# Simplifying the Network with Ansible & Cumulus Linux

## Ansible

Ansible is a radically simple and powerful IT orchestration engine that automates configuration management, application deployment and many other IT needs. It runs in an agentless manner using SSH that fits into your existing security profiles and uses a simple language to build Ansible playbooks that allow your automation to be described in a way that resembles plain English. Ansible is delivered with "batteries included," with over 450 modules for managing everything from system-level packages to multiple cloud providers, and a public repository of thousands of community- and vendor-contributed roles to help jumpstart automation efforts.

Ansible Tower is the best way to run Ansible in your organization. The Web-based UI enables one-click execution of jobs. With Tower, enterprise organizations gain control over how Ansible is run in their environments. They can fully audit each job easily as all the job run details are in one place — user, playbook, variables, systems targeted, and individual system results for each task. Tower links into LDAP or Active Directory, and can delegate access to non-privileged users in a manner that does not expose cloud or machine credentials needed for successful automation. Furthermore, everything in Tower is available via a RESTful API so that it can be integrated with other tools in your infrastructure.
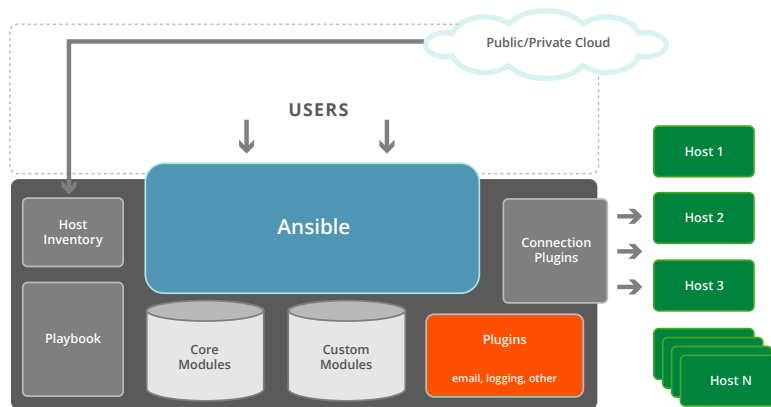


## Cumulus Linux

Cumulus Linux is the first native Linux network operating system (NOS) for industry-standard bare metal networking switches. Cumulus Linux is a Debian-based distribution and offers the full Linux experience on networking hardware. Cumulus Networks uses existing Linux networking packages and capabilities, addresses the gaps by adding additional innovation that provides modern tooling and functionality for data center networking, and then contributes these packages and capabilities back to the upstream community. Cumulus Linux supports x86, PowerPC, and ARM CPU architectures running Broadcom and Mellanox chipsets, so you can accelerate robust networking functions at wire rate on a variety of hardware platforms. Cumulus Networks also certifies the Cumulus Linux operating system for products listed publicly on the Cumulus Hardware Compatibility List (HCL).
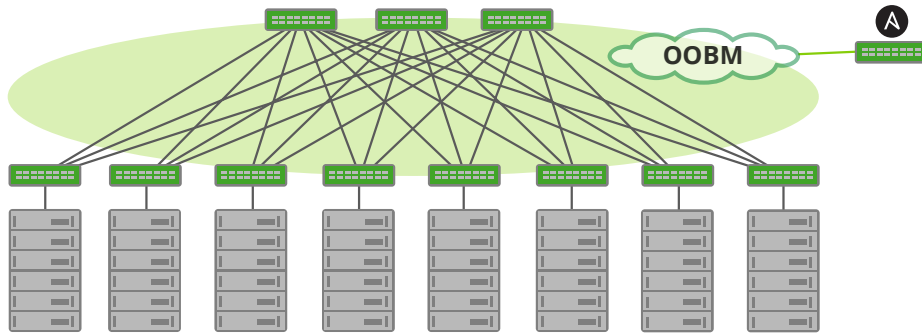
Existing open source and commercial Linux applications now run natively on industry-standard bare metal switches, and new applications can be developed and integrated rapidly, on par with agile development and using standard DevOps tools. By providing a native Linux interface for IT automation of the network, organizations can integrate networking with DevOps teams (AKA *NetDevOps*) to seamlessly deliver full-stack automation even within traditionally siloed organizations.

## Integrated Solution

Customers have long seen the benefits of automation for their compute workloads and applications. With automation and orchestration via Ansible and Ansible Tower combined with zero touch provisioning from Cumulus Linux, you can quickly provision and configure switches, reliably automate repetitive tasks, enable continuous deployment of critical applications, and scale out your infrastructure from tens to thousands of switches or more.

- **Only Cumulus Linux exposes IT automation as native Linux, expanding the capabilities of what can be accomplished together with compute resources using Ansible.**

- **The Cumulus Networks full-featured Linux NOS can be wholly configured with the same Ansible playbooks organizations are using on other systems, removing the need for separate network configuration toolsets and processes.**

- **Ansible Tower brings this together into an easy-to-use UI with an added RESTful API, bringing the combined power of Ansible and Cumulus Linux to the entire admin team via one consistent interface.**

- **Cumulus Linux integrates seamlessly with Ansible and Ansible Tower to deliver significant automation gains to the networking world.**

Ansible Tower centralizes and controls automation, enabling customers to easily track and manage their entire infrastructure. The integration of Ansible Tower and Cumulus Linux brings the benefits and cost savings of automation and orchestration to their networking infrastructure, allowing for the scaling and management of the data center as a whole.

## Solution Benefits

The combined Ansible Tower and Cumulus Linux solution provides:

- Comprehensive automation for systems, networks, and applications, which speeds deployments and eliminates errors, increasing reliability

- An environment where Ansible treats Cumulus Linux-powered hardware as just another server

- An easy management framework that doesn't require learning a programming language

- A single point of management for both compute and network infrastructures

- Powerful support for role-based and team-based access to management

## Challenges Addressed

Compute and networking resources are standardized, and new deployments are able to be provisioned, configured, and deployed quickly at low cost. Networking and compute teams have historically required disparate teams, hardware, and provisioning through incompatible and non-standard APIs.  As data centers have grown, the lack of automation and API standardization has made scaling and automating data center networks a critical growth and modernization bottleneck. Manual intervention is an option for planned expansions or growing an existing network, but enabling new applications in a matter of minutes to hours can only be done with automation; otherwise doing this quickly would require multi-tiered planning and operational execution based on proprietary changes needed for siloed hardware and transactions.

## Conclusion

Using Ansible with Ansible Tower, you can easily automate repetitive tasks, quickly deploy critical applications, proactively manage change, and scale from tens to 1000s of servers and switches — all on-premise or in the cloud.

Using Cumulus Linux as a platform enables you to operate a switch as if it were a Linux server, so it's a developer's paradise: full of customizations for enhancing your specific needs beyond a typical API handoff. And because Cumulus Linux *is* Linux, its community-driven nature provides you with feature velocity and faster bug fixes since you're not beholden to a vendor's roadmap. The ability to manage an underlying growing network is critical to meeting the needs of the application demands and the business SLAs desired in today's virtualized world.

Cumulus Linux enables a consistent experience between the network and compute while leveraging existing investment of orchestration tools and driving the next wave of scale, collaboration, and innovation in networking.

## Get Started!

- Try Cumulus Linux with Cumulus VX: cumulusnetworks.com/cumulus-vx/

- Download the latest version of Cumulus Linux: cumulusnetworks.com/downloads/

- Download Ansible Tower and start your 30 day trial: ansible.com/tower/

- Cumulus Linux Hardware Compatibility List (HCL): cumulusnetworks.com/hcl

### About Cumulus Networks®

Cumulus Networks helps customers realize cost-effective, high capacity networking for modern data centers. Linux transformed the economics and innovation for data center compute, and Cumulus Linux is doing the same for the network. It radically reduces the costs and complexities of operating modern data center networks for businesses of all sizes. Cumulus Networks has received venture funding from Andreessen Horowitz, Battery Ventures, Sequoia Capital, Peter Wagner and four of the original VMware founders.
For more information visit cumulusnetworks.com, or follow @cumulusnetworks.

### About Ansible

Ansible is a powerful automation engine that makes systems and applications simple to deploy. No custom scripting or custom code. No agents.  All using an automation language that's easy for anyone to understand and learn.  Just get in, get it done, and make some time for other strategic projects. For more information visit ansible.com.