

How service providers can unlock the full value of automation

Telecommunications networks, like 5G, RAN, edge, and cloud architectures, can significantly speed up service delivery, increase flexibility, boost productivity, and add to top line revenue. However, too many manual configuration and management processes diminish the benefits of these new technologies and negatively impact operations and delivery.

Increasing automation of deployment, operation, and management of networks and services is vital in accelerating new services to market. In addition, executing automation at scale can significantly reduce operational expenses (OpEx) and increase revenue. As a result, service providers of all sizes are seeking ways to extend automation beyond the isolated task-based systems and disparate initiatives that exist today.

Automating a single task or process is relatively straightforward. But, as a service provider, more value can be gained by automating workflows across processes and domains from the network edge to the core, and private and public clouds. It is also beneficial to deploy and coordinate this automation at scale.

Build an automation strategy

Red Hat® Ansible® Automation Platform offers the key capabilities you need to build, deploy, and manage large-scale automation that can increase service velocity, improve security and compliance, and significantly reduce OpEx.

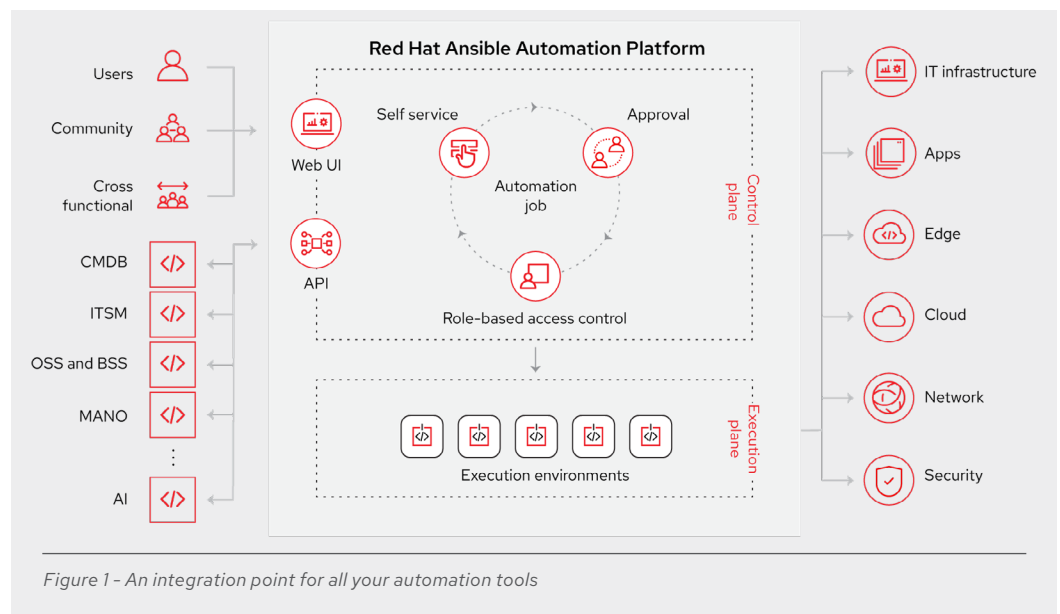


Figure 1 - An integration point for all your automation tools

As shown in Figure 1, using Ansible Automation Platform as an integration point for existing and new tools and processes allows you to scale automation in a more controlled and compliant way across your organization. Automated processes can be implemented across different departments and their unique domains—like billing, human resources, and finance—and the network from edge to core to cloud, as well as security and applications. Ansible Automation Platform supports individuals, groups, cross-functional teams, and application programming interfaces (APIs) connected to other systems. The value and effect of automation increases significantly when applied to end-to-end processes.

Automation platform for service providers

Ansible Automation Platform provides fully supported service provider capabilities. You can automate and manage entire application, network, and IT environment life cycles—encompassing server, cloud, and container-based infrastructure, network administration, security, and provisioning, and development and continuous delivery processes. The platform provides analytics to better measure and help maximize the value of automation, a service catalog to share preapproved automation processes across organizations, and role-based access control that allows tailored access based on the needs of your IT, DevOps, security, and network operations teams.

Use case: Cross-domain IT service management (ITSM) automation with ServiceNow and Ansible Automation Platform

Manually maintaining a configuration management database (CMDB) and library of IT asset execution steps can be time-consuming, inaccurate, or incomplete. Whether it is a change request, incident, or problem ticket, a large IT organization can have several teams involved in both the process and execution. Some of these teams might have direct access to the ServiceNow platform, while others might not.

With the Ansible Automation Platform-certified Content Collection for ServiceNow, you can dramatically increase value from service chains, while supporting a closed-loop process that automatically updates your ServiceNow workflows without manual intervention, illustrated in Figure 2. You can work across incidents, problems, and change requests to make remediations less difficult. You can also

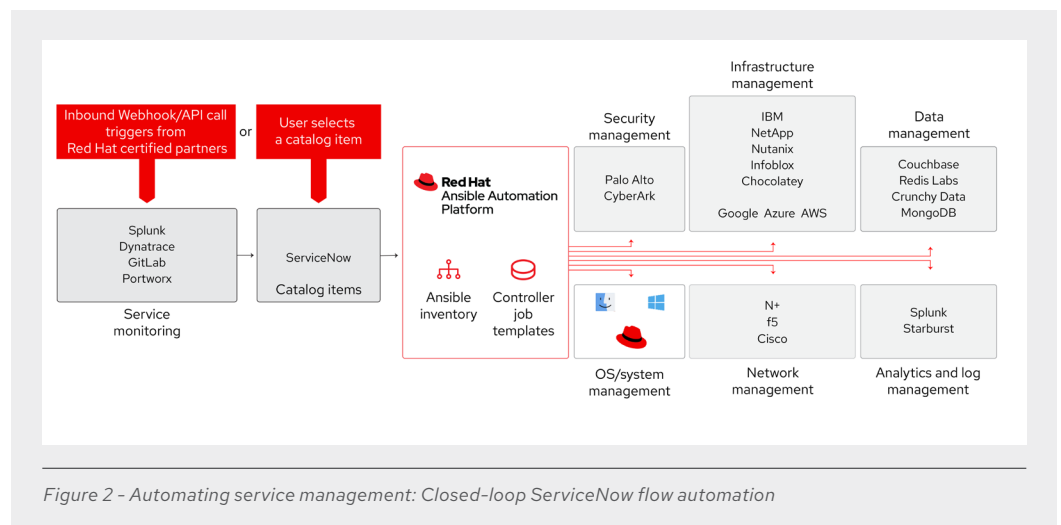


Figure 2 - Automating service management: Closed-loop ServiceNow flow automation

“Vodafone Idea has automated IT infrastructure and operations end to end by adopting Ansible Automation Platform. Adopting Ansible Automation Platform has helped in reducing cost and improving operational efficiency with increased user productivity and faster go to market.”¹

Jagbir Singh
Chief Technology Officer,
Vodafone Idea Limited

create playbooks to automate common service request actions, like resetting a network router. This implementation helps service teams use the tools they are familiar with to perform common actions and resolve incidents in a timely manner—while automatically establishing a digital trail in ServiceNow.

Services from the ServiceNow catalog can be triggered by user requests or inbound API calls from the extensive list of Red Hat ISV partners. ServiceNow documents and logs the requests, then passes them to Ansible Automation Platform to perform the approved tasks.

Ansible Automation Platform-certified Content Collection for ServiceNow lets your IT professionals automate retrieval of configurations, helping them to focus on other priorities. The collection has an inventory plug-in that allows Ansible Automation Platform to operate against your ServiceNow CMDB as a single source of truth. And, it includes other modules and plug-ins for managing incident tickets, interacting with problem tickets, handling change requests, and managing the CMDB in ServiceNow.

Use case: IT infrastructure automation

With other automation approaches, users typically employ many different tools to manage various aspects of their IT operating systems (OS) and software configurations. Ansible Automation Platform integrates with and augments other tools. It uses a common, intuitive language for automating IT infrastructure that allows users to coordinate across multiple teams and individuals to share, vet, and manage automation content. This helps accelerate and standardize automation and minimize friction between teams.

Success story: Vodafone Idea Limited

To stay ahead of the competition, Vodafone Idea Limited needed to optimize its IT infrastructure. Manual daily operations resulted in low operational efficiency and multiple errors. In addition, disconnects between automation tools caused security and compliance risks, inefficient resource use, and financial penalties for frequent breaches in service-level agreements.

Vodafone Idea Limited is now using Ansible Automation Platform to consolidate and integrate its automation tools into a unified platform, dashboard, auditing, and reporting system. The results include:

- ▶ A 30% year-over-year cost savings.
- ▶ About 1,000 saved staff hours.
- ▶ 75% of alerts are automatically self-healed and resolved.
- ▶ 99% faster provisioning of Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS).
- ▶ Reduced security and compliance risks.

¹ Red Hat success story. “Vodafone Idea Limited automates to improve IT infrastructure,” accessed 12 July 2022.

“We selected Red Hat OpenShift because of its leading position in the market and because of its competitive pricing and features. We were impressed by the results of an internal proof of concept that showed how its automation capabilities could help us accelerate our delivery process.”²

Moussa Wade

Head of the Center of Excellence,
Orange Sonatel

Use case: Application automation

Deploy multitier applications reliably and consistently from one common framework and configure needed services and push application artifacts from one common system. Ansible Automation Platform uses task descriptions in a language that team members across organizations can understand—saving not only your initial costs, but also making it less difficult to evolve in the future.

Using Ansible Automation Platform, you can automate application deployments and make installations, upgrades, and daily management repeatable, more consistent, and more reliable, allowing new software features, bug fixes, and code changes to be released more frequently.

Success story: Orange Sonatel

Orange Sonatel is Senegal’s leading telco service provider. To maintain their market leadership position, Orange Sonatel needed to deliver high-quality, highly available services at a rate commensurate with customer demand. But deploying new services using the community version of Docker on virtual machines took days or even weeks, and provisioning new developer environments took at least three weeks.

Orange Sonatel decided to implement a cloud-native, microservices-based architecture and a DevOps software delivery pipeline to help maintain and extend the company’s market leadership. The organization wanted a solution that would combine the fast-paced innovation of open source technology with enterprise support and an increased focus on security.

Orange Sonatel adopted Red Hat OpenShift® and Ansible Automation Platform for automating their time-consuming manual deployment processes. Now, their teams can deliver new services and features to customers more efficiently and with two-thirds of their staff free to work on other tasks. They reduced application deployment time from weeks to minutes and time to market for new services from several months to eight weeks.

With playbooks for automated, self-service provisioning capabilities, Orange Sonatel developers swiftly and independently build their environments for testing Java, Hypertext Processor (PHP), and AngularJS applications instead of waiting weeks for IT. Ansible Automation Platform and Red Hat OpenShift help Orange Sonatel to focus on valuable innovation, rather than infrastructure management.

Using enterprise open source software from an experienced vendor helps Orange Sonatel protect its infrastructure and cloud environments from vulnerabilities and performance-affecting issues. Security-focused deployment is user-friendly because the safety requirements are already incorporated into Red Hat OpenShift and Ansible Automation Platform environments.

² Red Hat case study. “Senegal’s top telco adopts Red Hat Ansible Automation Platform and Red Hat OpenShift,” 14 Sept. 2020.

“... a multi-vendor environment will stimulate innovation, reduce cost of the infrastructure, increase competition, and accelerate the development of an open 5G ecosystem, which in turn will enable a range of new services for Telenor’s consumers, industry, and government customers.”³

Patrick Waldemar
Vice President and Head of Technology,
Telenor Research

Use case: Network automation

Ansible Automation Platform is ideal for managing networks with components from multiple vendors, as well as different OS and configuration methods. It abstracts device-specific implementation details from network management, allowing you to focus on network configuration values.

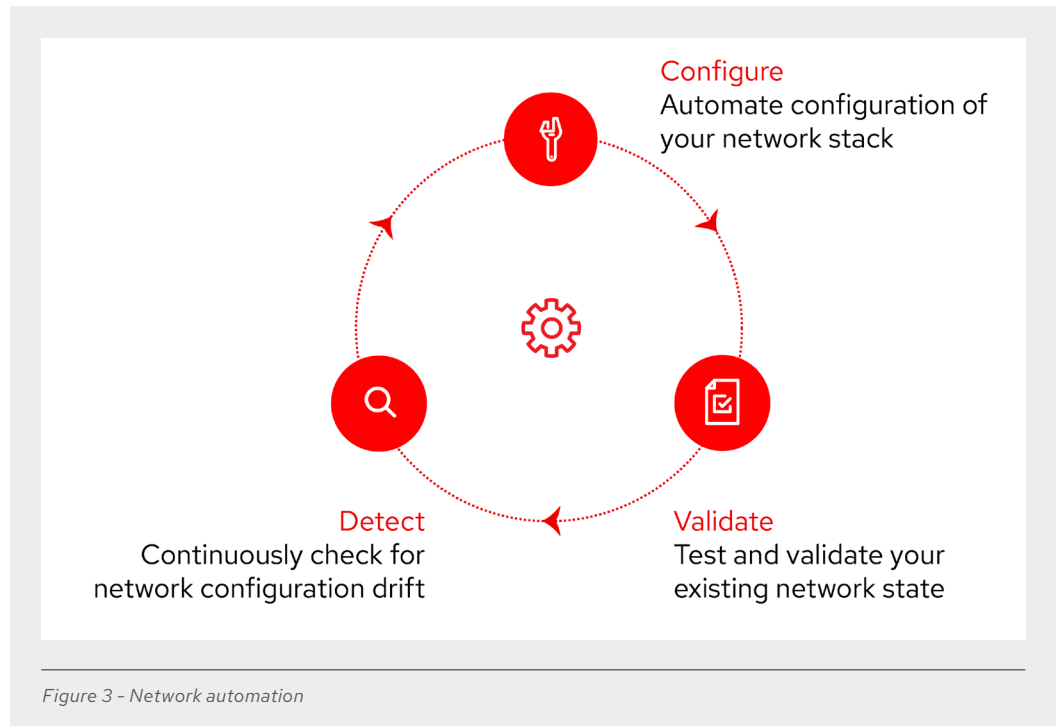


Figure 3 - Network automation

In a typical configuration process illustrated in Figure 3, Ansible Automation Platform attaches to and reads information from each network device, including devices present, device capabilities, and OSs in use. Ansible Automation Platform uses this information to intelligently and conditionally configure each device. It then validates the network configuration by comparing information read from each network device with expected values. Finally, the tool logs inconsistencies as configuration issues requiring remediation.

Success story: Telenor Research

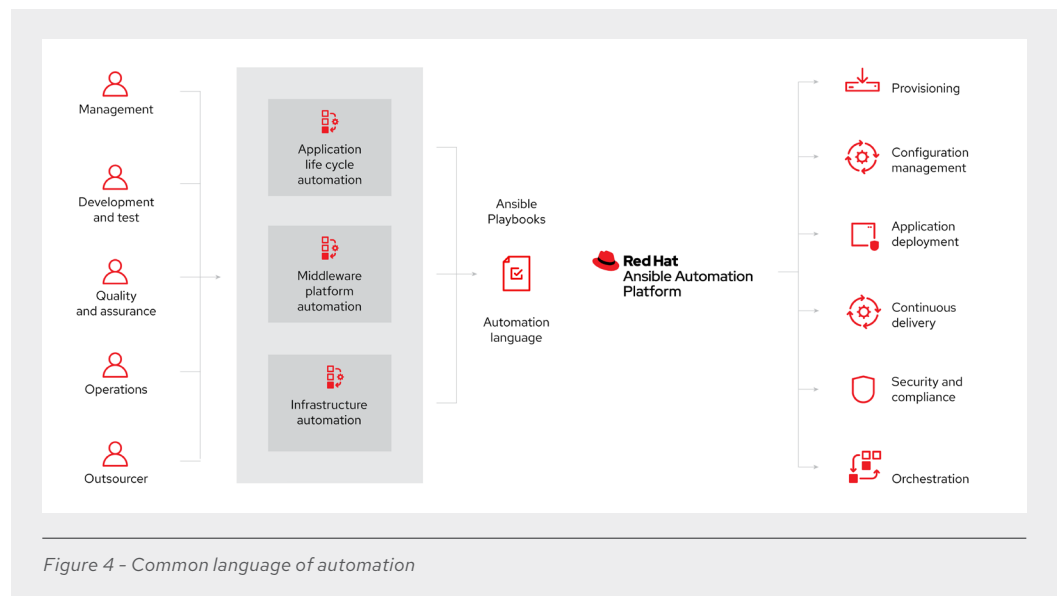
Telenor is one of the world’s largest mobile telco service providers with networks in eight countries. Telenor wanted to take advantage of the web-scale technology benefits of scale, openness, and shorter time to market to maintain a market leadership position. Their networks contained a mix of virtualized network functions (VNF) and cloud-native network functions (CNFs) from multiple vendors. As they began to deploy 5G networks, they found that manual provisioning was no longer an option. They also recognized that ongoing network function development would need frequent upgrade and reconfigure cycles.

³ “Groundbreaking 5G solution paves the way for new digital services,” Telenor Group, 21 April 2021.

To achieve Zero-Touch networking for their 5G networks, they built a neutral, unified, scalable automation platform with Red Hat OpenShift Container Platform, Ansible Automation Platform, and Red Hat OpenStack® Platform as the underlying platforms to cover all kinds of endpoints—from physical infrastructure to networking and security, to Day 1 and Day 2 configuration of VNFs and CNFs.

With Ansible Automation Platform as the common language of automation, as illustrated in Figure 4, Telenor can:

- ▶ Optimize infrastructure costs.
- ▶ Reduce development turnaround time as their 5G networks evolve.
- ▶ Reduce lock-in compared to a single-vendor network, stimulating innovation and new service creation.



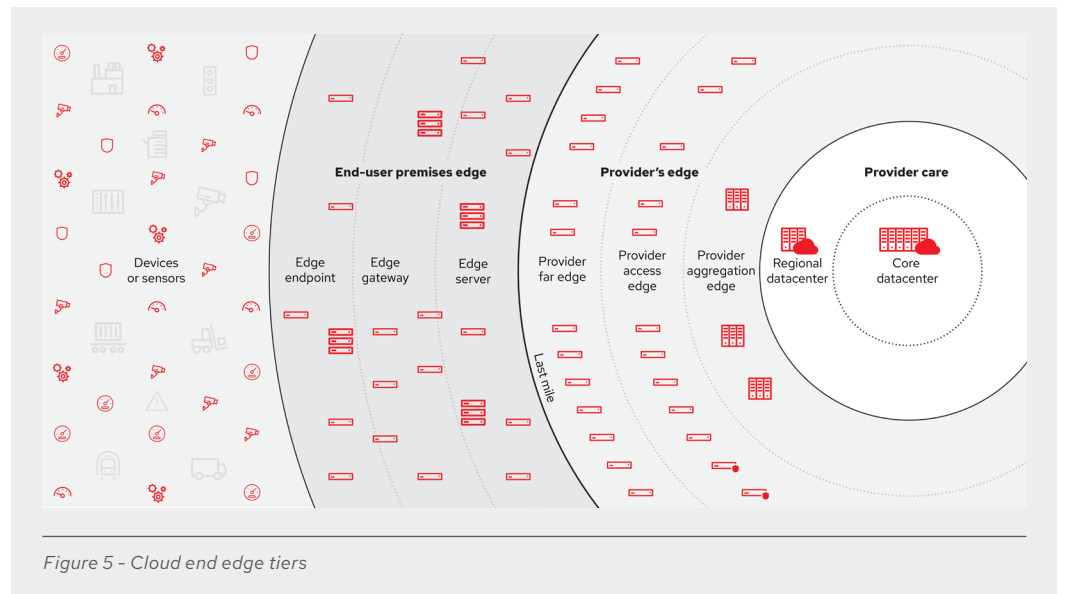
Use case: Cloud automation

As you migrate more back office and network operations into the cloud, you might need to use a multicloud architecture to meet your diverse set of needs. As illustrated in Figure 4, Ansible Automation Platform allows your cloud deployments to work smoothly across public, private, or hybrid clouds as smoothly as a single system.

Ansible Automation Platform processes and procedures are the same across major cloud providers. You can trust that every deployment meets all your policies. Ansible Automation Platform library of cloud support modules lets you provision instances, networks, and complete cloud infrastructure in multicloud environments with less effort. The same simple Ansible Playbook language you use for application deployment and on-premise virtualization automation also provisions your multicloud infrastructure, and applies the correct configuration.

The modularity of Ansible Automation Platform code base allows you to manage current infrastructure and also rapidly adapt to new IT needs and requirements as they emerge. Ansible Automation Platform includes over 300 modules spanning hundreds of API endpoints in various public and private cloud technologies and vendors. From Red Hat OpenStack Platform to Amazon Web Services (AWS) to Google Cloud Platform and Microsoft Azure, Ansible Automation Platform includes the capabilities to help you effectively deploy and manage:

- ▶ Servers and OSs.
- ▶ Cloud-native routing and networking.
- ▶ Virtual private networks.
- ▶ Access policy and permissions.
- ▶ Load balancers.
- ▶ Autoscaling policy.



Use case: Edge automation

Demand for mobile digital services and other edge computing use cases, combined with an increasingly diverse traffic profile, requires networks to be highly adaptable, scalable, and economical to deliver future edge-computing services. Edge deployments, as illustrated in Figure 5, often extend to many locations with minimal or no IT staff, or vary in physical and environmental conditions. Edge stacks also tend to mix and match hardware and software elements from different vendors. As a result, highly distributed edge architectures can become difficult to manage as they scale out to hundreds or even thousands of locations.

“Our collaboration with Red Hat has helped us deploy Universal Cloud based on open standards and systems. Effective working with various ecosystem stakeholders and rapid development cycles has enabled us to design efficient pods for widely distributed deployments running throughput intensive workloads. We now plan to extend this Universal Cloud as a platform to third-party workloads.”⁴

Vishant Vora
Chief Technology Officer,
Vodafone Idea Limited

Red Hat OpenShift, Red Hat Advanced Cluster Management for Kubernetes, and Ansible Automation Platform automate and orchestrate deployment of containerized applications, providing enhanced security, load balancing, and scalability across multiple cloud environments. Red Hat offers a horizontal cloud platform with an open ecosystem to build open, virtualized and/or cloud RAN and other edge solutions that help you deliver services faster and reduce operational complexity. Red Hat OpenStack Platform supports multiple network functions with consistent interfaces and the benefits of cloud orchestration and automation.

Success story: Vodafone Idea Limited

Vodafone Idea Limited deployed Red Hat OpenStack Platform, Red Hat Ceph® Storage, Ansible Automation Platform, and Red Hat Enterprise Linux® to transform over 100 datacenters into an open standards, open interfaces-based Universal Cloud.

Vodafone Universal Cloud is capable of running multiple network, IT, and third-party workloads across its distributed cloud locations. Red Hat OpenStack Platform allows Vodafone to design efficient pods, which can be geographically distributed and located closer to the end users, helping to reduce latency and optimize user experience. In addition, Vodafone deployed Ansible Automation Platform to automate workflows, and extend self-provisioning to its enterprise customers.

Production-ready, service provider automation

Red Hat offers a fully featured, production platform with a dependable release cadence, documentation, and training. Extensive hardening, testing, and support provides stable performance within your production environment. A rich ecosystem of technology partners makes it easier to integrate Ansible Automation Platform into your IT, network, and edge environments, reducing the need to develop custom integrations. A growing set of certified and supported Content Collections helps streamline your path to automation value. This helps boost productivity and reduces time to market for new services.

Ansible Automation Platform capabilities provide value beyond the community versions and other automation tools with:

- ▶ **Automation hub.** A library of certified Content Collections from hardware and software partners, as well as Red Hat product teams, simplifies content identification so you can quickly bootstrap automation projects.
- ▶ **Automation services catalog.** The service catalog extends existing automation in a controlled way to developers, business users, and the helpdesk so you can foster an environment of self service while meeting compliance and governance directives.
- ▶ **Red Hat Insights for Ansible Automation Platform.** The platform offers additional security and compliance benefits to meet the requirements of the highly regulated industries. With Red Hat Insights, the solution can detect configuration drift and automatically correct it before it causes a security vulnerability. It also creates an audit trail with the necessary documentation to help confirm compliance.

⁴ Red Hat press release. “Red Hat collaborates with Vodafone Idea to build Network as a Platform,” 21 Oct 2019.

- ▶ **Content life cycle management.** With the Ansible Automation Platform, certified content is curated, supported, and tested by Red Hat and its ecosystem partners. Having the most up-to-date content helps you launch new automation projects and maintain and use existing projects faster and with less effort.

Summary

A holistic approach to automation is critical for success, especially as customer demand, network, and IT complexity grow. Ansible Automation Platform offers network and infrastructure automation at scale to decrease risk through consistent and compliant configuration and environment management. The platform allows automation teams to work across systems, organizations, and domains to automate end-to-end processes. It provides a platform to automate, manage, and scale operations, while maintaining the stringent levels of security, compliance, and reliability service providers require.




Ansible Automation Platform is also hardened and rigorously tested by Red Hat engineers and technology partners. Red Hat offers end-to-end support, dozens of vendor integrations (including AWS, Cisco, Juniper, and VMware), and a full suite of automation consulting services to meet your IT and networking needs. With Ansible Automation Platform, you can focus your resources on innovation and let it handle many of your routine processes.

Download Red Hat Ansible Automation Platform trial at no cost to see these benefits firsthand.



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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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