

What's New with VMware vCloud Director 9.7

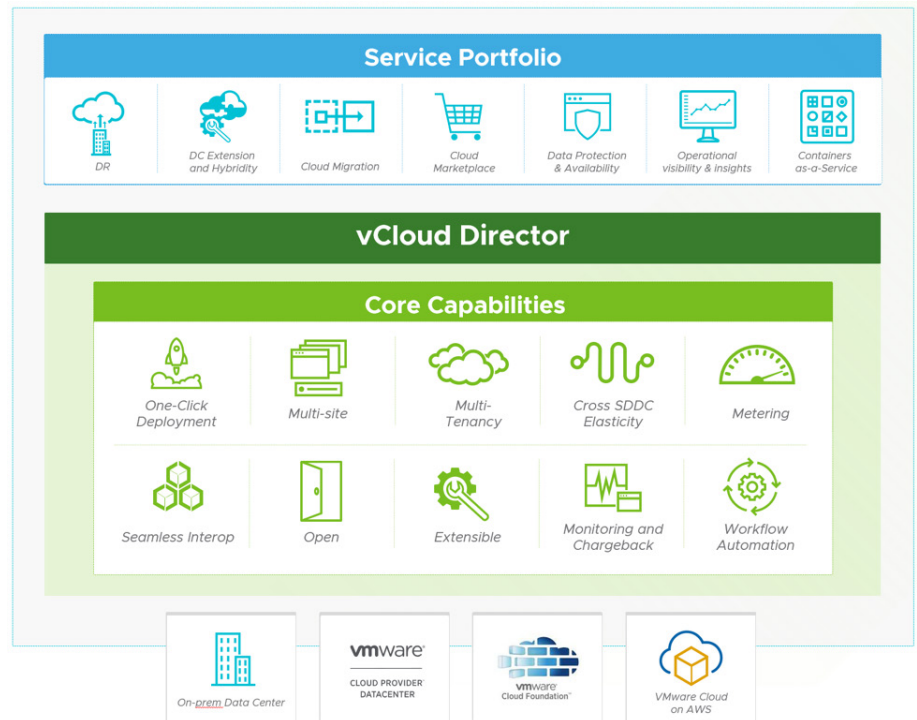
Feature Overview

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Overview

VMware vCloud Director (vCD) is the central Cloud Management and Orchestration platform within the VMware Cloud Provider Platform, enabling Service Providers to orchestrate the provisioning of software-defined, modular and ready-for-consumption Virtual Data Centers in a matter of minutes.



Version 9.7 of vCD adds features that leverage the server virtualization capabilities of VMware vSphere and Software-Defined Data Center (SDDC) functionality to offer Service Providers a powerful platform for delivering Infrastructure-as-a-Service (IaaS) solutions. It provides an enhanced customer and provider experience, enables centralized global cloud management for private and multi-tenant clouds, allows simplified deployment and scalability options and offers flexible customization, extensibility and integration options.

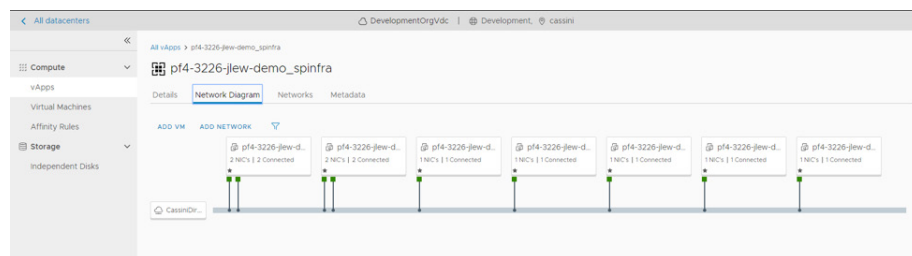
VMware vCloud Director 9.7 includes these new features and functionalities:

- HTML5 Tenant Portal Enhancements and Per-Tenant Branding Options
- HTML5 Provider Portal Enhancements
- Access to Dedicated Private vCenter Instances through the Tenant Portal
- vCD Appliance Improvements
- NSX Edge Placement Enhancements
- Flex Allocation Model and Compute Profiles
- Python SDK, VCD-CLI and vRO Plugin upgrades
- Terraform Provider 2.0
- Container Service Extension (CSE) 1.2s

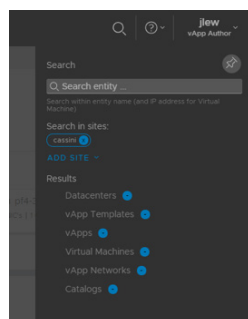
HTML5 Tenant Portal Enhancements

Version 9.7 of vCloud Director provides several enhancements to the HTML5 tenant portal:

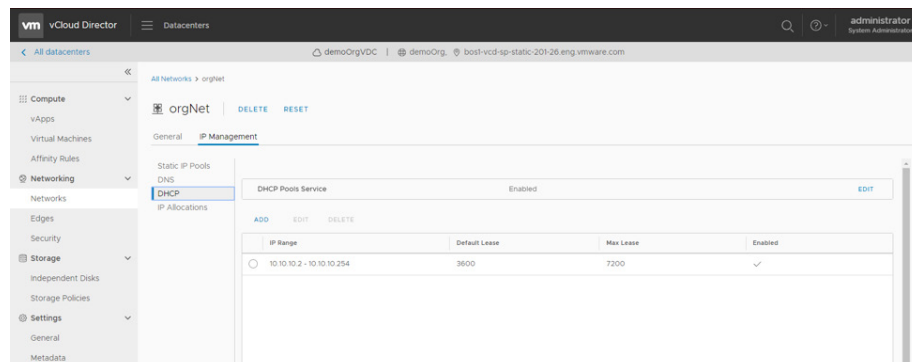
- Network Diagram view for vApps



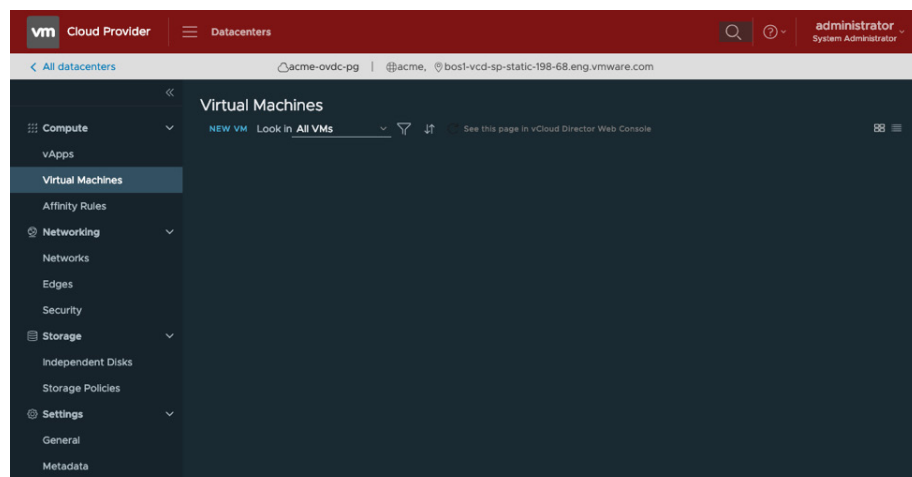
- Global Search



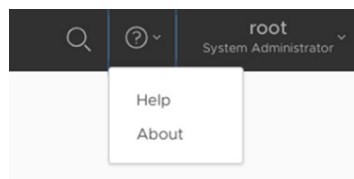
- Improved Org VDC Network configuration



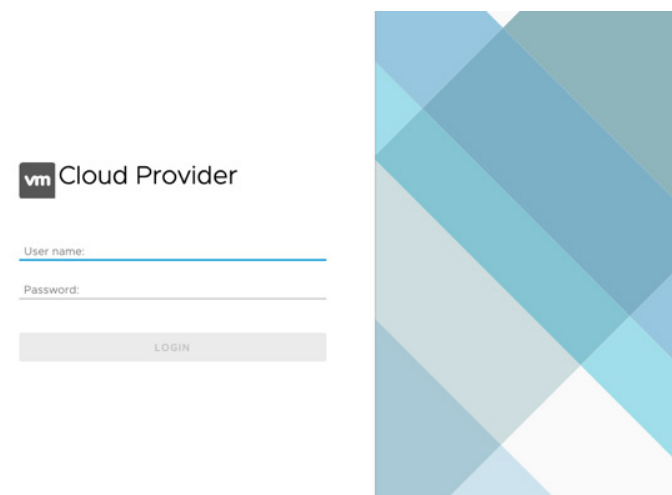
It is now possible to customize the look and feel of the tenant portal, either globally or even on a per-tenant basis.



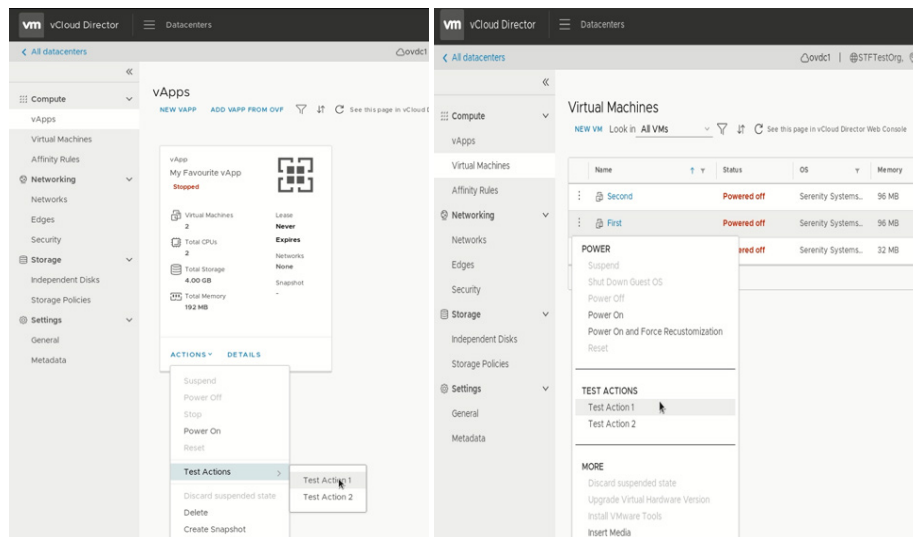
This includes CSS specifications for the portal colors and layout, custom links in the Help menu and custom favicon and tab title to optimize the user experience.



Optionally, the tenant login page can be customized as well (again, on a per-tenant basis).



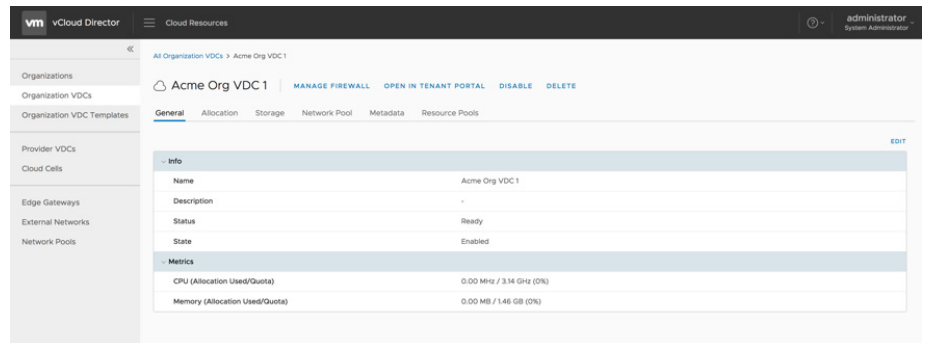
The UI Plugin API was also enhanced; it is now possible to add custom menu items into the contextual menus of VMs and vApps:



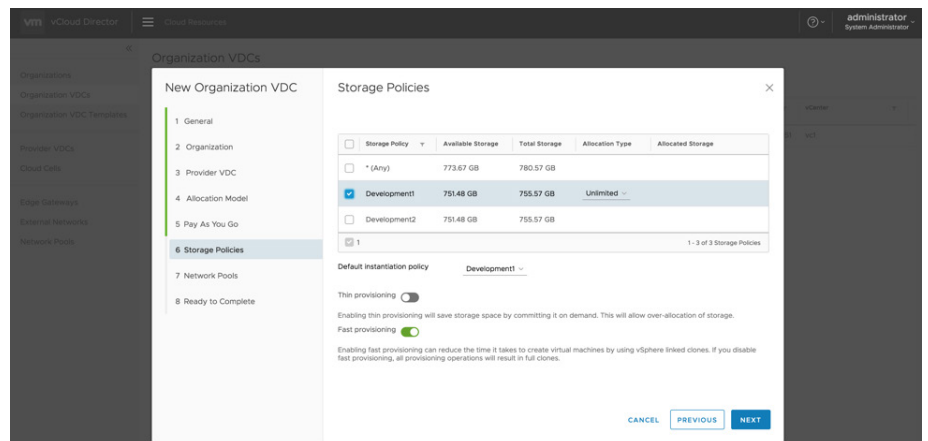
HTML5 Provider Portal

In vCD 9.7 a lot of provider-facing workflows are now available in the HTML5 provider portal:

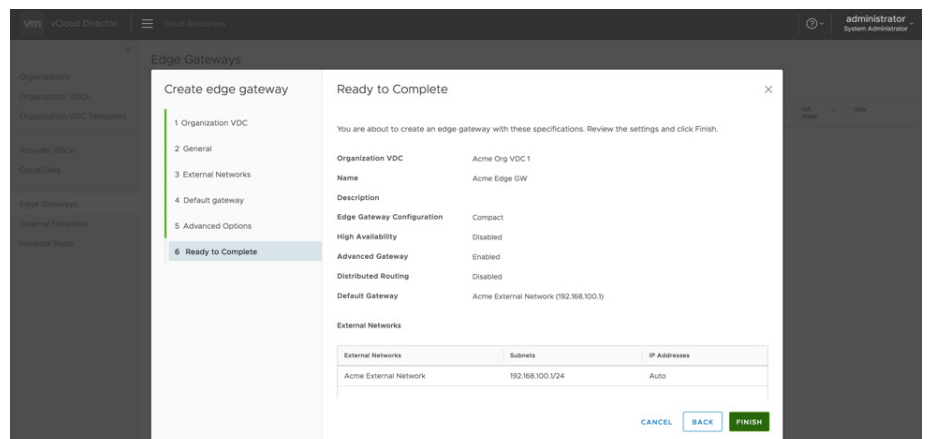
- Org VDC details



- Org VDC creation wizard



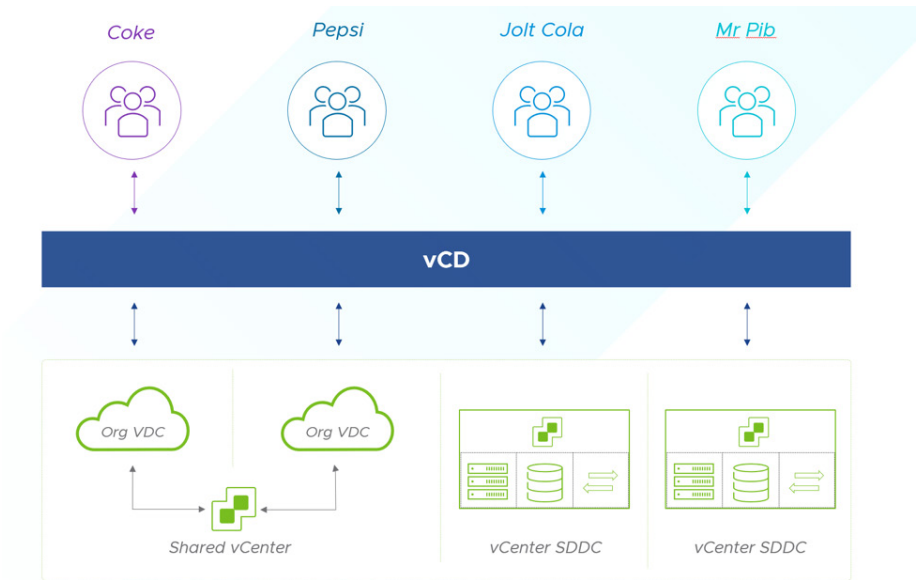
- Edge Gateway details
- Edge creation wizard



- Provider VDC details
- vCenter details
- NSX-T Manager details
- Multi-site resource listings

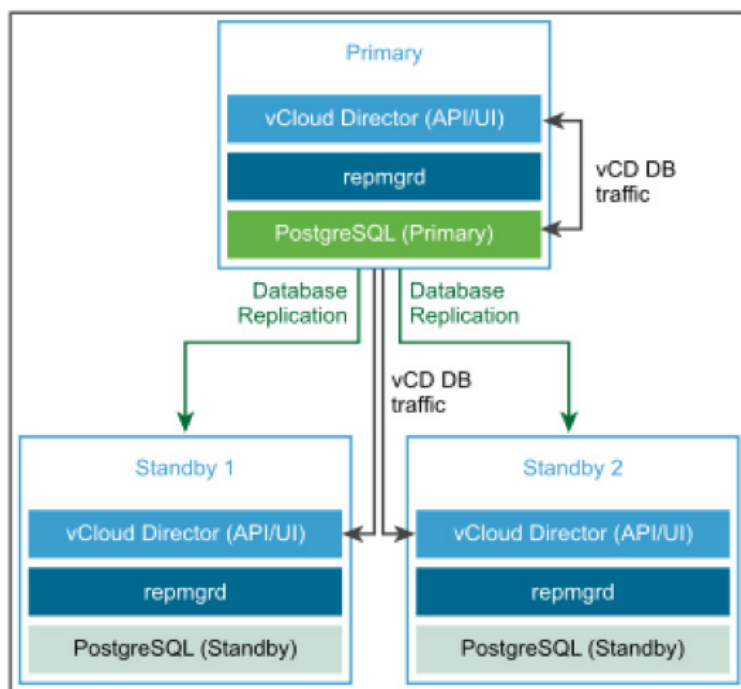
Central Point of Management

vCloud Director 9.7 introduces new functionality that allows tenants to access dedicated private vCenters through vCloud Director. Service Providers can now deliver vCenters with a branded Cloud Portal experience, without the need to set up VPNs. vCD acts as proxy to API calls to the vCenters.



vCloud Director Appliance Enhancements

vCloud Director 9.5 introduced the option to deploy vCD as appliance, in addition to the common installation binary file. In 9.7, the appliance has been further enhanced; it includes a postgres database and now it's possible to deploy the appliance in an HA configuration. The new appliance also contains two virtual NICs to allow more flexible network configurations.



NSX Edge Placement Enhancements

In the NSX reference architecture, all the NSX edge service gateways and DLR control VMs should be placed in dedicated edge clusters for north-south network connectivity of the data center. In vCloud Director, cloud administrators can now specify the primary and secondary edge clusters into which all NSX edge service gateways created and managed by vCloud Director will be placed. No compute workloads will be placed by vCloud Director into the edge clusters.

Flex Allocation Model and Compute Profiles

In addition to the known allocation models -- reservation pool, allocation pool and pay-as-you-go -- there is now a new allocation model called flex allocation.

Starting with vCloud Director 9.7, administrators can create organizational virtual data centers (VDC) using the flex allocation model. With the combination of flex allocation and VDC compute policies, administrators can control CPU and RAM consumption at both the VDC and the individual virtual machine levels. The flex allocation model supports all allocation configurations that are available in existing allocation models.

The screenshot shows the 'New Organization VDC' wizard with the 'Allocation Model' step selected. The left sidebar lists the steps: 1 General, 2 Organization, 3 Provider VDC, 4 Allocation Model (selected), 5 Flex, 6 Storage Policies, 7 Network Pool, and 8 Ready to Complete. The main content area shows four allocation models with radio buttons: Allocation pool, Pay as you go, Reservation pool, and Flex. The 'Flex' option is selected and highlighted with a blue circle. Each option has a brief description of its resource allocation policy.

With compute policies, system administrators control the compute resource consumption and host placement of VMs in a virtual data center (VDC).

Provider VDC compute policies contain VM group information and control the host placement of VMs that tenant users create in an organization's VDC.

VDC compute policies control resource consumption for individual VMs within an organization's VDC.

The flex allocation model supports the capabilities of organizational VDC compute policies. Users in the organization's VDC can specify reservation, limit and shares values when creating a virtual machine. Using the combination of the flex allocation model and organizational VDC compute policies, a single VDC can accommodate virtual machines that use configurations that are common for all other allocation models.

	Flex Allocation Model	Elastic Allocation Pool Model	Non-Elastic Allocation Pool Model	Pay-As-You-Go Model	Reservation Pool Model
Elastic	Based on the organization VDC configuration.	Yes	No	Yes	No
vCPU Speed	If a VM CPU limit is not defined in a VDC compute policy, vCPU speed might impact the VM CPU limit within the VDC.	Impacts number of running vCPUs in the Organization VDC.	Not Applicable	Impacts VM CPU Limit	Not Applicable
Resource Pool CPU Limit	Organization VDC CPU limit apportioned based on the number of VMs in the resource pool.	Organization VDC CPU Allocation	Organization VDC CPU Allocation	Unlimited	Organization VDC CPU Allocation
Resource Pool CPU Reservation	Organization VDC CPU reservation is apportioned based on number vCPUs in the resource pool. Organization VDC CPU reservation equals the organization VDC CPU allocation times the CPU guarantee.	Sum of powered on VMs and equals the CPU guarantee times the vCPU speed, times the number of vCPUs.	Organization VDC CPU Allocation times the CPU guarantee	None, expandable	Organization VDC CPU Allocation
Resource Pool Memory Limit	Organization VDC memory limit is apportioned based on the number of VMs in the resource pool.	Unlimited	Organization VDC RAM Allocation	Unlimited	Organization VDC RAM Allocation
Resource Pool Memory Reservation	Organization VDC RAM reservation is apportioned based on the number of VMs in the resource pool. The organization VDC RAM reservation equals the organization VDC RAM allocation times the RAM guarantee.	Sum of the powered on VMs and equals RAM guarantee times vRAM. The resource pool RAM reservation is expandable.	Organization VDC RAM Allocation times the RAM guarantee	None, expandable	Organization VDC RAM Allocation
VM CPU Limit	Based on the VDC Compute policy of the VM.	Unlimited	Unlimited	vCPU speed times the number of vCPUs	Custom
VM CPU Reservation	Based on the VDC Compute policy of the VM.	0	0	Equals the CPU speed times the vCPU speed, times the number of vCPUs.	Custom
VM RAM Limit	Based on the VDC Compute policy of the VM.	Unlimited	Unlimited	vRAM	Custom
VM RAM Reservation	Based on the VDC Compute policy of the VM.	0	Equals vRAM times RAM guarantee plus RAM overhead.	Equals vRAM times RAM guarantee plus RAM overhead.	Custom

vCloud API, Python SDK and vRealize Orchestrator Plugin

vCloud Director 9.7 provides a new API: version 32.0. API version 20 is marked as deprecated and will be removed in future releases. The Python SDK, vcd-cli and the vRO Plugin for vCD have been updated accordingly.

Python SDK: <https://github.com/vmware/pyvcloud>

VCD-CLI: <https://github.com/vmware/vcd-cli>

This release ends the support for Java SDK and .net SDK; the Python SDK is fully supported and will be in the future.

Terraform Provider

Version 2.0 of the Terraform Provider for vCD is available. This version has a restructured data model and some semantic changes. It uses a newly built Go module for vCD and provides additional network support.

Documentation: <https://www.terraform.io/docs/providers/vcd/>

Open-source repository of the terraform provider: <https://github.com/terraform-providers/terraform-provider-vcd>

Go module for vCloud Director: <https://github.com/vmware/go-vcloud-director>


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 - vcd_catalog_item
 - vcd_catalog_media
 - vcd_snat
 - vcd_firewall_rules
 - vcd_inserted_media
 - vcd_network
 - vcd_network_routed
 - vcd_network_direct
 - vcd_network_isolated
 - vcd_snat
 - vcd_edgegateway_vpn
 - vcd_vapp
 - vcd_vapp_vm

VMware vCloud Director Provider 2.0

The VMware vCloud Director provider is used to interact with the resources supported by VMware vCloud Director. The provider needs to be configured with the proper credentials before it can be used.

Use the navigation to the left to read about the available resources.

NOTE: The VMware vCloud Director Provider went through a refresh at the beginning of 2019 and some semantic changes were made compared to the previously available initial version. Please check docs for v2.0+ label and your existing .tf configuration files carefully when shifting to this new version.

Supported vCD Versions

The following vCloud Director versions are supported by this provider:

- 8.20
- 9.0
- 9.1
- 9.5

Example Usage

Connecting as Org Admin

The most common - tenant - use case when you set user to organization administrator and when all resources are in a single organization.

```

# Configure the VMware vCloud Director Provider
provider "vcd" {
  user      = "${var.vcd_user}"
  password  = "${var.vcd_pass}"
  org       = "${var.vcd_org}"
  vdc       = "${var.vcd_vdc}"
  url       = "${var.vcd_url}"
  max_retry_timeout = "${var.vcd_max_retry_timeout}"
  allow_unverified_ssl = "${var.vcd_allow_unverified_ssl}"
}

# Create a new network in organization and VDC defined above
resource "vcd_network_routed" "net" {
  # ...
}

```

Role-based Access Control for Container Service Extension (CSE)

vContainer Service Extension (CSE) allow service providers to offer Kubernetes-as-a-service to their tenants. The solution is available open-source and decoupled from vCD releases. Version 1.2.6 introduced a key enhancement: role-based access control (RBAC). The new feature gives service providers the ability to monetize Kubernetes service offerings by selectively enabling tenant access to CSE. A tenant admin can then use the role-based access control to assign Kubernetes operator roles within their organization.

For more details see this article: <https://blogs.vmware.com/vcloud/2019/02/role-based-access-control-container-service-extension.html>

Container Service Extension: <https://vmware.github.io/container-service-extension/INTRO.html>

Additional Resources

For more information about the VMware vCloud Director software solution, visit the product pages at <https://www.vmware.com/products/vcloud-director.html>

For vCloud Director case studies, whitepapers, customer testimonials and more visit <https://cloudsolutions.vmware.com/>

Access the documentation for vCloud Director software at <https://docs.vmware.com/en/vCloud-Director/index.html>

To purchase the vCloud Director software solution or to find out how you can join the VMware Cloud Provider Program (VCPP), visit <https://www.vmware.com/partners/service-provider/>

Custom Design and Automated Deployment of vCloud Director using Cloud Provider Pod: <https://www.vmware.com/products/cloud-provider-pod.html>



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