Video - Creating One Hundred Equal-sized Subnets (3 min)

An enterprise network requires 100 equal-sized subnets starting from 172.16.0.0/16. To subnet this network correctly, the first thing that I do is write out the subnet mask. There is my /16 subnet mask. I'm going to need to borrow bits from the host portion. If I borrow one bit, I have two subnets, two bits would be four subnets, eight subnets, 16, 32, 64, 128. I'll need to create 128 subnets to meet the requirement of having 100 equal-sized subnets. So I've highlighted the borrowed bits in the subnet mask, we've borrowed seven bits. Two to the seventh power is 128, creating 128 subnets. The last one in the subnet mask is in the two's place so I know that the networks will go up by two. So I can go down here and fill in the networks. The first network will be 172.16.0.0/23 because we have 23 ones now in the subnet mask. The next network will be 172.16.2.0/23. We can see that if I list out the networks, the networks will continue to go up by two and if we go all the way up, I'll skip a few here, the last subnet will be 172.16.254.0/23. If I was to list out all of the subnets, I would have 128 subnets. For hosts in each subnet, we have nine zeros in our subnet mask and two to the ninth power is 512 so we'll have 512 minus two so 510 usable hosts per subnet. An easy way to figure out the host is eight zeros is 256 hosts and every zero added on doubles the number of hosts so 256 plus one more zero would be 512 hosts minus two for 510 usable.