



Preparation for Installing and Using Cisco ACI vPod

Make sure to fulfill all the prerequisites, meet the requirements, and follow all the guidelines in this chapter before you install and use Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod).

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Prerequisites, Requirements, and Guidelines for Installing and Using Cisco ACI vPod

You must fulfill several requirements before you can install and use Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod). These include:

- Preparing the Cisco ACI fabric
- Meeting scalability requirements
- Fulfilling hardware requirements
- Fulfilling software requirements

This section provides an overview of the prerequisites for installing Cisco ACI vPod.

Cisco ACI Fabric Preparation

Before you can install and use Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod), the Cisco ACI fabric must be properly configured. This section lists the necessary configuration tasks.

- Set up Cisco APIC.

See the *Cisco APIC Getting Started Guide* and the *Cisco APIC Basic Configuration Guide* on [Cisco.com](#) for instructions on how to configure Cisco APIC for the first time.

- Set up at least one Cisco ACI physical pod or multipod.

Follow instructions in the *Cisco ACI Layer 3 Network Configuration Guide*. Review the following Cisco Live session for information on how to bring up a Cisco ACI fabric from scratch:

<https://www.ciscolive.com/global/on-demand-library/?search=paggen#/>.

- Physically connect the physical pod and the gateway for the Cisco ACI vPod tunnel endpoint (TEP) pool to the interpod network (IPN) devices.
- Configure the IPN devices with the correct IP addresses on the interfaces facing the spine switches.
- Ensure that the IPN supports the following functionalities so it can connect the physical on-premises data center to the Cisco ACI vPod:
 - **DHCP relay support:** Autoprovisioning of Cisco ACI fabric devices depends on DHCP relay support. It enables the Cisco ACI vPod components to automatically join the Cisco ACI fabric, as if Cisco ACI vPod were a physical pod, multipod, or remote leaf.
 - **OSPF support:** Open Shortest Path First (OSPF) v2 is the routing protocol that is supported on the physical spine interfaces connecting to IPN devices.
 - **Increased MTU support:** The IPN must support sufficient maximum transmission unit (MTU) to accommodate VXLAN data plan traffic between the physical and virtual pods. The required MTU in the IPN must be 50 bytes higher than the maximum frame size used by endpoints within the fabric to accommodate the additional VXLAN headers.
- Enable DHCP relay on the Cisco ACI vPod routers to direct DHCP requests to the Cisco APIC cluster external IP addresses assigned to Cisco APIC. The DHCP requests assignment of IP addresses from the configured TEP pool to new vSpines and vLeafs.

**Note**

You can find the external IP addresses assigned to Cisco APIC from Cisco APIC from the command **acidic avread** or from the physical pod spine switch with the command .

Scalability Requirements

Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod) is part of the Cisco ACI fabric and is managed by a single Cisco Application Policy Infrastructure Controller (APIC) controller. Observe the scalability limits in the [Verified Scalability Guide for Cisco APIC](#) on Cisco.com.

Hardware Requirements

Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod) components connect to an existing Cisco ACI fabric over an interpod network (IPN). Cisco ACI vPod uses head-end replication for broadcast, unknown unicast, and multicast (BUM) traffic across physical and virtual pods. Doing so reduces IPN requirements and allows Cisco ACI vPod to extend further into the enterprise backbone or WAN.

The use of head-end replication for BUM traffic requires that you use second-generation physical spines on the Cisco ACI fabrics that connect to the IPN. The following table shows the physical spine switches that support Cisco ACI vPod in Cisco APIC Release 4.0(1).

Switch Type	Supported Hardware
Fixed Spine Switches	<ul style="list-style-type: none"> • N9364C • N9332C

Switch Type	Supported Hardware
Modular Switches	Supported with the following line cards: <ul style="list-style-type: none"> • N9732C-EX • N9732C-FX • N9736C-FX

First-generation spine switches, which do not support Cisco ACI vPod, can be part of a Cisco ACI fabric that contains second-generation spine switches. However, make sure that only second-generation spine switches connect to the IPN to support Cisco ACI vPod.

Software Requirements

Make sure that you meet the software-related requirements in this section for Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod):

Component	Description
Cisco APIC	Cisco ACI vPod is supported beginning with the Cisco APIC 4.0(1) release.
Cisco ACI Virtual Edge	<ul style="list-style-type: none"> • Version: Cisco ACI Virtual Edge Release 2.0(1a) and later. • Hypervisor requirement: ESXi 6.0 and later. • Virtual Machine (VM) resources: 2 vCPU, 4 GB of RAM, and 24 GB of storage.
VMware vCenter	Cisco ACI vPod is compatible with VMware vCenter Server release 6.0 and later.
VMware vSphere bare-metal servers	<p>Cisco ACI vPod is supported as a virtual infrastructure for the Cisco APIC in remote sites with release 6.0 and later of the VMware ESXi hypervisor.</p> <p>Note Make sure that the ESXi server is time-synchronized with a Network Time Protocol (NTP) server. This ensures that the VMs are discovered.</p>
Virtual spine (vSpine)	<ul style="list-style-type: none"> • Hypervisor requirement: ESXi 6.0 or later. • Virtual Machine (VM) resources: 2 vCPU, 8 GB of RAM, and 100 GB of storage.
Virtual leaf (vLeaf)	<ul style="list-style-type: none"> • Hypervisor requirement: ESXi 6.0 or later. • Virtual Machine (VM) resources: 2 vCPU, 8 GB of RAM, and 100 GB of storage.

Component	Description
Cisco ACI vCenter plug-in	The latest available version.

Cisco ACI vPod Deployment Recommendations

We recommend that you follow the recommendations in this section when planning to deploy Cisco Application Centric Infrastructure (ACI) Virtual Pod (vPod) and its components.

- **vSpine and vLeaf deployment:** Deploy the vSpine and vLeaf in pairs. When you deploy the vSpine and vLeaf in pairs, both components provide active-active redundancy. Deploy each pair on two separate hosts with one vSpine and one vLeaf on each host. During deployment, the deployment tool prevents both vSpines and both vLeaves from residing on the same host. Ensuring that each vSpine-vLeaf pair is on separate hosts allows Cisco ACI vPod to remain operational if a physical host fails.

We recommend that you deploy the vSpines and vLeaves on a dedicated management VMware cluster that does not host Cisco ACI Virtual Edge or VMs that use the Cisco ACI vPod as a transport.