

Compatible Systems – IP Networking: Frequently Asked Questions

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Questions

Introduction

My connection to the Internet seems to be set up correctly, and I can ping from the router to any node on the Internet, but none of my other hosts can access or be accessed by the Internet. Why?

I used the standard configuration of the router with only one change at the start: Ethernet IP number 204.215.214.223. From a workstation (204.215.214.224), I pinged the router, and it responded. As soon as I assigned the IP number 204.215.214.65 to the WAN port, I was unable to ping the Ethernet port, anymore. I have tried different subnet masks with the same result. The router dials and connects fine to my server. I can ping the WAN port (204.215.214.65) from my server, but I cannot ping the Ethernet port (204.215.214.223) from anywhere. From my server, I cannot ping the workstation (204.215.214.224) connected to the router, either.

Do the RISC Routers 3500R and 3800R support multiple class C addresses? For instance, on the 3800R, can each of the 12 ports have a separate class C address?

Is remote router administration supported through a PPP connection?

Can you recommend a software package that monitors the traffic on Compatible Systems routers?

I was originally assigned a block of 64 IP addresses from my ISP. In the next 2 months I will be out of addresses. If I have my provider assign and route an additional block do I need to make changes to my router configuration?

I currently have a 2600i with a T1 connection to my ISP. Is it possible to use the second V.35 port to connect with one of our vendors over another T1 in order to allow them to have access to the Internet through us?

I currently have two Compatible Systems routers that route to each other at separate sites. Can one of them be configured to route TCP/IP packets to another site, as well?

Can I configure my router with the Class C network address of 192.0.0.0 to a PPP terminal?

I have been able to get a router configured and operational to the point where I can Telnet to the router, but nothing is able to go beyond it. Why?

The router is set to do RIP. Since the router has been rebooted a few times, the static routes are not loaded.

I have a situation where the ISP for my router takes down the link after 20 minutes inactivity. I have a syslog machine that collects information. I have tried to use RIP to prevent inactivity, but it seems to have no effect since I do not pick up routing info from the terminal server into which I am dialed. Is there some other way that I can force activity on the line?

Do Compatible Systems routers allow the IP Broadcast packets to pass through the router to the remote LAN?

How do I configure Macintosh Open Transport, so my workstations are served their IP addresses from EtherRoute IIs?

Related Information

Introduction

This document discusses some of the most frequently asked questions (FAQs) on the Compatible Systems – IP Networking.

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Q. My connection to the Internet seems to be set up correctly, and I can ping from the router to any node on the Internet, but none of my other hosts can access or be accessed by the Internet. Why?

A. First, check that the hosts on your network have their gateway or default router address set to the IP address of the Ethernet port of the router. This workstation parameter tells the workstation where to send packets that are not addressed for its local network.

If the gateway addresses are set correctly, your ISP must not have a network route set up to your network.

Q. I used the standard configuration of the router with only one change at the start: Ethernet IP number 204.215.214.223. From a workstation (204.215.214.224), I pinged the router, and it responded. As soon as I assigned the IP number 204.215.214.65 to the WAN port, I was unable to ping the Ethernet port, anymore. I have tried different subnet masks with the same result. The router dials and connects fine to my server. I can ping the WAN port (204.215.214.65) from my server, but I cannot ping the Ethernet port (204.215.214.223) from anywhere. From my server, I cannot ping the workstation (204.215.214.224) connected to the router, either.

A. The router must have different networks on each port in order to route between the ports. In order to use an IP address for the WAN port of the router (called "numbered interface" in CompaqView), you must use an address from a different IP network than the IP network(s) on any other interface on the router.

IP address 204.215.214.223 and 204.215.214.65 are on the same network as long as they both have a class C subnet mask of 255.255.255.0. The router in this case does not route between the Ethernet port and the WAN port.

In this scenario, you need to use a 255.255.255.192 subnet mask on EVERY device on the network. The Ethernet subnet is then 204.215.214.192 through .255 with usable host addresses between 204.215.214.193 through .254. The WAN subnet is then 204.215.214.64 through .127 with usable host addresses between 204.215.214.65 through .126.

Most routers configured for PPP can use an unnumbered interface, where an IP address is not required for the WAN ports. Check with your ISP for this option.

Q. Do the RISC Routers 3500R and 3800R support multiple class C addresses? For instance, on the 3800R, can each of the 12 ports have a separate class C address?

A. Not only CAN they have separate IP network numbers, they MUST have separate IP network numbers since that is the definition of a router. These can be class A, B, C, or subnets thereof.

Q. Is remote router administration supported through a PPP connection?

A. You can remotely administer Compatible Systems routers with CompaqView for Windows through a remote PPP connection.

Q. Can you recommend a software package that monitors the traffic on Compatible Systems routers?

A. In order to watch TCP/IP packets on your Macintosh, you can use the packet monitoring packages, EtherPeek from the AG Group and NetMinder Ethernet from Neon Software. They are independent of the router since they run on your Macintosh.

In order to watch TCP/IP packets on your UNIX or Windows NT, you can use Multi-Router Traffic Grapher (MRTG) . Additionally for Windows NT, there is SNMPc from CastleRock Computing.

Q. I was originally assigned a block of 64 IP addresses from my ISP. In the next 2 months I will be out of addresses. If I have my provider assign and route an additional block do I need to make changes to my router configuration?

A. Yes, one of two methods can be used.

- ◆ If your new addresses are simply an expansion of your old subnet, with a mask of 255.255.255.128, you must change the mask and broadcast address in the configuration of the router and in the currently configured equipment that has an old address.
- ◆ If you are given a totally new subnet, it can be configured on the router if you add a new subinterface. The router routes between the two subnets on the LAN, and the addresses do not have to be changed on currently configured equipment.

Note: The MicroRouter 1000R and the RISC Router 3000E do not support subinterfaces. If you have a PPP WAN connection, the Microrouter 900i must use router code v4.10B6 in order to support subinterfaces. This is an Interim software release and does not function in all instances.

If you have a Frame Relay WAN connection, do not enter any mappings in the DLCI database. The 900i goes into a boot loop if you do. The 900i and the router on the other side of the Frame Relay link use IARP to dynamically pick up DLCI and IP address mappings.

Q. I currently have a 2600i with a T1 connection to my ISP. Is it possible to use the second V.35 port to connect with one of our vendors over another T1 in order to allow them to have access to the Internet through us?

A. Yes, but the second V.35 port connection to your vendor over another T1 must be a different IP subnet obtained from your ISP, or you can use IP Proxy ARP and a subnet of your current Class C to another WAN router at the site of the vendor.

Q. I currently have two Compatible Systems routers that route to each other at separate sites. Can one of them be configured to route TCP/IP packets to another site, as well?

A. The routers can route to more than one place if the routing tables have the entries. These entries are made up of directly connected routes (based on the Ethernet and WAN configurations), dynamic routes (received through RIP-1, RIP-2, OSPF or BGP4), and static

routes (added by you). You can add any static routes that you wish as long as the gateways are attached to one of the directly connected networks.

Q. Can I configure my router with the Class C network address of 192.0.0.0 to a PPP terminal?

A. This is a reserved Class C IP network. You are able to route this on a private network, but you are not able to access the Internet. The private Class C IP addresses allocated by the Internet Assigned Numbers Authority (IANA) are from 192.168.0.0 to 192.168.255.255. You can choose to use any of those Class Cs if you have a private net that does not go out to the Internet. If you need to access the Internet, you must have routable addresses, most likely assigned by your ISP.

Q. I have been able to get a router configured and operational to the point where I can Telnet to the router, but nothing is able to go beyond it. Why?

A. If the router is the only one on the network or is the Internet gateway for the network, and you have an unnumbered WAN, set a static route with the destination of 0.0.0.0, subnet mask of 0.0.0.0, gateway of WAN A, a metric of 1 and leave RIP disabled.

If the router is the only one on the network and you have a numbered WAN, set a static route as mentioned but with a gateway of the IP address of the WAN port in use.

If the router is not the Internet gateway for the network, set a static route as mentioned but with a gateway of the IP address of the next upstream router. In most cases, this is the Internet gateway router.

Q. The router is set to do RIP. Since the router has been rebooted a few times, the static routes are not loaded.

A. The static routing table is stored in the flash EPROM of the router. You can see the routes you entered in Command Line "show ip routing" under "Configured IP Routes" or "Edited IP Routes."

It is usually easier to run either static routes or RIP, but they can certainly be used in combination. If you get a route from RIP that you have already entered as a static route, you cannot see the route in the static route table anymore.

Q. I have a situation where the ISP for my router takes down the link after 20 minutes inactivity. I have a syslog machine that collects information. I have tried to use RIP to prevent inactivity, but it seems to have no effect since I do not pick up routing info from the terminal server into which I am dialed. Is there some other way that I can force activity on the line?

A. RIP does the trick, as long as it is set for periodic, rather than the default, which is triggered. This can be set with Command Line or CompaView in the TCP/IP Routing section for the relevant WAN port.

The router sends RIP packets out the WAN port every 30 seconds. The terminal server can or cannot keep the link up when it sees RIP packets. If it does not, you have to write a cron

script or use some other timer program to send pings at a regular interval from a workstation on your local network.

Q. Do Compatible Systems routers allow the IP Broadcast packets to pass through the router to the remote LAN?

A. UDP Forwarding can be enabled on the router. This can be done in CompatiView or through Command Line. This directs UDP broadcasts for DNS, BOOTPS (DHCP), TFTP, NTP, NB_NS, or NB_DG to a server IP address across the WAN. Refer to the *Compatiview Management Software Reference Guide* or the *Text-Based Configuration and Command Line Management Reference Guide* for more information.

Q. How do I configure Macintosh Open Transport, so my workstations are served their IP addresses from EtherRoute IIs?

A. Run the TCP/IP application in the Control Panels folder. When the window opens, there is a "Connect via" popup at the top. Choose AppleTalk (MacIP). The bottom of the window changes. If the router has been configured for dynamic addresses, choose "Using MacIP Server" from the "Configure" popup menu. If the router has been configured for static addressing, choose "Using MacIP Manually" from the "Configure" popup menu and enter the IP addresses of the Macintosh, router, and name server.

Related Information

- **Technical Support & Documentation – Cisco Systems**

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