

FlexPod Hybrid Cloud for Google Cloud Platform with Intersight and Cloud Volumes ONTAP

Disaster recovery for the modern hybrid cloud

Power outages, network failures, and uninvited guests can happen at any time. No matter how prepared your environment is, business continuity is constantly put to the test. NetApp®, Cisco, and Google have come together to provide a Technical Report that has been tested, validated, and supported to minimize downtime if a critical event occurs. By utilizing ONTAP® storage, NetApp Cloud Volumes ONTAP for Google Cloud Platform, Intersight and Terraform, the solution enables simple, secure, cost-effective disaster recovery with automated failover and failback wherever your ONTAP data might lie. The solution grants the ability

to quickly provision and automate backups and Disaster Recovery (DR) to NetApp Cloud Volumes ONTAP for Google Cloud Platform, while reducing the total cost of ownership.

There are several advantages to our approach to hybrid cloud disaster recovery. Cisco Intersight provides a single pane of glass into your FlexPod environment and simplifies infrastructure and application lifecycle management. Cisco Intersight Service for HashiCorp Terraform enables the ability for day-to-day operations (such as replicating to Cloud Volumes ONTAP) to simply become another automated framework in

your continuous integration and continuous deployment (CI/CD) pipeline. Cloud Volumes ONTAP allows for granular, customizable protection in terms of per volume settings, synchronization scheduling, and virtual machine or application protection. If a disaster occurs, failover and failback can be quickly put in place and synchronized back once recovery is complete. Finally, Cloud Volumes ONTAP optimizes cloud storage consumption through data compression, deduplication, and thin provisioning, which improves both TCO and speed of transfers.

TR-4939 incorporates the Cloud Volumes ONTAP high availability configuration for Google Cloud. This architectural design meets the highest service level agreement, and guarantees a recovery point objective (RPO) of 0 and a recovery time objective (RTO) of less than 60 seconds. This is achieved through synchronously mirrored volumes, providing a continuation of services to applications during the complete loss of an availability zone. With RPO and RTO this low, failover is seamless, while ensuring strict compliance and data integrity requirements.

TR-4939 also covers how to configure Terraform for automation and orchestration by utilizing a template provide on GitHub. By utilizing Intersight Cloud Orchestrator (ICO), the guide delves into how to create a workflow that automates volumes creation and mapping, as well as executing a Terraform runbook all from the ICO Designer page. Cisco has also provided a predefined workflow available on GitHub for added convenience. Once the workflow is in place, volume creation and replication are as simple as a few mouse clicks.

To read more about this reference architecture, view TR-4939 in its entirety [here](#).

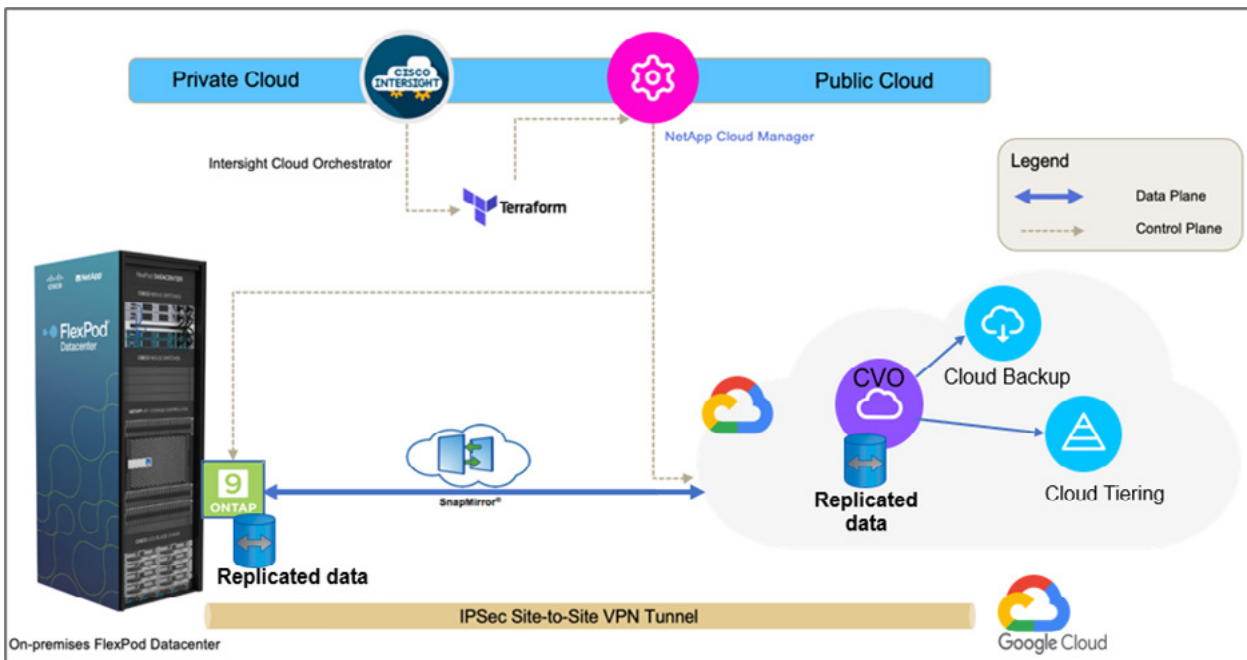


Figure 1. Solution topology of the on-premises FlexPod environment, NetApp Cloud Volumes ONTAP running on Google Cloud, Cisco Intersight, and NetApp Cloud Manager.

©2022 NetApp, Inc. and Cisco. All rights reserved. NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. Other company and product names may be trademarks of their respective owners. SB-884-1022