

Holistic automation for service providers

“While technological complexity will continue to increase, automation is a technology capability that has proven to increase speed and agility for high-performing teams while delivering and optimizing business returns.”

—
Source:
IDC¹

Two of the biggest challenges facing service providers are generating new revenue streams and finding more ways to lower costs. To overcome these challenges, providers are looking at increasing operational efficiency by reducing manual processes and hand-overs between teams to lower operational cost (OpEx) as well as bring new services to market faster. Service providers of all sizes are looking for ways to extend automation implementations beyond isolated task-based systems and disparate initiatives that often exist today. For example, automatically deploying hundreds of network functions and automating the management of thousands of network devices can help you bring new services to market faster, and doing it at scale is key to significantly reducing OpEx and increasing revenue.

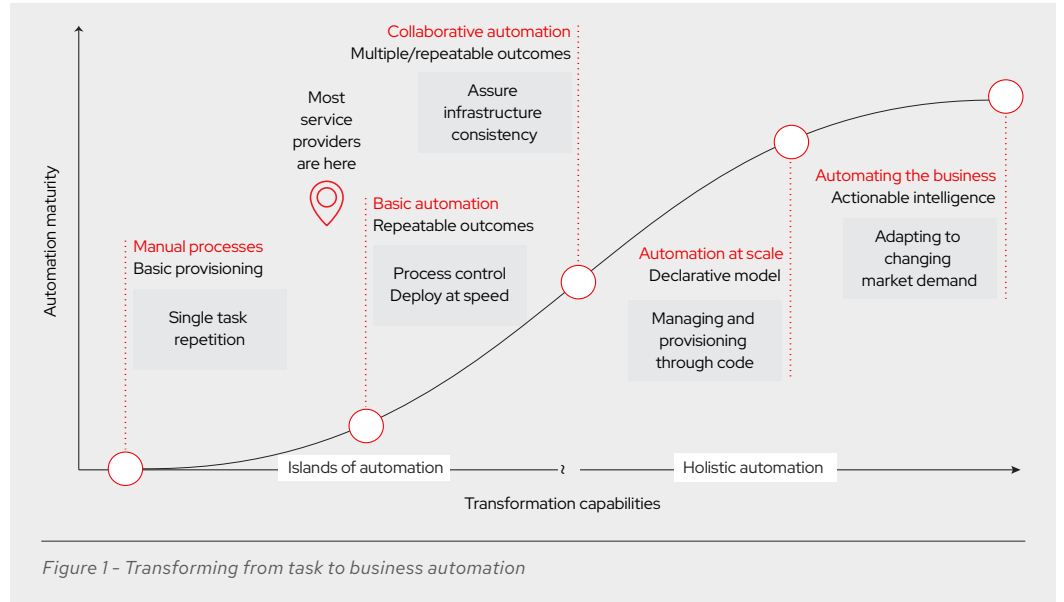
Automation makes processes go faster, execute consistently, and can remediate critical situations quickly when they occur. Automating processes end to end across organizations bridges today’s gaps, reduces OpEx, shortens the time from order to delivery, and therefore, shortens time to revenue. A more holistic approach to automation needs to expand across organizational boundaries and network domains from the edge of the network to the core and across private and public cloud environments. To do this, a hardened automation platform that integrates with the tools and technologies you use today is essential. Scalability, tested and certified content, and robust management are key platform components required to improve efficiency, optimize costs, and reduce risk in production environments.

Red Hat Ansible Automation Platform

Red Hat® Ansible® Automation Platform provides the key capabilities you need to build, deploy, and manage automation at scale, increase velocity, improve security and compliance, and significantly reduce OpEx.

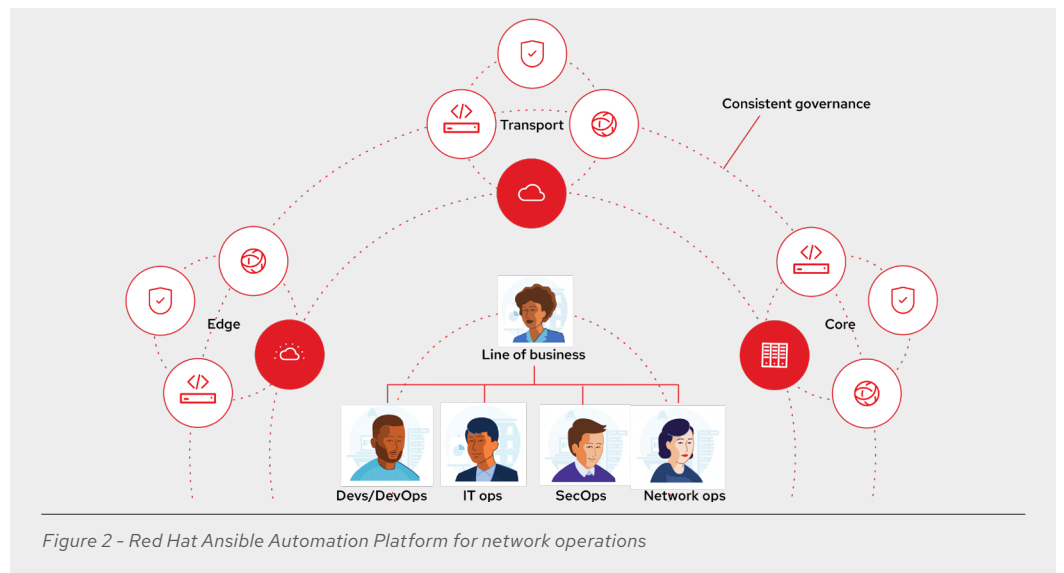
A holistic approach to automation

Automating a single task or process is relatively straightforward. But, as a service provider you need more than just simple task-by-task automation. You need coordination and scalability across processes and domains, and the ability to coordinate the automation across your business.



Maximizing the value of automation by evolving from individual automation projects to collaborative automation requires an organization-wide perspective (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 organizational structures. Automated processes can be implemented across the various departments responsible for domains, like billing, human resources, finance, and the network from edge to core to cloud, as well as security, applications, and business processes. The value of automation and its impact increases significantly when it is deployed to automate end-to-end processes that go beyond islands of automation.

Maximize the return of automation investment



It is important to adopt a top-down strategy that includes investments in time, technology, and people for automation to work at scale. Ansible Automation Platform helps you develop a culture of collaborative automation by providing the same consistent experience for everyone, everywhere (figure 2). A service catalog and role-based access control govern the features to tailor access based on the needs of your IT, DevOps, security, and network operations teams. Ansible Automation Platform maximizes your return on investment (ROI) because it draws more value out of your existing automation investments by integrating them into automated cross-domain workflows.

Break down barriers

Service provider network operations and IT teams often have multiple domain-specific automation tools. For example, networking, infrastructure, and security each have their own specialized tools that are rarely integrated with others. This makes end-to-end automation difficult and eventually causes compliance and security problems.

- ▶ A more encompassing approach to automation can address these challenges by:
- ▶ Integrating different tools within and across disparate domains.
- ▶ Streamlining processes across multiple tools.
- ▶ Breaking down barriers between individual teams, tools, and processes.
- ▶ Establishing consistent governance of processes, products, and technologies.
- ▶ Offering clear interfaces to provide and consume resources as part of automation.
- ▶ Providing clear means to implement new processes and extend automation.

A connective fabric for high-impact automation

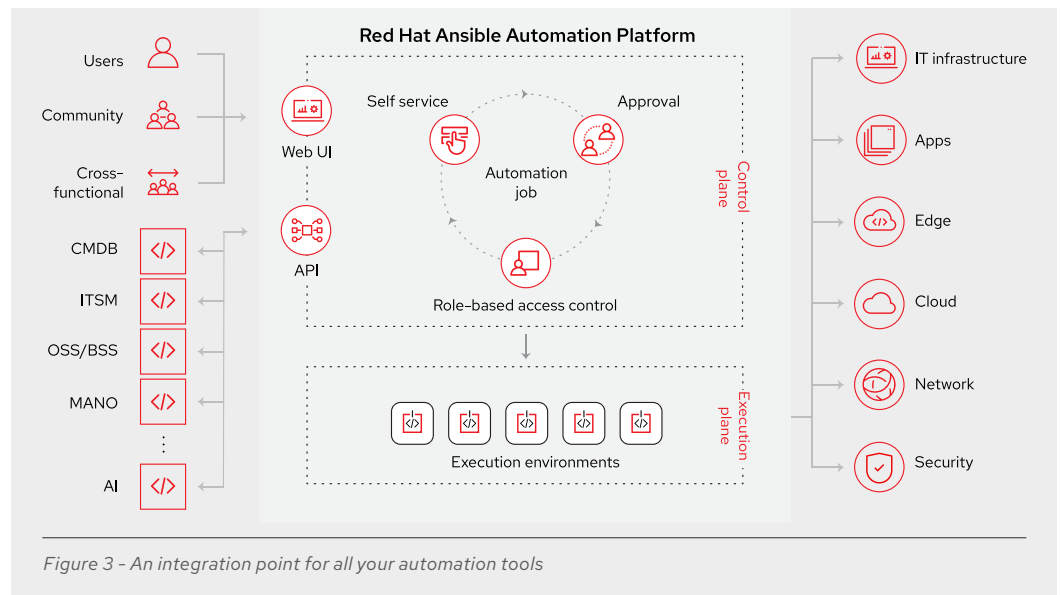


Figure 3 - An integration point for all your automation tools

In addition to automating manual processes, Ansible Automation Platform can integrate with existing automation tools and manual processes to provide service providers with a unified, cross-domain tool to implement complex process flows (figure 3).

Ansible Automation Platform can be accessed by individual users, a community, and cross-functional teams. The web-based GUI makes it easy for people and teams to collaborate and work with the platform. Different departments can more easily work together to create automated workflows across organizations without the risk of sprawl and variance.

The platform also supports an extensive set of application programming interfaces (API) that allow other tools and systems to integrate automated workflows with the platform—like configuration management databases (CMDB), IT service management systems (ITSM), operation and business support systems, artificial intelligence (AI) capabilities, and more. In addition, the platform contains a self-service portal with precreated automation content that can be triggered by automation requests from users and systems.

An approval process ensures that only automation requests from the appropriate users or systems, for the appropriate level of automation under the appropriate conditions, are granted. Users can manage inventory, launch and schedule workflows, track changes, and integrate into reporting, all from a centralized user interface and RESTful API.

More efficient integration, deployment, and usage

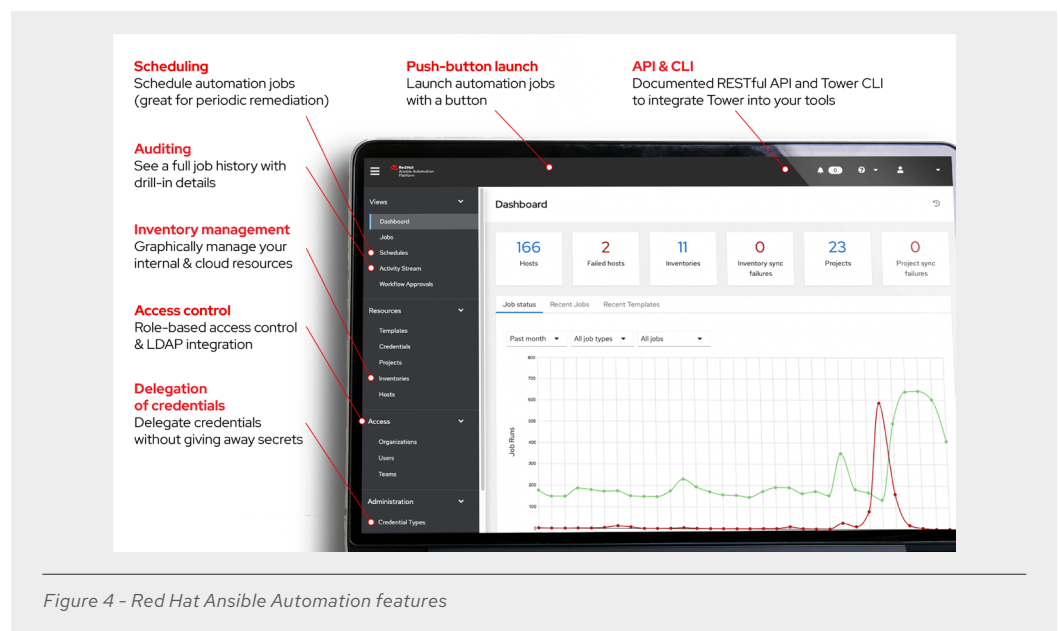


Figure 4 - Red Hat Ansible Automation features

Ansible Automation Platform’s minimal learning curve for administrators, developers, and IT managers makes it a more efficient way to adopt across the entire organization—from networks, servers, security, and compliance to cloud environments, infrastructure, DevOps, and continuous integration and continuous delivery (CI/CD) (figure 4). It installs within minutes and is agentless, which means you don’t have to make changes to your servers or network equipment.

With other automation approaches, users typically have to combine many different tools to cover the basics of managing IT operating systems and software configurations. Ansible Automation Platform integrates with and augments other tools without disturbing existing infrastructure. The common language used for IT infrastructure bridges the gap between separate organizations, accelerates and standardizes requests between organizations, and reduces friction between teams.

Simplifies automation with playbooks and modules

Playbooks are Ansible Automation Platform’s configuration, deployment, and orchestration language. Playbooks are written in YAML (human-readable data-serialization language), with minimal syntax, to provide simplistic descriptions of configurations and processes. Ansible Automation Platform playbooks include a series of plays that define automation across a set of hosts, known as the inventory. Each play consists of multiple tasks that can target one, many, or all the hosts in the inventory. Each task is a call to a module, which is a piece of Ansible Automation Platform code that performs a specific function.

Ansible Automation Platform already includes thousands of modules in the module index, ranging from tasks for host-operating systems, like Red Hat Enterprise Linux® and Microsoft Windows, to tasks for maintaining infrastructure on every major cloud provider. You can also write your own modules as needed to perform other required tasks, including controlling system resources and executing system commands.

Multivendor integration out of the box

Ansible Automation Platform integrates with numerous devices across multivendor routing (router configuration), switching, software-defined networking (SDN), datacenter, and security platforms. Figure 5 lists examples of Ansible Automation Platform integrations.

CLOUD	VIRT & CONTAINER	WINDOWS	NETWORK	DEVOPS	MONITORING
AWS	Docker	ACLs	Arista	Atlassian	Airbrake
Azure	OpenStack®	Configs	A10	Bamboo	BigPanda
Digital Ocean	OpenShift	Domains	Bigswitch	GitHub	Datadog
Google	Red Hat	Files	Cisco	Hipchat	Dynatrace
OpenStack®	Virtualization	IIS	Cumulus	Jenkins	LogicMonitor
Rackspace	VMware	Packages	Dell	Jira	Nagios
+ more	+ more	Regedits	F5	Subversion	New Relic
		Shares	Juniper	Slack	PaperDuty
OPERATING SYSTEMS	STORAGE	Services	OpenSwitch	Vagrant	Sensu
Red Hat	Infinidat	Users	Palo Alto	+ more	StackDriver
Enterprise Linux	NetApp	+ more	+ more		Zabbix
UNIX	Red Hat Storage				+ more
Windows	+ more				
+ more					

Figure 5 - Red Hat Ansible Automation Platform automates the technologies you use

Benefits of using Ansible Automation Platform for service providers

Service provider-grade automation

Red Hat provides a fully featured, production-grade platform with a dependable release cadence, documentation, training, and committed life cycle. Red Hat gives you instant access to a partner ecosystem of 5,000+ certified hardware vendors, 4,500+ certified software vendors, and 140+ certified cloud providers to ensure the platform works in a wide variety of environments.

Ansible Automation Platform is aligned with the global community behind the Ansible project, with added foundational capabilities and assurance from Red Hat that help your business comfortably adopt organization-wide automation at any scale. Red Hat provides extensive hardening, testing, and support to meet production environment needs. Red Hat provides technical support and open source intellectual property assurances as part of the Ansible Automation Platform subscription. Training and professional services options are also available for Ansible Automation Platform subscribers.

Ansible Automation Platform is also supported by a rich ecosystem of technology partners that make it easier to integrate it into your IT, network, and edge environments, reducing the need to develop custom integrations.

Ansible Automation Platform capabilities go beyond the community versions of Ansible and other automation tools

Automation use cases

Implement network operations, manage network infrastructure as code, and support digital transformation

- ▶ SDN, network functions virtualization (NFV), and 5G
- ▶ Deployment of virtualized network functions (VNF) and cloud-native network functions (CNF) services
- ▶ Network migration and testing

Automate security events

- ▶ Validation and auditing for compliance on multivendor equipment
- ▶ Automated remediation and patching of system vulnerabilities

- ▶ **Automation hub.** The platform comes with a library of certified Content Collections from hardware and software partners, as well as Red Hat product teams. Service providers trust automation hub to simplify content identification and to quickly bootstrap automation projects. An additional capability called private automation hub gives your content creators a single source of truth to collaborate and publish their own automation content and streamline Ansible code within their own organizations in accordance with corporate and compliance policies.
- ▶ **Automation services catalog.** The service catalog extends automation in a controlled way to the various end users who need it— a collection of all the implemented automation content from across your organization and across roles. You can select and execute jobs from a central point regardless of location and level of complexity. By extending existing automation to developers, business users, and the help desk, you can foster an environment of self service while meeting compliance and governance directives. This can increase agility and play a crucial role in digital transformation and innovation initiatives.
- ▶ **Red Hat Insights for Red Hat Ansible Automation Platform.** The platform offers additional security and compliance benefits to meet the requirements of the highly regulated telco industry. 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 service providers confirm compliance.
- ▶ **Content life cycle management.** With the Ansible Automation Platform, certified content is curated, supported, and tested by Red Hat and its ecosystem partners. This helps you launch new automation projects and maintain and use existing projects more efficiently with less effort. When freed from managing the platform and curating content, teams have more time to focus on extending automation and drive business outcomes.

Automate cloud infrastructure

- ▶ Application deployment
- ▶ As-needed task execution for tasks that do not fit into workloads, like batch server rebooting

Automate cross-domain workflows

- ▶ ServiceNow
- ▶ Predict and prevent poor customer experience
- ▶ Predict churn and using proactive techniques to retain customers
- ▶ Prevent customer complaints
- ▶ Establish closed-loop service assurance to continuously improve service quality, and operations and maintenance (O&M) efficiency

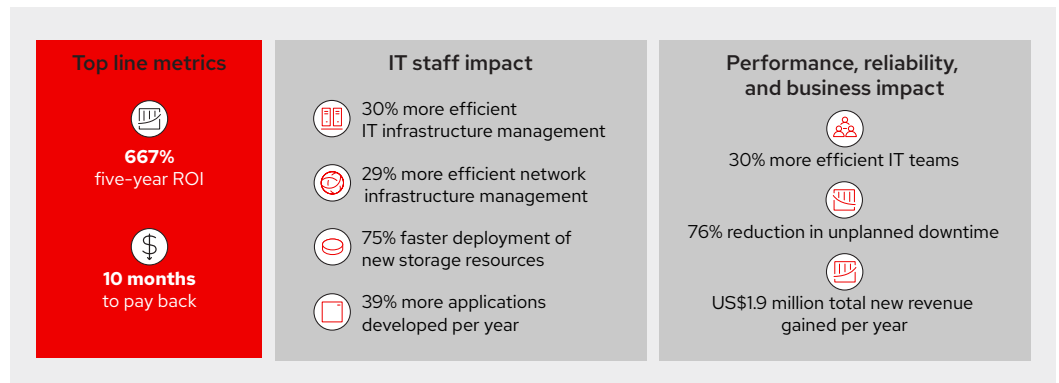
Ansible Automation Platform benefits

- ▶ Accelerated automation efforts across the organization
- ▶ Simplified network and IT operation
- ▶ Increased control and governance
- ▶ Accelerated innovation

▶ **Red Hat Automation Services Portfolio.** The Red Hat Automation Services Portfolio is a tiered set of services tailored to address your needs. It offers foundational, team-oriented capabilities to accelerate strategic, organization-wide automation and transformation. Red Hat automation consultants bring real-world experience to improve your infrastructure and application workflows, security and compliance, and CI/CD and DevOps practices. They help you employ an automation-first approach that addresses practical and long-term value across the business—from how your servers are provisioned, to providing network services, to the transformative best practices it can support.

Business value of Ansible Automation Platform

A recent study by IDC found organizations achieved significant process efficiencies, faster cycle times, and operational benefits across operations, network, storage, architecture, and security teams with Ansible Automation Platform. These improvements significantly contributed to cost reduction and containment, improved team collaboration, and implementation of more consistent security measures. They also increased DevOps agility and execution, alignment of automation across teams for faster decision making, improved control, and service transparency.²



Summary

A holistic approach to automation is critical for success in the digital world, especially as customer demand, and network and IT complexity grow. Ansible Automation Platform provides network and infrastructure automation at scale to decrease risk through consistent and compliant configuration deployment and environment management.

The platform allows automation teams to work across systems, departments, and domains to automate end-to-end processes. It goes beyond a collection of disconnected automation tools, providing a platform to automate, manage, and scale operations while maintaining the stringent levels of security, compliance, and reliability service providers require.

² *The Business Value of Red Hat Ansible Automation Platform*, IDC Research, Inc., October 2021.

Ansible Automation Platform is also hardened and rigorously tested by Red Hat engineers and their technology partners. In addition to Ansible Automation Platform, the Red Hat portfolio offers end-to-end support, from Linux administration, to containers and cloud environments, to analytics and dozens of vendor integrations (including AWS, Cisco, Juniper, and VMware), and a full suite of automation consulting services encompassing all your IT and networking needs. With an Ansible Automation Platform subscription, you can focus your resources on innovation and let Ansible Automation Platform handle your business-critical automation.

Start your Ansible Automation Platform [trial](#) today at no cost.



About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

f facebook.com/redhatinc
t @RedHat
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

redhat.com
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