474 CCNP and CCIE Enterprise Core ENCOR 350-401 Official Cert Guide



Unlike the VLAN ID, which has only 12 bits and allows for 4000 VLANs, VXLAN has a 24-bit VXLAN network identifier (VNI), which allows for up to 16 million VXLAN segments (more commonly known as *overlay networks*) to coexist within the same infrastructure.

The VNI is located in the VXLAN shim header that encapsulates the original inner MAC frame originated by an endpoint. The VNI is used to provide segmentation for Layer 2 and Layer 3 traffic.



To facilitate the discovery of VNIs over the underlay Layer 3 network, *virtual tunnel endpoints (VTEPs)* are used. VTEPs are entities that originate or terminate VXLAN tunnels. They map Layer 2 and Layer 3 packets to the VNI to be used in the overlay network. Each VTEP has two interfaces:

- Local LAN interfaces: These interfaces on the local LAN segment provide bridging between local hosts.
- IP interface: This is a core-facing network interface for VXLAN. The IP interface's IP address helps identify the VTEP in the network. It is also used for VXLAN traffic encapsulation and de-encapsulation.

Figure 16-14 illustrates the VXLAN VTEP with the IP interface and the local LAN interface.



Devices that are not capable of supporting VXLAN and need to use traditional VLAN segmentation can be connected to VXLAN segments by using a VXLAN gateway. A VXLAN gateway is a VTEP device that combines a VXLAN segment and a classic VLAN segment into one common Layer 2 domain.

