Hypervisor Requirements

The Cisco IOS XRv Router supports selected hypervisors for installation. This chapter covers information about virtual machine requirements for hypervisors, VMware ESXi and KVM/QEMU hypervisor's support, and limitations.

General Virtual Machine Requirements

Regardless of hypervisor, all Cisco IOS XRv Router virtual machines must meet the following requirements:

Parameter	Minimum	Maximum
Memory (RAM)	3 GB	8 GB
Hard Disk	1 disk, 2 GB	Primary disk must be 2 GB, secondary disk of arbitrary size can be added
CPUs	1 CPU	8 CPUs
Serial Ports	1 serial port (IOS XR console)	4 serial ports (XR console, XR aux port, 2 debugging ports)
NICs	1 NIC	128 (depending on hypervisor's capabilities)

VMware ESXi Support Information

The Cisco IOS XRv Router runs on the VMware ESXi hypervisor. You can use the same VMware ESXi hypervisor to run several VMs. Use the VMware vSphere Client GUI to create and manage VMs.

Note   The Cisco IOS XRv Router is compatible with VMware ESXi Server version 5.0 and later.

VMware vSphere

VMs run on the VMware vSphere Hypervisor. You can use the same VMware vSphere hypervisor to run several VMs. Use the VMware vSphere Client GUI to create and manage VMs.

The VMware vSphere Client is an application for creating, configuring and managing VMs on the VMware vCenter Server. The Cisco IOS XRv Router can boot from a virtual disk located on the data store. You can perform basic administration tasks such as starting and stopping the Cisco IOS XRv Router, using the VMware vSphere Client.

VMware vCenter Server manages the vSphere environment and provides unified management of all the hosts and VMs in the data center from a single console.

For more information about how Cisco and VMware work together, see http://www.vmware.com/cisco.

Supported VMware Features and Operations

VMware supports various features and operations that allow you to manage your virtual applications and perform operations.

Below is the list of VMware features and operations that are supported on the Cisco IOS XRv Router:

- Template
- Power On
- Power Off
- vSwitch

For more information about VMware features and operations, see the VMware Documentation.

KVM/QEMU Support Information

Kernel-based Virtual Machine (KVM) is an open source, full virtualization solution for Linux on x86 hardware containing virtualization extensions. It consists of a loadable kernel module, kvm.ko that provides the core virtualization infrastructure and a processor specific module, kvm-intel.ko or kvm-amd.ko.

QEMU (Quick EMUlator) is a free and open-source software product that performs hardware virtualization. You can run QEMU on the Cisco UCS server with KVM installed. The recommended version of QEMU for Cisco IOS XRv Router reference platform is QEMU 1.0.

Supported KVM/QEMU Features and Operations

Below table lists KVM/QEMU features and operations that are supported/not-supported on the Cisco IOS XRv Router.

Supported	Not-supported
Power on/off	Suspend/Resume
E1000	Snapshots
VirtIO NICs	Cloning

Hypervisor Limitations

The following are hypervisor limitations for Cisco IOS XRv Router, Release 4.3.2:

- Cisco IOS XRv Router supports an maximum transmission unit (MTU) range of 1500-9216 bytes. However, the maximum MTU supported on your hypervisor version may be lower. The MTU value configured on any interface on Cisco IOS XRv Router should not exceed the maximum MTU value supported on the hypervisor.

- Cisco IOS XRv Router is aware of the emulated virtual NICs (VirtIO/E1000) provided to it by the hypervisor, but is unaware of the underlying physical NICs on the host. This has various implications, including:

  ◦ Cisco IOS XRv Router interfaces default to 1 GB bandwidth, irrespective of the hypervisor's physical NIC(s) bandwidth. The routing protocols (OSPF, EIGRP) use the Cisco IOS XRv Router interface bandwidth values for calculating the costs, not the physical NIC(s) bandwidth.

  ◦ If the physical NIC(s) on the host goes down, this state change may not necessarily propagate to the virtual NICs in Cisco IOS XRv Router, which may remain in an up/up state. This behavior is expected.