

Configuring Per Subnet Route Table For Azure Cloud Using Nexus Dashboard Orchestrator

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Revised: June 5, 2026,

New and Changed Information

The following table provides an overview of the significant changes to the organization and features in this guide from the release the guide was first published to the current release. The table does not provide an exhaustive list of all changes made to the guide.

Table 1: Latest Updates

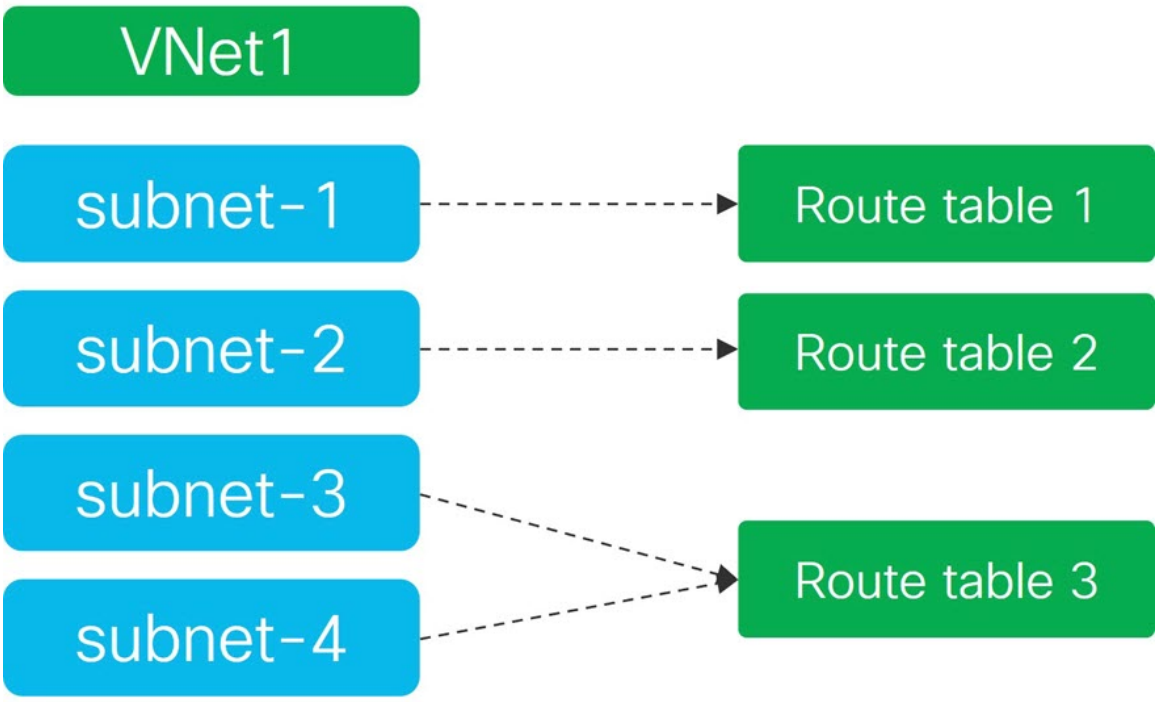
Release	New Feature or Update	Where Documented
4.2(2e)	First release of this document.	--

Summary

Prior to the Cisco Cloud Network Controller (CCNC) 26.0(2) release, all subnets belonging to one Azure VNet logical construct were associated to a single route table. This implied that communication from endpoints connected to the subnets part of that VNet would always use the same routing policy (that is, the same route entry in the single route table).

CCNC 26.0(2) introduces the per subnet route table feature that allows you to create an Azure VNet with multiple subnets, where each subnet can map to its own route table, or you can group subnets to share a specific route table.

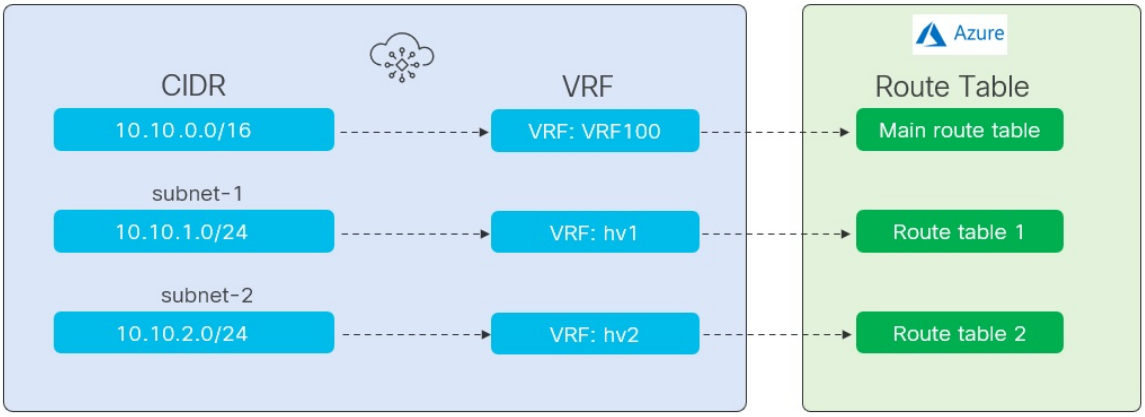
Figure 1:



From a configuration point of view, the support of per subnet route table requires the configuration of multiple VRF instances. The main VRF instance is still mapped to a region and allows you to create a VNet (modeled in CCNC with a Cloud Context Profile object) with the associated the CIDR prefix. Additional VRFs instances (named as "Secondary VRFs") are then associated to one or

more subnets defined in the VNet, carved out from the CIDR, to implement the logical mapping between subnets and route tables shown in figure below.

Figure 2:



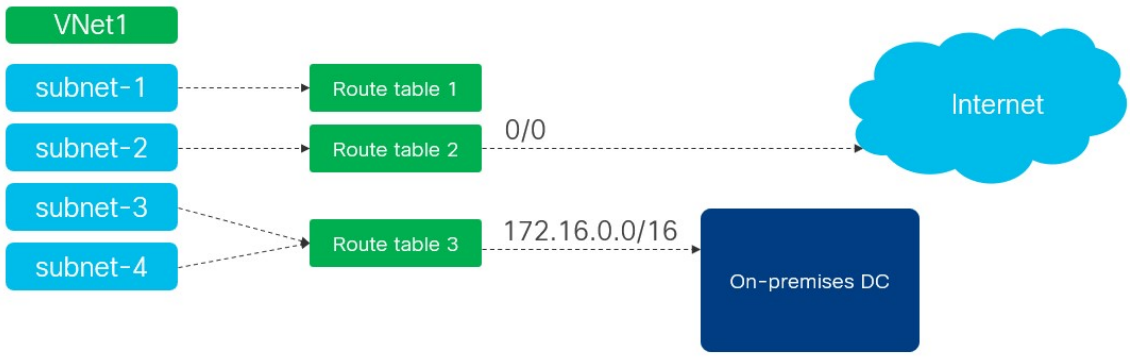
Note This document interchangeably uses "route table" and "Azure user-defined routing (UDR)."

This document shows how to use Cisco Nexus Dashboard Orchestrator (NDO) release 4.2(2) to drive the configuration of the per subnet route table functionality in one or more CCNC domains. The value proposition of this new functionality is highlighted by the use case described later in this chapter.

Variable Routing Policy Per Subnet

The benifit of this solution is to allow different routing treatments for different subnets in a VNet. It also opens the way for other useful features in the future. In the example below we see subnets belonging to the same VNet1 can have different routing policy based its own route table.

Figure 3:



- `subnet-1` cannot reach out to the internet.
- While `subnet-2` can connect to the internet directly.

- Similarly, only `subnet-3` and `subnet-4` can reach out to the On-premises Data Center (DC).

Prerequisites

Before you follow the procedures described in this document, you must complete the following basic configuration tasks:

- Deploy and have ready a Cisco Nexus Dashboard cluster.

  This is described in detail in the *Cisco Nexus Dashboard Deployment Guide* for your release.

- Onboard one or more cloud sites in the Cisco Nexus Dashboard.

  This is described in detail in the *Cisco Nexus Dashboard User Guide* for your release.

- Install and enable Cisco Nexus Dashboard Orchestrator, Release 4.2(2) or later.

  This is described in detail in the *Cisco Nexus Dashboard Orchestrator Deployment Guide* for your release.

- Enable the cloud sites for management in the orchestrator service and complete the basic infra configuration.

  This is described in detail in the *Cisco Nexus Dashboard Orchestrator Configuration Guide for ACI Fabrics* for your release.

- Add sites to the schema and provide configuration for the subnets.

Creating Schema and Templates

Before you begin

The following guidelines apply when creating the schemas and templates using the Cisco Nexus Dashboard Orchestrator:

- You must have a user with either the `Power User` or `Site Manager` read/write role to create and manage tenants.
- You must have at least one available tenant that you want to incorporate into your site.

  For more information, see *Cisco Nexus Dashboard Orchestrator Configuration Guide for ACI Fabrics*.

Procedure

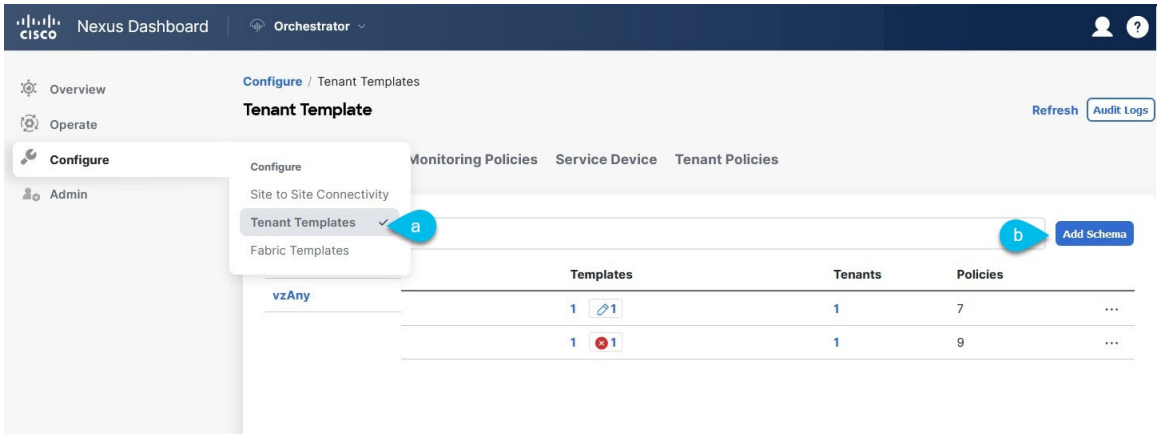
Step 1 Log in to your Cisco Nexus Dashboard and open the Cisco Nexus Dashboard Orchestrator service.

Step 2 Create a new schema.

a) From the left navigation pane, choose **Configure** > **Tenant Templates**.

b) Under the **Application** tab, click **Add Schema**.

Figure 4:



c) In the schema creation dialog, provide the **Name** and optional description for the schema and click **Next**.

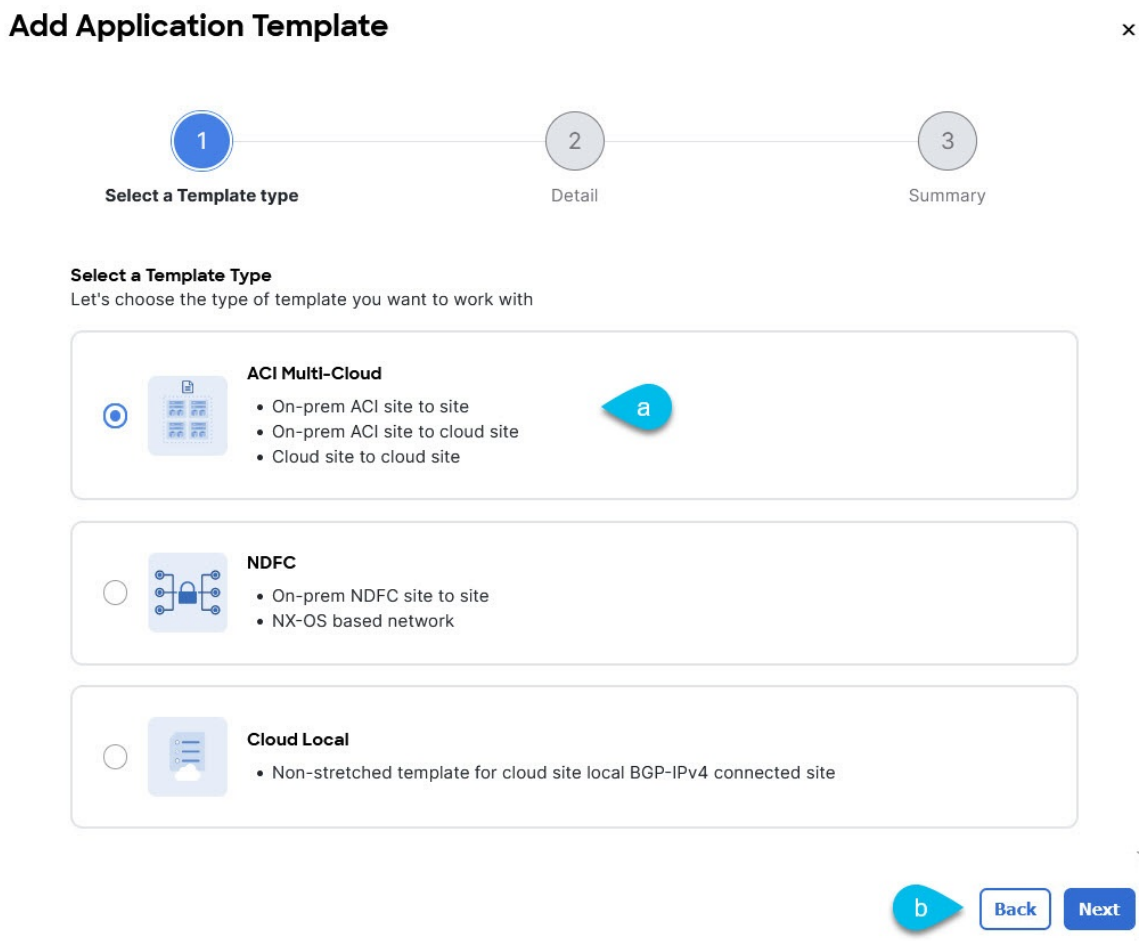
By default, the new schema is empty, so you must add one or more templates.

Step 3 In the schema page, click **Create New Template**.

a) In the **Select a Template type** window, choose `ACI Multi-Cloud` and click **Add**.

b) Click **Next** to continue adding the template details.

Figure 5:



c) In the left sidebar, provide the **Display Name** for the template.

d) (Optional) Provide a **Description**.

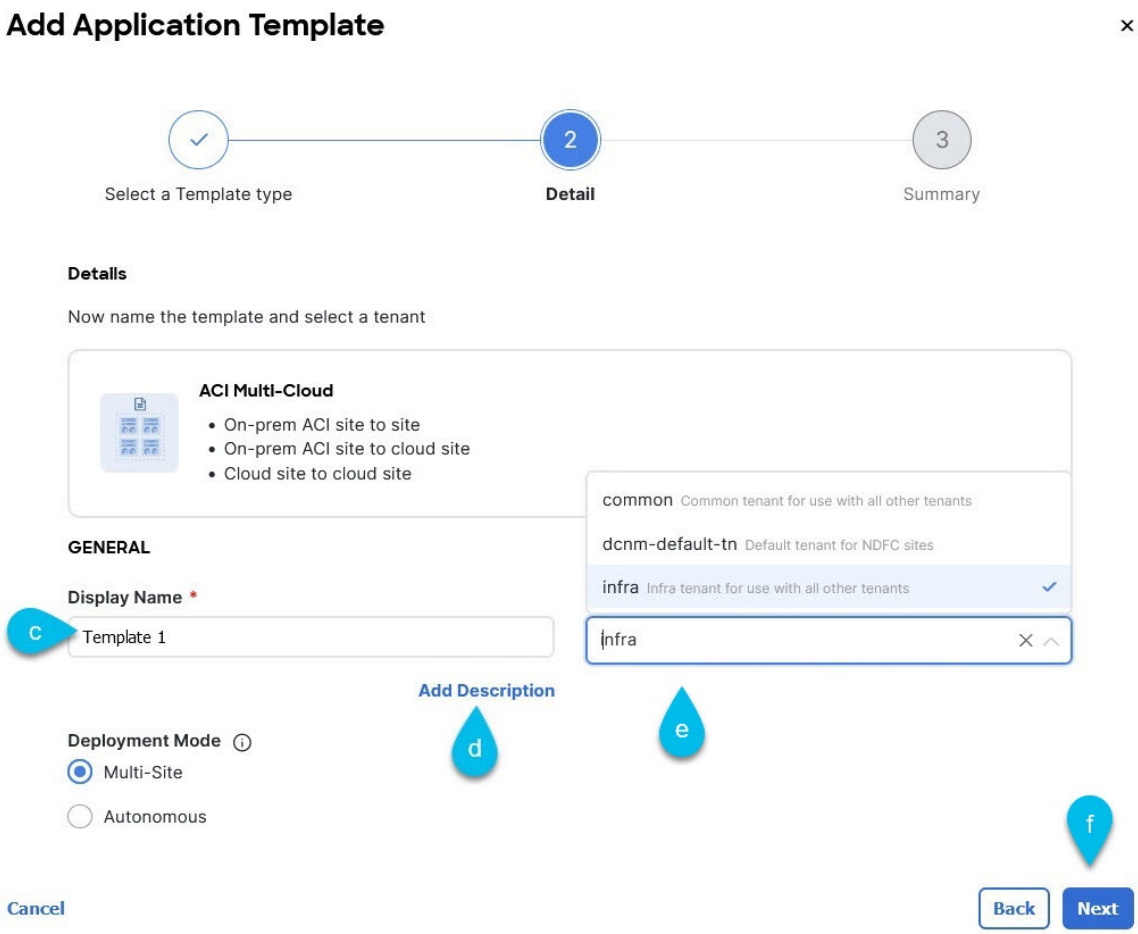
e) From the **Select a Tenant** drop-down list, choose the tenant for this template.

Note
The user account you are using to create a new schema must be associated with the tenant that you will add to the schema, otherwise the tenant will not be available in the drop-down list. For more information on importing the tenant, see *Cisco Nexus Dashboard Orchestrator Configuration Guide for ACI Fabrics*.

f) In the template view page, click **Next**.

Save the template after this initial configuration for extra options (such as site association) to become available.

Figure 6:



Note
Leave the default **Deployment Mode** to the **Multi-Site** option, to stretch the template across mutiple sites.

g) Click **Continue** to finish adding the template to the schema.

Step 4 The next step is to assign the template to sites.

Deploy fabric configuration by deploying one template at a time to one or more sites. You must associate the template with at least one site where you want to deploy the configuration.

a) In the template view page, click **Actions** and choose **Add/Remove Sites**.
b) In the **Add/Remove Sites <template>** dialog, select one or more Azure sites where you want to deploy the template and click **Ok**.

Figure 7:



Creating the VRF Instances

This section describes how to create the VRF instances.

Before you begin

Create the schema and template and assign a tenant to the template, for more information on importing the tenant, see Creating Schema and Templates, on page 4.

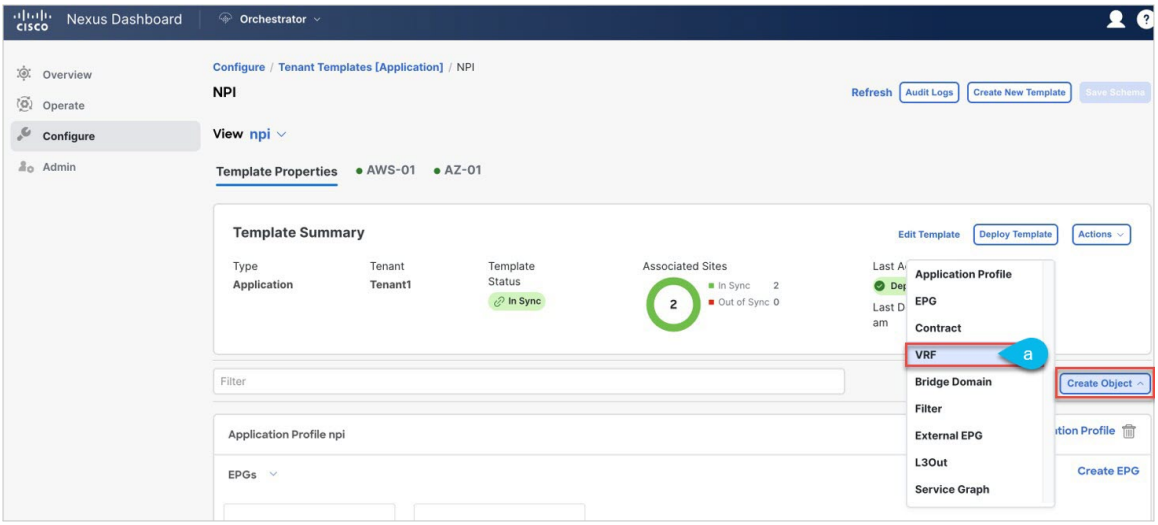
Procedure

Step 1 Choose the schema and template where you want to create the VRF instance.

Step 2 Create the VRF instance.

a) In the main pane, choose **Create Object** > **VRF**.

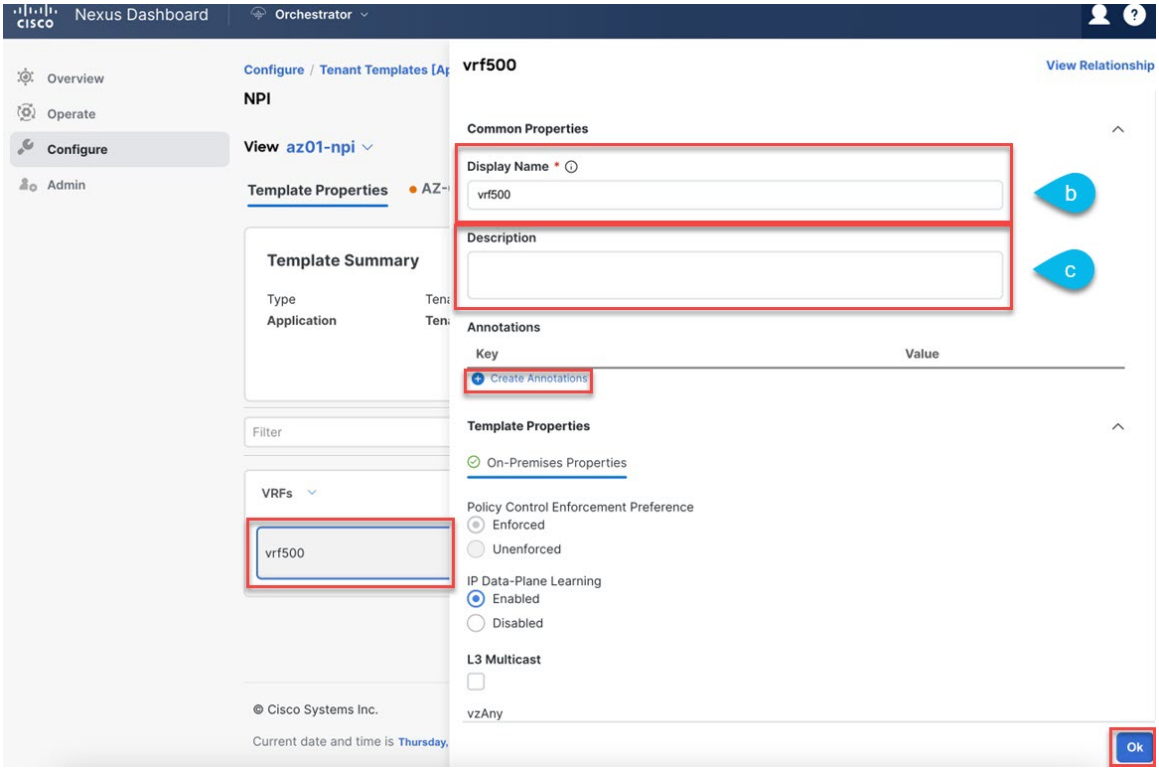
Figure 8:



b) In the properties pane, provide the **Display Name** for the VRF instance.

c) (Optional) Provide a **Description**.

Figure 9:



Step 3 (Optional) Add one or more **Annotations**.

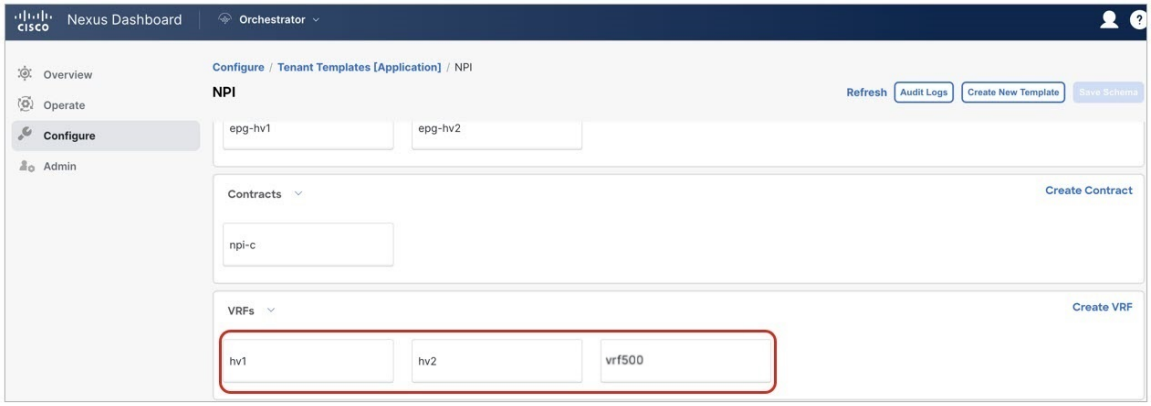
This allows you to add arbitrary `key:value` pairs of metadata to an object as annotations (`tagAnnotation`). Annotations provide any customization that you may require, such as descriptions, markers for personal scripting or API calls, or flags

for monitoring tools or orchestration applications such as your Cisco Nexus Dashboard Orchestrator. Cisco APIC ignores these annotations and merely stores them with other object data, Cisco APIC also does not impose any format nor content restrictions.

What to do next

For our example use Step 1 - Step 3, to create two more secondary VRF instances (`hv1` and `hv2`) under the same template as the parent VRF instance. Secondary VRF instances associate with each individual subnet (or with a group of subnets) as described later in the example.

Figure 10:



Configuring the VRF Instances

This section describes how to create a cloud context profile and configure the VRF instances.

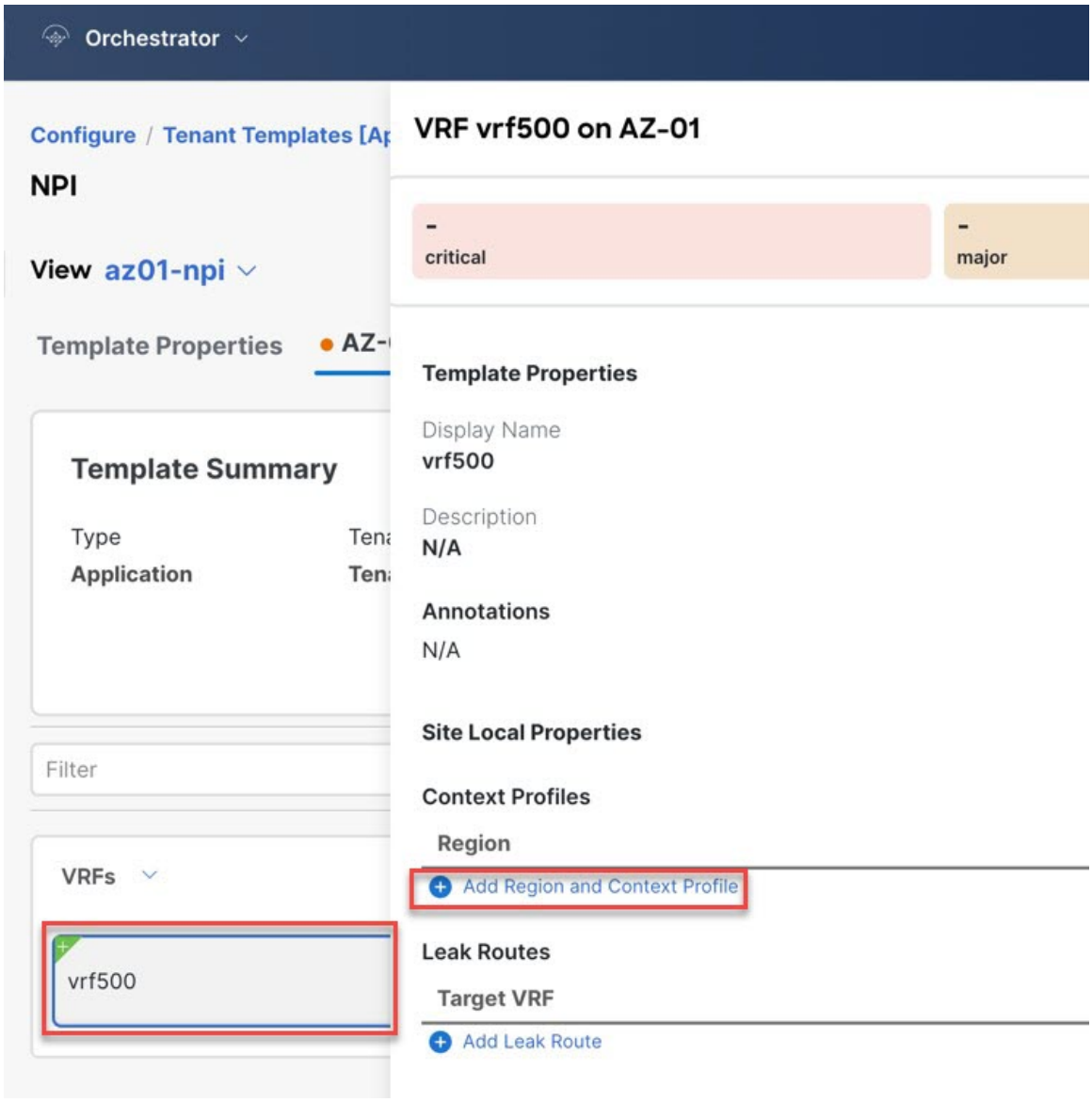
Before you begin

Create the schema and template and assign a tenant to the template, for more information on importing the tenant, see Creating Schema and Templates, on page 4.

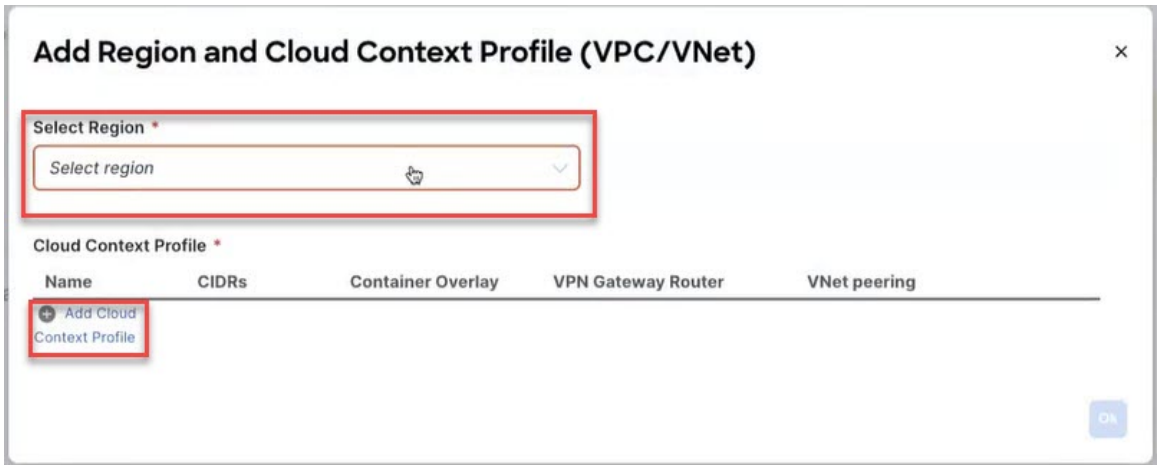
Procedure

Step 1 Select the site local template for the Azure site choose the parent VRF from the list of objects.

a) Click on the **Add Region and Cloud Context Profile**.



b) In the **Select Region** drop-down list, choose the region on which this VRF instance will be deployed.



Note
Beginning with release 4.2(2), Cisco Nexus Dashboard Orchestrator users can configure multiple VNets within one VRF region.

c) Click on the **Add Cloud Context Profile** and enter the following information.

- **Name**—Enter the name for the cloud context profile, then click on **Add CIDRs**.

Figure 11:



- **CIDR**—Enter the VPC/VNet CIDR information. For example, 51.51.0.0/16.

  The CIDR includes the scope of all subnets that are going to be available to an VPC/VNet.

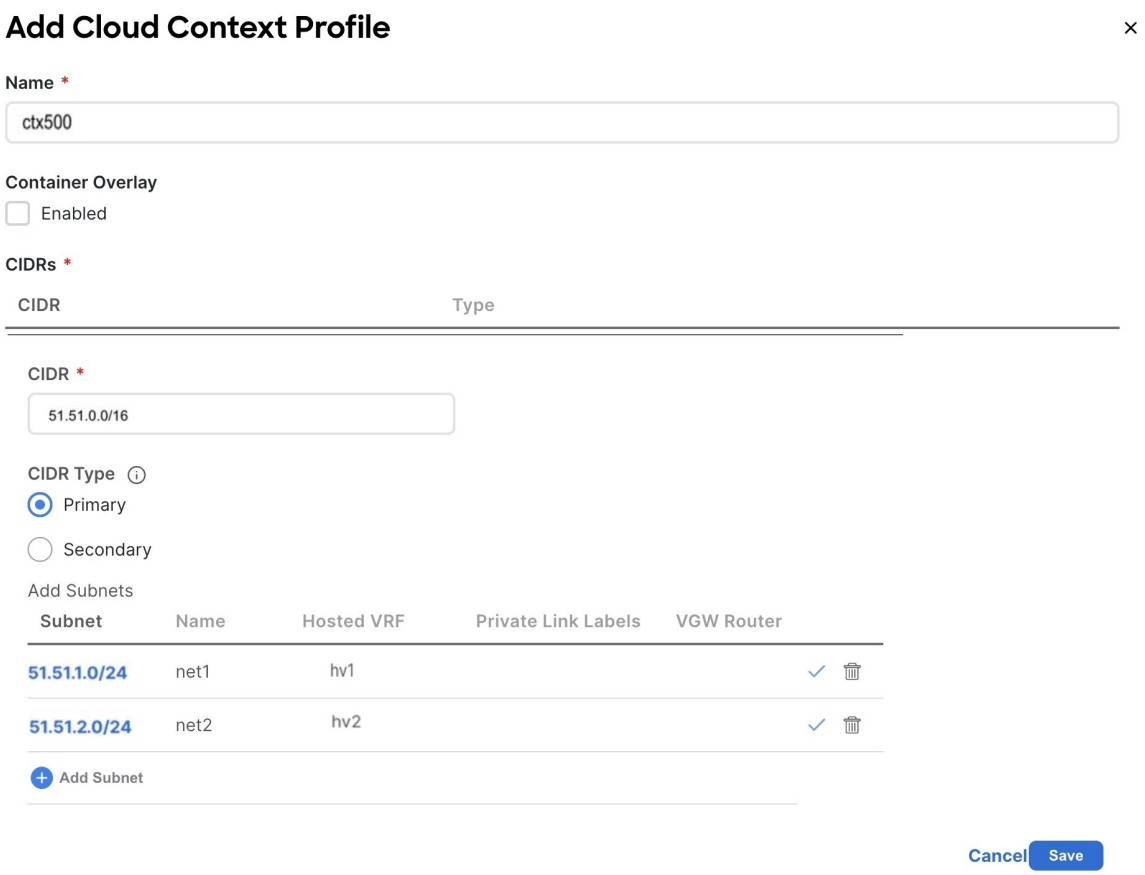
  Note
  The VNet CIDR information that you enter in this field cannot overlap with the infra pool. Verify that the CIDR information that you enter in this field does not overlap with the infra pool information that you entered in the **Infra Subnet** field in Step Deploying the Cisco Cloud Network Controller in Azure.

- **CIDR Type**—Select **Primary** or **Secondary**. If this is your first CIDR, choose **Primary** for the CIDR type.
- **Add Subnet**—Enter the subnet information, then click the check mark. For example, 51.51.1.0/24.

For our example, we add at least two subnets each with a secondary VRF instance (`hv1` or `hv2`) defined earlier.

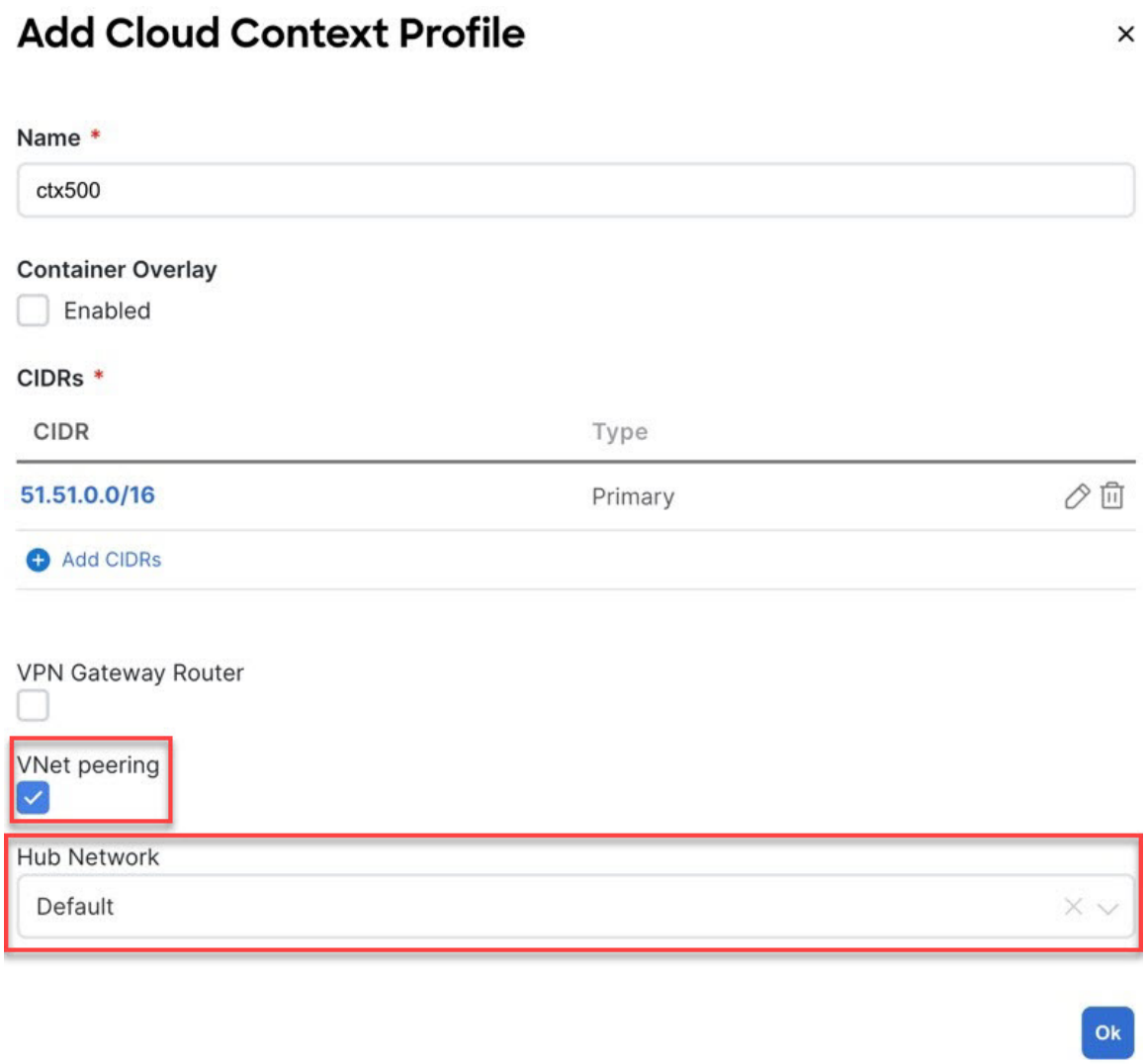
d) Click **Save** to exit from the window.

Figure 12:



Step 2 Put a check on **VNet Peering** box then choose **Default** from **Hub Network** drop-down list to enable VNet peering to the Infra VNet.

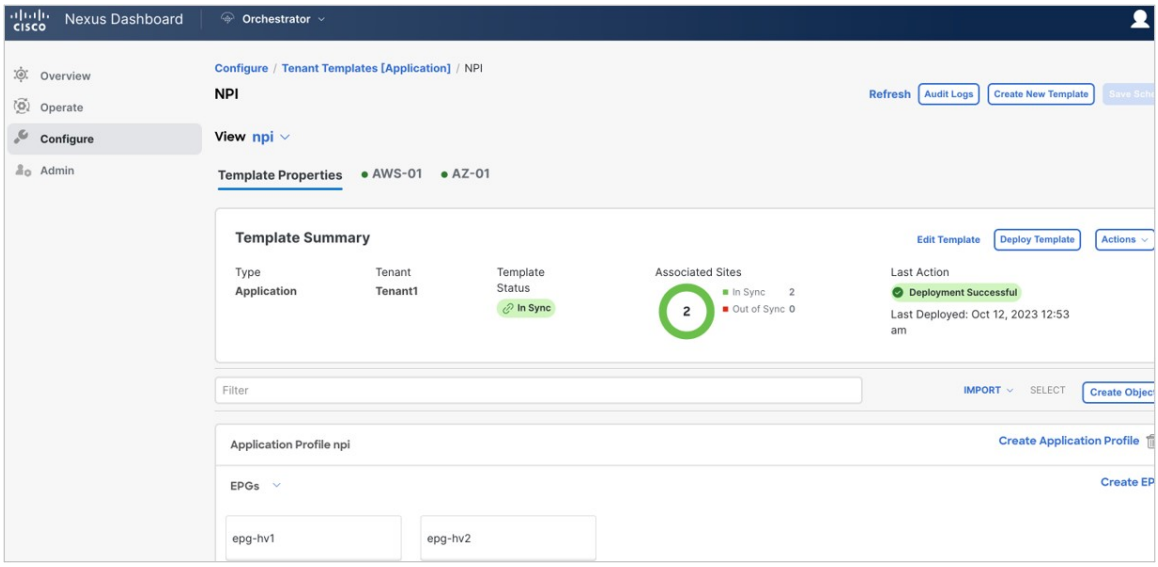
Figure 13:



Step 3 Click **Ok** to finish adding the cloud context profile to the VRF instance.

Step 4 Click on the **Deploy Template** button at the top-right corner of the screen to deploy the schema to the sites. You should see a message saying "Successfully Deployed" at this point.

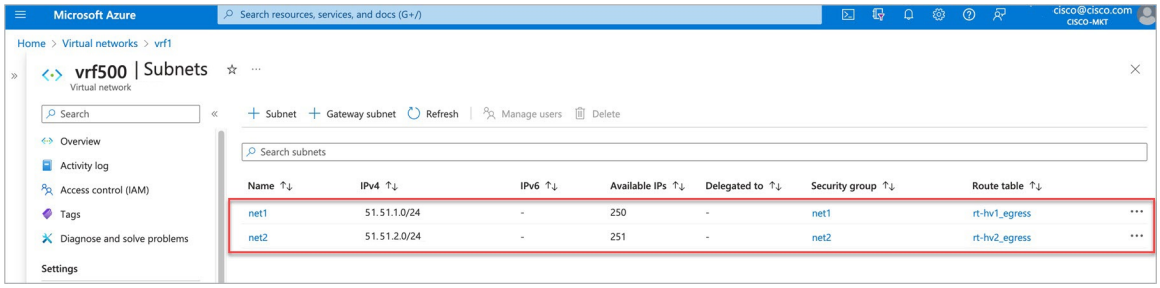
Figure 14:



What to do next

After the template is sucessfully deployed, you can see the newly created VNet and two newly created subnets that are hosted under two different secondary VRFs with separate route tables on your Azure portal.

Figure 15:



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