UC Voice Application Connectivity in a VMware UCS Environment

Contents

Introduction

This document describes how to troubleshoot connectivity issues when Cisco Unified Communications Manager (CUCM), Cisco Unity Connection, or Cisco Unified Contact Center Express (UCCX) is installed on a Unified Computing System (UCS) platform but cannot be reached.

This document uses the example of a CUCM that is a virtual machine (VM) on the VMware ESXi host on the UCS platform.

Troubleshoot

This procedure describes how to troubleshoot connectivity issues between a CUCM VM and a UCS. The steps are:

1. Verify the VM Network Interface Controller (NIC) state.
2. Check connectivity.
3. Verify the Layer 2 (L2) connectivity.
4. Verify the Layer 3 (L3) connectivity.
5. Verify the port-group configuration.
6. Verify the VSwitch configuration.
7. Remove any improperly configured adapters.

   Notes:

   Use the Command Lookup Tool (registered customers only) in order to obtain more information on the commands used in this section.

   The Output Interpreter Tool (registered customers only) supports certain **show** commands. Use the Output Interpreter Tool in order to view an analysis of **show** command output.

1. On the CUCM command-line interface (CLI) console, enter the **show network eth0** command, and verify the VM NIC state:

Status: upLink Detected: yesMode: Auto enabled, Full, 1000 Mbits/sDuplicate IP: noConfirm the configured IP Address

```
admin:show network eth0
Ethernet 0
DHCP           : disabled       Status     : up
IP Address     : 10.106.119.131 IP Mask    : 255.255.255.192
Link Detected: yes              Mode       : Auto enabled, Full, 1000 Mbits/s
Duplicate IP : no
```

2. Attempt to ping the default gateway with the **utils network ping** *default gateway IP* command in order to check connectivity. If the gateway is not accessible, continue with the next steps.

3. Log in to the upstream switch that is connected to the UCS, and enter the **show mac-address** command in order to verify L2 connectivity. Verify that the CUCM VM address has been learned by the upstream switch. In VSphere, right-click the VM, select **Edit-Settings**, navigate to the **Hardware** tab, and select the **Network Adapter**:
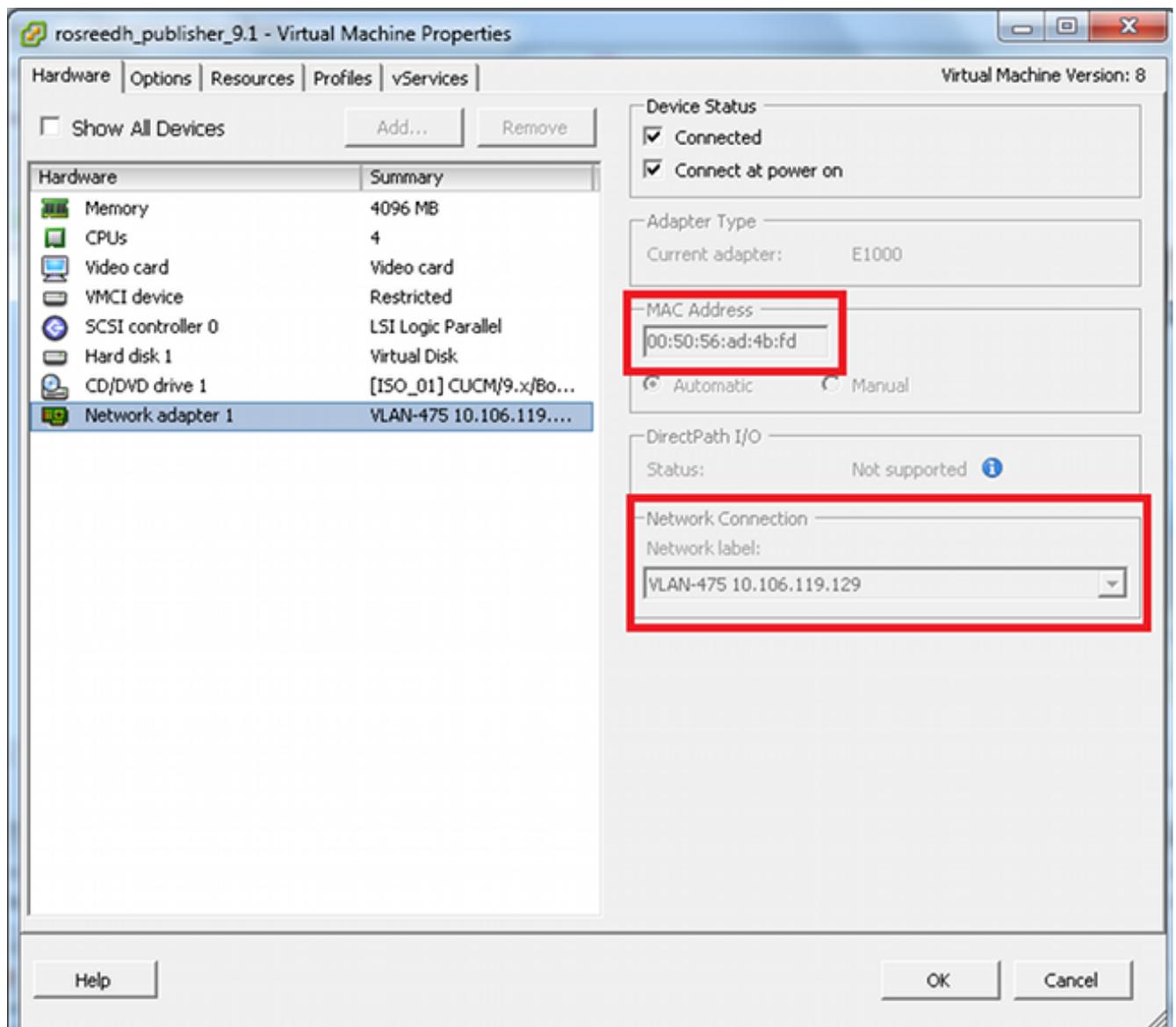
4. If Step 3 confirmed that the MAC address has been learned, verify L3 connectivity. Create a

VLAN interface, and ping the default gateway from the switch in order to verify that the upstream switch can route on the VLAN. Verify the port-group used by the CUCM VM. In this example, the port-group is assigned to VLAN-475.

5. Navigate to the UCS host **Configuration** tab. In the Hardware section, click **Networking** in order to verify port-group configuration. Check the port-group identified in Step 4, and verify the associated physical adapters:
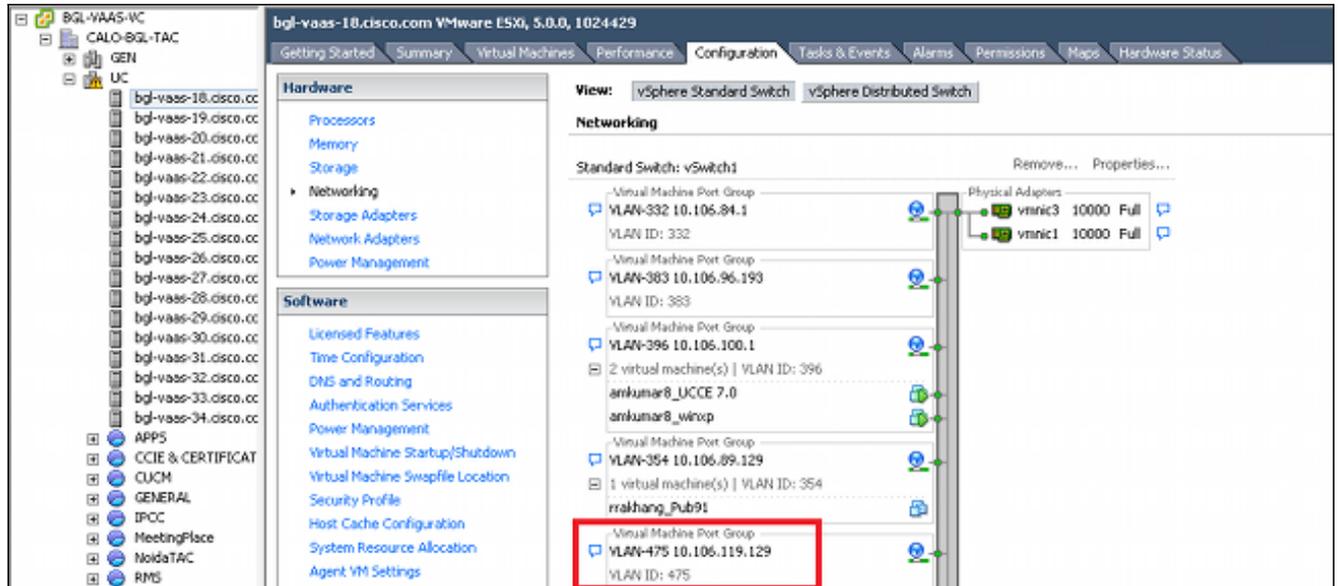
6. Click the blue icon next to each physical adapter in order to verify VSwitch configuration and view the Cisco Discovery Protocol (CDP) neighbor details. In this example, the switches are vmnic1 amd vmnic3. If the CDP details are not shown, the switch is not configured properly.

See the VMware document, "Cisco Discovery Protocol (CDP) network information (1007069) ," for more information.

Note: If there are multiple physical adapters, all devices should show the CDP details properly. Even if only one is not shown properly, the communication might be disrupted because the load is balanced among all of the added or configured physical adapters.Verify the configuration on the upstream port shown in the CDP information. For example, ensure that the interface is set to trunking and the port-group VLAN is allowed. If the port-group does not have a VLAN mapping, ensure that the upstream switch has the correct native VLAN set or is accessing the correct VLAN.

This is a sample configuration for the VLAN-475 setup for trunking:

```
interface gigabitEthernet1/0/2
switchport mode trunk
switchport trunk allowed vlan 400-475
spanning-tree portfast trunk
```
This is a sample configuration with trunking, but no VLAN tagging in the port-group:

```
interface gigabitEthernet1/0/2
switchport mode trunk
switchport trunk allowed vlan 400-475
spanning-tree portfast trunk
switchport trunk native vlan 4
```

7. Step 6 might reveal that CDP neighbor details are not shown for the physical adapters and that other adapters do have CDP details. A temporary workaround is to remove the improperly configured physical adapter:

Click **Properties**:
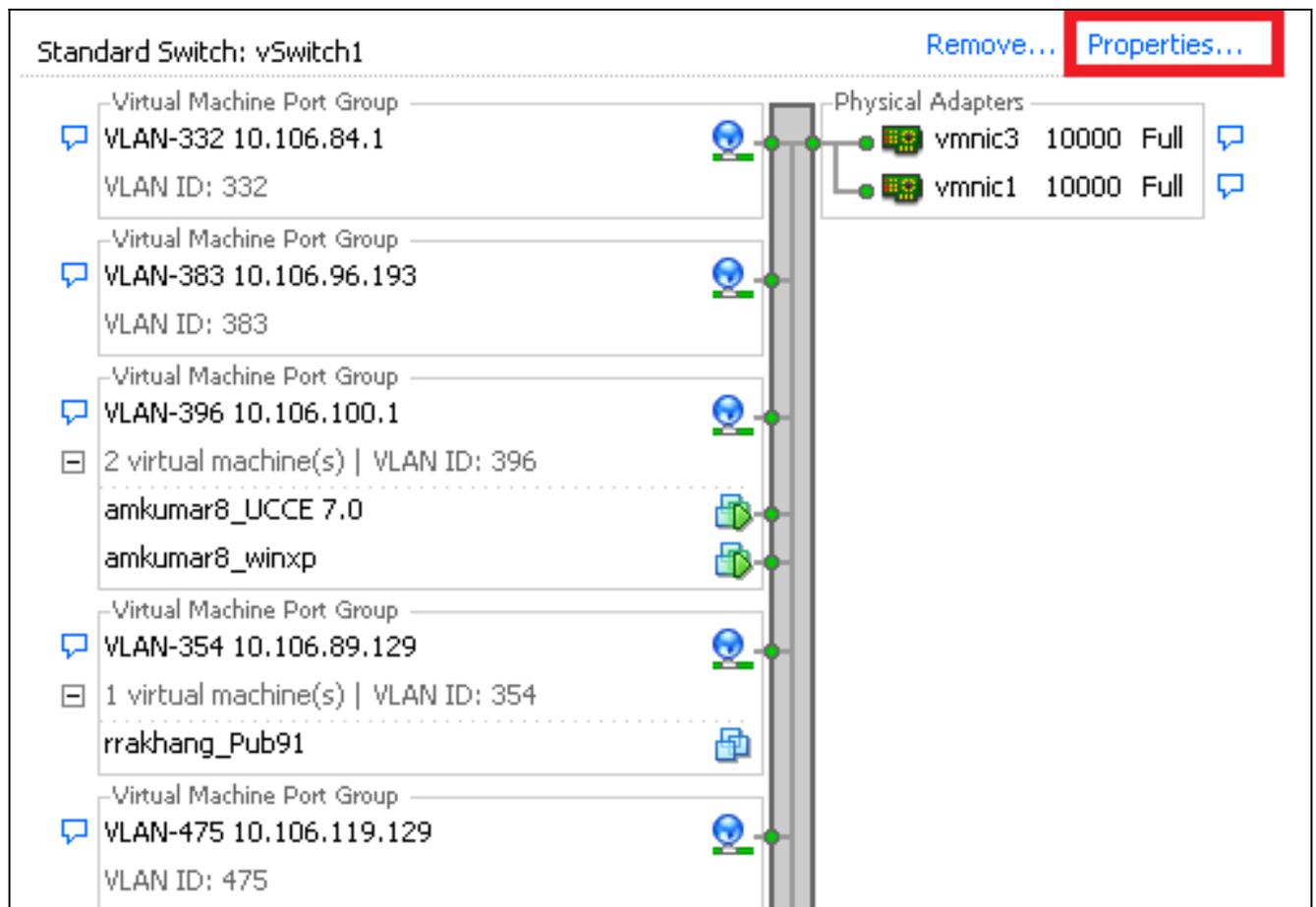
Click the **Network Adapters** tab, click the device name, and click **Remove**:
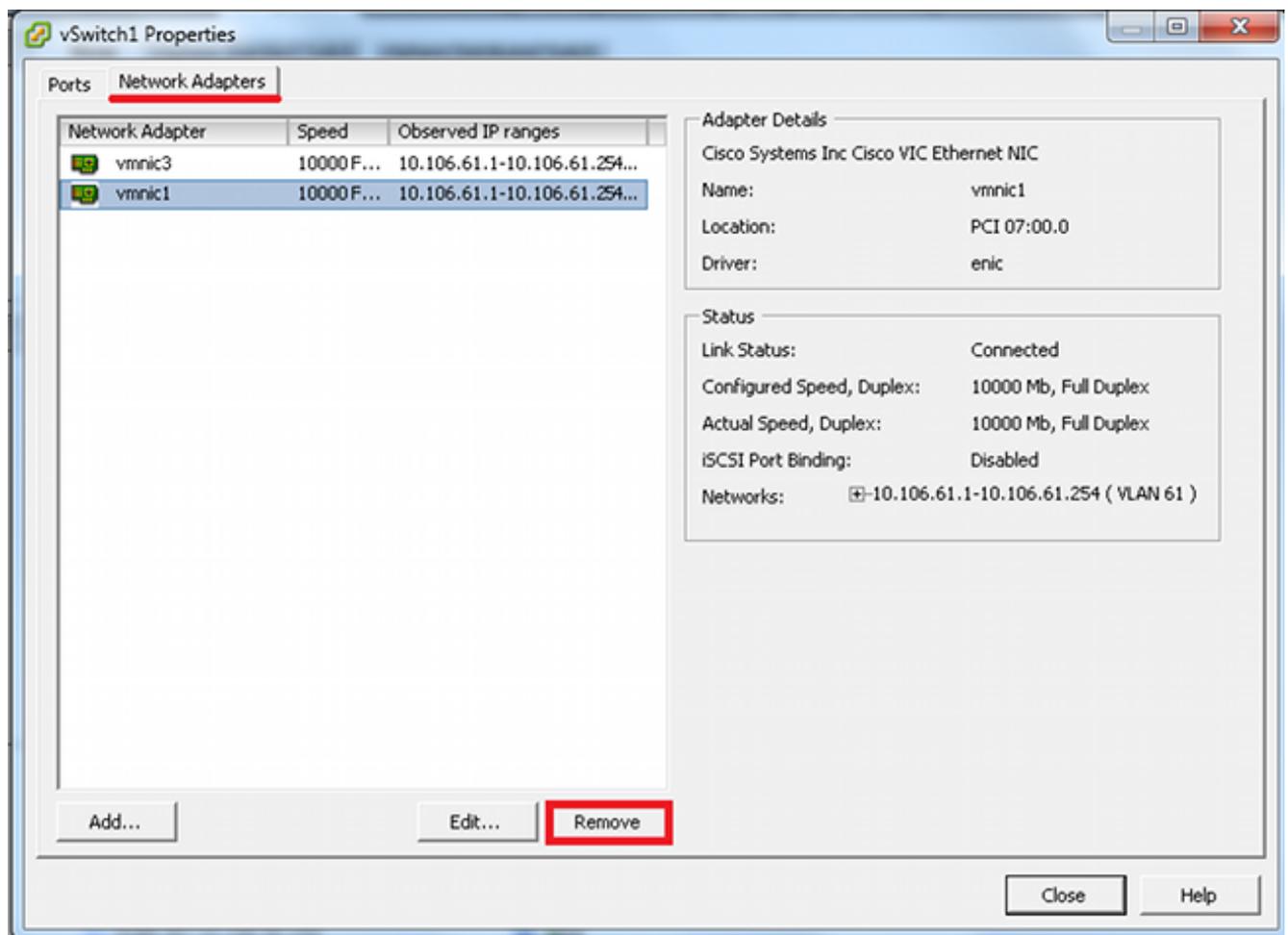
Confirm that the network connectivity from the CUCM VM has been restored.