

IFT 266 Introduction to Network Information Communication Technology (ICT)

Lab 24

IPv6 Subnetting

Problem 1

Your ISP has given you the IPv6 address 3FFF:5801:DEAF::/48

How many /64 subnets are available with this address?

65536

What are the first four /64 subnets?

3FFF:5801:DEAF::/64

3FFF:5801:DEAF:1::/64

3FFF:5801:DEAF:2::/64

3FFF:5801:DEAF:3::/64

What are the last two /64 subnets in this range?

3FFF:5801:DEAF:FFFE::/64

3FFF:5801:DEAF:FFFF::/64

Problem 2

Your ISP has given you the IPv6 address 2001:ACAD:5678:1840::/60.

How many /64 subnets are available with this address?

16

Complete the /64 subnets in this range. (The ISP's Global Routing Prefix is already printed for you.)

2001:ACAD:5678:1840::/64

2001:ACAD:5678:1841::/64

2001:ACAD:5678:1842::/64

2001:ACAD:5678:1843::/64

2001:ACAD:5678:1844::/64

2001:ACAD:5678:1845::/64

2001:ACAD:5678:1846::/64

2001:ACAD:5678:1847::/64

2001:ACAD:5678:1848::/64

2001:ACAD:5678:1849::/64

2001:ACAD:5678:184A::/64

2001:ACAD:5678:184B::/64

2001:ACAD:5678:184C::/64

2001:ACAD:5678:184D::/64

2001:ACAD:5678:184E::/64

2001:ACAD:5678:184F::/64

Problem 3

Your ISP has given you the IPv6 address 3100:6523:AD14:8000::/52.

How many /64 subnets are available with this address?

4096

What are the first four /64 subnets?
(The ISP's Global Routing Prefix is already printed for you.)

3100:6523:AD14 : 8000 :: /64

3100:6523:AD14 : 8001 :: /64

3100:6523:AD14 : 8002 :: /64

3100:6523:AD14 : 8003 :: /64

What are the last two /64 subnets in this range?

3100:6523:AD14 : 8FFE :: /64

3100:6523:AD14 : 8FFF :: /64

Problem 4

Your ISP has given you the IPv6 address 2100:89:4500::/48.

How many /64 subnets are available with this address?

65,536

What are the first four /64 subnets?
(The ISP's Global Routing Prefix is already printed for you.)

2100:89:4500::/64

2100:89:4500:1::/64

2100:89:4500:2::/64

2100:89:4500:3::/64

What are the last two /64 subnets in this range?

2100:89:4500:FFFE::/64

2100:89:4500:FFFF::/64