

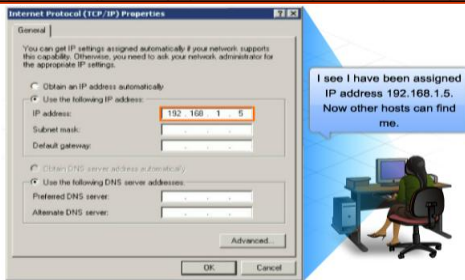
COMPUTER NETWORK

ADDRESSING a NETWORK [IPv4]

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IP version 4 (IPv4) is the current form of addressing used on the Internet.

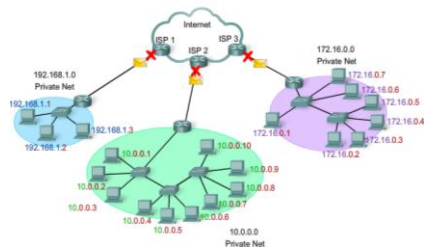
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Public IP vs Private IP

Private Addresses Used in Networks without NAT



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IPv4 anatomy

Class	Theoretical Address Range	Subnet	Hosts
A	0.0.0.0 to 127.255.255.255	255.0.0.0	16,777,216
B	128.0.0.0 to 191.255.255.255	255.255.0.0	65,534
C	192.0.0.0 to 223.255.255.255	255.255.255.0	254

Private IP

Class	Private IP Address Range	Subnet	Hosts
A	10.0.0.0 to 10.255.255.255	255.0.0.0	
B	172.16.0.0 to 172.31.255.255	255.255.0.0	
C	192.168.0.0 to 192.168.255.255	255.255.255.0	

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Public IP vs Private IP

Public IP Addresses

(also known as Static IP Addresses) are IP addresses that are visible to the public. Allow other people to know about and access your computer.

Private IP addresses

Used on a private network, but they're not routable through the public Internet.

This not only creates a measure of much-needed security, but it also conveniently saves valuable IP address space.

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Address Class Prefixes

Class A	Network	Host		
Octet	1	2	3	4
Class B	Network	Host		
Octet	1	2	3	4
Class C	Network	Host		
Octet	1	2	3	4
Class D	Host			
Octet	1	2	3	4

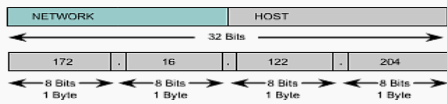
Class D addresses are used for multicast groups. There is no need to allocate octets or bits to separate network and host addresses. Class E addresses are reserved for research use only.

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NETWORK and HOST division



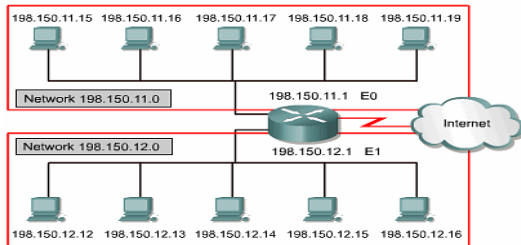
An IP address will always be divided into a network and host portion. In a classful addressing scheme, these divisions take place at the octet boundaries.

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NETWORK Address

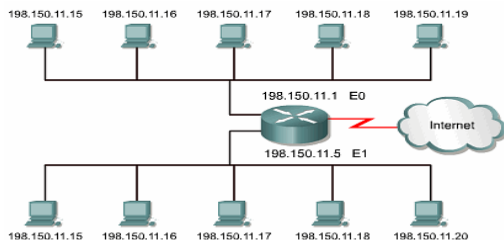


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Require Unique Address



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Use IP address



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TCP/IP Configuration for Windows XP

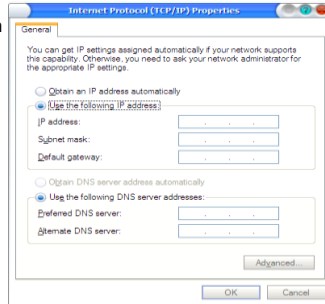
Example

IP : 192.168.30.5

Subnet : 255.255.255.0

Gateway : 192.168.30.254

DNS : 8.8.8.8

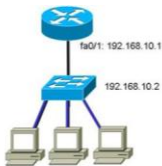


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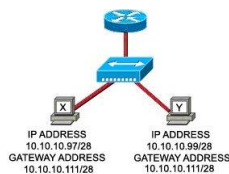
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Gateway Address



Both the hosts and the switch would use a default gateway address of 192.168.10.1



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Domain Name System [DNS]



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