



# Affinity and Anti-Affinity Rules

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## Affinity and Anti-Affinity Rules

Affinity and anti-affinity rules create relationship between virtual machines (VMs) and hosts. The rule can be applied to VMs, or a VM and a host. The rule either keeps the VMs and hosts together (affinity) or separated (anti-affinity).

Policies are applied during individual VM deployment. You can deploy a single VNF or multiple VNFs together through ESC portal by uploading an existing deployment datamodel or by creating a new deployment datamodel. For more information, see ESC Portal Dashboard.

Affinity and anti-affinity policy streamlines the deployment process.

Affinity and anti-affinity rules are created and applied on VMs at the time of deployment. VM receives the placement policies when the deploy workflow is initialized.

During a composite VNF deployment, if a couple of VMs need to communicate with each other constantly, they can be grouped together (affinity rule) and placed on the same host.

If two VMs are over-loading a network, they can be separated (anti-affinity rule) and placed on different hosts to balance the network.

Grouping or separating VMs and hosts at the time of deployment helps ESC to manage load across the VMs and hosts in the network. Recovery and scale out of these VMs do not impact the affinity and anti-affinity rules.

The anti-affinity rule can also be applied between VMs within the same group and on a different host. These VMs perform similar functions and support each other. When one host is down, the VM on the other host continues to run preventing any loss of service.

The table shows the types of affinity and anti-affinity policies in a deployment.

**Table 1: Intra and Inter group affinity and anti-affinity policies**

Policy	Policy	VM group	Host	Zone
affinity	Intra group affinity	same VM group	same host	same zone
	Inter group affinity	different VM group	same host	same zone

Policy	Policy	VM group	Host	Zone
anti-affinity	Intra group anti-affinity	same VM group	different host	same zone
	Inter group anti-affinity	different VM group	different host	same zone



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**Note** If the zone is not specified on OpenStack, VMs will be placed on different hosts and different zones for inter and intra group anti-affinity rules.

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