OPEN YOUR POSSIBILITIES

with Red Hat and AWS

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Introduction

In today's world, the possibilities for business value span the entire IT organization, from traditional workloads and applications to new technology integrations and cloud deployments.

That means IT organizations can be a key contributor to growth and advance innovation, efficiencies, and productivity throughout the business. In short, IT organizations are crucial to your competitive advantage, regardless of your company size.

Whether rapidly meeting business innovation and growth requirements or using open source and hybrid cloud technologies, IT teams need flexibility and freedom from being locked into a single solution so they can use the tools to automate and standardize methods and deployment options as new opportunities arise.

However, that optimization isn't as simple as flipping a switch. It involves the complex task of creating a robust, flexible, and efficient IT operation within a modern hybrid cloud strategy.

You need to ensure IT has the resources it needs to support your business. You need to map how your IT agility helps you compete with larger organizations. You need to figure out how to manage multiple toolsets and vendor solutions. And, you need to use the operational efficiency you've gained to position IT as a center for innovation.

This isn't easy, especially if you're doing it all in house, tried a similar transition before and experienced setbacks.

But ultimately it's worth it. Using tested and trusted enterprise-ready technology can help you build efficiency and security into your hybrid cloud strategy and reduce costs in the long run. What you need are reliable, tested partners in the process.

That's where Red Hat and AWS come in. Through collaborative engineering, integrated and certified solutions, and joint support, we help you gain control of IT complexity to open your business possibilities in the cloud.
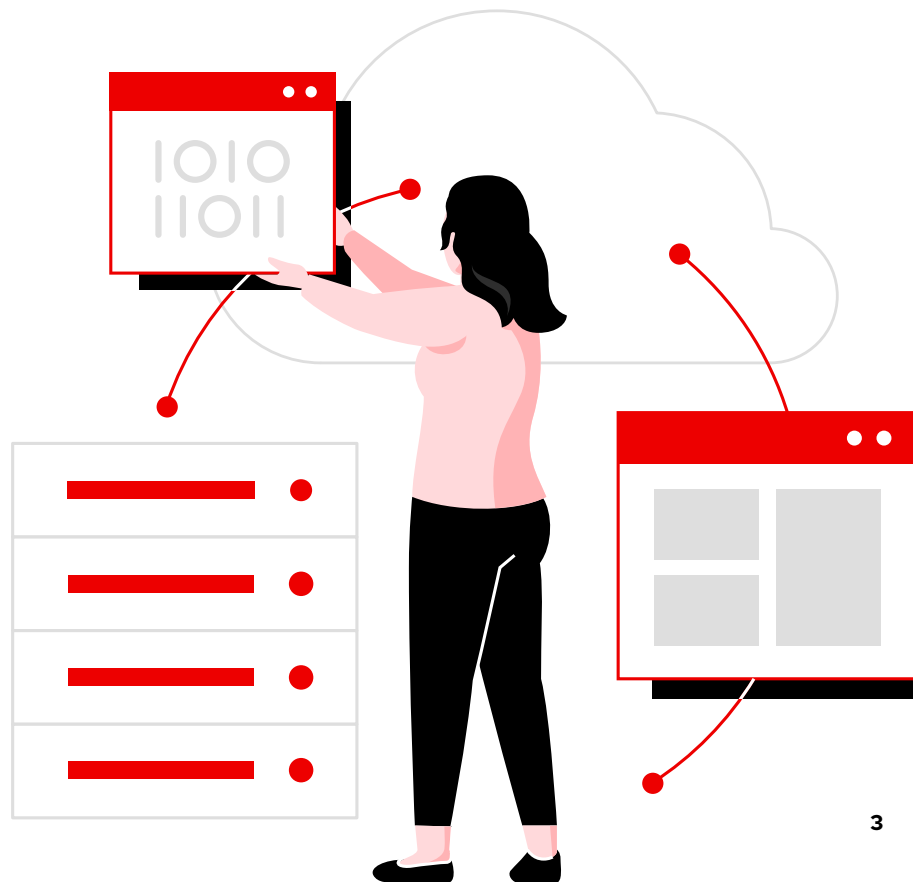
Our goal is to help you overcome business challenges and make informed decisions, no matter your company size. Together, we can help you:

- Expand your business possibilities with an IT foundation that prepares you for the future and adapts to your schedule.

- Become a disruptor in your industry with an environment that supports continuous innovation.

- Scale your IT in line with your business needs using a consistent, supported, global infrastructure.

- Streamline costs and use your AWS Enterprise Discount Program (EDP) and Red Hat® Hybrid Committed Spend funds and discounts effectively.

Red Hat and AWS have partnered to help our customers meet modern, digital business needs since 2008.
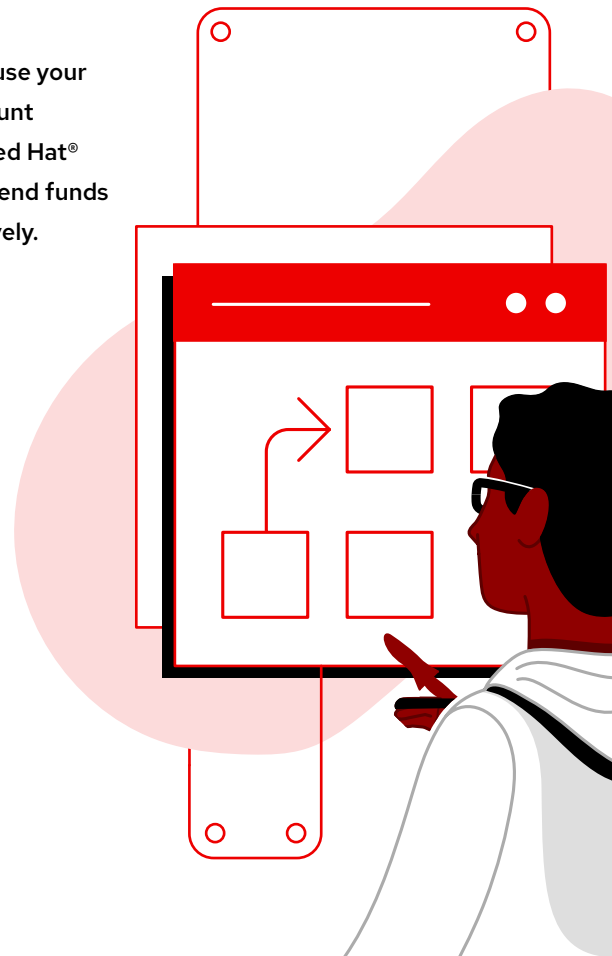
What Red Hat and AWS provide to help you support 3 key IT pillars

For many IT organizations, successful modernization is dependent on 3 key areas—infrastructure, automation, and application development.

This e-book reviews each of these areas in detail and discusses tools and strategies to help you solve the associated business challenges. We'll also show how our global ecosystem of leading hardware, software, system integrator, and solution provider partners and joint support model can help you adopt modern, flexible, and reliable IT operations to support your business initiatives now and in the future.
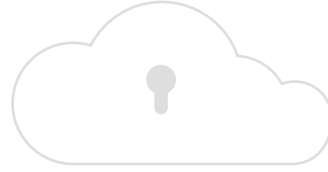
Innovation starts with infrastructure

2

Organizations cannot innovate without a solid IT foundation.

Your IT infrastructure forms the foundation for your applications, services, and processes. A modern, flexible IT environment can help your business compete in a fast-changing digital world.

Even so, most organizations still operate legacy infrastructure that can't simply be left behind. And adding new technologies—like cloud resources, application platforms, and management tools—can be a complicated and time-consuming process, especially when IT teams already face increased demands.

Adopting hybrid cloud infrastructure based on a common operating foundation can help you make the most of your existing investments while taking advantage of new technologies and approaches.
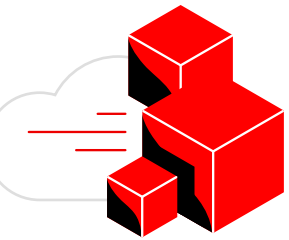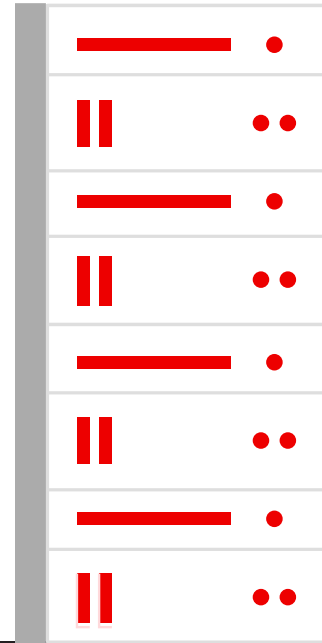
Does your organization have too much IT infrastructure complexity and not enough clarity?

If so, you are not alone. Over time, organizations of all sizes have evolved a complex maze of operating systems and versions, system configurations, and management tools. It often takes a large, skilled IT team to handle interoperability issues, complicated administration, and labor-intensive processes. And traditional

processes created decades ago lurch on while competitors are using tools better crafted for digital-native businesses.

The consequences? Slower provisioning, more downtime, and greater security and compliance gaps. It can be difficult to deliver the services the business needs with the efficiency and speed it demands.

Define a standard operating environment

A standard operating environment (SOE) uses a defined set of platforms, components, interfaces, and processes across your entire infrastructure.

It creates a consistent, known foundation for all of your systems to help you boost IT efficiency and productivity, speed provisioning and deployment, reduce costs, and improve security and uptime.

SOEs greatly simplify your IT infrastructure to overcome many of the challenges of varied, disparate environments. Fewer variations makes it easier to provision systems, deploy applications, scale resources, troubleshoot errors, and remediate issues across your environment. An SOE also allows you to create a single, standard set of operating procedures and processes, speeding operations and allowing your current staff to manage effectively at scale.

SOEs are particularly important when adopting hybrid cloud environments, since they help to ensure consistency across physical, virtualized, containerized, and cloud infrastructure. You can deploy applications and workloads across your environment, knowing they'll operate the same regardless of the underlying infrastructure.

Finally, adopting an SOE prepares your infrastructure and company to move forward with organization-wide automation projects that can serve as a force-multiplier for your IT teams.

Do-it-yourself versus enterprise-ready solutions

When defining your SOE, your choice of operating system, cloud platform, and cloud provider are strategic decisions. Your operating system forms the foundation for your entire environment—security, management, portability, and life cycle planning start with the operating system. And your ability to scale flexibly, maintain availability, and deliver resilient services is greatly influenced by your cloud provider.

Even so, not all combinations of operating system and cloud provider offer the features, capabilities, and resources needed to operate effectively and efficiently in hybrid cloud environments. Consistency, security, manageability, interoperability, and support across your entire environment are critical.

With an open source development model that delivers flexibility and innovation, Linux® is an ideal choice for hybrid cloud environments. Choosing a production-ready, security-focused Linux distribution can actually save costs and effort—and deliver more value—over unpaid alternatives. The expert support, management capabilities, and security features offered with enterprise-grade solutions help your teams get more done, faster.

These concepts extend to your choice of cloud provider as well. Even with an SOE, do-it-yourself (DIY) approaches require a lot of time and effort to research, select, test, integrate, and maintain components together. Small changes or updates to one component may result in much larger changes to your environment. Selecting an operating system vendor and cloud provider that offer integrated, tested, and certified solutions lets you refocus on innovation. You can take advantage of reliable operations, joint support, and even combined partner ecosystems to create an infrastructure that truly supports your business.

Want to learn more? Read about the value of an integrated cloud foundation
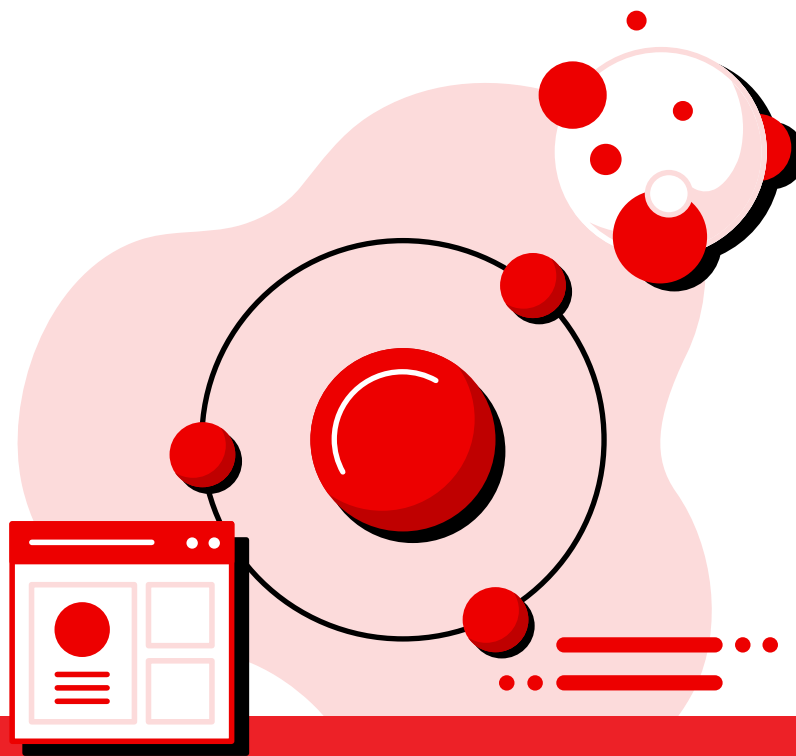
The business value of enterprise-ready operating systems

Compared to unpaid alternatives, enterprise-ready open source operating systems like Red Hat Enterprise Linux help your teams get more done, no matter where they work:

32%
more efficient IT infrastructure teams[1]

72%
less unplanned downtime[1]

24%
lower 3-year cost of operations[1]

[1] IDC White Paper, sponsored by Red Hat. "The Business Value of Red Hat Solutions Versus Non-Paid Open Source Alternatives," Document #US50423523, March 2023.

How Red Hat and AWS help you do more with enterprise-ready solutions

Running Red Hat Enterprise Linux on AWS gives you a consistent, manageable, and security-focused foundation for getting the most value from your hybrid cloud investments.

Red Hat and AWS are industry leaders with extensive experience in building, deploying, and supporting enterprise-grade hybrid cloud technologies. Through long-standing collaboration, we empower organizations with integrated solutions, unified management, and interoperable capabilities.

Together, Red Hat Enterprise Linux, the top paid Linux operating system in the world,[2] and AWS, the world's most comprehensive and broadly adopted cloud,[3] form a flexible, production-grade foundation for open hybrid cloud environments. This combination gives you access to the flexibility, support, tools, services, and expertise needed to gain control of cloud complexity.

Flexible consumption models and purchasing options help you align your deployments with your organization's procurement processes. For example, you can take advantage of your AWS Enterprise Discount Program (EDP) and Red Hat Hybrid Committed Spend funds and discounts when deploying Red Hat Enterprise Linux on AWS.

Regardless of how you purchase Red Hat Enterprise Linux, you're backed by Red Hat's award-winning support organization in coordination with AWS support teams. We work together to provide expertise, knowledge, and joint support models to ensure you can successfully accomplish your goals with our solutions.

Proactive analytics and management tools and services help you streamline operations and management across your environment. Red Hat Insights—a unique suite of hosted services that helps you manage and optimize your hybrid cloud environment—is included with Red Hat Enterprise Linux. With a focus on operations, security, and business outcomes, Insights proactively alerts administrators and stakeholders before an outage, security event, or overspending occurs.

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[2] IDC. "Worldwide Server Operating System Environments Market Shares, 2021: OSE Momentum Persists," Document #US49340322, July 2022.
[3] "What is AWS?" AWS, accessed 25 July 2023.
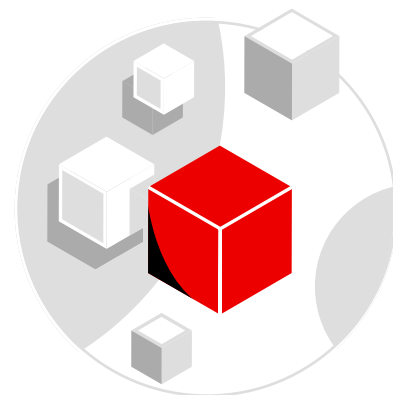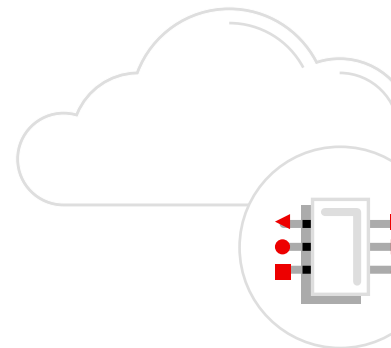
It works across on-site and cloud environments, so you can manage everything from a single interface. To further simplify operations, you can even link your Red Hat account to your AWS account and choose to automatically connect your cloud-based systems and workloads to Insights and other Red Hat services upon provisioning.

The combination of Red Hat Enterprise Linux and AWS delivers integrated, automated security capabilities throughout your infrastructure and software stack, making it simpler to maintain security and compliance across your environments. Security is a key part of both the Red Hat Enterprise Linux and the AWS architectures and life cycles. Built-in operating security features like live kernel patching, security standards certification, and a trusted software supply chain help you meet today's high security and compliance expectations while stringent security policies, architecture, and operational processes in AWS protect your information, identities, applications, and devices. We also provide security advisories for current issues and can work with you to resolve security problems when needed.

Finally, our extensive certified partner ecosystems let you run the enterprise applications your business relies on with confidence. You can lift and shift your existing applications on your terms, and choose from a broad selection of new ones when you're ready.

Infrastructure with an eye toward security

Enterprise open source software solutions benefit from a large number of engineers working to find and patch vulnerabilities.

Enterprise-grade infrastructure provides the consistency needed to maintain security and compliance across your environment.

An infrastructure with integrated management capabilities helps you build security into your operations from the start.

Automation can redefine how you do business

3

The immense scale of modern IT and cloud environments requires new approaches to management, security, compliance, and governance.

Most organizations use a variety of tools to administer their IT environments, often resulting in inconsistencies and redundancies. And traditional management tools have limitations. They compartmentalize control, use proprietary languages, and cannot adapt to new use cases. As a result, routine manual tasks can dominate your teams' time and energy, leaving little for innovation.

Automation in all forms has evolved from a simple cost-saving measure into a strategic imperative. IT automation serves as a force multiplier for your teams, making work less complicated and more repeatable. In fact, 80% of surveyed business executives say that adopting IT automation is "extremely important" to the future

success of their business.[4]

Many organizations already automate some IT operations in limited, disparate areas. While this can save time and effort for some teams in the short term, it can actually create other inefficiencies over time.

An organization-wide approach can help you realize the full value of automation for modern, digital

operations. Organization-wide automation allows your company to manage complex environments more readily, gain visibility into your operations, and integrate new technology and processes more effectively to support business agility, innovation, and value.

Ready to learn more? Read An IT executive's guide to automation
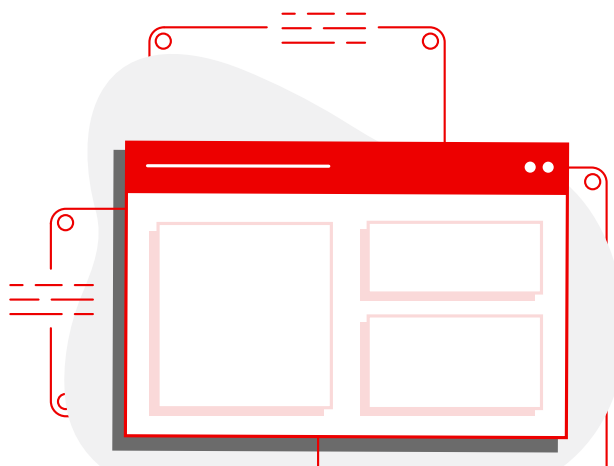
The business value of IT automation

An effective automation platform unites people and processes on a flexible foundation to deliver value across your organization:

24%
faster time to market for services and products[5]

39%
more applications developer per year[5]

$US1.9 million
total new revenue gained per year[5]

[4] Harvard Business Review Analytic Services, sponsored by Red Hat. "Taking the lead on IT automation: IT leaders as evangelists for their automation strategies," January 2022.
[5] IDC White Paper, sponsored by Red Hat. "The business value of Red Hat Ansible Automation Platform," Document #US48678022, March 2022.

Connect your clouds with automation

Automation helps you overcome the challenges of moving to and managing cloud environments to maximize the value of your cloud investments.

Cloud automation—applying IT automation to cloud technologies—can help you more efficiently move to the cloud and manage cloud environments at scale. It can encompass everything from resource provisioning and retirement to complete life-cycle workflows that incorporate management, release engineering, and network and security operations.

Automation can also connect your public cloud, private cloud, and cloud-native environments and the teams that operate within them to promote collaboration and self-sufficiency when working across domains. It helps you operationalize entire hybrid and multicloud environments with streamlined orchestration and workflows. Using cloud automation, you can document, assess, and codify tasks so that they can be combined reliably and repeatedly into workflows to achieve predictable business outcomes. Cloud automation also helps you create a consistent operational framework across all IT and cloud domains.

A unified automation platform is central to effective cloud workflow orchestration. While many solutions are available, platforms that offer enterprise-grade support, integrations with industry-leading partner products, simple adoption for all roles, massive scalability, and agentless deployment can help you adopt cloud automation more efficiently.

Want to learn more?
Read Automate your hybrid cloud at scale

How Red Hat and AWS help you get started with a solid foundation for automation

Red Hat Ansible® Automation Platform on AWS lets you automate applications and IT resources across your organization and hybrid cloud environment.

A foundation for building and operating automation at scale, Red Hat Ansible Automation Platform delivers all the tools and features you need to create complete hybrid cloud automation workflows that support your business goals. It combines a simple, easy-to-read automation language with security-focused sharing and collaboration capabilities. Multiple domain teams can use Ansible Automation Platform, so you can build, scale, and deploy automation across your entire organization.

Ansible Automation Platform lets you automate and orchestrate all aspects of your hybrid cloud environment, from AWS cloud resources and services to operating systems, applications, and security. It connects your existing automation, configuration, and cloud tools and processes with a common language. As a result, you can create a consistent operational framework across all cloud domains, processes, and roles. And Ansible Automation Platform is agentless, so you can readily automate components without installing automation software on them.

Ansible Automation Platform on AWS offers all the benefits of Ansible automation, deployed in your AWS cloud. It integrates with native AWS services and the full Ansible Certified Content Collection for AWS, co-developed and security tested by AWS and Red Hat.

You can purchase Ansible Automation Platform directly from the AWS Marketplace as a self-managed offering that is supported by Red Hat. This offering counts toward your committed spend, so you can use your existing credits and discounts to optimize costs.

Ready to learn more?
Read Red Hat Ansible Automation Platform: A beginner's guide
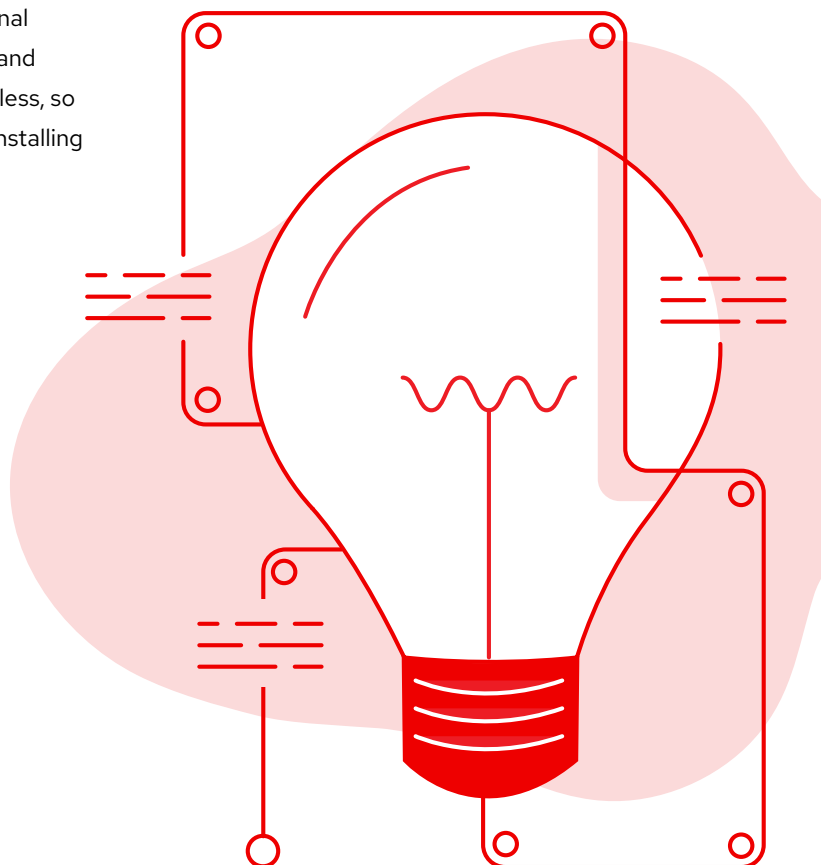
# Gain confidence with certified content

Red Hat Ansible Certified Content Collections offer tested, fully supported integrations with partner platforms like AWS.

Red Hat and our partner ecosystem provide Red Hat Ansible Certified Content to help you deploy enterprise-wide automation with confidence. There are more than 100 Red Hat Ansible Certified Content Collections and thousands of modules developed and supported by our partners.

The AWS collection makes it easy to provision instances, networks, and complete AWS infrastructure whenever you need, and in any region you require. The automation content in this collection is co-developed, tested, maintained, and supported by AWS and Red Hat to ensure consistent, reliable operation. The collection includes nearly 100 modules for many different AWS capabilities, including:

- Amazon Machine Image (AMI) management.

- Autoscaling groups.

- CloudFormation.

- Elastic Block Store (EBS).

- Elastic Cloud Compute (EC2).

- Identity Access Manager (IAM).

- Security groups.

- Simple Storage Service (S3).

Ansible also has hundreds and hundreds of additional modules that help you manage every aspect of your Linux, Windows, UNIX, network infrastructure, and applications—regardless of where they're deployed.
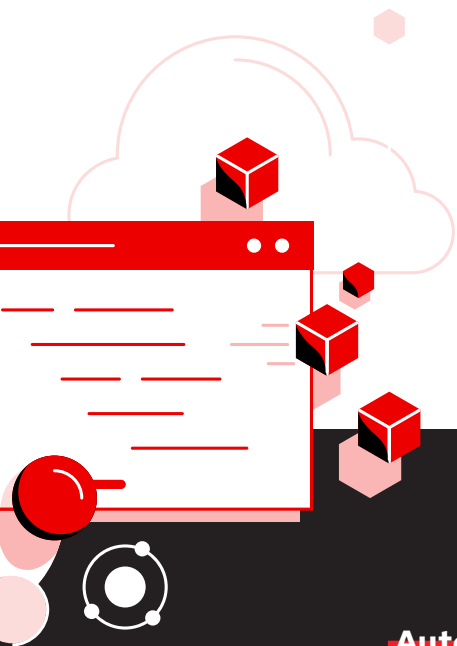
Automation with an eye toward security

Automating the application of patches means fewer will be missed or delayed, and vulnerabilities will be closed more quickly and judiciously.

When configuring tens of thousands of edge devices, automation makes sure that each device is tested equally for security vulnerabilities.

Integrating automation into the tools that detect and reduce security threats means that responses can be automatic and don't need to wait for a human reaction.

4

Streamline your modernization journey with cloud services

Application transformation changes the way you develop, test, deploy, run, and manage applications to increase speed, efficiency, and agility.

Innovative applications are at the core of modern business. They connect organizations, partners, and customers to deliver valuable user experiences for all. By rapidly building, deploying, updating, and scaling applications in a security-focused, repeatable manner, across hybrid environments, you can unlock new possibilities for your business.

Hybrid cloud application platforms provide an ideal foundation for application modernization. These platforms can deliver the agility, consistency, efficiency, and scalability needed to build, deploy, run, and manage applications across datacenter, edge, and public cloud infrastructures. Combined with DevSecOps approaches, hybrid cloud application platforms can help you build a modern, reliable, and security-focused container environment for both existing and new applications.
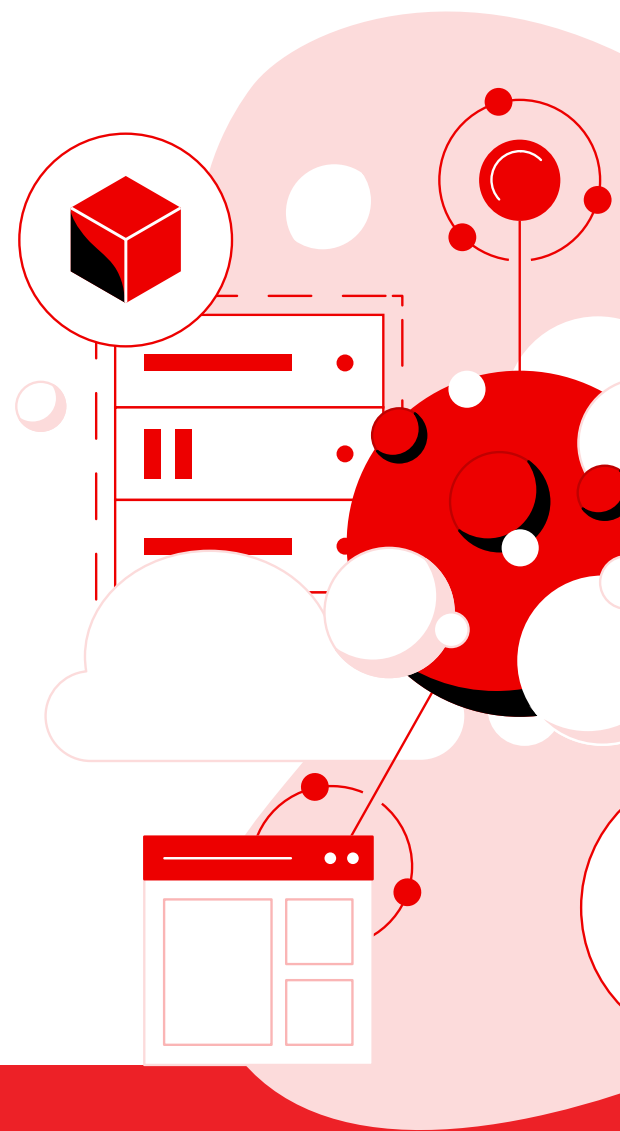
To compete and succeed, many businesses rely on an array of digital applications:

Operations software

Predictive analytics tools

Customer-facing applications

Intelligent data services

Business intelligence applications

Machine learning (ML) services

Even so, integrating these platforms into complex IT environments yourself can be difficult and time consuming. When moving to a container-based application platform, you must reassess how you perform common operations and manage security and compliance, while developing your staff's container expertise.

A hybrid cloud application platform that can be deployed in-house, in the cloud, and as a cloud service gives you the flexibility to choose where you run your applications and how much internal time and effort you devote to platform operations and management.

Adopting a fully managed, cloud-based application platform can simplify deployment, streamline operations, and speed time to value compared to in-house solutions. With on-demand consumption models and expert guidance, your teams can focus on innovation and strategic projects that support your digital business initiatives.

Save costs and achieve more with cloud services

Cloud services are hosted and managed platform, application, and data services that streamline the hybrid cloud experience.

The right cloud service provider can simplify your application modernization journey, allowing your teams to focus on strategic projects and business value, rather than administering the underlying cloud infrastructure and application platform. With a cloud service, external teams manage day-to-day operation of your application environment, from cloud infrastructure to operating platform. Your cloud service should simplify hybrid cloud deployment with a ready-to-use platform, built-in developer tools, self-service resource delivery, certified automation, expert support and management, and flexible pricing options. Integration with your current and preferred public cloud services—including identity and access management, messaging, and data streaming—as well as your cloud provider discount and purchasing programs, is also essential to maximize the value of your investment.

**Learn more about cloud services.
Read The Total Economic Impact™
Of Red Hat OpenShift Cloud Services**
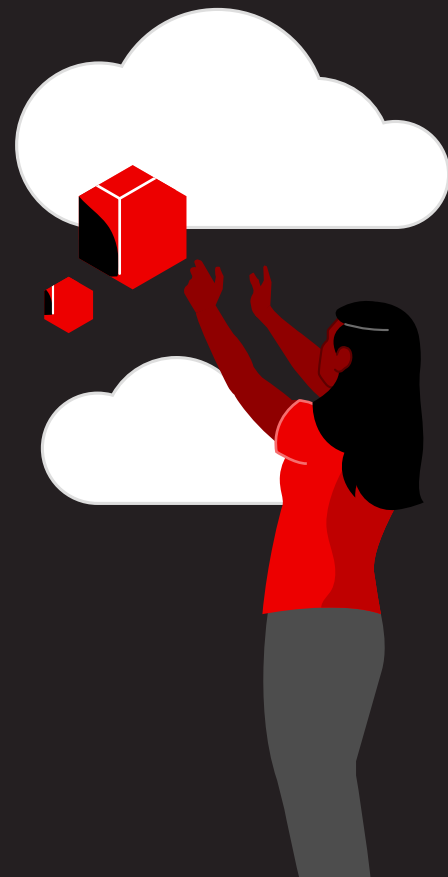
Finding a cloud services partner is appealing for several important reasons:

It removes pressure on IT operations teams.

Because a cloud service provider handles platform maintenance, monitoring, and routine tasks like performing updates, IT teams can focus on what they do best—building and running applications that benefit the business.

It brings more confidence and reliability.

Cloud service providers offer service level agreements that shield companies from unexpected costs and downtime, ensuring confidence for critical applications.

It can speed application development and delivery.

An ideal cloud service provider will let you start developing and deploying applications right away through automated provisioning and management and ready-to-use infrastructure and tools that are always up-to-date.

# How Red Hat and AWS help you accelerate application development

Red Hat OpenShift® Service on AWS gives you a trusted, reliable, cloud-based foundation for modernizing applications.
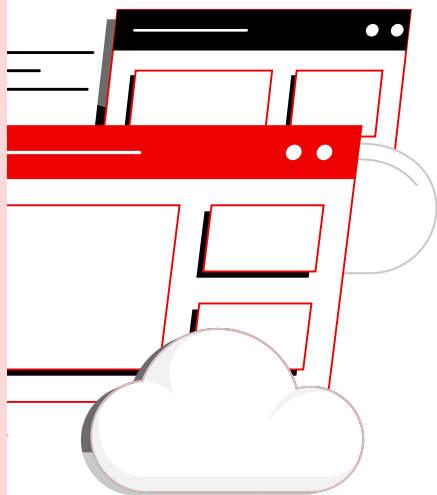
Red Hat OpenShift is a unified, security-focused hybrid cloud application platform for innovation. Powered by containers and Kubernetes, it provides a trusted foundation for modernizing existing applications, building cloud-native ones, streamlining development, and integrating third-party services. Red Hat OpenShift runs consistently in on-site datacenter and public, private, and hybrid cloud environments, so you can choose the right location for every project and application, and move them as needs change.

Jointly engineered, operated, and supported by Red Hat and AWS, Red Hat OpenShift Service on AWS gives you a turnkey application platform based on production-grade components. This cloud service combines Red Hat OpenShift, AWS infrastructure, and an expert site reliability engineering (SRE) team to deliver efficiency and scalability on a reliable foundation.

OpenShift Service on AWS offers more than just access to managed software and technologies. It provides a complete, full-stack environment with all necessary services and technologies, simple self-service options, and expert 24x7 support with a 99.95% availability service level agreement (SLA). With OpenShift Service on AWS, you can reduce support costs and increase operational efficiency while freeing your staff to innovate. Plus, you can take advantage of extensive Kubernetes experience, migration planning assistance, and managed cluster installation and verification to further accelerate deployment and time to value.
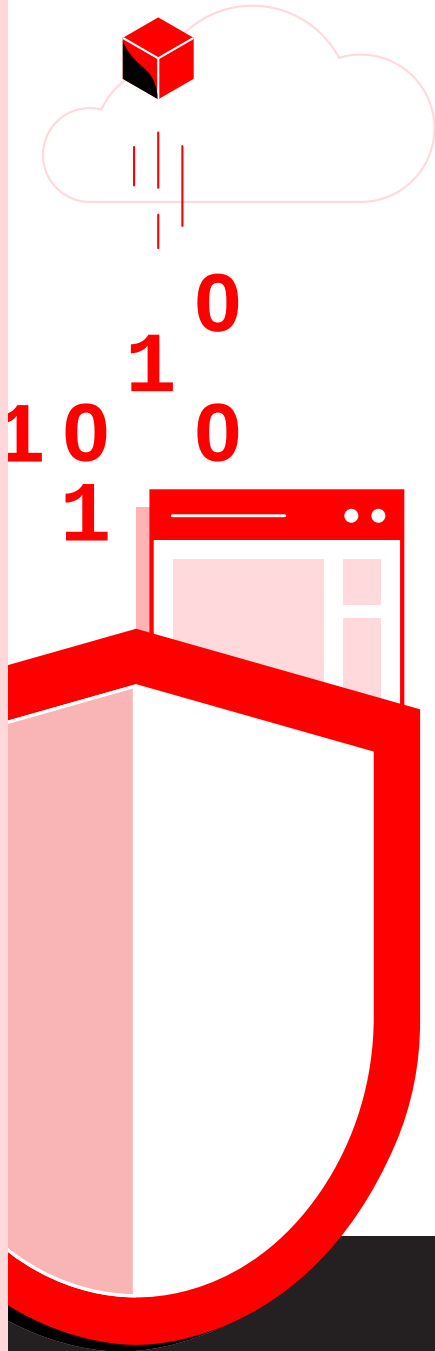
Our SRE teams use proven best practices and extensive experience to build, operate, and maintain your OpenShift Service on AWS deployment. Accessed on-demand from the AWS console, this service provides hourly billing on a single invoice for AWS deployments and integration with other AWS cloud-native services. And you can use your committed spend and discount programs for OpenShift Service on AWS.

Integration and interoperability with AWS cloud services, a large library of developer and application services, and an expansive partner ecosystem let you use your preferred tools and services with OpenShift Service on AWS. Developers can choose the programming languages and runtimes they are familiar with, while operations teams can continue to use AWS cloud services like Amazon S3 storage and Amazon CloudWatch. Finally, AWS offers a variety of certified Red Hat OpenShift operators for managing AWS services from within Red Hat OpenShift.

Want to learn more?
Read Transform your applications
with Red Hat OpenShift Service on AWS
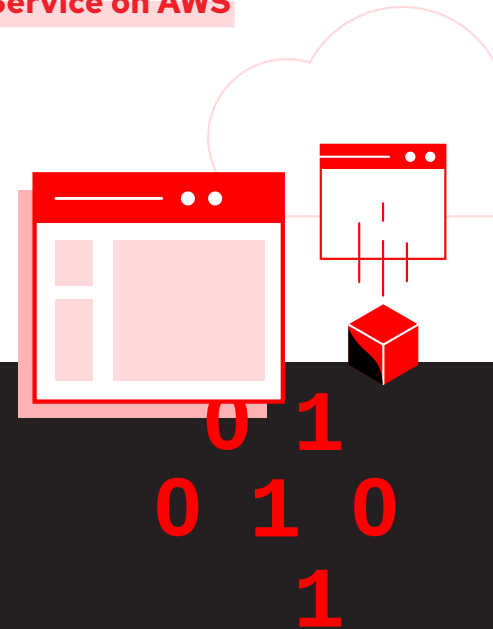
Cloud services with an eye toward security

SRE experts manage your clusters according to security and compliance best practices.

Proactive monitoring and automated patching help to find and remediate vulnerabilities before they impact business.

Tight integration and certification to security standards simplifies compliance.

Make your IT organization a key contributor to increased growth

So what is the critical path?

It's easier to get started than you might think. There are many enterprise-ready tools and services available. You can deploy a modern IT foundation today and grow into it over time. As you do, your teams can increasingly focus on your business while experts or automation manage some or all of your IT and cloud infrastructure.

And if you choose Red Hat and AWS solutions, you can benefit from our extensive certified partner ecosystems. Thousands of our hardware, software, and services partners work with our solutions and services, so you can continue to use your existing tools and services and move to new ones as your business needs evolve.

Do more with
Red Hat and AWS

Open more possibilities for your IT organization.

Find out how Red Hat and AWS can bring stability, security, and innovation to your business.

Learn more about our IT solutions and talk to a Red Hatter.

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