



VMware Cloud Director Availability 4.2

General Availability June 2021

Overview questions

Q. What has been announced?

A. VMware has announced General Availability of VMware Cloud Director Availability 4.2.

Q. What is VMware Cloud Director Availability?

A. VMware Cloud Director Availability is a powerful solution used by VMware Cloud Providers to offer simple, secure, and cost-effective Onboarding, Migration, and Disaster Recovery as a Service to or between multi-tenant VMware clouds.

Q: What are the core capabilities of VMware Cloud Director Availability?

A. Intuitive, Disaster Recovery as a service protection and wizard driven workflows to protect virtual machines (VM) or vApps. Replication and Recovery of VMs and vApps between VMware Cloud Director sites (cloud to Cloud) or on-premises to VMware Cloud Director and vice versa.

A. Single on-premise appliance installation for ease of deployment and simplicity for customers replicating to provider clouds. Supports a migration path and DR functionality from vSphere 6.5+ U3

A. The capability of each deployment to serve as both source and recovery instances (sites). There are no dedicated source and destination sites with symmetrical replication flow that can be started and managed from either the source or the recovery site means the UI can be accessed from anywhere with correct context.

A. Migration and Protection with maximum replicated VMs and retained replications (stored instances) as well as minimum 5min RPO Policy controls for providers to apply to one to many VDC or replications via SLA policies. This helps to control storage costs and provide tiered services to customers.

A. Cold or Warm Migration to provider VMware Cloud Director based Cloud from on-premises via vSphere plugin or via VMware Cloud Director Availability interface in provider cloud.

A Warm Migration from vSphere plugin or VMware Cloud Director provider cloud to VMware Cloud on AWS SDDC under Cloud Director service management

A Layer 2 stretch networking for simpler migrations (and/or Disaster Recovery) from on-premises to Provider VMware Cloud Director Org VDC cloud.

A. Secure tunneling through TCP proxy between sites with built-in encryption and optional compression availability. Cloud to Cloud replicant encryption is also supported using Cloud Director encrypted storage policies at the target.

A. Multi-tenant support native within the VMware Cloud Director hierarchy and in-context DRaaS providing administrative simple views and actions directly in VMware Cloud Director.

Q. What use cases does VMware Cloud Director Availability support?

A. On-Premises to Cloud migration (and vice versa*), On-Premises to Cloud DR (and vice versa), Cloud-to-Cloud DR, Cross version VMware Cloud Director migration.

*vice versa not available from/to Cloud Director org VDC on VMware Cloud on AWS

Q. What are the main new capabilities for VMware Cloud Director Availability 4.2?

A. Enhanced Migration connectivity

In 4.2 Cloud Director Availability now can manage L2 VPN configuration capability over secure IPSec. This configuration between on-premises client L2 VPN and centralized server L2 VPN can be connected securely over the public internet via IPSec. Previously doing this natively in NSX consisted of a lot of steps that required a fair amount of manual configuration and time. Now this L2 VPN setup can be achieved in the VMware Cloud Director 10.2.0 or above VMware Cloud Director Availability 4.2 management user interface in the cloud site and uses NSX-T Data Center 3.1 or above (necessary for stretching routed and isolated networks). It is wizard driven ensuring no mistakes can be made or parts of the process skipped or missed.

The on-premises client is the NSX-T Autonomous Edge and VMware Cloud Director Availability 4.2 takes care of all the keys and processes necessary to establish the VPN. There is some setup required for the Autonomous Edge that can be completed using the local VMware Cloud Director Availability

4.2 appliance interface, after which networks can be stretched to the cloud.

A: New Migration to Cloud Director service capability

With the native integrations with VMware Cloud Director and vCenter, VMware Cloud Director Availability tenants can easily perform migration and onboarding tasks from their on-premises vCenter environment to your provider VMware Cloud Director backed cloud. However, due to some design specifics of Cloud Director service hosted at VMC on AWS, pre 4.2 there was no option for migrating workloads from on-premises to Cloud Director service.

With VMware Cloud Director Availability 4.2, this scenario is now fully supported. It means you or your tenants, depending on the offered service, can follow the well-known existing flows for migrating workloads, now to Cloud Director service

A: New live incident recording

Now in VMware Cloud Director Availability 4.2 you can record a selectable area of your web browser screen and optionally, the microphone and the browser log directly by using VMware Cloud Director Availability. This can be very useful to track and show how an issue was created and can assist a provider provide the correct assistance to the customer.

Pricing and Packaging

Q. For cloud providers: How is VMware Cloud Director Availability packaged and how may it be purchased?

A. VMware Cloud Director Availability is available as a Pay-As-You-Go service to Service Providers in the VMware Cloud Provider Program. The service is metered monthly based on number of VMs protected, migrations are free. Detailed information is available in the VMware Cloud Provider Program Guide at <http://www.vmware.com/partners/service-provider.html>.

Q. I am a Cloud Provider and am not currently enrolled as a VMware Cloud Provider in the Partner Connect Program. Can I purchase this product directly from VMware?

A: You must be enrolled in the Partner Connect program as a VMware Cloud Provider in order to purchase VMware Cloud Director Availability. To learn more about the VMware Cloud

Provider Program, please visit

<http://www.vmware.com/partners/service-provider.html>.

Q. For Enterprise Customers: How is VMware Cloud Director Availability packaged and how may it be purchased?

A: Enterprise customers must consume this offering through a VMware Cloud Provider Partner that is offering this service in their VMware Cloud Director VMware clouds. 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 here: <https://cloud.vmware.com/providers/guided-search>.

Replication features

Q. What is the VM/vAPP migration feature?

A. VMware Cloud Director Availability allows end users to protect and migrate virtual machines and vApps from on-premises to VMware Cloud and between different VMware Cloud environments. End users can select an organization virtual data center (org VDC) as a destination and migrate virtual machines from source data center in a few simple steps including assigning destination networks. This provides for a predictable way to migrate workloads in a self-service manner. Migration in 4.2 also covers Cloud Director service VMware Cloud on AWS SDDC endpoints.

Q. Can you replicate to multiple destinations as the same time?

A. No, VMware Cloud Director Availability only supports replicating to one target at a time.

Q. How is failover (migration) performed?

A. To perform a migration a virtual machine or virtual app it must first be protected (replicated) between the source and target locations. Once replicated, an optional resync 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. Migration jobs additional conditioning to allow for

customization post failover of IP and other characteristics such as networks to join.

Q. How are VMs initially replicated between clouds?

A. During the configuration or replication workflow, a user can choose to configure replication from seed or to perform full initial sync. Once the workflow is configured to start VM or vAPP replication, the VMware Cloud Director Availability vApp Replication Manager ensures that only delta information is sent from one ESXi host to another ESXi host. Management and monitoring information for the replication is available from the vApp Replication 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. vAPP can also be powered on to test.

Q. What is the maximum Recovery Point Objective (RPO) supported by VMware Cloud Director Availability?

A. As of 4.2, the minimum RPO is 5 minutes. Therefore, the changes in the protected virtual machine can be replicated every five minutes to a selected destination.

Q. How many restore points can be configured?

A. VMware Cloud Director Availability uses vSphere Replications and hence scheduled block restore points are used the maximum is 24 that can be retained for 12 months. If a user wishes to keep a restore point for longer, they can use the "stored instance" feature to take an adhoc restore point and move it out of the cycle for however long they wish to keep it (note that this will not affect the number of restore points).

Q. What actions can be taken by users?

A. By using the Actions pane in the DR Workloads page, you can perform the following tasks:

- Failover workloads among to-destination sites
- Failback workloads among from-destination sites
- Reverse Failover workloads to synchronize data between source and destination sites
- Reverse Failback workloads to synchronize data between source and destination sites
- Test replication tasks and Cleanup test data

Q. What functionality is available to monitor DR operations?

A. You can monitor the overall VMware Cloud Director

Availability status by using the VMware Cloud Director Availability Portal home page in VMware Cloud Director or in the native VMware Cloud Director event window. 4.x introduced a syslog feature to be able to send syslog event data about replications and status to a central syslog server. All this information is also available from the API. Additionally, email can be conditioned for events a tenant can select (self-serve) to send emails when events are triggered.

Q. How are vApp configurations transferred from source to destination?

A. VMware Cloud Director Availability supports vApp aware migration and DR. Automated transfer of vApp settings and configurations such as vApp networks, guest OS customization and properties etc. happens from source to destination.

Q. Does VMware Cloud Director Availability support VM grouping for accelerated recovery?

A. VMware Cloud Director Availability provides intelligent recovery of the entire VM group accelerating recovery. You can also prioritize boot order of critical machines over less critical VMs

Policy Control Features

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

A. A Cloud Provider can assign replication policies to local one to-many VDC organizations:

- Allow migrations or protections or both
- Assign an vCD organization as a replication source and/or destination
- Minimum Recovery Point Objective (RPO)
- Maximum number of VM replications
- Maximum number of point-in-time instances per VM replication
- Maximum number of stored instances per VM replication

Out of the box VMware Cloud Director Availability 4.x installs 3 default SLA policies. Cloud Administrators and Users who have permissions can option to modify these policies:

- **Gold:** RPO 30m, retention 14 instances over 2 weeks, Quiescing off, Compression enabled, initial sync no delay.
- **Silver:** RPO 2h, retention 7 instances over 1 weeks, Quiescing off, Compression enabled, initial sync no delay.

- **Bronze:** RPO 4h, retention Disabled, Quiescing off, Compression enabled, initial sync no delay.

All policies can control:

- Allow or deny migration
- Allow or deny replication protections
- Outgoing and incoming replications
- Maximum incoming replications
- Maximum stored instances
- Maximum throughput
- All custom SLA setting (this allows a user to modify the setting for a replication job).

Q: Can a provider understand a tenant compute resources and storage usage and limit it?

A. A cloud provider can monitor a tenant's storage consumption reporting by organization and individual workloads. Equally they can see the tenant org compute requirements and disk capacity to ensure they have enough to start workloads at the target site.

A tenant can view their own disk usage over time and for every replication from within VMware Cloud Director Availability.

Architecture

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

A. The architecture of the solution uses a VMware Cloud Director Availability Replicator appliance, a Replication Manager and a vApp Replication Service/Manager together to support replication, secure communication, and storage of the replicated data.

Each service provider can support recovery for multiple customer Org Virtual Data Center environments that can scale to handle increasing loads for each tenant, and for multiple tenants.

All replication matters are handled within the VMware Cloud Director Availability user interface (or API) and are simple workflow configuration driven tasks for one-to-many VMs and vAPP.

Q. I am a cloud provider using a single VMware Cloud Director across multi data centers. Does VMware Cloud Director Availability support this architecture?

A. Yes. The centralized topology provides simpler management to control replication across multiple data centers. Please refer to the technical documentation for more information.

Q. Does VMware Cloud Director Availability support MPLS, VPN, etc?

A. Yes it does.

Q. Does VMware Cloud Director Availability support bandwidth throttling for vSphere to Cloud (v2c) replications?

A. Yes, since version 3.x. If enabled, the bandwidth maximum is pushed down and enforced at the on-prem replicator.

Q: Does VMware Cloud Director Availability support bandwidth throttling for incoming replications (both v2c and Cloud to Cloud)?

A. Yes, since version 3.x. If enabled, the bandwidth maximum is centralized and enforced at the Cloud Provider target.

Q: Does VMware Cloud Director Availability support multi-NIC appliances?

A: Yes, for the tunnel role only. For 4.0 and later tunnels. The tunnel appliance can now be configured with two NICs - one for the northbound traffic and the other for the southbound traffic. NOTE: The southbound interface must be explicitly marked as such in the c4 admin console (manages and monitors VCD VM/vAPP replications) for incoming replication data bandwidth throttling to work.

Minimum Requirements

Q. What are the minimum requirements for VMware Cloud Director Availability?

A. For system requirements and interoperability, see VMware Cloud Director Availability documentation.

<https://docs.vmware.com/en/VMware-Cloud-Director-Availability/index.html>

Service Deployment

Q. Does VMware Cloud Director Availability require any agents to be deployed at the customer site?

A. No, the solution is agentless and uses host-based replication, inherent in the VMware vSphere hypervisor. All that is required at the client site is the deployment of a replicator and tunnel appliance and configuration to connect to the provider cloud.

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

A. VMware Cloud Director Availability can be deployed using the VMware OVF Tool. Alternatively, you can use the vSphere Web Client to install the VMware Cloud Director Availability service; all DR services are deployed via a single installation VMware-Cloud-Director-Availability-OnPrem-release.number-xxxx-build_number_OVF10.ova package.

Q. Why would a provider need multiple VMware Cloud Director Availability 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. Whilst encryption is mandatory, compression can be optional, and both tax system resources.

Multiple replicators can be added to your DR environment to suite processing needs while scaling out supported workloads to protect or migrate.

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

A. Please check the 4.2 [configuration maximums](#) for the latest guidelines.

Q. What versions of vSphere are supported?

A. Cloud Director Availability 4.2 supports version 6.5U3 up to 7.0 U2. Each release of VMware Cloud Director Availability will impact the interoperability, please check the latest [here](#)

Q. Does VMware Cloud Director Availability work with NSX-T?

A. As of version 4.x of VMware Cloud Director Availability NSX-T 2.5.0 and beyond is supported. 4.2 interop has been validated up to 3.1.2 of NSX-T Data Center. Each release of VMware Cloud Director Availability will impact the interoperability, please check the latest [here](#)

Management**Q. Does VMware Cloud Director Availability support bandwidth monitoring?**

A. VMware Cloud Director Availability has natively integrated bandwidth monitoring and reporting on historical bandwidth consumption, allowing providers to analyze the volume of transferred data per org for provider, and for own data as a tenant.

Q. Does VMware Cloud Director Availability support Usage Meter for automatic metering?

A. Yes, VMware Cloud Director Availability has supported automatic metering from [Usage Meter 3.6.1. Hot Patch 3](#).

There is an indication in the management interface that vCloud Usage Meter is configured to meter the Cloud service instance. When vCloud Usage Meter has not requested metering information for more than three days, you now see a warning message in the management interface. To collect product consumption data and generate reports for the VMware Cloud Provider Program, see [Add vCloud Availability](#) in the vCloud Usage Meter documentation.

Q. Does VMware Cloud Director Availability support event forwarding?

A. As of 4.0 you could configure syslog event forwarding regarding the following notifications: RPO violations and certificate expiry, Events are also supported in VMware Cloud Director portal, where a system admin can monitor all events if required. Events are either on-demand system events or user-initiated events. Please check the [documentation](#) for a complete list of possible event notifications. Now in 4.1 events can also be sent by email, these are naturally not intended to be as many as syslog and hence are conditioned and can be restricted by the provider for each tenant.

Resources**Q. Where can I find more about VMware Cloud Director Availability 4.2?**

A. For more information visit:

<https://www.vmware.com/products/cloud-director-availability.html>

A. 4.2 Release Notes:

<https://www.vmware.com/en/VMware-Cloud-Director-Availability/4.2/rn/VMware-Cloud-Director-Availability-42-Release-Notes.html>

A. Provider download:

https://my.vmware.com/en/web/vmware/downloads/info/slug/datacenter_cloud_infrastructure/vmware_cloud_director_availability/4_2#product_downloads

A. Tenant download:

https://my.vmware.com/en/web/vmware/downloads/info/slug/datacenter_cloud_infrastructure/vmware_cloud_director_availability/4_2#drivers_tools

