Innovate at the edge with Red Hat OpenShift

Delivering better experiences through data-powered applications

Edge computing with Red Hat OpenShift can contribute to your business success.

As customer expectations rise, so does the demand for increased access to devices, data, and applications to power new experiences. Every interaction between company and customer is now a hybrid mix of technologies and touchpoints. For organizations, this presents a unique opportunity to derive insights by analyzing data locally to initiate actions like anomaly detection in manufacturing, predictive maintenance on an oil rig, new service offerings within smart cities, or contactless retail stores. Data also helps organizations offer new, modernized applications with enhanced user experiences like augmented reality/virtual reality (AR/VR) and video streaming in industries like telecommunications, healthcare, and education. However, gathering and analyzing data at a speed that captures patterns quickly or delivers the application experience users demand requires a different approach to a traditional centralized IT architecture. This is where edge computing can help.

Customers who have deployed Red Hat OpenShift benefited from:

44%
more new applications

33%
faster application updates

21%
more efficient IT teams

An IDC Business Value Snapshot, sponsored by Red Hat. "The Business Value of Red Hat OpenShift." Document #US47539121, March 2021.

Speed of relevance requires faster processing

Edge computing helps organizations extend their infrastructure to remote locations—closer to users and data sources. Faster response times and a better application experience result when application and data processing no longer have to take place back at a central site.

With edge computing, you can place artificial intelligence/machine learning (AI/ML)-powered applications closer to data sources like sensors, cameras, and mobile devices to gather insights faster, identify patterns, then initiate actions based on your business use cases.

When processing is closer to users, organizations can adopt new, modernized applications to create new revenue streams and offer differentiated experiences while meeting data sovereignty requirements when data cannot cross geographical boundaries.

At the same time, edge computing helps scale centralized datacenter resources by placing smaller infrastructure locally—reducing the requirements of both the central site infrastructure for processing, as well as the connections back to that central site. But the benefits of edge computing also come with complexities:

▸ **Scale.** Edge deployments can range up to thousands of sites that may have minimal-to-no IT staff on site and can vary in physical and environmental requirements.

▸ **Interoperability.** Edge stacks can consist of various hardware and software elements, comprising multiple technologies from different vendors that need to work together to address use case needs.

▸ **Manageability.** A highly-distributed edge architecture can quickly become difficult to manage, challenging existing IT and development teams to scale as applications and infrastructure scale out.

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Red Hat OpenShift powers the edge

Red Hat® OpenShift® provides a consistent experience wherever your applications need to be—on-premise, in a cloud environment, or on a plane, a ship, or at remote offices. With Red Hat OpenShift, IT operations teams can deliver infrastructure resources with security, speed, and consistency at a large scale while developers have the freedom to build, run, and manage applications using their preferred tools and processes.

Flexible topology options include single node, three-node clusters, and remote worker-node configurations that allow you to extend hybrid cloud resources and capabilities to remote sites with varying physical size and available power and cooling capacity, or to locations where network connectivity to a central datacenter may be intermittent.

With Red Hat OpenShift, you have the flexibility to evolve an entire deployment, inclusive of edge sites, as business strategy changes. Developers write code without worrying whether or not it will work in a particular architecture, and IT operations work on a consistent platform that runs across on-premise, public, hybrid, multicloud, and edge environments. Adopting containers and Kubernetes across all these environments allows organizations to use the same security-focused tools and processes to deliver consistent, portable, and reliable software in less time and at scale.

Red Hat OpenShift, together with Red Hat's broad portfolio, form the foundational building blocks that, together with our ecosystem of partners, helps customers create a distributed architecture to edge computing. This architecture provides organizations the ability to engage with customers more deeply and develop new business models by using data and applications. Find out more about how Red Hat OpenShift supports edge computing.

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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in linkedin.com/company/red-hat

North America
1 888 REDHAT1
www.redhat.com

Europe, Middle East, and Africa
00800 7334 2835
europe@redhat.com

Asia Pacific
+65 6490 4200
apac@redhat.com

Latin America
+54 11 4329 7300
info-latam@redhat.com