Red Hat

Automate your hybrid cloud at scale

Contents

Introduction

Innovation and adaptability are critical for success in today's digital world. To become more agile and responsive, many organizations are adopting cloud technologies. In fact, 86% of organizations embrace a multicloud strategy, and 70% of those have a hybrid cloud strategy.[1]

Even so, cloud environments also bring new operational challenges. Most organizations use a variety of tools to administer their environments, often resulting in inconsistencies and redundancies. The number of resources in use in cloud environments can be nearly infinite, making it difficult to manage and understand usage and costs. Organizations often adopt container-based and cloud-native technologies with their cloud environments, requiring staff to learn new knowledge and skills. And, due to their distributed architecture, cloud environments necessitate new approaches to security, compliance, and governance. AI then adds another layer of complexity, with organizations needing to manage AI workloads as well as handle the technology stack associated with AI operations.

IT automation can help you maximize the value of your cloud investments to support digital initiatives and innovation. Cloud automation—applying IT automation to cloud technologies—can help you overcome the operational challenges associated with moving to the cloud and managing these environments at scale. As well, it's a path toward maximizing the value of your cloud investments to support digital initiatives and innovations. Cloud automation can encompass everything from resource provisioning and retirement to complete life cycle workflows that incorporate management, release engineering, and network and security operations.

86%

of organizations embrace a multicloud strategy.[1]

70%

of those have a hybrid cloud strategy.[1]

1 *Flexera. "2025 State of the Cloud Report," accessed 20 Oct. 2025.*

Automation connects your cloud environments

Most organizations operate a mix of infrastructures and environments, including public cloud, private cloud, and hybrid cloud environments. Cloud automation can help you connect these domains and the teams that operate within them to promote collaboration and allow self-sufficiency when working across domains.

Public clouds

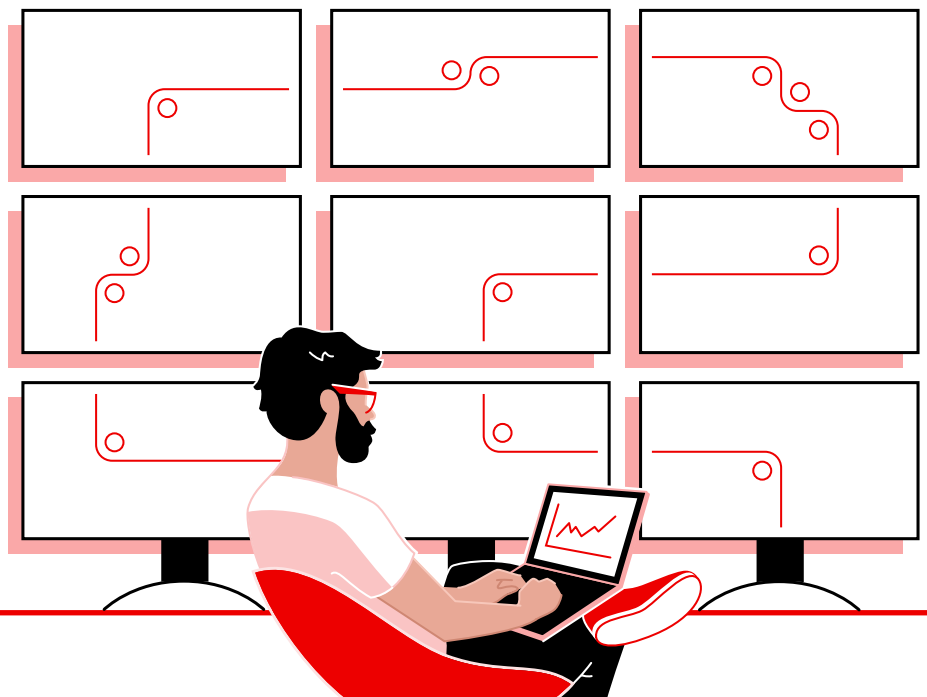
Cloud automation can help you handle the massive scale of these environments to improve consistency, visibility, and control across multiple clouds.

Private clouds

Cloud automation can help you deliver public cloud-like services with self-service capabilities via your on-site or self-hosted cloud infrastructure.

Cloud-native applications

Cloud automation can help you manage complete cloud-native application lifecycles more efficiently across hybrid and multicloud environments.



Understanding cloud environments and technologies

Clouds are environments that abstract, pool, and share scalable resources across a network.

Private clouds are cloud environments that are dedicated to a single end user group or organization. They are typically owned and managed by the organization and operated within its firewall.

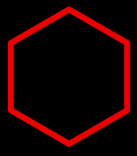
Public clouds are pools of virtual resources developed from hardware owned and managed by a third-party company like Amazon Web Services (AWS), Google Cloud, IBM, or Microsoft. These resources are automatically provisioned and allocated among multiple clients through self-service interfaces.

Hybrid cloud is an IT architecture that incorporates some degree of workload portability, orchestration, and management across two or more environments, including private cloud, public cloud, virtualized, or bare-metal environments.

Multicloud is an approach comprising multiple cloud services, from multiple private or public cloud vendors.

Cloud environments are often associated with two other technologies:

Cloud-native architectures use collections of small, independent, and loosely coupled services to deliver applications designed for cloud environments.

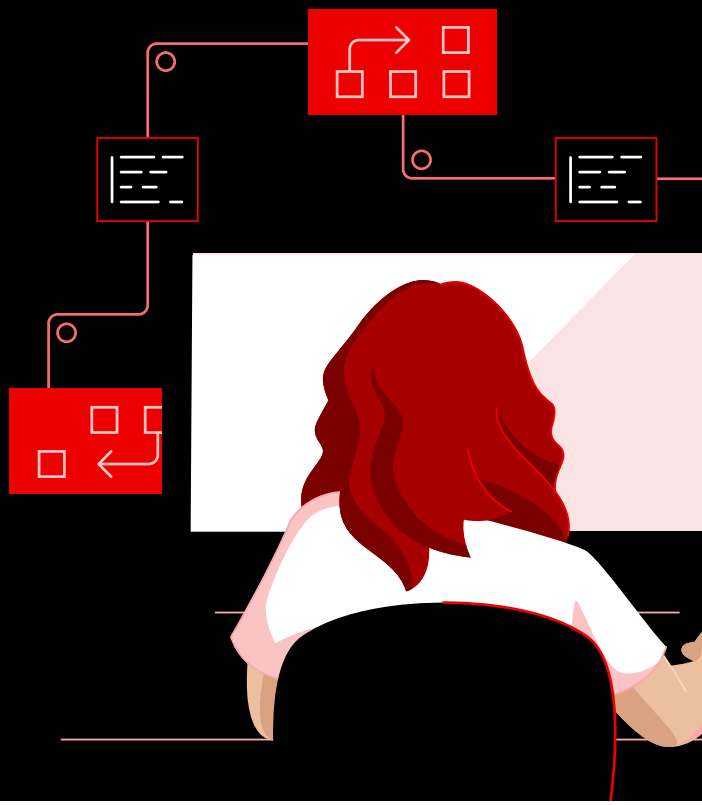


Containers allow you to package and isolate applications with their entire runtime environment—all of the files necessary to run.

Maximize the value of your cloud environments

IT automation brings together your organization's platforms, operations, and culture to support collaboration, innovation, and digital success.

- **Technology and platforms**
  Connect traditional, existing, and cloud-native IT environments.
- **Processes and policies**
  Increase operational speed, accuracy, and consistency across your organization. Automatically enforce policies to ensure compliance.
- **People and teams**
  Reduce teams' operational burden, boost self-sufficiency, and allow staff to focus on more interesting tasks.



Automation helps operationalize entire hybrid and multicloud environments—from on-site datacenters to public cloud infrastructure—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 create a consistent operational framework across all IT and cloud domains.

Automating your entire cloud environment can help everyone in your organization succeed:

- Simplify and speed operations.
- Boost business agility and responsiveness.
- Raise productivity and efficiency.
- Improve security posture and compliance.
- Increase consistency and availability.
- Reduce errors and misconfigurations.
- Focus on high-value, strategic initiatives.

What you need to automate your cloud

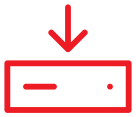
Though they may seem very similar, automation platforms, automation tools, and Infrastructure-as-Code (IaC) tools have contrasting characteristics that can unify efficient enterprise-wide adoption and unorganized, disparate automation efforts.

Automation platforms

Automation platforms provide a unified foundation for orchestrating complete workflows at scale. They let you efficiently manage and share automation content and connect resources, infrastructure, environments, and teams across your organization.

Automation tools

Automation tools are effective only for individual and point automation. They do not provide the connection and management capabilities needed for enterprise-wide automation or workflow orchestration.



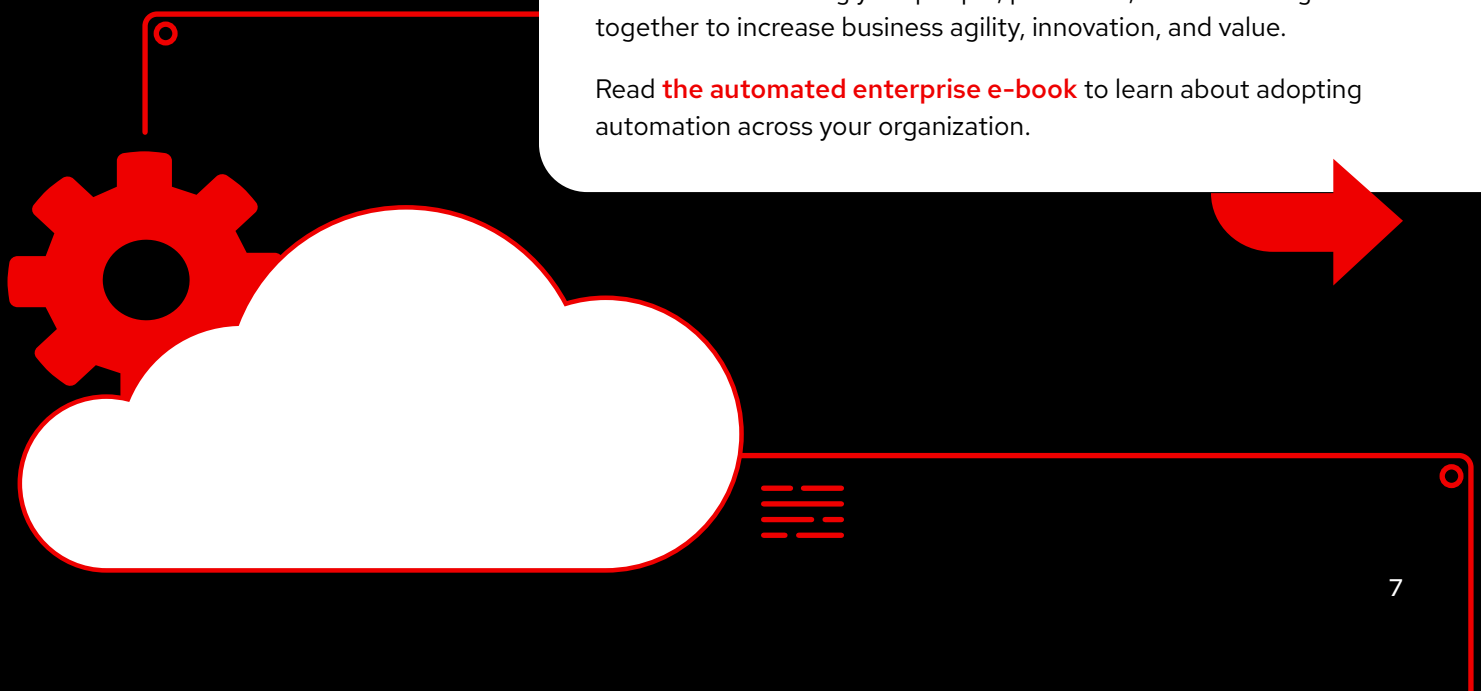
Infrastructure as Code and provisioning tools

IaC and cloud provisioning tools streamline the spin-up and retirement of specific resources, but cannot automate complete workflows or connect a wide variety of resources.

Automate across your enterprise

Automation can bring your people, processes, and technologies together to increase business agility, innovation, and value.

Read **the automated enterprise e-book** to learn about adopting automation across your organization.



Effective cloud automation requires workflow orchestration

A unified automation platform is central to effective cloud workflow management and supplies a consolidated foundation that lets everyone in your organization participate and automate consistently. A unified automation platform also allows for improved collaboration and the sharing of automation assets and best practices across your organization. While each team can create automation for their own domain, all domains can be connected into larger automation workflows under a united strategy.

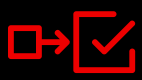
There are many automation solutions available, but they don't all include the capabilities your organization needs to create comprehensive, orchestrated cloud workflows. Look for automation platforms that offer:

- Complete, enterprise-wide support.
- Integrations with industry-leading partner solutions.
- Simple, streamlined adoption for all roles.
- Massive scalability across environments.
- Agentless deployment.

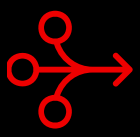
Red Hat® Ansible® Automation Platform delivers all of this and more, allowing you to implement effective cloud and enterprise-wide automation.

Task automation or workflow automation?

Effective cloud management requires the automation of individual tasks into larger workflows.



Task automation streamlines single functions performed by 1 person on 1 infrastructure resource. It speeds operations at the staff action level and reduces the time it takes to perform specific job functions.



Workflow automation connects multiple tasks into a single progression. It accelerates operations at the process level and moves automatically from 1 task to the next, reducing wait times resulting from handoffs between teams. Workflow automation also facilitates self-service operations while preserving IT control over resources.

The ‘what’ and the ‘where’ of cloud automation

When it comes to cloud automation, what you automate and where you run your automation platform are different things. This e-book primarily discusses what you can automate in the cloud: resources, applications, tools, processes, and workflows.

Even so, where you host and run your automation platform also matters. You can choose to run your platform in your cloud environment or in your private datacenter, depending on your organization’s needs.

For example, if you already run many of your IT operations and applications in the cloud, you might choose to host your automation platform in the cloud. You might also host your platform in the cloud if you’re planning to automate a large number of physically dispersed resources and applications—your public cloud’s regions may actually be closer to these endpoints than your own datacenter. Alternatively, if you manage your IT infrastructure from a private datacenter, you might choose to deploy your automation platform on site.

For most organizations, the choice comes down to what you currently have available and which is most convenient to get started.

Automate your cloud with Red Hat Ansible Automation Platform

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 cloud automation workflows. It combines an easy-to-read automation language with a trusted, composable execution environment and security-focused sharing and collaboration capabilities. Multiple domain teams can use Ansible Automation Platform, allowing you to build, scale, and deploy automation across your entire organization. Organizations that automated with Red Hat saw a 668% return on investment over 3 years as well as improvements in efficiency and time to market.[2]

Ansible Automation Platform lets you automate and orchestrate all aspects of your hybrid cloud environment, from cloud resources and services to operating systems (OSes), applications, and security. It connects your existing automation, configuration, and cloud tools and processes with a common language. That means you can create a consistent operational framework across all cloud domains, processes, and roles as well as locate your automation closer to target endpoints. Ansible Automation Platform is also agentless, so you can automate components without installing automation software on them. Finally, monitoring and logging capabilities help you understand and manage how automation is used across your organization.

Simplify management of your automation deployment

Ansible Automation Platform offers fully managed solutions on Microsoft Azure and AWS so you can get started quickly with an integrated and fully supported experience.

You can purchase Ansible Automation Platform from all 3 major cloud marketplaces: Azure, Google Cloud, and AWS. Draw down on your committed cloud spend, integrate with other services, and have it all supported by Red Hat expertise.

Learn more:

- **Microsoft Azure offering**
- **AWS offering**
- **Google Cloud offering**

2 *IDC White Paper, sponsored by Red Hat. "The Business Value of Red Hat Ansible Automation Platform," March 2024. Document #US51839824.*

Jumpstart your cloud automation journey

Ansible hybrid cloud automation is a set of Red Hat Ansible Certified Content Collections for streamlining and operationalizing cloud operations across multiple public clouds and services. It provides cloud administrators and application developers with an operational framework and tools for automating cloud operations, managing cloud resources as code, and supporting digital transformation by connecting teams across your IT organization.

What are Red Hat Ansible Certified Content Collections?

Certified Content Collections are prebuilt and tested automation content packages certified by Red Hat. Each collection bundles together roles, modules, and plugins that automate a specific technology.

The value of IT automation

668%

3-year ROI for organizations using Red Hat Ansible Automation Platform.[2]

$8.54 million

Higher revenue per organization per year.[2]

23%

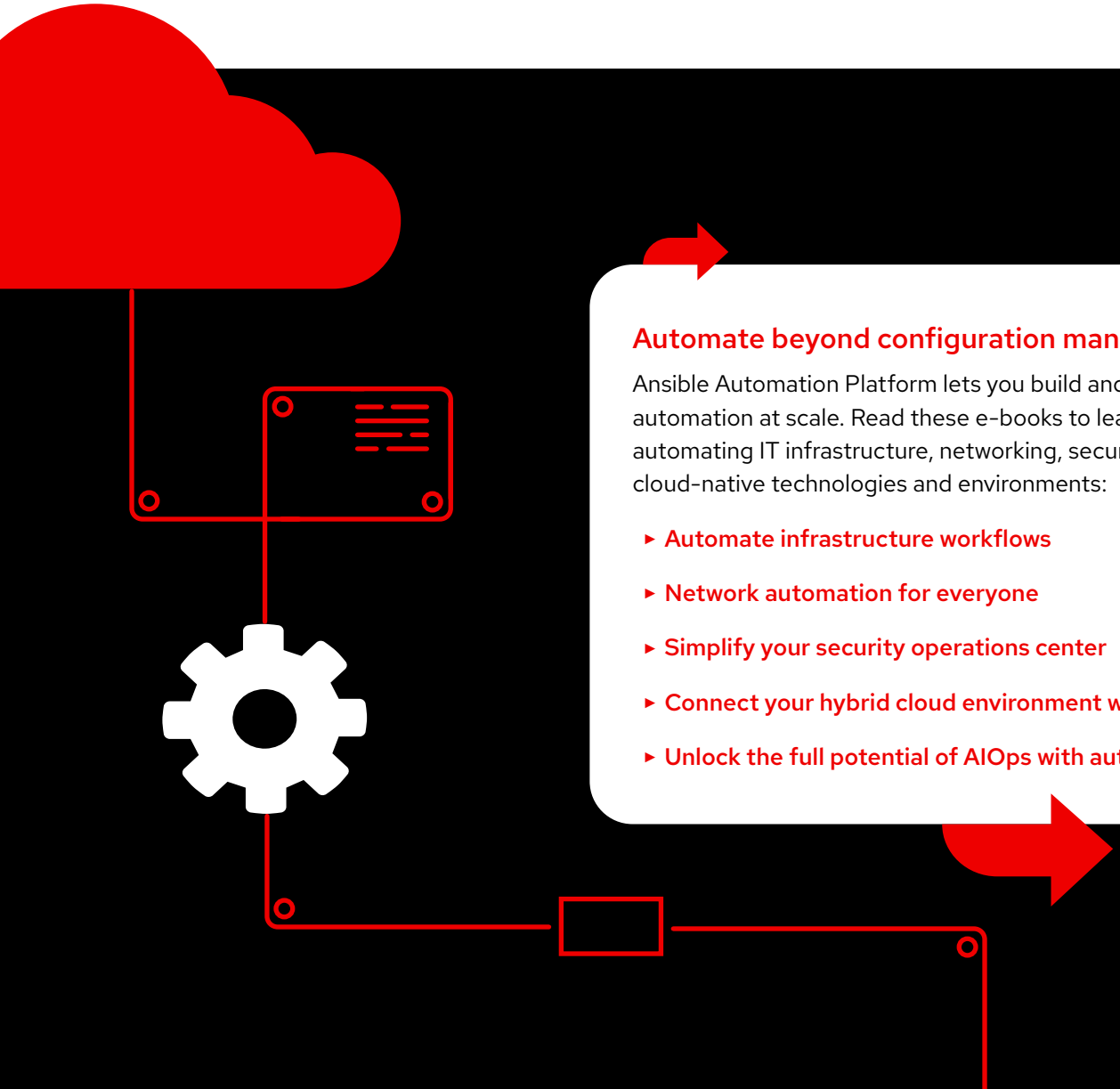
Faster to market for new products and services.[2]

2 *IDC White Paper, sponsored by Red Hat. "The Business Value of Red Hat Ansible Automation Platform," March 2024. Document #US51839824.*

Orchestration + automation = business value

Ansible Automation Platform combines workflow orchestration with resource automation to deliver real business results.

- Deliver predictable business outcomes by orchestrating complete cloud workflows.
- Improve consistency and portability by connecting all of your infrastructures.
- Streamline processes by integrating all of your tools with automation orchestration.
- Operationalize larger cloud processes by assessing, codifying, and combining tasks in different ways.
- Innovate across teams and domains through increased collaboration and sharing.
- Boost productivity with self-service automation that reduces manual handoffs.



Automate beyond configuration management

Ansible Automation Platform lets you build and perform IT automation at scale. Read these e-books to learn more about automating IT infrastructure, networking, security operations, and cloud-native technologies and environments:

- **Automate infrastructure workflows**
- **Network automation for everyone**
- **Simplify your security operations center**
- **Connect your hybrid cloud environment with IT automation**
- **Unlock the full potential of AIOps with automation**

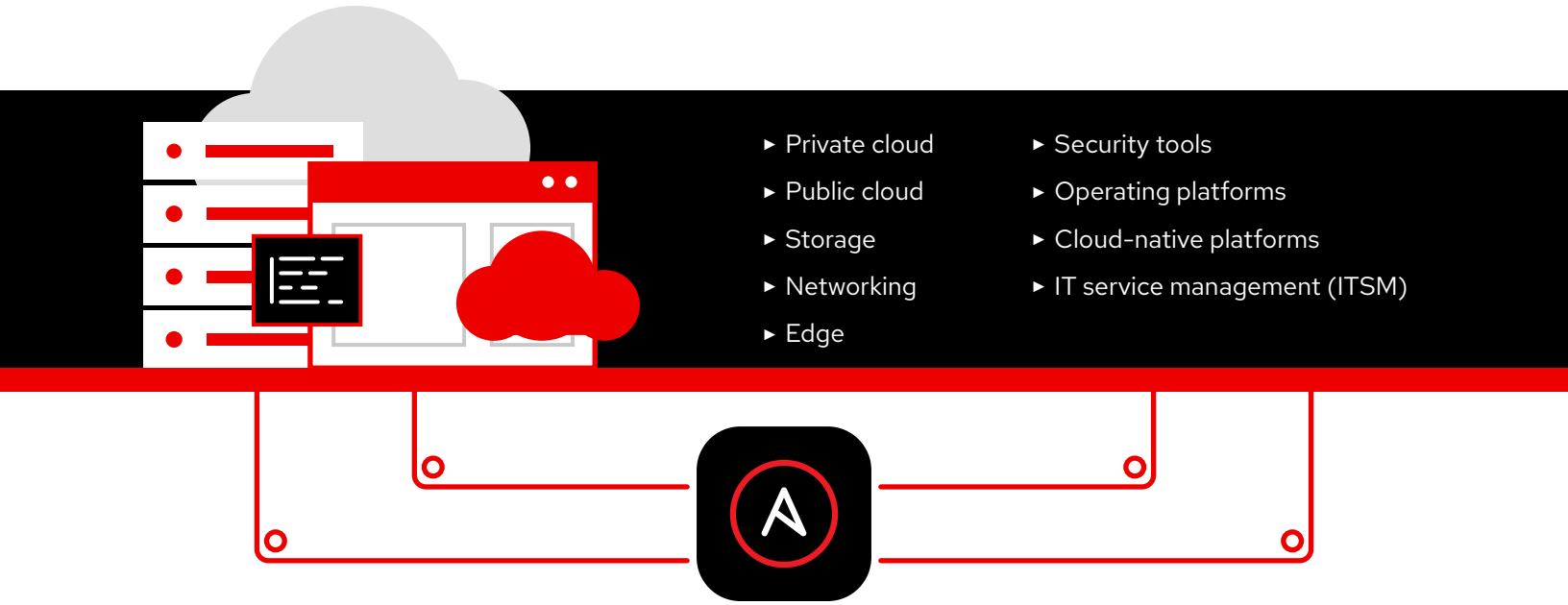
Connect and orchestrate all of your clouds, platforms, and tools with Ansible Automation Platform

Ansible Automation Platform works across clouds, platforms, and tools, so you can orchestrate complete workflows that incorporate the components and technologies you use today as well as those you plan to adopt in the future. Some examples of popular components are shown below—click on a logo to learn more about integrations with Ansible Automation Platform.

aws Google Cloud kubernetes

splunk> INSTANA an IBM Company Microsoft Azure

HashiCorp Red Hat OpenShift Red Hat OpenShift AI



Ansible Automation Platform

Start your cloud automation journey

Adopting cloud automation is a journey, not an all-or-nothing proposition. You can get started with a single use case and expand at a pace that works for your organization. Ansible Automation Platform helps you orchestrate, operationalize, and govern complete hybrid cloud workflows, from provisioning and deployment, to Day 2 operations and management, to disaster recovery and resource retirement.

This chapter gives an overview of common cloud automation use cases within the overall resource lifecycle. We've divided these use cases into stages—orchestrate, operationalize, and govern—to show how automation can be used throughout the complete lifecycle.

Even so, each of these use cases vary in the amount of time and effort required to automate. Successful automation adoption journeys often follow a progression: teams start small, show value, and expand the range and complexity of their efforts in an iterative manner. These efforts can be organized into 3 phases:

- **Opportunistic.** This phase focuses on simplifying tasks and creating quick, strategic victories for cloud teams. Use cases in this phase allow teams to show the results Ansible Automation Platform can provide and gain broader support for automation throughout their organization.
- **Systematic.** This phase concentrates on centralizing processes and applying automation in a programmatic manner to efficiently manage cloud resources at scale.
- **Embedded.** This phase involves creating and orchestrating complete workflows that support business outcomes by automating decision making, integrating infrastructures, and connecting teams across your organization.

Assessing automation efforts

To show the level of complexity involved in automating each of the use cases discussed in this chapter, we have marked each with a symbol denoting the associated phase in the automation journey:

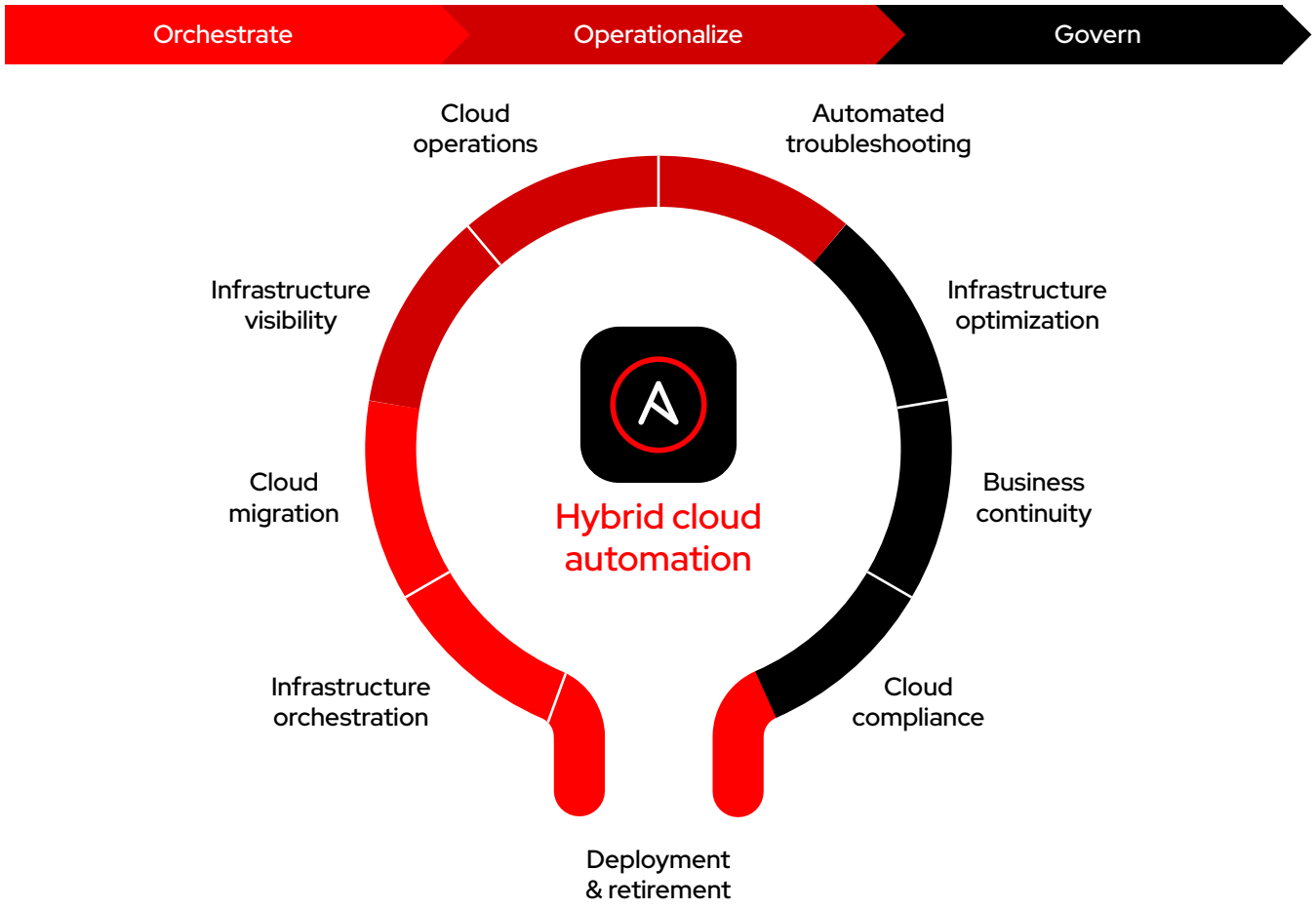

Opportunistic


Systematic


Embedded

Common automation use cases across resource lifecycles

Ansible cloud automation use-cases



In this chapter:

Orchestrate cloud resources

Orchestrating cloud resources is the initial step in many cloud automation workflows. These use cases involve setting up the environments, systems, applications, networks, and storage that your business needs to operate.

Resource deployment and retirement

- Provision, configure, and retire cloud instances.
- Quickly create ready-to-use cloud deployments.
- Build service catalogs that let users rapidly access preapproved resources.
- Govern instance creation and retirement with automatic policy enforcement.

Ansible Automation Platform integrates with popular cloud provisioning and IaC tools such as **HashiCorp Terraform** to deliver full infrastructure lifecycle management—including provisioning, configuration, deployment—across hybrid and multicloud environments.

69%

faster deployment of new compute resources.[2]

Cloud migration

Move your workloads to where you need them—from on site to a public cloud, between public clouds, or from traditional compute architectures to cloud-native application platforms.

- Streamline cloud adoption within your organization.
- Ease the migration of workloads to cloud-native application platforms.
- Orchestrate your traditional and cloud-native applications using a single platform.

Ansible Automation Platform works with mutable and immutable infrastructure, including traditional, virtualized, and cloud-native infrastructure, so you can use the migration strategy that works best for your organization—classic back up and restore, scan and recreate, or IaC. And the workflow visualizer lets you efficiently orchestrate your migration.

38%

more efficient network management.[2]

Infrastructure orchestration

Connect and coordinate teams and infrastructure across your organization.

- Integrate on-cloud and off-cloud infrastructure under a unified framework.
- Orchestrate entire business workflows as well as isolated technology domains.
- Apply consistent compliance across all infrastructure.

Ansible Automation Platform integrates with Red Hat's comprehensive partner ecosystem, so you can orchestrate nearly every aspect of your cloud environment. Many partners also provide certified and signed content via Ansible automation hub, allowing you to automate their products swiftly and more efficiently.

*2 IDC White Paper, sponsored by Red Hat. "**The Business Value of Red Hat Ansible Automation Platform**," March 2024. Document #US51839824.*

Operationalize cloud processes

Day 1 and Day 2 operations are critical for supporting business outcomes over time. These use cases focus on ongoing processes to keep your cloud environments running smoothly.

Infrastructure visibility

Collect information about your cloud infrastructure and resources to better understand your inventory.

- Gather information on a read-only basis.
- Gain visibility into your cloud assets—including virtual instances, containers, storage, networking, firewalls, identity management, and more—with dynamic inventories and reports.
- Access gathered data from your choice of tools.
- Create an inventory for further automation efforts.

Ansible Automation Platform includes a web-based user interface that streamlines operations across on-site and cloud environments. You can create customized reports and schedule automation jobs to gain more visibility into all aspects of your environment.

Cloud operations

Streamline Day 1 and Day 2 activities across your cloud environment.

- Manage complete cloud resource and application lifecycles from start to finish.
- Modify cloud resources, host operating systems, and applications.
- Programmatically access all of your cloud provider's capabilities in an automated fashion.
- Create reusable GitOps workflows and pipelines for ongoing maintenance of resources across all cloud environments.

Ansible Automation Platform gives you access to certified content for automating infrastructure, hybrid clouds, Windows, Linux®, application deployment, security operations, and more. As a result, you can manage and automate your entire environment more readily.

Automated troubleshooting

Rapidly respond to incidents and problems.

- Promptly identify the location or domain of the problem to reduce mean time to innocence.
- Apply role-based access controls (RBAC) to set limits and policies
- Integrate automated troubleshooting processes into your IT service management (ITSM) solutions like ServiceNow.
- Initiate automated troubleshooting manually, via ITSM tickets, or via monitoring tools.
- Pair automation with AI for IT operations (AIOps), which uses observability and machine learning to detect and predict issues then automatically remediate them.

Ansible Automation Platform includes native integrations with service and resource management systems such as ServiceNow, Github, and Gitlab, allowing you to orchestrate response actions between these tools. You can also integrate resources, tools, and systems via an application programming interface (API) to create complete response workflows.

Govern cloud environments

Governance is an integral part of cloud operations. Cloud environments can quickly scale well beyond manual control capabilities but automation helps apply and enforce policies across resources at scale. These use cases focus on making sure cloud environments run according to your expectations and business requirements.

Business continuity

Ensure your cloud environment is always available to support your business.

- Move and copy resources off-cloud to support disaster recovery operations.
- Create, manage, and enforce backup policies.
- Manage disruptions and failures via user-triggered and event-driven automation.
- Rapidly stand up complete disaster recovery sites.
- Perform routine snapshots and backups.

Ansible Automation Platform's automation mesh component lets you orchestrate diverse environments at scale to support business continuity across public cloud providers.

61%

less unplanned downtime.[2]

Compliance in the cloud

Make sure your cloud environment is in compliance at all times.

- Automatically enforce identity and access management (IAM) policies to improve security.
- Validate security groups and access control lists (ACLs).
- Synchronize with ITSM solutions to improve operational tracking.

Ansible Automation Platform works with mutable and immutable infrastructure to provide a common experience across public clouds. As a result, you can more easily create and enforce policies across multiple regions and clouds.

36%

Development team productivity gains.[2]

Infrastructure optimization

Automatically optimize your cloud environment to save time and money.

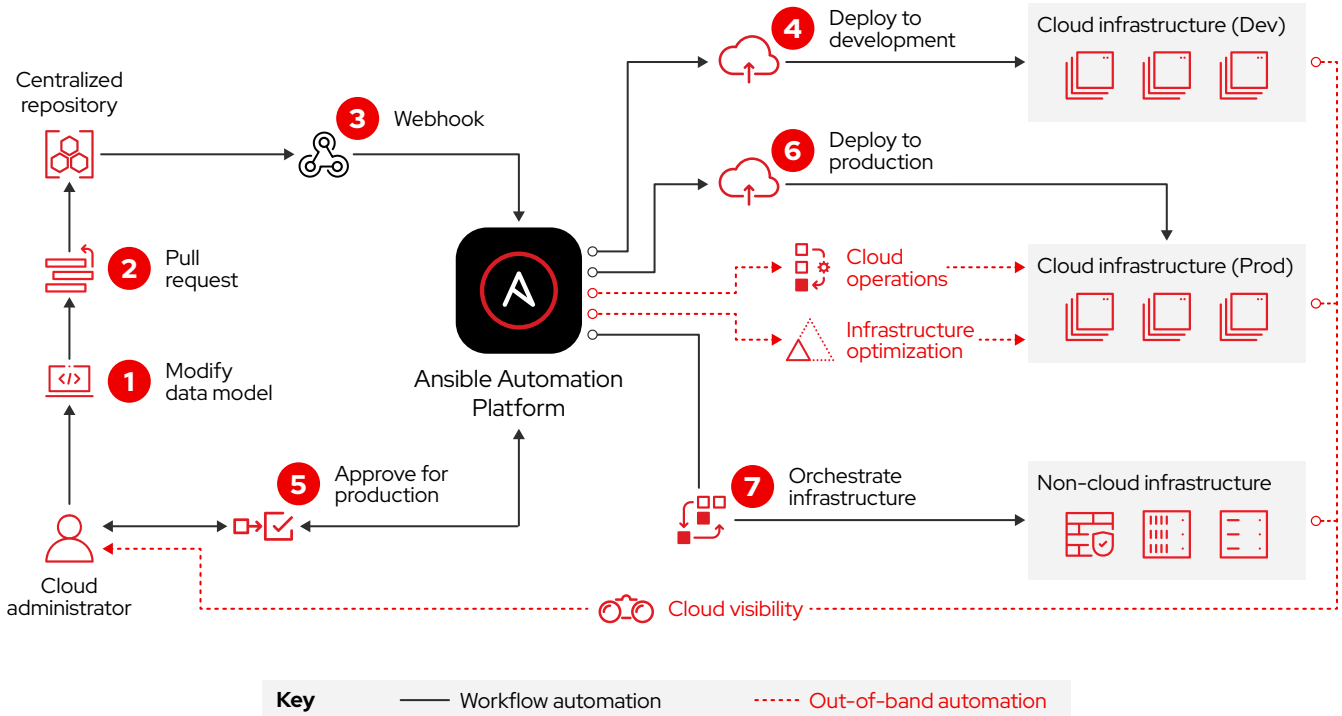
- Turn off unused resources according to policies.
- Optimize cloud resources to balance cost, performance, and availability.
- Recover orphaned resources.
- More accurately understand your cloud use to better plan investments and budget.

Ansible Automation Platform lets you schedule workflows to continually audit your clouds and gain visibility into what you have. With this knowledge, you can create automation to optimize your infrastructure. You can also use custom workflow approvals to understand how changes may affect your cloud environment before they go into production.

*2 IDC White Paper, sponsored by Red Hat. "**The Business Value of Red Hat Ansible Automation Platform**," March 2024. Document #US51839824.*

Cloud automation workflow

This example of a complete cloud automation workflow shows how you can use Ansible Automation Platform to orchestrate cloud resource and application lifecycles using a GitOps approach.



Workflow automation

1. A cloud administrator modifies a resource definition or playbook.
2. The cloud administrator commits the changed definition or playbook to a centralized repository.
3. Webhook integration in Ansible Automation Platform allows it to notice the change and start any necessary automation.
4. Ansible Automation Platform redeploys the cloud resources to a development environment.
5. The cloud administrator approves the automated production request.
6. Ansible Automation Platform deploys the cloud resources to the production environment.
7. Ansible Automation Platform sets up and orchestrates any other off-cloud resources needed for production deployment.

Out-of-band automation

- **Cloud operations:** Ansible Automation Platform performs Day 1 and Day 2 operations, including modifications and updates, as needed.
- **Infrastructure optimization:** Ansible Automation Platform optimizes infrastructure and resources as needed.
- **Cloud visibility:** Ansible Automation Platform takes snapshots of the infrastructure for visibility and insights as needed.

Are you ready to automate?

Automation can help you connect your cloud environments to streamline operations and create complete workflows.

Bring together your people, processes, and technology with Red Hat Ansible Automation Platform and simplify your journey to the cloud. With a unified automation framework, you can orchestrate, operationalize, and govern your hybrid cloud to create complete workflows and deliver business outcomes across your environment, at scale.

Get started at ansible.com/use-cases/hybrid-cloud

Take advantage of Red Hat expertise

Red Hat Consulting can help you successfully deploy automation in less time by providing a framework for managing an organization-wide automation adoption journey.

Learn more here.

See what industry analysts say about hybrid cloud automation

Read the **IDC Spotlight** to learn how cloud automation delivers business value.

Red Hat