Solution Brief

DevOps Automation with Ansible

Infrastructure as code (IaC) is a method of managing and provisioning infrastructure resources and configurations through code, rather than an otherwise manual process. The adoption of IaC has revolutionized the way IT organizations approach infrastructure management, providing numerous benefits in terms of efficiency, reliability, and agility. Dell Technologies offers integrations with automation tools to enable IT operations and DevOps teams to consume and manage their IT infrastructure and software development operations across any multi-cloud environment. By implementing these automation tools with Dell's product portfolio, customers can operate at scale, create consistency, and accelerate innovation resulting in high returns on investments and accelerating business outcomes.

BENEFITS

Operate at scale
➢ Onboard automation-ready infrastructures
➢ Establish consistency
➢ Enhance security and compliance

Increase efficiency
➢ Standardize your toolset
➢ Automate apps and CI/CD lifecycle
➢ Implement self-service

Accelerate innovation
➢ Leverage community & partner repositories
➢ Adopt a product mindset
➢ Increase agile releases and workload placement

Red Hat's Ansible in addition to HashiCorp Terraform[1], are two automation platforms that have been adopted (currently) at large in the IT infrastructure automation space. Common benefits of these independent solutions are reduced IT costs, deployment speed, error reduction, reduced risks, and increased business agility. For example, these platforms allow organizations to treat their infrastructure as version-controlled, repeatable, and testable resources, making detecting and resolving issues easier. By using code to manage infrastructure, organizations can also maintain a clear audit trail of changes, making it easier to identify the source of problems and take corrective actions. All these benefits enable seamless IT operations, continuously driving up application development cycles, and allowing the easier addressing of compliance across enterprises.

Ansible Modules from Dell enable DevOps personnel to configure and modify infrastructure components flexibly, simply, and agentless. Ansible modules do the actual work and what gets executed is in each "playbook" task. These are text-written files written in YAML (language) that is composed of one or more "plays" and each play can be comprised of one or more tasks being performed by a module. Once a configuration is applied, it provides repeatable targeted outcomes for the end user. Dell supports Ansible Modules across many of the product portfolios, including servers, storage, and networking.

Ansible Modules for Storage

Dell Ansible Modules for storage arrays enable IT Ops to rapidly provision storage infrastructure with accuracy and respond to the fast-paced needs of application developers. Supported arrays are PowerStore, PowerScale,

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[1] For Terraform-related content click here

PowerFlex, PowerMax, and Unity. The ability for application developers to access, provision, and deploy storage anywhere lessens their reliance on self-owned and maintained environments on-premises and in-cloud, whether bare metal or as well as in VMware environments.

Ansible Modules for Servers

Dell OpenManage Ansible modules are designed for IT Ops to be able to manage the configuration, deployment, and updates for PowerEdge Servers by leveraging the management automation capabilities built into Integrated Dell Remote Access Controller (iDRAC) and OpenManage Enterprise Modular (OMEM). These modules allow software developers to introduce the physical infrastructure provisioning into their software provisioning stack, integrate with existing data pipelines and manage their workflows using version-controlled playbooks, server configuration profiles and templates.
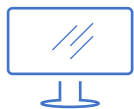
Ansible Modules for Networking

Dell Networking solutions incorporate Ansible modules for Smartfabric and Dell PowerSwitch devices[2] to design, provision, run and manage networks. IT Ops will be able to deploy new devices, change network configurations, and audit running network device configurations known as baselines.

> All the above modules families have playbooks and functions are too lengthy to list here; for more detailed automation and orchestration capabilities go to either of the following repositories:
>
> **Dell Ansible Modules on GitHub | Red Hat Ansible Galaxy**

Leverage Dell's proven expertise

Dell has cultivated an exceptional consultancy organization with years of working with customers, specifically their DevOps and IT Operations teams to gain alignment with infrastructure-as-code plans while using "value stream mapping" to create their automation strategy. Through ProConsult Advisory Services for Cloud Native Apps and DevOps Services, there are two models of offers that can greatly accelerate business outcomes through Infrastructure-as-Code Design and Implementation and Automation Services. The Automation Services team(s) will deliver customer-managed, on-premises solutions and assist in the implementation of the automation strategy itself. Between Dell Technologies' agile engineering release cadence of tools and expert consultants, customers can find their golden path to seamless end-to-end DevOps excellence!

Learn more about Dell DevOps solutions

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[2] Supported on OS6, OS9 and OS10

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