

Class A N.H.H.H

Class B N.N.H.H

Class C N.N.N.H

7 Departments      7 LAN      ~300 Hosts/Dep

148.37.0.0      ---> 1 Network  $2^{16}$  65536 hosts

Need: 7 Network IDs, 300 Host IDs,  $7 \times 300 = 2100$  Hosts

Subnetting:

10010100.00100101.00000000.00000000 - 148.37.0.0

10010100.00100101.00010000.00000000 - 148.37.16.0

10010100.00100101.00100000.00000000 - 148.37.32.0

10010100.00100101.00110000.00000000 - 148.37.48.0

10010100.00100101.01000000.00000000 - 148.37.64.0

10010100.00100101.01010000.00000000 - 148.37.80.0

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10010100.00100101.10110000.00000000

10010100.00100101.11010000.00000000

10010100.00100101.11100000.00000000

10010100.00100101.11110000.00000000 - 148.37.240.0

LAN-1

10010100.00100101.00010000.00000000 - 148.37.16.0 1/b

10010100.00100101.00010000.00000001 - 148.37.16.1

10010100.00100101.00010000.00000010 - 148.37.16.2

10010100.00100101.00010000.00000011 - 148.37.16.3

10010100.00100101.00010000.00000100 - 148.37.16.4

10010100.00100101.00010000.00000101 - 148.37.16.5

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10010100.00100101.00010000.11111111 - 148.37.16.255

10010100.00100101.00010001.00000000 - 148.37.17.0

10010100.00100101.00010001.00000001 - 148.37.17.1

10010100.00100101.00010001.00000010 - 148.37.17.2

10010100.00100101.00010001.00000011 - 148.37.17.3

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10010100.00100101.00010001.00101101 - 148.37.17.45

10010100.00100101.00011111.11111111 - 148.37.31.255 b/c

LAN-2

10010100.00100101.00100000.00000000 - 148.37.32.0

10010100.00100101.00100000.00000001 - 148.37.32.1

10010100.00100101.00100000.00000010 - 148.37.32.2

10010100.00100101.00100000.00000011 - 148.37.32.3

10010100.00100101.00100000.00000100 - 148.37.32.4

10010100.00100101.00100000.00000101 - 148.37.32.5

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10010100.00100101.00100000.11111111 - 148.37.32.255

10010100.00100101.00100001.00000000 - 148.37.33.0

10010100.00100101.00100001.00000001 - 148.37.33.1

10010100.00100101.00100001.00000010 - 148.37.33.2

10010100.00100101.00100001.00000011 - 148.37.33.3

.

.

10010100.00100101.00100001.00101101 - 148.37.33.45

10010100.00100101.00101111.11111111 - 148.37.47.255

148.37.56.25 - 255.255.240.0 Subnet Mask

Fixed Length Subnet Mask

11111111.11111111.11110000.00000000

|                                     |               |
|-------------------------------------|---------------|
| 10010100.00100101.00111000.00011001 | 148.37.56.25  |
| 11111111.11111111.11110000.00000000 | 255.255.240.0 |
| -----                               | Logical AND   |
| 10010100.00100101.00110000.00000000 | 148.37.48.0   |

CIDR - Classless Inter-Domain Routing

148.37.56.25 /20

11111111.11111111.11110000.00000000 - 255.255.240.0

|   |   |   |   |
|---|---|---|---|
| T | T | : | T |
| T | F | : | F |
| F | T | : | F |
| F | F | : | F |

VLSM Variable