

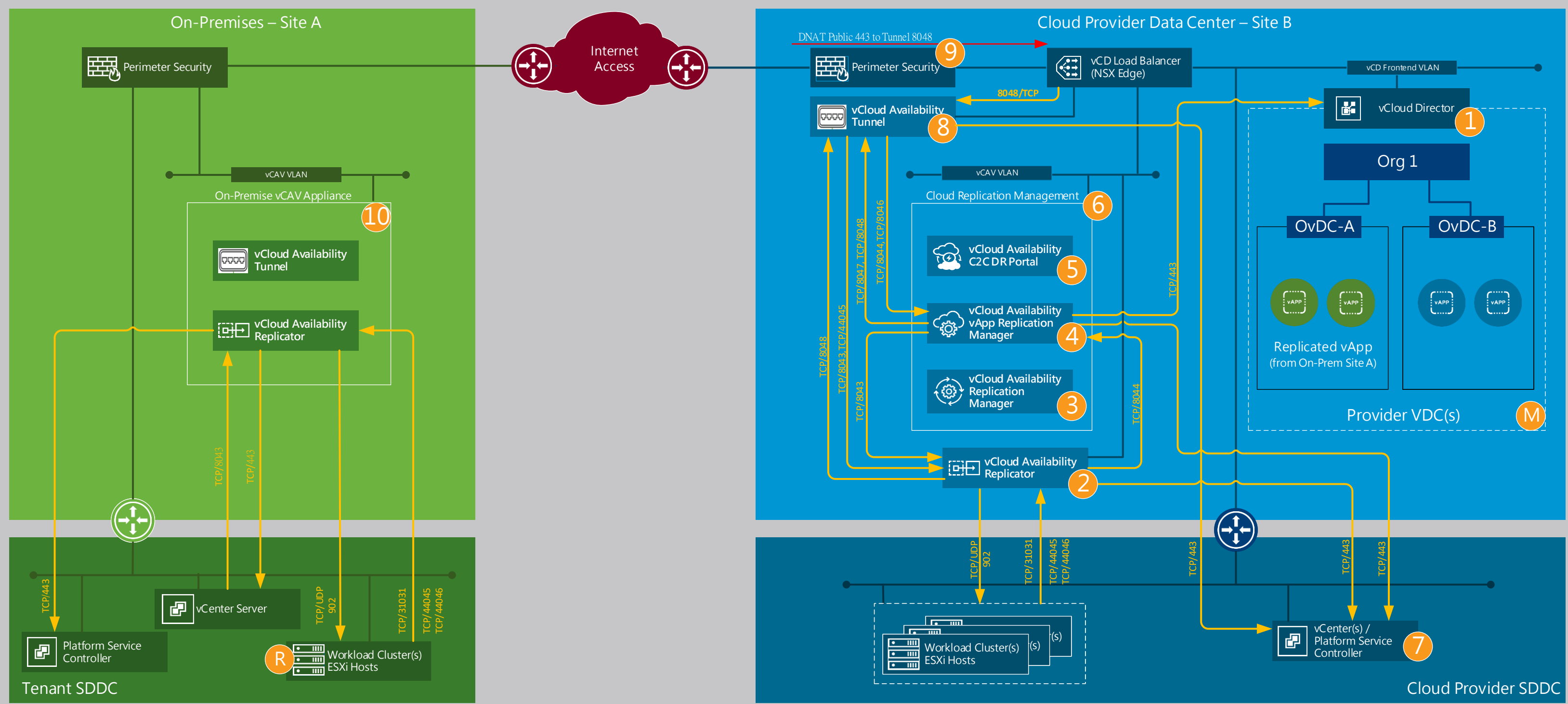
VMware vCloud Availability 3.0 solution introduces a new and simplified product architecture for replication, disaster recovery and migration capabilities into a single product. With the service you can perform:

- Migration and Disaster Recovery of VMs from on-premise vCenter Server to a vCloud site.
- Migration of vApps and VMs between two Virtual Data Centers that belong to a single vCloud Director Organization.
- Replication and recovery of vApps and VMs between vCloud Director sites.

- 1 With the vCloud Director solution service providers can build secure, multi-tenant private clouds by pooling infrastructure resources into virtual data centers and exposing them to users through Web-based portals and programmatic interfaces as fully automated, catalog-based services.
- 2 For production deployments, You deploy and configure dedicated vCloud Availability Replicator appliance or appliances, it exposes the low-level HBR primitives as REST APIs.
- 3 A management service operating on the vCenter Server level. It understands the vCenter Server level concepts for starting the replication workflow for the virtual machines. It must have TCP access to the Lookup Service and all the vCloud Availability Replicator appliances..
- 4 Provides the main interface for the cloud and on-prem replication operations. It understands the vCloud Director level concepts and works with vApps and virtual machines.
- 5 The embedded vCloud Availability Portal provides tenants (vCloud Availability Portal) and service providers (vCloud Availability Service Provider Portal) with a graphic user interface to facilitate the management of the VMware vCloud Availability solution. It also provides overall system and workload information.
- 6 A single appliance that contains the following services:
  - vCloud Availability Replication Manager
  - vCloud Availability vApp Replication Manager with embedded vCloud Availability Portal
- 7 The PSC provides common infrastructure services to the vSphere environment. Services include licensing, certificate management, and authentication with VMware vCenter Single Sign-On.
- 8 Simplifies provider networking setup by channeling all incoming and outgoing traffic for a site through a single point - the vCloud Availability Tunnel appliance. The traffic is both management and monitoring for the replication data (LWD traffic).
- 9 You must set an IP and port in the local site that is reachable for remote sites and forward it to the private address of the vCloud Availability Tunnel appliance, port 8048, for example, by using destination network address translation(DNAT).
- 10 vCloud Availability Appliance for Tenants (On-premise Sites), which contains the binaries for the VMware vCloud Availability appliance.

**Key**

- M** Logical placement shown, existing VMware vCloud Director multi-tenant cloud environments.
- R** If your ESXi hosts have more than one vmkernel network interface (vmk), make sure that vSphere Replication NFC Traffic is enabled. This setting is required for routing the replication traffic



## Firewall Rules for Cloud Site Connection

Source	Destination	Port Number	Protocol	Description
vCloud Availability Replicator	ESXi Hosts	902	TCP and UDP	Used by the vCloud Availability Replicator service for replication traffic to the destination ESXi hosts.
vCloud Availability Replicator	VMware Platform Services Controller*	443	TCP	Used for single sign-on and Lookup Service communication when vSphere 5.5 or later is used in the respective site.
vCloud Availability Replicator	vCenter Server	443	TCP	Used by the local vCloud Availability vApp Replication Manager service or the vCloud Availability Replicator service for communication with the local vCenter Server.
vCloud Availability Replicator	vCloud Availability vApp Replication Manager	8044	TCP	Used for vCloud Availability vApp Replication Manager management from the vCloud Availability Replicator.
vCloud Availability Replicator	vCloud Availability Tunnel	8048	TCP	Used for vCloud Availability Tunnel management from the vCloud Availability Replicator.
vCloud Availability vApp Replication Manager	VMware Platform Services Controller*	443	TCP	Used for single sign-on and Lookup Service communication when vSphere 5.5 or later is used in the respective site.
vCloud Availability vApp Replication Manager	vCloud Director	443	TCP	Used for vCloud Director management from the vCloud Availability vApp Replication Manager.
vCloud Availability vApp Replication Manager	vCloud Availability Replicator	8043	TCP	Used for vCloud Availability Replicator management from the vCloud Availability vApp Replication Manager.
vCloud Availability vApp Replication Manager	vCloud Availability Tunnel	8047, 8048	TCP	Used for vCloud Availability Tunnel management from the vCloud Availability vApp Replication Manager.
vCloud Availability Tunnel	vCloud Availability Replicator	8043, 44045	TCP	Used for vCloud Availability Replicator management from the vCloud Availability Tunnel.
vCloud Availability Tunnel	vCloud Availability vApp Replication Manager	8044, 8046	TCP	Used for vCloud Availability vApp Replication Manager service management from the vCloud Availability Tunnel appliance.
vCloud Availability Tunnel	VMware Platform Services Controller*	443	TCP	Used for VMware Platform Services Controller* communication management from the vCloud Availability vApp Replication Manager and vCloud Availability Replicator.
ESXi Hosts	vCloud Availability Replicator	31031, 44045, 44046	TCP	Used by the ESXi hosts for replication traffic to the destination vCloud Availability Replicator service.
Firewall	vCloud Availability Tunnel	8048	TCP	Used for redirecting external traffic management to the vCloud Availability Tunnel service.