



# Stretched Cluster Deployments of the Avi Service Engines for the Avi Vantage Platform

Avi Technical Reference (v20.1)

# Stretched Cluster Deployments of the Avi Service Engines for the Avi Vantage Platform

[view online](#)

## Scope Avi Service Engine(s) to a Metro Region in the first Workload Domain in Region A

To ensure all Avi Service Engines belonging to a Service Engine Group are hosted on the primary metro region, only the Hosts belonging to the primary metro region should be included for placement.

### Prerequisites

- vCenter has been setup in the Workload Domain
- Cluster where Avi Service Engine VMs will be deployed has been configured and stretched

### Procedure

You can use the steps detailed in Configure Service Engine Group on the Avi Controller for the First Workload Domain.

Setting	Value
Host Scope Service Engine within	Select Host and Include the ESXi hosts which are part of the primary metro region of this Workload Domain

**Note:** If there is a DR scenario, vSphere HA would migrate existing Avi Service Engines to hosts on the secondary metro region. To enable creation of new Avi Service Engines in the secondary metro region, Avi Controller admin would need to update the Host Scope Service Engine within property of the Service Engine Group to include the hosts of the secondary metro region.

## Creating VM Groups for Avi Service Engines in the First Workload Domain in Region A

VM/Host Groups are created for deploying Avi Service Engines to support VCF stretched cluster deployment. In the case of a DR event, vSphere HA will migrate failed Avi Service Engine VMs from the failed metro region to the alive metro region. Avi Service Engines in the alive metro region should continue to service application traffic with zero to minimal disruption. When the failed metro region comes back online, DRS should rebalance Avi Service Engine VM placement across the two metro regions.

All Avi Service Engines belonging to the same SE Group will be placed in one metro region and act as the primary region for services hosted on these Avi Service Engines. Different SE Groups can pick which metro region to associate as the primary metro region. Hence, multiple VM/Host Groups might be created for such a purpose.

You can configure 2 VM/Host Groups, one each mapping to the two metro regions. These can be used in a flexible fashion to to annotate different metro regions as primary across different SE Groups.

### Prerequisites

- vCenter is setup in the workload domain.
- The cluster where Avi Service Engine VMs will be deployed is configured and stretched.

- ? At least 1 Virtual Service has been deployed and configured on Avi Vantage.

### Procedure to create VM Groups for Avi Service Engines in the first Workload Domain

The following are the steps to create virtual machine groups for Avi Vantage Service Engines in the first workload domain:

1. Log in to the vCenter Server of the corresponding workload domain.
2. Navigate to the vCenter Cluster configuration where the Avi Service Engine VMs are deployed vCenter > DataCenter Cluster > Configure.
3. Under the VM or host groups, click on + to add a new VM or host group to host Avi Service Engine VMs. This VM Group will host all Avi Service Engines from the SE Group which is mapped to metro region 1 as its primary.
4. Specify the following information in the Create VM/Host Group section:

Setting	Value
Name	sfo-w01-avise-01
Type	VM Group
5. Click on + to add the Avi Service Engine.
6. Search and add the appropriate Avi Service Engine VMs by entering sfo-w01-avise in the search Filter.
7. Click on OK to add the Avi Service Engine VMs to the group.
8. Click on OK to save the configuration.

Similarly create a sfo-w01-avise-02 VM Group to host all Avi Service Engines from the SE Group which is mapped to metro region 2 as its primary.

Note: New Avi Service Engine VMs will be added to the appropriate VM group. This will not be orchestrated by the Avi Controller.

### Creating Host Groups for ESXi hosts in the first Workload Domain in Region A

You can create one host group each that contains ESXi hosts of each of the two metro regions in a stretched cluster deployment. This group can be used for Avi Service Engine VM availability.

#### Prerequisites

- vCenter is setup in the workload domain.
- The cluster where Avi Service Engine VMs will be deployed is configured.
- The cluster is stretched between two metro regions.

### Procedure to create Host Groups for ESXi hosts in the first Workload Domain

The following are the steps to create host groups for ESXi hosts in the first workload domain:

- Log in to the vCenter server of the corresponding workload domain.

- Navigate to the vCenter cluster configuration where the Avi Service Engine VMs are deployed vCenter > DataCenter > Cluster > Configure.
- Under the VM or host groups, click on + to add a new VM or host group to host ESXi servers in metro region 1.
- Specify the following information in the Create VM/Host Group section:

Setting	Value
Name	sfo-w01-c01-metroregion01
Type	Host Group

- Click on + and add the ESXi servers in metro region 1.
- Click on OK.
- Click on OK to save the configuration.
- Create another host group for metro region 2 with the following information in the Create VM Host Group section:

Setting	Value
Name	sfo-w01-c01-metroregion02
Type	Host Group

## Creating VM/Host Affinity Rules for Avi Service Engines in the first Workload Domain in Region A

To ensure highest availability, the primary Avi Service Engine VM will be configured with affinity to ESXi servers in metro region 1 and the secondary Avi Service Engine VM will be configured with affinity to ESXi servers in metro region 2.

### Prerequisites

- SE Group is using the legacy active or standby HA mode.
- The cluster where Avi Service Engine VMs will be deployed is stretched.
- You should create two VM groups for the Avi Service Engines VMs to support active or standby and active or active Avi Service Engine deployments.
- The two host groups are been created for the two metro regions.

### Procedure to create VM/Host Affinity Rules for Avi Service Engines in the first Workload Domain

The following are the steps to create VM/host affinity rules for Avi Service Engines in the first workload domain:

1. Log in to the vCenter Server of the corresponding workload domain.
2. Navigate to the vCenter cluster configuration where the Avi Service Engine VMs are deployed vCenter > DataCenter > Cluster > Configure.

3. Under the VM or host rules, click on + to add a new VM or host rule to create an affinity rule for Avi Service Engine VMs of the first VM group to ESXi servers of the first metro region.

4. Specify the following information in the Create VM/Host Rule section:

Setting	Value
Name	sfo-w01-avise-01
Type	Virtual Machines to Hosts
VM Group	sfo-w01-avise-01
Should run on hosts in group	
Host Group	sfo-w01-c01-metroregion01

5. Click on OK to save the configuration.

6. Create another VM or host rule to create an affinity rule for Avi Service Engine VMs of the second VM group to ESXi servers of the second metro region.

Setting	Value
Name	sfo-w01-avise-02
Type	Virtual Machines to Hosts
VM Group	sfo-w01-avise-02
Should run on hosts in group	
Host Group	sfo-w01-c01-metroregion02

```
<div class="col-6 text-left prev-topic-nav">
  <a class="prev-topic" href="https://avinetworks.com/docs/20.1//avi-reference-architecture-for-vcf/avi-reference-arc
    <i class="fa fa-angle-double-left" aria-hidden="true"></i>
    <span data-i18n="" data-i18n-previous="">Previous Page</span>
  </a>
</div>
```