Red: 172.16.0.0 /13

- 10,000
- 8,000
- ~~1,000~~
- 250

172.16 | 000. 00 | 000000. 00000000 | $2^m = 1000$ $m = 14$ $2^{14} = 16384$
                                        $n = 5$ $2^5 = 32$

0 | 000.00 | → 172.16.0.0
1 | 000.01 | → 172.16.0.64
  | ⋮ |
30 | 111.10 | → 172.23.128.0 /18
31 | 111.11 | → 172.23.192.0 → 10,000 Host (BRANCH)
                              #

172.23.10 | 00000. 00000000 | $2^m = 8000$ $m = 13$ $2^{13} = 8192$
                                $n = 1$ $2^1 = 2$

0 | 0 | → 172.23.128.0 /19
1 | 1 | → 172.23.160.0 → 8,000 Host (HQ)
                        #

172.23.100 | 00000. 00000000 | $2^m = 250$ $m = 8$ $2^8 = 256$
                                 $n = 5$ $2^5 = 32$

0 | 00000 | → 172.23.128.0
1 | 00001 | → 172.23.129.0
  | ⋮ | /24
30 | 11110 | → 172.23.158.0
31 | 11111 | → 172.23.159.0 → 250 Host (GRANJA)

- 4000
- 3000
- 2 D. 4

172.23.192.0 /18

$2^m = 4000$ m = 12 $2^{12} = 4096$
$n = 2$ $2^2 = 4$

172.23.10|00 0000.0000 0000|

0	00	→ 172.23.192.0
1	01	→ 172.23.208.0 /20
2	10	→ 172.23.224.0
3	11	→ 172.23.240.0 → 4000 Host → LAN ＊ VLAN'S

172.23.1010|0000.0000 0000|

$2^m = 3000$ m = 12
$n = 2$ $2^2 = 1$ /20

→ 172.23.224.0 /20 (3000 Host) → SERVER DHCP

172.23.1001|0000.0000 0000|

$2^n = 4$ m = 2 $n = 10$ $2^{10} = 1024$

0	0000.0000 00	→ 172.23.208.0
1	0000.0000 01	→ 172.23.208.4
⋮	⋮	/30
1022	1111.1111 10	→ 172.23.223.248
1023	1111.1111 11	→ 172.23.223.252

} 4 Host (WAN)

VLAN's BRANCH :

172.23.240.0 /20

172.23. $1111|0000.00000000|$ $2^m=1200$ $m=11$ $2^{11}=2048$
$n=1$ $2^1=2$

$\begin{array}{c|c}0&0\\1&1\end{array}$ $\rightarrow$ 172.23.240.0 /21
$\rightarrow$ 172.23.248.0 $\longrightarrow$ 1200 Host (SALES)

172.23. $11110|000.00000000|$ $2^m=450$ $m=9$ $2^9=512$ $n=2$ $2^2=4$

$\begin{array}{c|c}0&00\\1&01\\2&10\\3&11\end{array}$
$\rightarrow$ 172.23.240.0 /23
$\rightarrow$ 172.23.242.0
$\rightarrow$ 172.23.244.0 $\longrightarrow$ 400 Host (PRODUCTION)
$\rightarrow$ 172.23.246.0 $\longrightarrow$ 450 Host (ACCOUNTING)

172.23. $1111001|0.|00000000|$ $2^m=200$ $m=8$ $n=1$ $2^1=2$

$\begin{array}{c|c}0&0\\1&1\end{array}$
$\rightarrow$ 172.23.242.0 /24
$\rightarrow$ 172.23.243.0 $\longrightarrow$ 200 Host (HR)

172.23.242. $|00|000000|$ $2^m=45$ $m=6$ $n=2$ $2^2=4$

$\begin{array}{c|c}0&00\\1&01\\2&10\\3&11\end{array}$
$\rightarrow$ 172.23.242.0
$\rightarrow$ 172.23.242.64 /26
$\rightarrow$ 172.23.242.128
$\rightarrow$ 172.23.242.192 $\longrightarrow$ 45 Host (NATIVE)

172.23.242.10 $|0|00000|$ $2^m=20$ $m=5$ $2^5=32$ $n=1$ $2^1=2$

$\begin{array}{c|c}0&0\\1&1\end{array}$
$\rightarrow$ 172.23.242.128 /27
$\rightarrow$ 172.23.242.160 $\longrightarrow$ 20 Host (MANAGEMENT)

Segmento HQ

172.23.160.0/19 $2^m = 3000$ $m = 12$ $n = 1$ $2^1 = 2$

172.23.101 | 00000.0000000 |

$\begin{array}{c|c|c} 0 & 0 \\ 1 & 1 \end{array}$ → 172.23.160.0   /20
→ 172.23.176.0 → 3000 Host (LAN) 🔖 VLANs

$2^m = 2000$ $m = 11$ $n = 1$ $2^1 = 2$

172.23.1010 | 0000.00000000 |

$\begin{array}{c|c|c} 0 & 0 \\ 1 & 1 \end{array}$ → 172.23.180.0 /21
→ 172.23.168.0 → 2000 Host (Server DHCP)

$2^m = 100$ $m = 7$ $n = 4$ $2^n = 16$

172.23.10100 | 000.00000000 |

0 | 000.0 | → 172.23.160.0
1 | 000.1 | → 172.23.160.128
⋮   /25
14 | 111.0 | → 172.23.167.0
15 | 111.1 | → 172.23.167.128 → 1000 Host (LAN Admin)

$2^M = 4$ $M = 2$ $n = 5$ $2^5 = 32$

172.23.167.0 | 0000000 |

0 | 00000 | → 172.23.167.0
1 | 00001 | → 172.23.167.4
⋮   /30
30 | 11110 | → 172.23.167.120 } 4 Host (WAN)
31 | 11111 | → 172.23.167.124 }

−1000 ✓
−600 ✓
−300 ✓
−250 ✓
−60 ✓
−20

VLANs HQ.

172.23.176.0 /20

172.23.1011 | 0000. 00000000 | $2^m = 1000$ $m = 10$ $2^{10} = 1024$ $n = 2$ $2^2 = 4$ ✳

0	00	→ 172.23.176.0	/22
1	01	→ 172.23.180.0	
2	10	→ 172.23.184.0 → 600 Host (Accounting)	
3	11	→ 172.23.188.0 → 1000 Host (Sales)	

172.23.101101 | 00. 00000000 | $2^m = 300$ $m = 9$ $2^n = 512$ $n = 1$ $2^1 = 2$

0	0	→ 172.23.180.0 /23
1	1	→ 172.23.182.0 → 300 Host (HR)

~~172.23.180.00000~~

172.23.1011010 | 0. 00000000 | $2^m = 250$ $m = 8$ $2^8 = 256$ $n = 1$ $2^1 = 2$

0	0	→ 172.23.180.0 /24
1	1	→ 172.23.181.0 → 250 Host (Production)

172.23.180. | 00000000 | $2^m = 60$ $m = 6$ $2^6 = 64$ $n = 2$ $2^2 = 4$

0	00	→ 172.23.180.0	
1	01	→ 172.23.180.64	/26
2	10	→ 172.23.180.128	
3	11	→ 172.23.180.192 → 60 Host (Native)	

172.23.180.10 | 000000 | $2^m = 20$ $m = 5$ $2^5 = 32$ $n = 1$ $2^1 = 2$

0	0	→ 172.23.180.128 /27
1	1	→ 172.23.180.160 → 20 Host (Management)