

Hybrid Cloud utilizing Red Hat OpenShift on IBM Power

Today, enterprises have moved, or are moving, their workloads to the cloud. The most common strategy is a mixture of on-premises and public cloud providers, or what is referred to as hybrid multicloud. Most organizations today are already some way along this complex journey.

Businesses that are transitioning to a cloud environment should take a look at Red Hat OpenShift on IBM. Enterprise workloads are changing and Red Hat OpenShift can help organizations with hybrid multicloud. Regardless of your business size, the power, ease and savings that you can reap are just the tip of the virtual iceberg when you consider the benefit and how this innovative combination can propel your business into the future.

OpenShift on IBM Power Systems takes advantage of the Hybrid Cloud Flexibility, Enterprise AI, Security and Robustness of the POWER platform – whether on-premises private cloud or public cloud. Businesses can quickly deploy OpenShift clusters with PowerVC on Power Enterprise Servers to incrementally modernize existing applications. Additionally, OpenShift can be deployed on PowerVM or Red Hat KVM (development) on Power scale-out servers to exploit the 3.2x container density advantage per core of the POWER9 multi-threaded architecture.

An Innovative Partnership

When IBM acquired Red Hat, the ability to truly harness the power of the hybrid cloud was unlocked for all sizes of business and industry. With the flexibility and power of Red Hat's open hybrid cloud technologies, combined with the depth and scale of IBM innovation, the ideal tools are now available to facilitate your cloud journey.

Red Hat OpenShift on IBM Cloud leverages the enterprise scale and security of IBM Cloud as a fully managed OpenShift service. IBM has integrated OpenShift as an as-a-service option adding unique security and productivity abilities that save time on provisioning, scaling and updating.

As a part of the offering, IBM provides the flexibility to manage unexpected surges and protect against attacks, allowing development teams to be free more on creating new competitive capabilities.



What is OpenShift?

Red Hat OpenShift is a hybrid cloud, enterprise Kubernetes application platform and on-premises as a service built around Docker containers coordinated and managed by Kubernetes and founded on Red Hat Enterprise Linux. The graphic below depicts this architecture.

Why Use Containerization?

With the ability to move between clouds and platforms, containerization facilitates:

- **More with less:** Fewer resources required for greater operational efficiency.
- **Agility:** Easy integration with the dexterity to incorporate into existing DevOps.
- **Incredible speed:** Quickly deliver enhancements and functionality.
- **Better security:** Isolating applications from each other and the host increases protection.
- **Start-up:** Easier scaling and a quicker application power up.
- **Virtualize:** Can work either on bare metal servers or virtualized infrastructures.

Best IT ops experience

CaaS ↔ PaaS | FaaS

Best developer experience

Cluster services

Monitoring,
showback,
registry, logging

Application services

Middleware, functions, ISV

Service mesh

Developer services

Dev tools,
automated builds,
CI/CD, IDE

Automated operations



kubernetes



Red Hat
Enterprise Linux
CoreOS

Any infrastructure



Physical



Virtual



Private



Public



Maximizing Your Hybrid Cloud Environment

Massive global change has brought hard choices. Technical limitations shouldn't compound them. In a well-coordinated hybrid cloud, open infrastructure tools give you the flexibility to scale up when customers and teams need more, pull back when circumstances demand it, or hold steady until conditions change.

Hybrid clouds are a combination of private and public clouds that share data and applications between them and are capable of utilizing the resources on either. A multicloud is an environment that consists of more than one cloud provider, and a hybrid multicloud is a combination of a private and public cloud with more than one vendor.

Red Hat OpenShift on Power Systems is an ideal building block for your hybrid cloud environment. IBM Power Systems are consistent across industries, deliver outstanding workload performance and are known for hosting mission-critical workloads.

How OpenShift Works as a Service

Kubernetes Integration

Utilize well-loved OpenShift APIs and tools for a dependable experience, that's consistent even when working with hybrid environments and diverse cloud providers.

End to End Application Security

Level 4 FIPS and inbuilt industry compliance allow you to move workloads and more securely.

Global Scalability

Reliably deploy and scale workloads anywhere in the world with continuous availability using multizone clusters in six regions.

Access the Integrated OpenShift Catalog

Easily deploy an array of applications utilizing a guided experience built into your OpenShift cluster.

Simple to Extend Applications

Use inbuilt services for logging, monitoring, storage, load balancing, storage and security with integrated AI with IBM Watson APIs, IBM and Red Hat middleware.

Regain Time for Your Business Focus

With the IBM, OpenShift experts on the job managing your service, you have the time to concentrate on your core business.

OpenShift Benefits from Open Source

Using Open Source adds flexibility when working in the hybrid cloud. It enables IT to bridge different environments, maximizing the benefits of each while offering the flexibility to scale to demand, changes in industry and your own companies' requirements.

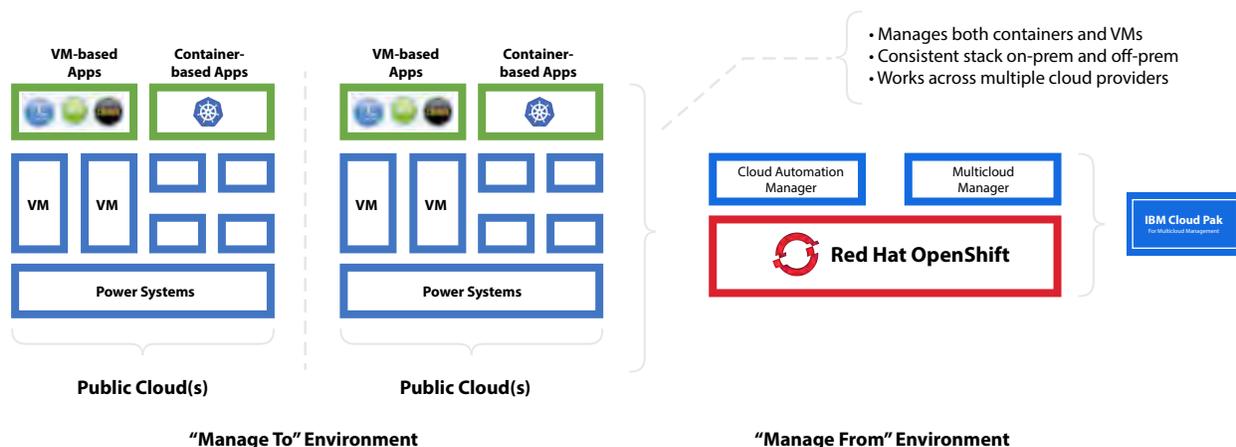
Open Source invites innovation and encourages teams to easily create, implement and scale applications ideal for analytics, imaging, and diagnostics within an infrastructure that is by nature flexible.

OpenShift allows you to manage complexity with automation. When workloads are spread across various cloud infrastructures and deployments, managing with the right tools, and ensuring compliance and security become a major challenge. OpenShift's automation tools manage across all spaces turning a complex situation into an easily supervised one.

How Red Hat OpenShift Complements the Power of IBM

By forging a partnership with Red Hat, IBM can now offer customers a greater choice and flexibility. They share a vision for using container architecture that enables all enterprises to access leading technology.

As seen in the diagram below, when using the OpenShift platform, because it's an extension of the IBM Kubernetes service, organizations can utilize their same API, CLI and console to manage their community Kubernetes and OpenShift clusters. IBM has ported valuable functionality such as multicloud management, data and AI services, and integration APIs from Cloud Paks to OpenShift to help enterprises modernize core legacy applications. OpenShift is the most widely deployed multicloud container platform and boasts powerful development and unified operations experiences across many public and on-premises platforms.



Some of the specific benefits when using Red Hat OpenShift on IBM include the following:

Simpler Migration

One of the key purposes behind OpenShift on IBM is to help organizations to establish cloud-agnostic containerized software. This gives developers a platform that allows them to deploy bulky workloads in Kubernetes using a tool that ensures both reliability and speed.

More Innovation

The simplicity of OpenShift frees up the time of your IT staff and creates the opportunity for innovation. As they are not tied up with more mundane tasks, they can spend more time innovating, designing new applications and updating features.

Quicker Application Development

Shorter app development lifecycles give your business the edge. OpenShift assists when it comes to taking applications to the market in a shorter time frame.

Modernization Simplified

Modernization is a must in the current and future marketplaces. As keeping up and staying competitive are imperatives for every successful business, and OpenShift is specifically designed to help you shift to application modernization.

Traditionally modernizing apps has been difficult and costly, usually requiring the services of a developer to complete. However, when OpenShift is enabled its adept at modernizing apps easily with precisely and efficiently.

What do you get when you implement OpenShift with IBM?

1. Faster Development to Market Cycle

Imagine that your development team can focus what they do best, innovation. OpenShift exempts them from spending unnecessary time deploying and managing containers so they can design and test applications and take them to market quicker.

2. Simplified Container Process

OpenShift simplifies the process of provisioning, scaling, deploying, and managing containers and ensures that it is efficient. It automates the management of containers, freeing up staff time that can enhance productivity and quicken application development.

3. No Vendor Lock-in

With OpenShift you get an enterprise grade container platform that adjusts to the needs of your business. Often vendors will lock you into a contract that makes it difficult to (and costly) to move your business if your needs change and your vendor is unable to provide the right solution.

4. Simply Collaboration

Containerization makes testing new applications easier. OpenShift enables your staff to test apps throughout your architecture with no issues of deployment, conflicts with the framework or discrepancies with language.

5. Integrate Tools

Incorporate the tools that you need into your operating environment with OpenShift. Instead of needing to source tools to work with your system, just integrate the tools that you love to use and are familiar with.

6. Compliance

Industry compliance is built in including PCI, HIPAA, GDPR, SOC1 and SOC2 Type 2.



Join the Company of Like-Minded Enterprises

Red Hat OpenShift provides a powerful, scalable Kubernetes foundation for hybrid cloud computing use cases across industries and regions.

Financial Services

A residential mortgage company that processes 70 million records daily implemented OpenShift with IBM to improve their risk analysis. They wanted to increase global availability, reduce costs, and accelerate their compliance to industry regulations.

With Red Hat OpenShift on IBM Cloud available in many regions, their analysis applications were containerized and deployed worldwide. This improved availability and complied with all local regulations.

Healthcare

A leading healthcare provider with on-premises business reporting and patient systems with slow improvement cycles, causing sluggish patient service levels. They deployed Red Hat OpenShift on IBM Cloud and IBM Cloud Continuous Delivery to decrease their IT expenditure and increase their development in a secure environment.

They used the platform to address increasing labor costs because of a shrinking budget, and to move the management of their network off premises for a streamlined operation.

Transportation

A worldwide shipping organization had a routing and scheduling system that was unable to provide the up to the minute information that was needed by the company's partners.

Red Hat OpenShift on IBM Cloud was able to use containerized applications that could scale according to their business needs. They implemented data streaming from each shipping container for real time information, digitally sharing of customs and regulatory paperwork, and an application for shipping customers that aggregates and communicates all the required arrival information.

Hybrid cloud-ready: Now and for the future

The hybrid cloud needs of organizations today may not necessarily be the same as the needs of tomorrow, especially as dynamic global conditions necessitate rapid changes in service delivery, scale and composition. Red Hat OpenShift can help businesses address these challenges with the following:

Powerful new edge computing features with remote worker nodes, which extend processing power to space constrained environments. This enables IT organizations to scale remotely while maintaining centralized operations and management.

Key capabilities for public sector Kubernetes deployments including availability on AWS GovCloud and Azure Government Cloud, extended OpenSCAP support and more.