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https://www.100test.com/kao_ti2020/136/2021_2022__E8_AE_A1_E7_AE_97_E6_9C_BA_E8_c98_136559.htm Default gateways If a TCP/IP computer needs to communicate with a host on another network, it will usually communicate through a device called a router. In TCP/IP terms, a router that is specified on a host, which links the hosts subnet to other networks, is called a default gateway. This section explains how TCP/IP determines whether or not to send packets to its default gateway to reach another computer or device on the network. When a host attempts to communicate with another device using TCP/IP, it performs a comparison process using the defined subnet mask and the destination IP address versus the subnet mask and its own IP address. The result of this comparison tells the computer whether the destination is a local host or a remote host. If the result of this process determines the destination to be a local host, then the computer will simply send the packet on the local subnet. If the result of the comparison determines the destination to be a remote host, then the computer will forward the packet to the default gateway defined in its TCP/IP properties. It is then the responsibility of the router to forward the packet to the correct subnet. Troubleshooting TCP/IP network problems are often caused by incorrect configuration of the three main entries in a computers TCP/IP properties. By understanding how errors in TCP/IP configuration affect network operations, you can solve many common TCP/IP problems.Incorrect Subnet Mask: If a network

uses a subnet mask other than the default mask for its address class, and a client is still configured with the default subnet mask for the address class, communication will fail to some nearby networks but not to distant ones. As an example, if you create four subnets (such as in the subnetting example) but use the incorrect subnet mask of 255.255.255.0 in your TCP/IP configuration, hosts will not be able to determine that some computers are on different subnets than their own. When this happens, packets destined for hosts on different physical networks that are part of the same Class C address will not be sent to a default gateway for delivery. A common symptom of this is when a computer can communicate with hosts that are on its local network and can talk to all remote networks except those that are nearby and have the same class A, B, or C address. To fix this problem, just enter the correct subnet mask in the TCP/IP configuration for that host. Incorrect IP Address: If you put computers with IP addresses that should be on separate subnets on a local network with each other, they will not be able to communicate. They will try to send packets to each other through a router that will not be able to forward them correctly. A symptom of this problem is a computer that can talk to hosts on remote networks, but cannot communicate with some or all computers on their local network. To correct this problem, make sure all computers on the same physical network have IP addresses on the same IP subnet. If you run out of IP addresses on a single network segment, there are solutions that go beyond the scope of this article. Incorrect Default Gateway: A computer configured with an incorrect default gateway will be able to

communicate with hosts on its own network segment, but will fail to communicate with hosts on some or all remote networks. If a single physical network has more than one router, and the wrong router is configured as a default gateway, a host will be able to communicate with some remote networks, but not others. This problem is common if an organization has a router to an internal TCP/IP network and another router connected to the Internet. 