Major Network $\Rightarrow$ 49.0.0.0   Date:_____

150, 100, 50, 30, 14, 5, 4, 4, 2, 2, 2, 2, 2, 2, 2, 2

For 150 Hosts:

$2^8 - 2$

$256 - 2 = 254$ Useable Hosts

Total Bits - n

$32 - 8 = 24$

49.0.1.0/24 $\rightarrow$ Next Network Address

Network Address $\Rightarrow$ 49.0.0.0/24
Starting Ip Address $\Rightarrow$ 49.0.0.1/24
Last Ip Address $\Rightarrow$ 49.0.0.254/24
Broadcast Address $\Rightarrow$ 49.0.0.255/24
Subnet Mask $\Rightarrow$ 255.255.255.0

For 100 Hosts:

$2^7 - 2$

$128 - 2 = 126$ Useable Hosts

Total Bits - n

$32 - 7 = 25$

Network Address $\Rightarrow$ 49.0.1.0/25
Starting Ip Address $\Rightarrow$ 49.0.1.1/25
Last Ip Address $\Rightarrow$ 49.0.1.126/25
Broadcast Address $\Rightarrow$ 49.0.1.127/25
Subnet Mask $\Rightarrow$ 255.255.255.128

For 50 Hosts:

$2^6 - 2$

$64 - 2 = 62$ Useable Hosts

Total Bits − n

$32 - 6 = 26$

Network Address ⇒ 49.0.1.128/26
Starting Ip Address ⇒ 49.0.1.129/26
Last Ip Address ⇒ 49.0.1.190/26
Broadcast Address ⇒ 49.0.1.191/26
Subnet Mask ⇒ 255.255.255.192

For 30 Hosts:

$2^5 - 2$

$32 - 2 = 30$ Useable Hosts

Total Bits − n

$32 - 5 = 27$

Network Address ⇒ 49.0.1.192/27
Starting Ip Address ⇒ 49.0.1.193/27
Last Ip Address ⇒ 49.0.1.222/27
Broadcast Address ⇒ 49.0.1.223/27
Subnet Mask ⇒ 255.255.255.224

For 14 Hosts:

$$2^4 - 2$$

$16 - 2 = 14$ Useable Hosts

Total Bits $- n$

$32 - 4 = 28$

Network Address $\Rightarrow$ 49.0.1.224/28

Starting Ip Address $\Rightarrow$ 49.0.1.225/28

Last Ip Address $\Rightarrow$ 49.0.1.238/28

Broadcast Address $\Rightarrow$ 49.0.1.239/28

Subnet Mask $\Rightarrow$ 255.255.255.240

For 5 Hosts

$$2^3 - 2$$

$8 - 2 = 6$ Useable Hosts

Total Bits $- n$

$32 - 3 = 29$

Network Address $\Rightarrow$ 49.0.1.240/29

Starting Ip Address $\Rightarrow$ 49.0.1.241/29

Last Ip Address $\Rightarrow$ 49.0.1.246/29

Broadcast Address $\Rightarrow$ 49.0.1.247/29

Subnet Mask $\Rightarrow$ 255.255.255.248

For 4 Hosts:

$2^3 - 2$

$8 - 2 = 6$ Useable Hosts

Total Bits - n

$32 - 3 = 29$

Network Address => 49.0.1.248/29
Starting Ip Address => 49.0.1.249/29
Last Ip Address => 49.0.1.254/29
Broadcast Address => 49.0.1.255/29
Subnet Mask => 255.255.255.248

For 4 Hosts:

$2^3 - 2$

$8 - 2 = 6$ Useable Hosts

Total Bits - n

$32 - 3 = 29$

Network Address => 49.0.2.0/29
Starting Ip Address => 49.0.2.1/29
Last Ip Address => 49.0.2.6/29
Broadcast Address => 49.0.2.7/29
Subnet Mask => 255.255.255.248

For 2 Hosts:

$$2^2 - 2$$

$$4 - 2 = 2 \text{ Useable Hosts}$$

Total Bits - n

$$32 - 2 = 30$$

Network Address => 49.0.2.8/30
Starting Ip Address => 49.0.2.9/30
Last Ip Address => 49.0.2.10/30
Broadcast Address => 49.0.2.11/30
Subnet Mask => 255.255.255.252

For 2 Hosts:
Network Address => 49.0.2.12/30
Starting Ip Address => 49.0.2.13/30
Last Ip Address => 49.0.2.14/30
Broadcast Address => 49.0.2.15/30
Subnet Mask => 255.255.255.252

For 2 Hosts
Network Address => 49.0.2.16/30
Starting Ip Address => 49.0.2.17/30
Last Ip Address => 49.0.2.18/30
Broadcast Address => 49.0.2.19/30
Subnet Mask => 255.255.255.252

For 2 Hosts:
Network Address => 49.0.2.20/30
Starting Ip Address => 49.0.2.21/30
Last Ip Address => 49.0.2.22/30
Broadcast Address => 49.0.2.23/30
Subnet Mask => 255.255.255.252

For 2 Hosts:
Network Address => 49.0.2.24/30
Starting Ip Address => 49.0.2.25/30
Last Ip Address => 49.0.2.26/30
Broadcast Address => 49.0.2.27/30
Subnet Mask => 255.255.255.252

For 2 Hosts:
Network Address => 49.0.2.28/30
Starting Ip Address => 49.0.2.29/30
Last Ip Address => 49.0.2.30/30
Broadcast Address => 49.0.2.31/30
Subnet Mask => 255.255.255.252

For 2 Hosts:
Network Address => 49.0.2.32/30
Starting Ip Address => 49.0.2.33/30
Last Ip Address => 49.0.2.34/30
Broadcast Address => 49.0.2.35/30
Subnet Mask => 255.255.255.252

For 2 Hosts.
Network Address => 49.0.2.36/30
Starting Ip Address => 49.0.2.37/30
Last Ip Address => 49.0.2.38/30
Broadcast Address => 49.0.2.39/30
Subnet Mask => 255.255.255.252