DELL Technologies

Asset label

Infrastructure Automation with Terraform Providers

Benefits

Operate at scale

- Onboard automation-ready endpoints
- Establish application consistency and reduce risk
- Move workloads from ground to cloud

Increase efficiency

- Standardize your toolset
- Automate apps and CI|CD lifecycle
- Implement self-service

Accelerate business outcomes

- Leverage community and partner repositories
- Adopt product mindsets
- Increase agile release cycles

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 Dell infrastructure for IT and software development operations across any multi-cloud environment. By implementing these integration tools with Dell's product portfolio, customers can operate at scale, create consistency, increase productivity, and accelerate innovation resulting in high returns on investments and business outcomes.

Hashicorp's Terraform and Red Hat's Ansible[1] are two automation platforms that have been adopted with the most success in the IT infrastructure automation space. Common benefits of these independent solutions are reduced costs, deployment speed, error reduction, reduced risks, and increased business agility. For example, these platforms allow organizations to treat their infrastructure as a version-controlled, repeatable, and testable resource, 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 easier addressing compliance at a large scale.

Hashicorp's Terraform enables DevOps personnel to build, configure and modify infrastructure configuration using human-readable configuration files written in Hashicorp Configuration Language (HCL) securely and efficiently. Information required to configure various infrastructure components (called resources) is provided within pre-built providers so that the end user can easily discover the infrastructure properties that can be used to affect configuration changes. The configuration files can be versioned, reused, and shared enabling more consistent workflows for managing the infrastructure. These configurations, when executed change the state of the infrastructure to bring it to the desired state. The idempotency feature of Terraform makes sure only the necessary changes are made to the infrastructure to reach the desired state even when the same configuration is run multiple times, thereby avoiding unwanted drift of infrastructure state.

Dell supports Terraform providers for storage and servers today. These custom providers provide the resources and data sources that can be consumed to write a Terraform plan using a declarative syntax to provision and deploy arrays. This enables DevOps engineers the ability to manage their infrastructure tasks in repeatable, predictable, and scalable ways. In addition, the ability to modify and execute new plans without disruption to the environment.

[1] For more Ansible related content click here

Terraform Provider for APEX
This provider enables support for Dell PowerFlex clusters from AWS marketplace and/or Dell APEX block storage for AWS, with provisioning of storage volumes and additionally, data mobility capabilities between them. Decommissioning of clusters from AWS and the deletion of storage volumes can also be added to the configurations.

Terraform Providers for PowerStore
PowerStore has a flexible, software-driven architecture that gives the speed and scale which automation tools can benefit from. Having always-on and available storage is the first step to uninterrupted success for provisioning. Terraform providers for PowerStore manage volumes, storage containers, snapshot rules and protection policies.

Terraform Providers for PowerFlex

PowerFlex is a software-defined infrastructure that enables customers the ability to modernize IT delivery with broad OS, hypervisor, platform support and automation. Already purposed with out-of-the-box toolsets such as PowerFlex REST API, Dell Container Storage Modules (CSM), CSI drivers and PowerFlex Ansible modules, Terraform becomes the addition to round out end to end automation needs for DevOps. Terraform providers for PowerFlex manage volumes,storage pools, storage data clients (SDC), software- defined storage (SDS), snapshots and snapshot policies. In addition to on-premises automation, Terraform modules are available for configuration and deployment using APEX Block for AWS and Azure with PowerFlex.

Terraform Provider for PowerScale
PowerScale powers performance-intensive use cases File and unstructured data in general. Terraform provider will enable end users to write plans to provision entities like access zone, active directory, file systems and more.

Terraform Providers for Open Manage Enterprise

Open Manage Enterprise is a systems management and monitoring application that provides comprehensive views of Dell servers. OpenManage Enterprise Terraform Provider allows for the resource management of PowerEdge servers that are using OpenManage Enterprise (OME). These providers allow users to run bare-metal server provisioning and deployment across fleets of servers using templates from “golden” server configuration.

Terraform Providers for RedFish
Users of RedFish on PowerEdge will be able to additionally provision bios, iDRAC attributes, updates, volumes, and more.

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 premisessolutions and assist in implementation of the automation strategy itself.

Find all of your Terraform providers and documentation:

Terraform Documentation https://dell.github.io/terraform-docs

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