1. Address Classes

0

Class A address are used as large network blocks with 16,777,214 (2^24 - 2) hosts. They can be identified by it's first octet.

What is the range of a Class A IP addresses in the first octet?

Use the format of xxx-xxx

2. Address Classes

0

Class B address are used as medium network blocks with 65.534 (2^16 - 2) hosts. They can be identified by it's first octet.

What is the range of a Class B IP addresses in the first octet?

Use the format of xxx-xxx

2. Address Classes

0

Class B address are used as medium network blocks with 65.534 (2^16 - 2) hosts. They can be identified by it's first octet.

What is the range of a Class B IP addresses in the first octet?

Use the format of xxx-xxx

3. Address Classes

0

Class C address are used as small network blocks with 254 (2^8 - 2) hosts. They can be identified by it's first octet.

What is the range of a Class C IP addresses in the first octet?

Use the format of xxx-xxx

4. Address Classes

0

Class D addresses are not used to assign to hosts but rather for multicast addressing (one-to-many)

What is the range of a Class D IP addresses in the first octet?

Use the format of xxx-xxx

5. Address Classes

0

Class E addresses are not used at all. They were intended for experimental use.

What is the range of a Class E IP addresses in the first octet?

Use the format of xxx-xxx

1. Default Masks

0

Subnetting was invented to divide networks into smaller subnets. However they have their default starting subnet masks before any subnetting is applied.

What is the default Subnet Mask of a Class A network?

Use the format of x.x.x.x

2. Default Masks

0

What is the default Subnet Mask of a Class B network?

Use the format of x.x.x.x

3. Default Masks

0

What is the default Subnet Mask of a Class C network?

Use the format of x.x.x.x

1. Subnet Mask to CIDR

0

Subnetting is the process of 'borrowing' host bits of a Network mask and converting them to subnet bits. This is a uniformed process by turning on bits sequentialy from left-to-right.

The term CIDR (Classless Inter-domain Routing) is a method to simply express a subnet mask by identifying the TOTAL number of bits turned on in the subnetmask.

What is the CIDR of 255.192.0.0?

Use the format of /xx

2. Subnet Mask to CIDR

0

What is the CIDR of 255.255.128.0?

Use the format of /xx

3. Subnet Mask to CIDR

0

What is the CIDR of 255.255.255.252?

Use the format of /xx

4. Subnet Mask to CIDR

0

What is the CIDR of 255.255.254.0?

Use the format of /xx

5. Subnet Mask to CIDR

0

What is the CIDR of 255.240.0.0?

Use the format of /xx

1. CIDR to Subnet Mask

0

Throughout networking we will see subnet masks expresses as a CIDR notation. We will need to be comfortable in converting these back into their dotted-decimal mask format.

br> What is the subnet mask of the CIDR '/25`?

Use the format of x.x.x.x

2. CIDR to Subnet Mask

0

What is the subnet mask of the CIDR '/29`?

Use the format of x.x.x.x

3. CIDR to Subnet Mask

0

What is the subnet mask of the CIDR '/18`?

Use the format of x.x.x.x

4. CIDR to Subnet Mask

0

What is the subnet mask of the CIDR '/11`?

Use the format of x.x.x.x

5. CIDR to Subnet Mask

0

What is the subnet mask of the CIDR '/27`?

Use the format of x.x.x.x

1. Usable Hosts in Subnet

0

The subnet mask is divided up into different parts. Typically it has the network-bits (default), subnet-bits(borrowed), and host-bits(remaining). In the mask the network-bits and subnet-bits are expresses with binary 1's and host-bits are expresses as binary 0's. Using the formula of 2^h - 2 , where h is the number of binary 0's in the subnet mask, we can determine how many usable hosts are available on any given subnet.

How many usable hosts are on a network with the CIDR of /26?

2. Usable Hosts in Subnet

0

How many usable hosts are on a network with the CIDR of /23?

3. Usable Hosts in Subnet

0

How many usable hosts are on a network with the CIDR of /27?

4. Usable Hosts in Subnet

0

How many usable hosts are on a network with the CIDR of /16?

5. Usable Hosts in Subnet

0

How many usable hosts are on a network with the CIDR of /20?

1. Host range

0

A method to determine the usable host range of a subnet is to first determine its entire range. We can do this by identifying the start of the next network. We can do this by first identifying the bit value of the last bit turned on in the subnet mask. We then add that value to the current subnet and this will give us the next subnet. We can then subtract 1 from this address and we will have the subnet broadcast address. We subtract 1 more and this will be the last usable on our subnet. The first usable is simply done by adding 1 to our subnet.

Determine the first-last usable host address of 192.168.1.0/27?

Use the format of xxx-xxx

2. Host range

0

Determine the first-last usable host address of 172.16.99.64/26?

Use the format of xxx-xxx

3. Host range

0

Determine the first-last usable host address of 10.10.10.128/28?

Use the format of xxx-xxx

4. Host range

0

Determine the first-last usable host address of 172.30.1.144/29?

Use the format of xxx-xxx

5. Host range

0

Determine the first-last usable host address of 192.168.10.128/25?

Use the format of xxx-xxx

1. Network address

0

Most of the time you may be given an address that is just a host on a subnet and not the subnet address itself. So before we can determine the host range we must first determine the subnet address. To determine this we need to perform the ANDing process on the ip address with it's subnet mask. (1+1=1, 1+0 or 0+1 =0, 0+0=0). Anything ANDed to 255 will always be the same. Anything ANDed to 0 will always be 0. So we only need to focus on the octed where the mask is not 255 or 0. In this octet we need to convert the IP and mask in to binary and preform the AND operation. The result will be the subnet address.

Determine the subnet address of the IP 192.168.76.94/29.

Use the format of x.x.x.x

2. Network address

0

Determine the subnet address of the IP 172.16.29.246/28.

Use the format of x.x.x.x

3. Network address

0

Determine the subnet address of the IP 10.110.12.65/12.

Use the format of x.x.x.x

4. Network address

0

Determine the subnet address of the IP 192.168.254.104/22.

Use the format of x.x.x.x

5. Network address

0

Determine the subnet address of the IP 10.1.193.235/19.

Use the format of x.x.x.x

1. Subnet Host Range

0

What is the usable host range with the host address of 192.168.159.50/29?

Use the format of x.x.x.x-x.x.x.x

2. Subnet Host Range

0

What is the usable host range with the host address of 192.168.99.99/27?

Use the format of x.x.x.x-x.x.x.x

3. Subnet Host Range

0

What is the usable host range with the host address of 172.31.31.31/26?

Use the format of x.x.x.x-x.x.x.x

4. Subnet Host Range

0

What is the usable host range with the host address of 10.100.200.199/25?

Use the format of x.x.x.x-x.x.x.x

5. Subnet Host Range

0

What is the usable host range with the host address of 192.168.101.132/27?

Use the format of x.x.x.x-x.x.x.x