



# Troubleshooting Cisco CSR 1000v VM Issues

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## Verifying the Cisco CSR 1000v Hardware and VM Requirements

To help troubleshoot issues with the Cisco CSR 1000v, make sure that the router is installed on supported hardware and that the VM requirements are being met:

- Verify that the server hardware is supported by the hypervisor vendor.  
If using VMware, verify that the server is listed on the VMware Hardware Compatibility List. See the VMware documentation for more information.
- Verify that the I/O devices (for example, FC, iSCSI, SAS) being used are supported by the VM vendor.
- Verify that sufficient RAM is allocated on the server for the VMs and the hypervisor host.  
If using VMware, make sure the server has enough RAM to support both the VMs and VMware ESXi.
- Verify the hypervisor version is supported by the Cisco CSR 1000v.
- Verify that the correct VM settings for the amount of memory, number of CPUs, and disk size are configured.
- Verify that the vNICs are configured using a supported network driver. See [Installation Overview](#).

Also see [Cisco CSR 1000v Release Notes](#).

## Troubleshooting Network Connectivity Issues

To troubleshoot network connectivity issues for the Cisco CSR 1000v, do the following:

- Verify that there is an active and unexpired license installed on the VM.

Enter the **show license** command. The License State should be shown as “Active, In Use”.

- Verify that the vNIC for the VMs are connected to the correct physical NIC, or to the proper vSwitch.
- If using virtual LANS (VLANs), make sure the vSwitch is configured with the correct VLAN.
- If using static MAC addresses, or VMs that are cloned, make sure there are no duplicate MAC addresses. Duplicate MAC addresses can cause the Cisco CSR 1000v feature license to become invalidated, which will disable the router interfaces.

## Troubleshooting VM Performance Issues

The Cisco CSR 1000v operates within a set of supported VM parameters and settings to provide certain levels of performance that have been tested by Cisco. Use the vSphere Client to view data to troubleshoot VM performance. If you are using vCenter, you can view historical data. If you are not using vCenter, you can view live data from the host.

This is a list of troubleshooting tips for performance issues:

### Troubleshooting—MTU

Verify that the router has the correct setting for maximum MTU.

By default, the maximum MTU on the router is 1500. To support jumbo frames, edit the default VMware vSwitch settings. For more information, see the VMware vSwitch documentation.




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**Note** ESXi 5.0 supports a maximum MTU of 9000, even if jumbo frames are enabled on the router.

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### Troubleshooting—Memory

The Cisco CSR 1000v does not support memory sharing between VMs. On the ESXi host, check the memory counters to find out how much used memory and shared memory is on the VM. Verify that the balloon and swap used counters are zero.

If a given VM does not have enough memory to support the Cisco CSR 1000v, increase the size of the VM's memory. Insufficient memory on the VM or the host can cause the Cisco CSR 1000v console to hang and be non-responsive.




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**Note** When troubleshooting performance issues, note that other VMs on the same host as the Cisco CSR 1000v can impact the performance of the Cisco CSR 1000v VM. Verify that other VMs on the host are not causing memory issues that are impacting the Cisco CSR 1000v VM.

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### Troubleshooting—Network Packets

Verify that no network packets are being dropped. On the ESXi host, check the network performance and view the counters to measure the number of receive packets and transmit packets dropped.

## Troubleshooting—Throughput

Verify the current maximum throughput level with the **show platform hardware throughput level** command.

## Troubleshooting—Instruction Extensions

Some x86 processors support instruction extensions for performing certain cryptographic transforms. Using these instructions is more efficient than not using them. The Cisco CSR 1000v/ISRv detects at runtime if the instruction extensions are available and will use them if they are available. To determine if the extensions are available, enter the **show platform software system all** command. (See the example below.)

If the output shows that "Crypto Supported" is "No", then the Cisco CSR 1000v/ISRv may not exhibit the expected throughput. This is an issue with either the underlying physical hardware or the hypervisor. Check to see if the underlying physical hardware is capable of exposing the extensions and also check to see if the hypervisor can expose the extensions.

If the output shows that "Crypto Supported" is "Yes", then the Cisco CSR 1000v/ISRv should provide the expected throughput, because the physical hardware and the hypervisor can expose the extensions.

In the following example, "Crypto Supported" is "Yes". Therefore the cryptographic transforms can use instruction extensions, and perform efficiently.

```
CSR1# show platform software system all
Processor Details
=====
Number of Processors : 4
Processor : 1 - 4
vendor_id : GenuineIntel
cpu MHz : 3192.307
cache size : 20480 KB
Crypto Supported : Yes
```

## IP address Inconsistency Issues on the vSphere Web Client

As a user who's using CSR 1000v running on IOS XE 16.9.1 release or later, you might face inconsistencies in the IP addresses that is configured on the router and what is shown on the vSphere Web Client. At this moment there are no resolutions for this issue. See the following list to know why these inconsistencies might occur:

- ipv4 addresses for interfaces that are up or down are detected, while ipv6 addresses are only detected for interfaces that are up.
- After you perform an Interface Hot Delete, the vSphere Web Client continues to display the IP Address of the deleted interface.
- When you perform a reload on a CSR 1000v with addresses configured but not written to memory, the vSphere Web client continues to display the addresses even after the router comes up again. This occurs even though there are no addresses configured on the router. For example, configure Loopback, port-channel, port-group, and subinterfaces on a CSR 1000v router so that 63 addresses are displayed by the vSphere Web Client. Do not write the configuration to memory and reload the CSR 1000v. After the reload completes, all the 63 addresses are displayed on the Web Client. This occurs even though no addresses are configured on the CSR 1000v router. You can resolve this issue by configuring an address

on the CSR 1000v router. When you do so, the web client then removes the 63 address and just displays the newly configured address.

- When you configure multiple ipv6 addresses on an interface, only the last address that you configured is detected. If you unconfigure that address, none of the remaining configured ipv6 address on that interface are detected. This creates a state with multiple ipv6 addresses configured on an interface, but none displayed by the Web Client.
- When you delete interfaces, some of the addresses of the new interfaces are not displayed. This happens when the maximum number of IP Addresses are displayed and then you delete interfaces. For example, configure 32 Loopback interfaces with addresses and then delete each interface. Then, configure 32 GigabitEthernet subinterfaces with addresses. The addresses for the subinterfaces are not detected. This is because the router maintains entries for the deleted Loopback interfaces and is not able to add new interfaces.
- Addresses are detected for GigabitEthernet, Loopback, PortChannel, and VirtualPort-Group Interfaces as well as subinterfaces. However, Tunnel interface addresses are not detected.
- Secondary IP Addresses for IPv4 interfaces are not detected