

21. Single-Mask Subnetting

"Single-Mask Subnetting" is my own term, designed to differentiate this chapter from chapter 22, VLSM, at a glance.

No matter the question, you'll be working within the number of host bits in a given network class (A, B, C). Question types can include:

- Use powers of 2 to decide how many bits are required to support a given number of subnets and how many bits are needed to support a given number of hosts in each. Within your host-bit budget, there can be 0 or more correct solutions.
 - If the question mentions accommodating growth, inflate your subnet and host counts accordingly, before you even start.
- If the above has more than one combination of host & subnet bitcounts meeting the criteria, you may need to choose one of them to optimize for future growth of either hosts or subnets. That will narrow your answer down to one possibility.
- Find all subnet IDs—Subtract your mask from 256 to find the number of addresses per subnet (including network ID and broadcast). Multiples of that so-called "magic number" will be your subnet IDs.

Router (config)# **[no] ip subnet-zero**

By default, Cisco allows use of subnet zero, e.g. 172.16.0.0/24 instead of a 172.16.1.0 start