**0001,0010,0101,0101,0101,1100,0010,1010  
 1 2 5 5 5 C 2 A**

**2 B A D 4   
0010,1011,1010,1101,0100**

**0005 RMB = 5 RMB**

**~~5000 RMB = 5 RMB~~**

**FC00::1::1 🡪 NEVER!!!!!!!!!!**

**FC00:0:1:0:0:0:0:1  
FC00:0:0:1:0:0:0:1  
FC00:0:0:0:1:0:0:1  
FC00:0:0:0:0:1:0:1**

**FC00:0:0:0:0:0:0:0 FC00:: /64**

**Network 0: FC00:0:0:0::0 /64 FC00:: /64  
first Host FC00:0:0:0::0001 FC00::1  
last host FC00:0:0:0:FFFF:FFFF:FFFF:FFFF  
Network 1: FC00:0:0:1::0  
Network 2: FC00:0:0:2::0**

**FC00::/64 🡪 FC00::1 FC00::2 FC00::3  
FC01::/64 🡪 FC01::1 FC01::2 FC01::3**

**Given Network: Private „zero“**

**Create Subnet for 65000 hosts 🡪 216=65536-1=65535 hosts  
16 Bits for hosts (one block)🡪 128-16=112  
128-16=112-64=48 🡪 248= 256 Trillion Subnets  
FC00:0000:0000:0000:0000:0000:0000:0001  
 :0000000000000001 0001  
 :1111111111111111 FFFF**

**FC00:0:0:0:0:0:0:H  
Subnet 0: FC00::0:0000 FC00::0:0 FC00:: /112  
first host FC00::0:0001 FC00::0:1 FC00::1  
last host FC00::0:FFFF FC00::FFFF  
Subnet 1: FC00::1:0 /112  
Subnet 2: FC00::2:0 /112**

**255 hosts:  
FC00:0:0:0:0:0:0:00HH /120  
Subnet 0: FC00:: 0 0001 … 00FF :: … FF  
Subnet 1: FC00::0100 0101 … 01FF  
Subnet 2: FC00::0200 0201 … 02FF  
 Subnet No. first last Host**

**FC00:0:0:0:H:H:H:H**

**FC00::0 /64  
FC01::0   
FC02::0**

**PC 1 192.168.0.88  
PC 2 192.168.0.110  
PC 3 192.168.0.130**

**Mask 255.255.255.192 11000000 🡪 4 Subnets 64-2=62 Hosts  
0 – 63 / 64 – 127 / 128 – 191 / 192 – 255**

**192.168.1.0 /24 🡪 10 Hosts per subnet**

**24=16 🡪 16 Adr. -2 = 14 Hosts/subnet 🡪 4 Bits  
8-4=4 🡪 24=16 Subnets 🡪 11110000 🡪 255.255.255.240 /28**

**172.16.0.0 00000000.00000000 Network  
172.16.0.1 00000000.00000001 Host No. 1  
172.16.0.2 00000000.00000010 Host No. 2  
172.16.0.255 00000000.11111111 Host No. 255  
172.16.1.0 00000001.00000000 Host No. 256  
172.16.1.1 00000001.00000001 Host No. 257**

**FC00::0 … FC00::FFFF  
FC00::1:0  
Size? 216=65k hosts  
Mask? /112 128-16=112**

**IPv6 Private Network 0:  
create 2 private Subnets with size 15 hosts**

**Mask: 24=16 🡪 need 4 bits 🡪 128-4=124  
Mask: /124**

**Subnet 0 : FC00::0000 FC00::0 FC00::  
first host : FC00::0001 FC00::1  
Last host : FC00::000F FC00::F**

**Subnet 1 : FC00::0010 FC00::10  
first host : FC00::0011 FC00::11  
Last host : FC00::001F FC00::1F**

**Subnet 2 : FC00::0020 FC00::20  
first host : FC00::0021 FC00::21  
Last host : FC00::002F FC00::2F**

**IPv6 Private Network 0:  
create private Subnets with size 3 hosts**

**Mask: 22=4 🡪 need 2 bits 🡪 128-2=126  
Mask: /126**

**Subnet 0 : FC00::0000 FC00::0 FC00::  
host 1 : FC00::0001 FC00::1  
host 2 : FC00::0002 FC00::2  
Last 3 : FC00::0003 FC00::3**

**Subnet 1 : FC00::0004 FC00::4  
host 1 : FC00::0005 FC00::5  
host 2 : FC00::0006 FC00::6  
Last 3 : FC00::0007 FC00::7**

**Subnet 2 : FC00::0008 FC00::8  
host 1 : FC00::0009 FC00::9  
host 2 : FC00::000A FC00::A  
Last 3 : FC00::000B FC00::B**

**Create Subnet for 16.7M hosts (like IPv4 Class A)**

* **Need 24 bits for hosts 🡪 128-24=104 🡪 /104**

**FC00:0:0:0:SSSS:SSSS:SSHH:HHHH /104**

**Subnet 0:**

**Subnet Adr: FC00::0 /104 FC00:: /104  
First host: FC00::1 Last Host: FC00::00FF:FFFF**

**Subnet 1:**

**Subnet Adr: FC00::0100:0 /104 FC00::100:: /104  
First host: FC00::0100:1 Last Host: FC00::01FF:FFFF**