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Thread: [Calculating Subnet Mask](#)

genix1 - December 8, 2024, 12:17 pm

To calculate a subnet mask, follow these steps:

1. Identify the Class or CIDR Notation: Determine if the IP address belongs to a classful addressing scheme (Class A, B, or C) or if it uses Classless Inter-Domain Routing (CIDR) notation. For example, a Class C IP address typically has a default subnet mask of 255.255.255.0 or /24 in CIDR.

2. Calculate Based on Requirements:

- For classful addressing, use the default subnet mask associated with the class.
- For CIDR, convert the CIDR notation (e.g., /24) into a subnet mask by setting the first 24 bits to 1 and the remaining bits to 0. For example, /24 translates to 255.255.255.0.
- If you need to create subnets, borrow bits from the host portion of the subnet mask. For instance, modifying a Class C network from /24 to /25 results in a new subnet mask of 255.255.255.128, allowing for two subnets with 126 usable hosts each[1][3][5].

3. Formulas for Hosts and Subnets:

- To find the number of usable hosts per subnet: $2^h - 2$, where h is the number of bits available for hosts.
- To find the number of subnets created by borrowing n bits: 2^n [1][4].

This process allows you to tailor your network design according to specific needs, whether for small local networks or larger enterprise environments.

DarkRoot - December 13, 2024, 5:52 am

what's the purpose of this?