Usage Guidelines for User-Defined Routes

Introduction to the Cisco Catalyst 8000V Route Tables

This section provides guidelines which will help you to decide user-defined routes to add to the route tables. When you deploy a Cisco Catalyst 8000V in a Virtual Network using the Microsoft Azure Marketplace template, a route table is created for each subnet to which the Cisco Catalyst 8000V has a network connection. For example, if you deploy a 4-NIC version of the Cisco Catalyst 8000V from the Microsoft Azure Marketplace, 4 subnets are created. Each subnet has an associated route table. No routes are automatically installed in the route table.

For further information on defining user-defined routes, see the *User Defined Routes* section in this Microsoft Azure documentation: https://docs.microsoft.com/en-us/azure/.

User Defined Routes in the Same Virtual Network

By default, the Microsoft Azure network infrastructure provides a basic routing service which interconnects all the subnets within a virtual network. Packets can be passed between any virtual machines within the same virtual network without the assistance of the Cisco Catalyst 8000V instance.

However, if you need inter-subnet packets to be delivered to the Cisco Catalyst 8000V (to implement advanced services such as filtering and QoS) you need to install a user-defined route in the routing table for the subnet that designates the Cisco Catalyst 8000V instance as the next hop router.

Routing between Virtual Networks or On-Premises Networks

The Microsoft Azure network infrastructure does not, by default, interconnect different virtual networks or connect virtual networks to on-premises networks. To connect to these networks, you must create a user-defined route in each route table to specify the Cisco Catalyst 8000V as the next hop router to each remote network. The user-defined route can be either a default route or a specific destination route. To force traffic through Cisco Catalyst 8000V, either install a default route or a specific destination route in the route table that points to Cisco Catalyst 8000V.

Note If a default route is installed in a route table, all the traffic is diverted to the specified next hop. This causes a problem if you have virtual machines with an allocated public IP address (used for management access to the VM). If you have a default route in the route table associated with the subnet, the virtual machine is not reachable through its public IP address.

Note Microsoft Azure supports a feature called VNET Peering which can interconnect virtual networks as long as they are hosted in the same region. In order to use VNET Peering and utilize services within Cisco Catalyst 8000V, you must add a user-defined route to force the traffic through Cisco Catalyst 8000V.

User Defined Routes for High Availability

You can deploy two Cisco Catalyst 8000V instances in the same virtual network to provide 1:1 redundancy for high availability. When you configure a Cisco Catalyst 8000V instance with high availability, it monitors the reachability of its peer router. If Cisco Catalyst 8000V believes that the peer router has gone down, it installs its own IP address in the route table. This causes the traffic to be routed through the "working" Cisco Catalyst 8000V instance.

When you configure user-defined routes, you need to decide if you want the entries in the route table to be updated when there is a failure of one of the Cisco Catalyst 8000V peer routers. You must configure a redundancy node for each user-defined route table if the route table is one in which the high availability feature needs to redirect traffic to the “working” Cisco Catalyst 8000V.

All the routes in the route table specified by a redundancy node are updated in the case of a Cisco Catalyst 8000V peer failure.