

VMWARE vCLOUD AVAILABILITY FOR CLOUD-TO-CLOUD DR 1.5

Solutions Overview

Q. What is VMware vCloud® Availability for Cloud-to-Cloud DR™?

A. The vCloud Availability for Cloud-to-Cloud DR solution provides replication and failover capabilities for VMware vCloud Director® workloads between organization virtual data centers (VDCs) at both the virtual machine (VM) and vApp levels.

The service operates through a VMware Cloud Provider™, and each installation provides recovery for multiple VDC cloud environments.

Q. What capabilities does the solution provide?

- A.
- Self-service protection and failover workflows per VM and vApp
 - Single installation; appliance installation simplicity
 - The capability of each deployment to serve as both the source and the recovery vCloud Director instance (site); there are no dedicated source and destination sites
 - Symmetrical replication flow that can be started from either the source or the recovery vCloud Director site means the UI can be accessed from anywhere with correct context
 - Replication and recovery of vApps and VMs between vCloud Director sites
 - Maximum replicated VMs and retained snapshots as well as minimum recovery time objective (RPO) policy controls for providers to apply to one-to-many VDCs to help control storage costs and provide tiered services to customers
 - Secure tunneling through TCP proxy between sites
 - Integration with existing VMware vSphere® environments
 - Multitenant support native in vCloud Director
 - Built-in encryption or encryption and compression of replication traffic
 - Extensible orchestration using VMware vRealize® Orchestrator™ Plug-in for vCloud Availability Cloud-to-Cloud DR allows you to run complex workflows
 - Build your own failover plan by JSON import, or use existing out-of-the-box vRealize Orchestrator workflows
 - Support for VMware vCenter Server® versions 6.5 U1 and 6.0 U3, and vCloud Director versions 8.20.X, 9.0.X, and 9.1 (only 9.1 has the integrated vCloud Director UI; earlier will use a standalone version)

- The vRealize Operations™ plug-in provides monitoring services for tenants to view dashboards, reports, and metrics regarding their DR service status and history

Q. What disaster-recovery-as-a-service (DRaaS) use case does VMware vCloud Availability for vCloud Director support?

A. VMware vCloud Availability for Cloud-to-Cloud DR supports the symmetrical execution (from source or destination) of replication, failover, and failback of VDC VMs or vApps to a different organization VDC whether on the same vCloud Director or a different instance.

Pricing and Packaging

Q. For service providers: How is VMware vCloud Availability Cloud-to-Cloud DR packaged, and how may it be purchased?

A. vCloud Availability for Cloud-to-Cloud DR is available by subscription to service providers in the VMware Cloud Provider Program. Detailed information is available in the VMware Cloud Provider Program Guide at <https://www.vmware.com/partners/service-provider.html>

Q. I am a service provider and am not currently enrolled in the VMware vCloud Air™ Network program. Can I purchase this product directly from VMware?

A. You must be enrolled in the VMware Cloud Provider Program in order to purchase vCloud Availability Cloud-to-Cloud DR. To learn more about the VMware Cloud Provider Program, please visit <https://www.vmware.com/partners/service-provider.html>

Q. For enterprise customers: How is VMware vCloud Availability for vCloud Director packaged, and how may it be purchased?

A. Enterprise customers must consume this offering from a VMware Cloud Provider Partner who is offering this service in their vCloud Director clouds (your organization VDCs). All prices for these services will be quoted by the VMware Cloud Provider Partner. To find a VMware Cloud Provider Partner offering DRaaS, please use the assisted search at <https://cloud.vmware.com/providers/guided-search>

Migration Features

Q. What is the VM/vApp migration feature?

A. Virtual machines or vApps that are replicated from VDC to VDC can be failed over and then disconnected from the replication service. This provides a predictable way to synchronize and migrate VMs without disruption.

Q. How is failover (migration) performed?

A. To perform a migration, the target site must be protected (replicated) from your source site data. Once replicated, an optional resync (quiesce) can be initiated prior to failover (migration) to get real-time data migrated before failover to the destination site. This ensures that the latest changes of the source vApp/VM are present in the recovered instance.

- If you are migrating a vApp, it is important to manage the state of all VMs in the vApp for a stable state. This can be validated simply in the UI, and corrective actions can be taken.

Q. How are VMs initially replicated between clouds?

A. Once the workflow is configured to start VM or vApp replication, the VMware vCloud Availability vApp Replication Service/Manager™ ensures that delta information is sent from one VMware ESXi™ host to another ESXi host. Management and monitoring information for the replications is available from the vCloud Availability vApp Replication Service/Manager portal and APIs.

Q. What is a test failover?

A. Test failovers allow you to verify whether the source data is replicated correctly on the destination:

- You can test network connectivity and application (VM) behavior.
- Seed data is supported, as is sync prior to test failover.
- vApp can also be powered on to test.

Q. What actions can be taken by users?

A. By using the Actions pane in the DR Workloads page, you can perform the following vCloud Availability for Cloud-to-Cloud DR tasks:

- Failover workloads among/to destination sites
- Failback workloads among/from destination sites
- Failover reverse workloads to synchronize data between source and destination sites
- Test replication tasks and cleanup of test data
- Remove a vApp or a VM from the vCloud Availability for Cloud-to-Cloud DR managed vApp or VM set by confirming detach

Q. What functionality is available to monitor DR operations?

A. You can monitor the overall vCloud Availability for Cloud-to-Cloud DR status by using the VMware vCloud Availability Portal™ home page in vCloud Director or in the separate UI, and view the progress and status of finished and ongoing tasks by using the Replication Tasks tab.

Policy Control Features

Q. What policies can be used to control/limit functionality?

A. A cloud service provider can assign replication policies to local one-to-many VDC organizations:

- Flag indicating whether the org can be used as a replication source
- Flag indicating whether the org can be used as a replication destination
- Minimum RPO
- Maximum number of VM replications
- Maximum number of point-in-time instances per VM replication

vCloud Availability for Cloud-to-Cloud DR has a default policy, which cannot be deleted, but it can be modified:

- Allow outgoing replications = false
- Allow incoming replications = false
- Minimum RPO = 15 minutes
- Maximum instances = 24
- Maximum replications = 0

Policies that result in conflicts will need manual resolution, which the cloud provider can easily find and rectify using system filters. Beyond this, once a policy is applied, when the new workflow is executed, the system will validate and reject upon violation:

- The source org allows outgoing replications
- The destination org allows incoming replications
- The replication RPO
- The number of instances
- The total number of destination replications

Architectures

Q. What services are included in the installation? Do I need to configure vSphere Replication™ somehow?

A. This is where a lot of improvements have been made. The architecture of the solution uses a vCloud Availability Replicator™, a vCloud Availability Replication Manager™, and a vCloud Availability vApp Replication Service/Manager together to support replication, secure communication, and store the replicated data.

Each service provider can support recovery for multiple customer org VDC environments that can scale to handle increasing loads for each tenant and for multiple tenants.

All replication matters are dealt with within the vCloud Availability for Cloud-to-Cloud DR user interface (or API) and are simple workflow configuration-driven tasks for one-to-many VM and vApp.

Minimum Requirements

Q. What are the minimum requirements for vCloud Availability for Cloud-to-Cloud DR?

A. For system requirements and interoperability, see vCloud Availability for Cloud-to-Cloud DR documentation at <https://docs.vmware.com/en/VMware-vCloud-Availability-for-Cloud-to-Cloud-DR/index.html>

Service Deployment

Q. Does vCloud Availability for Cloud-to-Cloud DR require any agents to be deployed?

A. No, the solution is agentless and uses vSphere Replication inherent in vSphere.

Q. How is the product installed in the provider data center?

A. vCloud Availability for Cloud-to-Cloud DR can be deployed using the VMware OVF Tool. Alternatively, you can use the vSphere Web Client to install the vCloud Availability for Cloud-to-Cloud DR service; all vCloud Availability for Cloud-to-Cloud DR services are deployed via a single installation OVA package:

- Combined install – All-in-one deployment option for test/eval environments
- Manager node with vCloud Director support – Set configuration for compute and storage
- Varying sizes of replicator node based on your capacity needs:

Replicator node – Set configuration appliance of 2 vCPUs, 4GB RAM, and 10GB storage

Large replicator node – Set configuration appliance of 4 vCPUs, 6GB RAM, and 10GB storage

Tunnel node – Set configuration appliance of 2 vCPUs, 4GB RAM, and 10GB storage

Q. Why are there different versions of replicators?

A. Replication in terms of volume will impact the capacity and performance of the appliance. When each VM is compressed and encrypted, there is an overhead on CPU. While encryption is mandatory, compression can be optional, and both have tax on system resources.

Multiple replicators can be added to your DR environment to suit processing needs.

Q. What are the tested scale limits for a deployment?

- A. • 300 active protections for a single tenant
- 300 active protections using a single large vCloud Availability Replicator; for more information about the replicator types, see Deploy vCloud Availability for Cloud-to-Cloud DR Services by Using the vSphere Web Client at <https://docs.vmware.com/en/VMware-vCloud-Availability-for-Cloud-to-Cloud-DR/1.0/com.vmware.c2c.install.config.doc/GUID-9CAC4BE5-8357-4CDE-8558-00D13DA84CBC.html>
 - 20 tenants with active replications
 - 7 active vCloud Availability Replicator instances
 - Up to 2TB VMDK limit (tested)
 - 3,000 active protections across 100 tenants

Q. What are the tested concurrency limits for a deployment?

- A. • 60 concurrent protect, test failover, reverse protect, test fallback, and fallback operations
- 110 concurrent failover operations

Resources

Q. Where can I find out more about vCloud Availability for Cloud-to-Cloud DR?

- A. • For more information, visit: <https://www.vmware.com/products/vcloud-availability.html>
- Documentation: <https://docs.vmware.com/en/VMware-vCloud-Availability-for-Cloud-to-Cloud-DR/index.html>
 - Download: https://my.vmware.com/web/vmware/info/slug/datacenter_cloud_infrastructure/vmware_vcloud_availability_for_cloud_to_cloud_dr/1_0

