

ADDRESS CALCULATIONS

Important tip... work in binary!

Which address matches 32.0.0.0/4

- A. 10.119.22.0 ?
- B. 65.209.10.0 ?
- C. 5.0.1.0?
- D. 33.33.1.0 ?
- E. 96.21.3.0 ?

Which prefix matches 95.254.36.0/23

- A. 95.244.46.0/23
- B. 95.244.37.0/24
- C. 95.244.36.0/24
- D. 95.244.40.0/23

Which of the following prefixes contains 65.40.0.0/13

- A. 65.128.0.0/11 ?
- B. 65.128.0.0/10 ?
- C. 65.192.0.0/10?
- D. 65.64.0.0/12?
- E. 65.0.0.0/10?

Which prefix matches both 229.65.47.0 and 229.65.56.0

- A. 229.65.32.0/20?
- B. 229.65.49.0/20?
- C. 229.65.37.0/19?
- D. 229.65.35.0/21?

SUBNETTING

Given a network address 175.32.0.0 and subnet mask of 255.255.255.0

What is the total number of subnets?

What is the range of subnet addresses?

What is the number of hosts per subnet?

What is the range of host addresses

Given the network 31.0.0.0 with subnet mask 255.255.255.0

What is the...

Total number of subnets

Range of subnet addresses

Number of hosts per subnet

Range of host addresses

Given the network 31.0.0.0 with subnet mask 255.255.192.0

What is the...

Total number of subnets

Range of subnet addresses

Number of hosts per subnet

Range of host addresses

Given an address 5.228.229.195 and a subnet mask 255.255.255.224

What are the following?

The Network ID

The Host ID

Subnet broadcast address

Range of subnet addresses

Given an address 192.4.4.67 and a subnet mask 255.255.255.252

What are the following?

The Network ID

The Host ID

Subnet broadcast address

Range of subnet addresses

A company is given 193.1.1.0/24 and wants to subnet this address into six subnets with up to 25 hosts per subnet.

Write down all the subnet addresses.

Write down all the broadcast addresses for each subnet

A company is given 1120.10.0.0/16 and wants to subnet this address with up to 60 hosts per subnet.

Write down all the subnet addresses.

Write down all the broadcast addresses for each subnet

VARIABLE LENGTH SUBNET MASKS

A company is given 100.22.0.0/16

Create 16 subnets

Create 32 sub-subnets

Create 8 sub-subnets for the 5th sub-subnet of subnet 10

Given a subnet address 179.55.32.0/20 for a set of four LANs, each one with a router and all joined by a single unifying central router.

Generate an efficient set of VLSM addresses for the network, allowing twenty-five hosts per LAN.

Address each of the interfaces on the Routers.

Identify the local broadcast addresses for each LAN.

CIDR

Identify the class C network numbers that are specified by the CIDR block
198.31.168.0/21

Identify the class C network numbers that are specified by the CIDR block
199.24.0.0/13

Aggregate the following addresses using CIDR

200.47.132.0/24
200.47.133.0/24
200.47.134.0/24
200.47.135.0/24

Aggregate the following addresses using CIDR

200.47.146.0/24
200.47.147.0/24
200.47.148.0/24
200.47.149.0/24

Aggregate the following addresses using CIDR

200.47.96.0/24
200.47.97.0/24
200.47.98.0/24
200.47.99.0/24
as far as...
200.47.158.0/24
200.47.159.0/24

(2 Supernets here, 2 broadcast addresses!)

Binary-Decimal Conversion

Last 4 bits→	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
First 4 bits↓	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0000	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0010	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
0011	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0100	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
0101	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
0110	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
0111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
1000	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
1001	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
1010	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
1011	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
1100	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
1101	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
1110	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
1111	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255