

## What is the difference between a default route, a default gateway, and a gateway of last resort?

## Q:

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**A:** A router can be used in one of two modes: it can be setup in a host mode, or it can be used as a router. First, let's consider host mode operation. Host mode is useful when first sending the router to a remote site for installation and configuration, providing Telnet access to the device. The host mode resembles a plain workstation and requires an IP host address as well as a default gateway. The default gateway is where the device will send packets not on the subnet defined by the host address and mask. Now consider the operation in router mode. The router has a similar set of decisions but over a wider number of interfaces. First, the router must determine if the incoming packet is destined for that router, one of the attached interfaces, or some other network. So the default route (defined by the static route command " ip route 0.0.0.0 0.0.0 A.B.C.D" where A.B.C.D. is the address of the far end router serving as the gateway for all unknown route packets) if configured, serves as the destination for packets that a route is not known for. If the default route is learned through a routing protocol, it is also known as the gateway of last resort.