CHAPTER 11

Troubleshooting Banyan VINES

This chapter presents protocol-related troubleshooting information for connectivity problems related to Banyan's Virtual Integrated Network Service (VINES). The sections in this chapter describe specific VINES symptoms, the problems that are likely to cause each symptom, and the solutions to those problems.

- Clients Cannot Communicate with Servers over Router
- Client Cannot Connect to Server over PSN
- Client on Serverless Network Cannot Connect to Server over PSN

Clients Cannot Communicate with Servers over Router

Symptom: Clients cannot connect to VINES servers over one or more routers. Clients might or might not be able to connect to servers on their directly connected networks.

Table 11-1 outlines the problems that might cause this symptom and describes solutions to those problems.

Table 11-1 VINES: Clients Cannot Communicate with Servers over Router

Possible Problem	Solution
Router interface is down	**Step 1** Use the **show interfaces** EXEC command to check the status of the router interfaces. **Step 2** If the status line indicates that an interface that should be up is "administratively down," use the **no shutdown** interface configuration command on the interface. **Step 3** If the status line indicates that the interface or line protocol is in any state other than up, refer to the "Troubleshooting Hardware and Booting Problems," "Troubleshooting LAN Media Problems," and "Troubleshooting Serial Line Problems" chapters.
Hardware or media problem	For information on troubleshooting hardware problems, see the "Troubleshooting Hardware and Booting Problems" chapter. For information on troubleshooting media problems, see the "Troubleshooting LAN Media Problems" and "Troubleshooting Serial Line Problems" chapters.
Addressing problem	**Step 1** On a serverless segment, use the **show vines route** EXEC command to make sure the router is seeing server network layer addresses. **Step 2** If the router is not seeing server addresses, make sure that the server and router addresses are correct.
VINES metric value is not specified	**Step 1** Use the **show vines interface** EXEC command to check the status of VINES interfaces on the router. Make sure that all VINES interfaces have the **vines metric** interface configuration command configured. This command enables VINES processing on the interface. **Step 2** If the **vines metric** interface configuration command is not configured on the interface, specify the command for the interface. Configure the **vines-metric** based on whether the interface is LAN or WAN connected. Suggested metrics for LAN and WAN connections follow: • Ethernet and 16-Mbps Token Ring: **vines-metric 2** • 4-Mbps Token Ring: **vines-metric 4** • T1 line: **vines-metric 35** • Other WAN link: **vines-metric 45**
Missing **vines serverless** or **vines arp-enable** commands	A network that does not have an attached server must be configured with the **vines serverless broadcast** and **vines arp-enable** router configuration commands. **Note:** These commands are enabled by default in Cisco IOS Release 10.3 and later. **Step 1** Use the **show running-config** privileged EXEC command on routers attached to networks with no VINES servers attached. Look for **vines serverless** and **vines arp-enable** router configuration commands entries. **Step 2** If both the **vines serverless** and the **vines arp-enable** commands are not present, specify the commands for router interfaces in serverless networks.

Possible Problem	Solution
Misconfigured access list	**Step 1** Use the **show vines access-list** privileged EXEC command on routers in the path from source to destination. This command shows whether there are access lists configured on the router. **Step 2** Disable all access lists configured on the router using **no vines access-group** commands. **Step 3** Test the connection from the client to the server to see whether connections are now possible. If the connection is successful, an access list is blocking traffic. **Step 4** To isolate the problem access list, apply one access list statement at a time until you can no longer create connections. **Step 5** When the problem list is identified, alter it so that necessary traffic is allowed to pass. On a serverless segment, make sure that well-known ports 0x06 (VINES file service) and 0x0F (StreetTalk) are not filtered. Configure explicit **permit** statements for traffic that you want to be forwarded by the router. **Step 6** If problems persist, continue testing for problem access lists on all routers in the path from source to destination.

Client Cannot Connect to Server over PSN

Symptom: Clients cannot connect to VINES servers across a packet-switched network (PSN). Clients can connect to local VINES servers.

Table 11-2 outlines the problems that might cause this symptom and describes solutions to those problems.

Table 11-2 VINES: Client Cannot Connect to Server over PSN

Possible Problem	Solution
Address mapping error	**Step 1** Use the **show running-config** privileged EXEC command to view the configuration of the router. **Step 2** For X.25 environments, make sure that LAN protocol-to-X.121 address mapping specified in **x25 map vines** interface configuration command entries use the VINES addresses and X.121 addresses of the destination routers. Confirm that the destination addresses used in the command entries are correct. **Step 3** For Frame Relay environments, make sure that the LAN protocol-to-DLCI address mapping specified in **frame-relay map** command entries use the VINES address of the destination router and the DLCI of the local interface. Confirm that the destination address and the local DLCI used in the command entries are correct.
PVC[1] is not set up	**Step 1** Use the **show running-config** privileged EXEC command to view the configuration of the local and remote routers. Make sure that there is an **x25 pvc** *n* **vines** *address* interface configuration command specified on the local and remote routers. This command sets up a PVC between the two routers. **Step 2** If the command is not present, add it to the router configuration.

1. PVC=permanent virtual circuit

Client on Serverless Network Cannot Connect to Server over PSN

Symptom: Clients on a serverless network (that is, a network segment that has no attached VINES servers) cannot open a connection to a VINES server over a PSN.

Table 11-3 outlines the problems that might cause this symptom and describes solutions to those problems.

Table 11-3 VINES: Client on Serverless Network Cannot Connect to Server over PSN

Possible Problem	Solution
Address mapping error	**Step 1** Use the **show running-config** privileged EXEC command to view the configuration of the router. **Step 2** For X.25 environments, make sure that LAN protocol-to-X.121 address mapping specified in **x25 map vines** interface configuration command entries use the VINES addresses and X.121 addresses of the destination routers. Confirm that the destination addresses used in the command entries are correct. **Step 3** For Frame Relay environments, make sure that the LAN protocol-to-DLCI address mapping specified in **frame-relay map** command entries use the VINES address of the destination router and the DLCI of the local interface. Confirm that the destination address and the local DLCI used in the command entries are correct.
PVC is not set up	**Step 1** Use the **show running-config** privileged EXEC command to view the configuration of the router. Make sure that a PVC is set up between the routers on each side of the PSN using the **x25 pvc** *n* **vines** *address* interface configuration command. **Step 2** If the command is not present, add it to the configuration.
VINES broadcasts are not forwarded across the PSN	**Step 1** Use the **show running-config** command to examine the configuration of the router. Make sure that the **vines propagate** interface configuration command is configured on the serial interface of the router that provides the serverless packet switched node service. **Step 2** If the command is not present, add it to the configuration.
VINES broadcasts not forwarded to all router interfaces	**Step 1** Use the **show running-config** privileged EXEC command to view the router configuration. Check to see if the **vines serverless broadcast** interface configuration command is configured on the router. **Step 2** If the command is not present, configure the router using the **vines serverless broadcast** command. This command configures the router to always flood VINES broadcasts on all interfaces. **Note:** The **vines serverless broadcast** command is enabled by default in Cisco IOS Release 10.3 and later.