



Ansible

for beginners

PRESIDIO



Easy Automation with Presidio and Red Hat Ansible

In a world of unrelenting change and increasing complexity, automation is a bright spot. It saves us time and money, and helps us do things better and faster. It increases quality and improves the customer experience. It also changes employees' experience, replacing repetitive tasks with more interesting work. What could be better than that?

Surprisingly, as recently as 2019, only 18% of organizations considered themselves to be extremely effective at employing automation in software development and maintenance.¹ That may be changing, though. According to Gartner, one of the top strategic technology trends for 2022 includes the recognition of a need for better, more widespread automation, driven by an increased focus on growth, digitalization and operational excellence.²

If you don't have an automation tool or are unhappy with the ones you have, you may want to consider Red Hat Ansible.





Why Red Hat Ansible?

First of all, Red Hat Ansible is a **one-stop shop** for automation and orchestration across the board. It can automate and orchestrate anything on and between devices.

Secondly, it is the only automation tool that has such a **breadth of capabilities**, crossing many boundaries.

It is also **diverse and flexible** so you can design around your particular use case, regardless of whether you are working on servers or the network, for example. It is pretty much the same at a high level; it is just calling on different modules. It is a tool that everyone in the organization who needs to automate tasks at varying complexities can use, regardless of their use case. In fact, it can be used across the organization, instead of different groups having their own vendor-proprietary tools. While these alternate tools perform well within their developed use cases, they often do not scale outside of those use cases, if at all.

Additionally, Red Hat Ansible is **easy to use**. It is a great first step into the world of automation for newbies because it's much easier than writing everything yourself. It handles all the little details for you. It uses the same code and the same language no matter what you're automating, so it is very streamlined.

It all sounds great, right? But there's something else, something even better.

It's **free**.

Yes, you heard that right. The only time you would have to pay for it is if you run the Ansible automation platform, and even then you only pay for the number of devices you want to run on it.

See? All goodness with no pain.

5 Benefits of Red Hat Ansible

- 1 It allows you to automate monotonous tasks**
so you can spend your time on more valuable, interesting and enjoyable activities.
- 2 It drives consistency of configurations**
which simplifies work in the future and removes the risk and cost of human error during repetitive tasks.
- 3 It allows technical engineer teams to communicate within the same code structure/language**
by using a singular tool across all the teams completing development work.
- 4 It increases the speed of deployment**
Spending the time to build upfront saves significant time in the long run.
- 5 It forces self-documentation**
as you have to identify and document the steps you are automating, so there is a built-in record.



5 Use Cases



Patching

Patching is a perfect use case for Ansible. It is also one of the most common. Automating patching can have a huge impact in terms of saving time, eliminating repetitive tasks, and the potential for human error causing security risk. Whether you are utilizing built-in operating system patching capabilities or using alternate patching technologies, Ansible makes complex patching processes much simpler.



Security & Compliance

Your organization's security posture is weakened when security policy is not applied consistently across all devices. Ansible allows for the security standards for a specific device type (router, load balancer, server, etc.) and ensures that it is applied across the organization. Most Ansible functionalities are idempotent, which means executing the same security standards on devices that are already configured will result in no change. Inversely, if that same execution is run against a device that is not running the standard security configuration, it will update the configuration to the known good state of security compliance in your code. This gives the security team comfort that they can launch the playbook on a regular basis without worry that changes will be made to compliant devices, as only non-compliant devices will be remedied. It also helps meet security and audit compliance requirements by helping many security engineers know when configurations were updated, and more importantly, when they were not.



Network Automation

A large number of networks today are primarily managed via the command line on individual devices. When you have hundreds or thousands of network devices that have been installed at different times by different people, the occurrence of configuration errors, especially minor errors, is almost guaranteed. Eventually these errors will be discovered during an outage or other critical situation when they contribute to additional difficulties while troubleshooting. Ansible allows organizations to move toward an Infrastructure as Code (IaC) approach, where the required configuration is defined in the playbooks and Ansible is responsible for enforcing the application of the defined standards to the network devices it manages. Not only does this approach guarantee consistency across the network, but also provides a single authoritative location where all networking standards will be defined.



CI/CD DevOps Space

Although this use case is less common, it is ramping up a lot more lately. Ansible tends to be used more for continuous deployment, but it does have some integrations and native capabilities to take on continuous integration as well. The Ansible Automation Platform also comes with built-in webhook integrations when using GitHub or GitLab for your source control repositories. Not using GitHub or GitLab? No problem. The Ansible Automation Platform also comes with an extremely in-depth API functionality that allows you to automate your automation tool (Ansible) as well.



Orchestration

Some organizations need to onboard numerous customers or applications to the cloud, and they follow the same steps every time. When onboarding applications to the cloud, for example, you may need to make some AWS changes, make some Palo Alto firewall changes and some routing changes. You can define all of those changes, type in a few variables and click a button, and it's all done exactly the same each time, introducing consistency and removing the risk of human error. Ansible can help you define the steps to this.



Tips for Successful Automation with Red Hat Ansible

Start small.

Get familiar with it, then expand from there. This allows you to feel progress as you grow, build momentum, develop credibility, and show value.

Begin with things that are repetitive and monotonous.

Start by automating tasks that are simple and repetitive before considering more complicated processes. Tasks that require human decisions or judgements will be much more complicated to implement as code, and the time required to automate such tasks may exceed the time you will save by using automation.

Focus on one bite (solving a single pain point) rather than the entire pie.

For example, if you are not having trouble with a particular process, don't try to solve it right away. Go for quick hits and big successes. Also, if you only have trouble with a particular part of the process, you can automate just that part to save yourself time, instead of automating the entire process.

Use Ansible how it makes sense for you

There is no one best way.

Open Source Execution Tips

The Red Hat Ansible Open Community tracks a list of execution tips.³ Some are small but have a big impact. Check back every now and then to see what's new. Here are 5 good ones:

- 1 Keep it simple.**

Only use advanced features when necessary. If a simpler solution is available, opt for that instead.
- 2 Use whitespace, i.e. a blank line before or after each block or task.**

This makes it easier to scan.
- 3 Name each task to describe what it does and why.**

Ansible shows you the name of each task it runs, so you will save yourself or others time if you name them with relevant information.
- 4 Use comments (any line starting with a #) to add an explanation wherever needed.**

Once again, this basic explanation will save you or others time in the future.
- 5 Update in batches**

Use the "serial" keyword to control how many machines you update at once in the batch.





How to Get Started

Getting started on Ansible could not be easier. Just keep in mind these 4 simple considerations:

Make sure you have a Linux-based system on which to install Ansible. When installing Ansible, be sure you have either a Linux-based system, or when testing on a Windows-based operating system, Docker images or WSL will suffice.

Follow the widely available, simple installation process. Both official and unofficial documentation exist for installing Ansible, including resources on Red Hat's site that will guide you through the installation and integration process. These guidelines are clear, simple and easy.

Just dive in. It's free; what's there to lose? Just start, play around and learn.

Play around with it in a test environment. Make sure you're not playing around in a production environment.



To learn more, visit presidio.com/partners/red-hat/

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Jamie Caesar is a seasoned network architect with 25 years of experience and a thorough knowledge of both cloud networking and data center networking products. With his expertise in automation and programmability, he helps clients design and implement enterprise class networks that can easily scale and survive failures with minimal or no disruption.

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Adam Hughes provides expert guidance to help enterprise clients select fast, simple, and efficient solutions. He has set up, maintained, and adjusted various infrastructures and technologies to meet their needs, with a heavy focus on automation and integration with tools. He also focuses heavily on reusability with standardization to ensure clients can create, re-create, modify and/or duplicate their environments as needed. He has implemented the Ansible Automation Platform in environments ranging from a few servers, scaling to hundreds of thousands of assets with quick and efficient runtime executions.

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About Presidio & Red Hat

PRESIDIO + RED HAT = APPLICATION MODERNIZATION STRATEGISTS

Presidio and Red Hat share a vision of DevOps as being more than the sum of its parts. It is the interpretation of technology, practices and principles that help IT people focus on achieving business challenges – not just the tools we use to do so. Fortunately, along with the vision, Red Hat is also a leading open-source technology provider that makes open-source software safe and responsible to use in the enterprise. From operating systems to hybrid cloud, to automation and management tools, to container-based platforms, the Red Hat portfolio of technology fits Presidio app modernization strategy like a glove. Presidio uses Red Hat platforms and development tools to provide agility for our clients in a climate of accelerating business demands.

Red Hat OpenShift is a go-to Kubernetes platform for Presidio, allowing us to develop apps that reach the market swiftly. With Ansible, we can automate the deployment and orchestration of those apps to allow for end-to-end solutions and pave the way for our clients to leverage modern practices like continuous integration and continuous delivery (CI/CD).

ABOUT PRESIDIO

We are a Global Digital Services and Solutions Provider delivering customers the secure cloud environments that form the backbone of digital transformation. We guide you from initial assessments, strategy and consulting—to implementation and deployment—to managed services that run IT for you, topped off with a suite of flexible financing and consumption options to simplify procurement. Our services experts are thinkers and doers focused on accelerating business outcomes for customers in all industries.

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¹ Harvey Nash / KPMG CIO Survey, 2019

² Gartner Top Technology Trends, 2022

³ [Tips and tricks - Ansible Documentation](#)