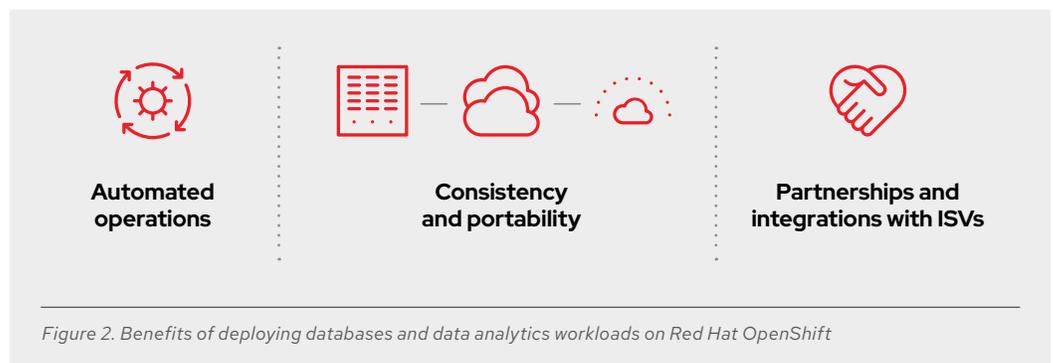


Figure 2. Benefits of deploying databases and data analytics workloads on Red Hat OpenShift

The benefits of deploying databases and data analytics applications on Red Hat OpenShift include:

- ▶ **Automated operations.** Kubernetes operators automate the deployment, scaling, and life-cycle management of containerized databases and data analytics applications and services on Red Hat OpenShift. This supports DevOps and allows database administrators (DBAs) to focus on more strategic tasks such as controlling user access and security.

¹ IDC White Paper, sponsored by Red Hat. "Build Partners Improve Business Results Through Red Hat Certification of Their Software." Document #US46434220, June 2020.

- ▶ **Consistency and portability.** Red Hat OpenShift lets you enhance deployment, operations, and portability in a consistent way on-premise and across clouds to accelerate cloud-native application delivery. You can also run containerized databases and data analytics in the same manner as the other components of your cloud-native applications.
- ▶ **Partnerships and integrations with independent software vendors (ISVs).** Red Hat has strategic partnerships and integrations with key database and data analytics ISVs such as Couchbase to support your success. These partnerships and integrations ensure that customers can choose from a portfolio of databases and Kubernetes Operators to deploy their databases and data analytics workloads effectively. We also work with ISVs to help them meet various certification standards, which ensures the availability of Operators, security, and support from both Red Hat and our ISV partners.

You can also complete your architecture with Red Hat infrastructure solutions. [Red Hat OpenShift Data Foundation](#) provides scalable and resilient software-defined storage for containerized workloads, including databases and data analytics. [Red Hat Application Services](#) includes data integration, frameworks and programming languages, and runtimes, such as Red Hat AMQ (Kafka on Kubernetes) and Red Hat build of Quarkus (Java™ on Kubernetes). [Red Hat Enterprise Linux®](#) is the robust and security-focused foundation for running databases and data analytics on Red Hat OpenShift.

Modernize data workloads with Couchbase

Red Hat is the world's leading provider of enterprise open-source solutions, including high-performing Linux, cloud, container, and Kubernetes technologies. Couchbase provides an agile and cost-effective framework for efficiently developing and running highly scalable and reliable applications. The combined solution is ideal for building and scaling web, IoT, big data, mobile, and other contemporary public sector applications. Red Hat and Couchbase help developers supply highly scalable and reliable database functionality for OpenShift-based applications and services.

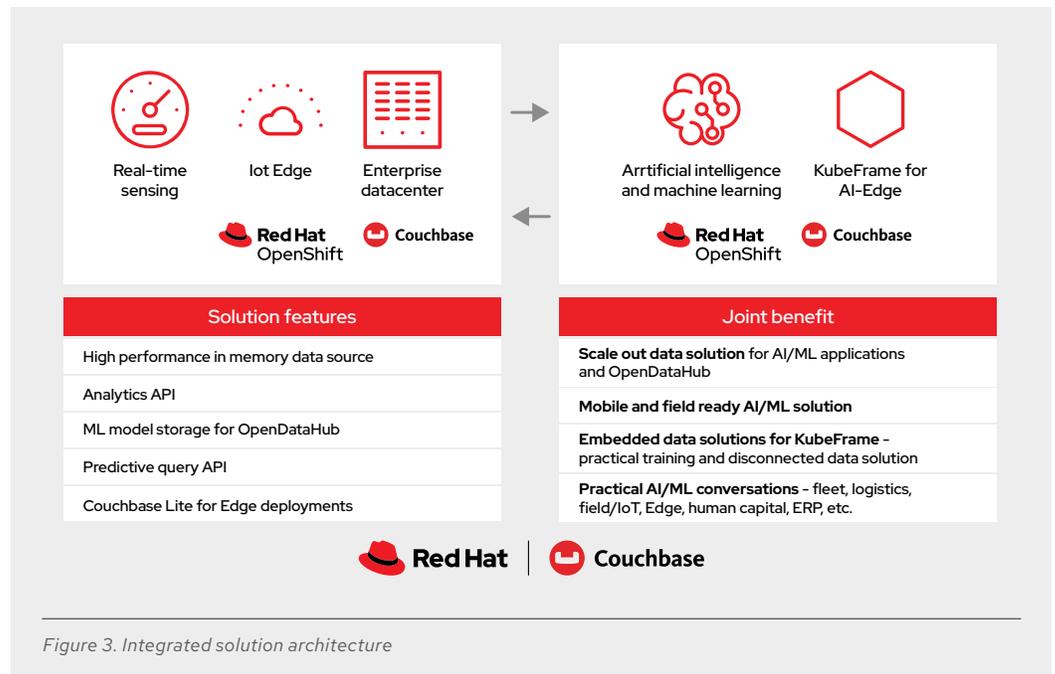


Figure 3. Integrated solution architecture

Together, Couchbase and Red Hat give organizations the flexibility to address a diverse set of requirements for connected and disconnected mobile, AI/ML and high transactional, low-latency modern applications. When running Couchbase on Red Hat OpenShift, you can automate containerization of workloads with Couchbase as the data layer for new and existing data-oriented stateless applications.

About Couchbase

Couchbase is an award-winning distributed NoSQL cloud database. It delivers unmatched versatility, performance, scalability, and financial value across cloud, on-premises, hybrid, distributed cloud, and edge computing deployments.

Conclusion

Red Hat OpenShift offers a unified, consistent way of deploying the databases and data analytics that support transformative cloud-native applications. Couchbase, a technology market leader in the NoSQL open source data management space, provides a complete platform for data access and storage. The Couchbase Operator allows flexible and scalable data management across your organization from edge to datacenter to public cloud. Together, Red Hat and Couchbase help you harness your data and use it to fuel your digital transformation.

Learn more about [Couchbase and their products](#).

Find out more about how Red Hat can help organizations run [databases and data analytics to accelerate cloud-native application delivery](#).



About Red Hat

Red Hat helps customers standardize across environments, develop cloud-native applications, and integrate, automate, secure, and manage complex environments with [award-winning](#) support, training, and consulting services.

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