

# Re: subnetting confusion

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*Source:*

<http://www.tech-archive.net/Archive/Windows/microsoft.public.windows.server.networking/2005-12/msg00303.html>

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- *From:* "Frankster" <Frank@xxxxxxxxxxxxxx>
  - *Date:* Wed, 14 Dec 2005 17:37:49 -0700
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> What I want to do is get a better understanding of when and why changing a  
> subnet mask is or is not necessary.

You are correct in your assumption that you can carve out a subnet from you existing network (alienate) by simply changing the mask. You can also do it by changing the IP to be outside of the same mask. But, you do have to understand how this works.

A mask of 255.255.255.0 means that to be on the same network (subnet), the first three octets have to be the same. The fourth octet can be anything, up to 254. If you change a machine's address to be same.same.different.different, he will be off your network (on it's own subnet). It will not be able to communicate with the original network unless you place a router between them and manually forward the networks back and forth.

You could also change the mask. For this, I need an IP calculator (crutch) because I am not that good at it. However, I will use my own scenario as an example because know it is right.

I have purchased a set of 8 static IPs. My ISP gave me the IPs, told me which one to assign to my router, which one was used to define the network, which one to assign to my firewall (using 3 total at this point). That leaves me 5 I can use internally for the machines where I want to have public IPs (not often, but it happens). So... Here is what I use: IPs 61.50.80.45 to 61.50.80.52. You'll notice that is 8 total IPs (I made them up for this post...hehe...). Anyway, my mask is 255.255.255.248 (really mine). The ending 248 limits my (sub)network to only those 8 addresses. If I configured an address out of that range he would be off the original network. In this case, you are subneting using a mask.

The actual IP and the mask have both got to be taken into consideration to determine if you are on the same subnet or not. You can't tell with just one.

> I am looking possibly at a better way to organize my network

Use AD and OUs in Windows. Don't bother with subnets unless you can absorb

Re: subnetting confusion

the costs of a router between each subnet.

> Maybe my confusion lays in the fact that there are always several ways to  
> accomplish the same thing.

Yes, probably.

> just trying to get a grasp on the big picture really.

Suggest a good read from the bookstore or online about TCP/IP. It's all based on binary math. Kinda tedious but helps in the long run.

–Frank

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• *Follow-Ups:*

◆ *Re: subnetting confusion*

◇ *From:* J.Couch via WinServerKB.com

• *References:*

◆ *subnetting confusion*

◇ *From:* Aaron Neunz

◆ *Re: subnetting confusion*

◇ *From:* Frankster

◆ *Re: subnetting confusion*

◇ *From:* Aaron Neunz

• Prev by Date: *Re: Windows Server 2003 / XP Pro: Workgroup Woes*

• Next by Date: *Re: Combiing Networks*

• Previous by thread: *Re: subnetting confusion*

• Next by thread: *Re: subnetting confusion*

• Index(es):

◆ *Date*

◆ *Thread*