**Problem 1**

Your ISP has given you the IPv6 address 2000:ACAD:1234:6600::/56.

How many /64 subnets are available with this address? 2^8=256

What are the first four /64 subnets?

2000:ACAD:1234:6600::/64

2000:ACAD:1234:6601::/64

2000:ACAD:1234:6602::/64

2000:ACAD:1234:6603::/64

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

2000:ACAD:1234:66FE::/64

2000:ACAD:1234:66FF::/64

**Problem 2**

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

How many /64 subnets are available with this address? 2^16=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 3**

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

How many /64 subnets are available with this address? 2^4=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 4**

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

How many /64 subnets are available with this address? 2^12=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 5**

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

How many /64 subnets are available with this address? 2^16=65536

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

//

ISP Address: 2001:EE00:2575::/48

Infrastructure Site ID: 2001:EE00:2575::/52

Sales Site ID: 2001:EE00:2575:1000::/52

Accounting Site ID: 2001:EE00:2575:2000::/52

Distribution Site ID: 2001:EE00:2575:3000::/52

Casting Site ID: 2001:EE00:2575:4000::/52

Editing Site ID: 2001:EE00:2575:5000::/52

ISP Address: 2001:EE00:2575::/48

Infrastructure Site ID: 2001:EE00:2575::/52

Administration Site ID: 2001:EE00:2575:1000::/52

Infrastructure Sub-Site ID: 2001:EE00:2575:1000::/56

Sales Sub-Site ID: 2001:EE00:2575:1100::/56

Accounting Sub-Site ID: 2001:EE00:2575:1200::/56

Distribution Sub-Site ID: 2001:EE00:2575:1300::/56

Production Site ID: 2001:EE00:2575:2000::/52

Infrastructure Sub-Site ID: 2001:EE00:2575:2000::/56

Casting Sub-Site ID: 2001:EE00:2575:2100::/56

Editing Sub-Site ID: 2001:EE00:2575:2200::/56

ISP Address: 3F01:ABCD:8875::/48

Infastructure Site ID: 3F01:ABCD:8875::/52

Management Site ID: 3F01:ABCD:8875:1000::/52

Sales Site ID: 3F01:ABCD:8875:2000::/52

Human Resources Site ID: 3F01:ABCD:8875:3000::/52

Warehouse Site ID: 3F01:ABCD:8875:4000::/52

ISP Address: 3F01:ABCD:8875::/48

Infrastructure Site ID: 3F01:ABCD:8875::/52

Building 1 Site ID: 3F01:ABCD:8875:1000:/52

Infrastructure Sub-Site ID: 3F01:ABCD:8875:1000:/56

Management Sub-Site ID: 3F01:ABCD:8875:1100:/56

Sales Sub-Site ID: 3F01:ABCD:8875:1200:/56

Building 2 Site ID: 3F01:ABCD:8875:2000:/52

Infrastructure Sub-Site ID: 3F01:ABCD:8875:2000:/56

Management Sub-Site ID: 3F01:ABCD:8875:2100:/56

Human Resources Sub-Site ID: 3F01:ABCD:8875:2200:/56

Building 2 Site ID: 3F01:ABCD:8875:3000:/52

Infrastructure Sub-Site ID: 3F01:ABCD:8875:3000:/56

Management Sub-Site ID: 3F01:ABCD:8875:3100:/56

Warehouse Sub-Site ID: 3F01:ABCD:8875:3200:/56

ISP Address: 2001:CA21:9000::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2001:CA21:9000::/52

Management Groups Site ID: 2001:CA21:9000:1000::/52

HR Sub-Site ID: 2001:CA21:9000:1000::/56

Sales Sub-Site ID: 2001:CA21:9000:1100::/56

Wholesale Sub- Site ID: 2001:CA21:9000:1100::/60

Retail Sub- Site ID: 2001:CA21:9000:1110::/60

Production Groups Site ID: 2001:CA21:9000:2000::/52

Warehouse Sub-Site ID: 2001:CA21:9000:2000::/56

Shipping Sub-Site ID: 2001:CA21:9000:2100::/56

Domestic Sub-Site ID: 2001:CA21:9000:2100::/60

Worldwide Sub-Site ID: 2001:CA21:9000:2110::/60

ISP Address: 2001:CA21:9000::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2001:CA21:9000::/52

Building A Site ID: 2001:CA21:9000:1000::/52

Infrastructure Sub-Site ID: 2001:CA21:9000:1000::/56

HR Sub-Site ID: 2001:CA21:9000:1100::/56

Sales Sub-Site ID: 2001:CA21:9000:1200::/56

Wholesale Sub-Site ID: 2001:CA21:9000:1200::/60

Retail Sub-Site ID: 2001:CA21:9000:1210::/60

Building B Site ID: 2001:CA21:9000:2000::/52

Infrastructure Sub-Site ID: 2001:CA21:9000:2000::/56

Warehouse Sub-Site ID: 2001:CA21:9000:2100::/56

Shipping Sub-Site ID: 2001:CA21:9000:2200::/56

Domestic Sub-Site ID: 2001:CA21:9000:2200::/60

Worldwide Sub-Site ID: 2001:CA21:9000:2210::/60

ISP Address: 2000:ACAD:1145::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2000:ACAD:1145::/52

Administration Site ID: 2000:ACAD:1145:1000::/52

Finance Site ID: 2000:ACAD:1145:2000::/52

Guest Access Site ID: 2000:ACAD:1145:3000::/52

Marketing Site ID: 2000:ACAD:1145:4000::/52

Bookkeeping Site ID: 2000:ACAD:1145:5000::/52

ISP Address: 2000:ACAD:1145::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2000:ACAD:1145::/52

Office A Site ID: 2000:ACAD:1145:1000::/52

Infrastructure Sub-Site ID: 2000:ACAD:1145:1000::/56

Management Sub-Site ID: 2000:ACAD:1145:1100::/56

Administration Sub-Site ID: 2000:ACAD:1145:1100::/60

Finance Sub-Site ID: 2000:ACAD:1145:1110::/60

Wireless Access Sub-Site ID: 2000:ACAD:1145:1200::/56

Guest Access Sub-Site ID: 2000:ACAD:1145:1200::/60

Marketing Sub-Site ID: 2000:ACAD:1145:1210::/60

Office B Site ID: 2000:ACAD:1145:2000::/52

Infrastructure Sub-Site ID: 2000:ACAD:1145:2000::/56

Management Sub-Site ID: 2000:ACAD:1145:2100::/56

Administration Sub-Site ID: 2000:ACAD:1145:2100::/60

Production Sub-Site ID: 2000:ACAD:1145:2200::/56

Administration Sub-Site ID: 2000:ACAD:1145:2200::/60

Bookkeeping Sub-Site ID: 2000:ACAD:1145:2210::/60

Wireless Access Sub-Site ID: 2000:ACAD:1145:2300::/56

Guest Access Sub-Site ID: 2000:ACAD:1145:2300::/60

ISP Address: 3F01:AA07:3907::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 3F01:AA07:3907::/52

Manufacturing Groups Site ID: 3F01:AA07:3907:1000::/52

Infrastructure Sub-Site ID: 3F01:AA07:3907:1000::/56

Marketing Sub-Site ID: 3F01:AA07:3907:1100::/56

Inventory Sub-Site ID: 3F01:AA07:3907:1200::/56

Shipping Sub- Site ID: 3F01:AA07:3907:1300::/56

Admin Groups Site ID: 3F01:AA07:3907:2000::/52

Infrastructure Sub-Site ID: 3F01:AA07:3907:2000::/56

HR Sub-Site ID: 3F01:AA07:3907:2100::/56

Hiring Sub-Site ID: 3F01:AA07:3907:2100::/60

Benfits Sub-Site ID: 3F01:AA07:3907:2110::/60

Financial Sub-Site ID: 3F01:AA07:3907:2200::/56

Purchasing Sub-Site ID: 3F01:AA07:3907:2200::/60

Sales Sub-Site ID: 3F01:AA07:3907:2210::/60

ISP Address: 3F01:AA07:3907::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 3F01:AA07:3907::/52

33rd Floor Site ID: 3F01:AA07:3907:1000::/52

Infrastructure Sub-Site ID: 3F01:AA07:3907:1000::/56

Manufacturing Groups Sub- Site ID: 3F01:AA07:3907:1100::/56

Marketing Sub-Site ID: 3F01:AA07:3907:1100::/60

Inventory Sub-Site ID: 3F01:AA07:3907:1110::/60

Shipping Sub- Site ID: 3F01:AA07:3907:1120::/60

34th Floor Site ID: 3F01:AA07:3907:2000::/52

Infrastructure Sub-Site ID: 3F01:AA07:3907:2000::/56

Admin Groups Sub-Site ID: 3F01:AA07:3907:2100::/56

HR Sub-Site ID: 3F01:AA07:3907:2100::/60

Hiring Sub-Site ID: 3F01:AA07:3907:2100::/64

Benefits Sub-Site ID: 3F01:AA07:3907:2101::/64

Financial Sub-Site ID: 3F01:AA07:3907:2110::/60

Purchasing Sub-Site ID: 3F01:AA07:3907:2110::/64

Sales Sub-SiteID: 3F01:AA07:3907:2111::/64

ISP Address: 2001:0:17::/52 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2001:0:17::/56

Administrators Site ID: 2001:0:17:100::/56

Staff Site ID: 2001:0:17:200::/56

Advertising Site ID: 2001:0:17:300::/56

Infrastructure Sub-Site ID: 2001:0:17:300::/60

Radio Sub-Site ID: 2001:0:17:310::/60

TV Sub- Site ID: 2001:0:17:320::/60

Web Sub- Site ID: 2001:0:17:330::/60

Sales Site ID: 2001:0:17:400::/56

Infrastructure Sub-Site ID: 2001:0:17:400::/60

Retail Sub-Site ID: 2001:0:17:410::/60

Wholesale Sub-Site ID: 2001:0:17:420::/60

ISP Address: 2001:0:17::/52 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2001:0:17::/56

Management Site ID: 2001:0:17:100::/56

Infrastructure Sub-Site ID: 2001:0:17:100::/60

Administrators Sub-Site ID: 2001:0:17:110::/60

Staff Sub- Site ID: 2001:0:17:120::/60

Finance Site ID: 2001:0:17:200::/56

Infrastructure Sub-Site ID: 2001:0:17:200::/60

Staff Sub-Site ID: 2001:0:17:210::/60

Marketing Dept Site ID: 2001:0:17:300::/56

Infrastructure Sub-Site ID: 2001:0:17:300::/60

Advertising Sub-Site ID: 2001:0:17:310::/60

Radio Sub-Site ID: 2001:0:17:310::/64

TV Sub-Site ID: 2001:0:17:311::/64

Web Sub-Site ID: 2001:0:17:312::/64

Sales Sub-Site ID: 2001:0:17:320::/60

Retail Sub-Site ID: 2001:0:17:320::/64

Wholesale Sub-Site ID: 2001:0:17:321::/64

ISP Address: 3F00:3589:0:5000:/52 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 3F00:3589:0:5000:/56

Management Site ID: 3F00:3589:0:5100:/56

HR Site ID: 3F00:3589:0:5200:/56

Infrastructure Sub-Site ID: 3F00:3589:0:5200:/60

Record Keeping Sub-Site ID: 3F00:3589:0:5210:/60

Insurance Site ID: 3F00:3589:0:5220:/60

Finance Site ID: 3F00:3589:0:5300:/56

Infrastructure Sub-Site ID: 3F00:3589:0:5300:/60

Sales Sub-Site ID: 3F00:3589:0:5310:/60

Purchasing Sub-Site ID: 3F00:3589:0:5400:/56

Inventory Sub-Site ID: 3F00:3589:0:5400:/60

Distribution Sub-Site ID: 3F00:3589:0:5410:/60

ISP Address: 3F00:3589:0:5000::/52 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 3F00:3589:0:5000::/56

Office A Site ID: 3F00:3589:0:5100::/56

Infrastructure Sub-Site ID: 3F00:3589:0:5100::/60

Management Sub-Site ID: 3F00:3589:0:5110::/60

HR Sub- Site ID: 3F00:3589:0:5120::/60

Record Keeping Sub-Site ID: 3F00:3589:0:5120::/64

Insurance Sub-Site ID: 3F00:3589:0:5121::/64

Office B Site ID: 3F00:3589:0:5200::/56

Infrastructure Sub-Site ID: 3F00:3589:0:5200::/60

Management Sub-Site ID: 3F00:3589:0:5210::/60

Finance Sub-Site ID: 3F00:3589:0:5220::/60

Sales Sub-Site ID: 3F00:3589:0:5220::/64

Office C Site ID: 3F00:3589:0:5300::/56

Infrastructure Sub-Site ID: 3F00:3589:0:5300::/60

Management Sub-Site ID: 3F00:3589:0:5310::/60

Purchasing Sub-Site ID: 3F00:3589:0:5320::/60

Inventory Sub-Site ID: 3F00:3589:0:5320::/64

Distribution Sub-Site ID: 3F00:3589:0:5321::/64

ISP Address: 2000:2531:FE00::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2000:2531:FE00::/52

Nurses/Staff Site ID: 2000:2531:FE00:1000::/52

Laboratory Site ID: 2000:2531:FE00:2000::/52

Obstetrics Site ID: 2000:2531:FE00:3000::/52

Pediatric Site ID: 2000:2531:FE00:4000::/52

Records Site ID: 2000:2531:FE00:5000::/52

Guest WIFI Site ID: 2000:2531:FE00:6000::/52

ISP Address: 2000:2531:FE00::/48 (The ISP’s Global Routing Prefix is already printed for you.)

Infrastructure Site ID: 2000:2531:FE00::/52

Emergency Site ID: 2000:2531:FE00:1000::/52

Infrastructure Sub-Site ID: 2000:2531:FE00:1000::/56

Nurses/Staff Sub-Site ID: 2000:2531:FE00:1100::/56

Laboratory Sub-Site ID: 2000:2531:FE00:1200::/56

Obstetrics Sub-Site ID: 2000:2531:FE00:1300::/56

Pediatric Sub-Site ID: 2000:2531:FE00:1400::/56

Admissions Site ID: 2000:2531:FE00:2000::/52

Infrastructure Sub-Site ID: 2000:2531:FE00:2000::/56

Nurses/Staff Sub-Site ID: 2000:2531:FE00:2100::/56

Records Sub-Site ID: 2000:2531:FE00:2200::/56

Patient Wards Site ID: 2000:2531:FE00:3000::/52

Infrastructure Sub-Site ID: 2000:2531:FE00:3000::/56

Ward A Sub-Site ID: 2000:2531:FE00:3100::/56

Nurses/Staff Sub-Site ID: 2000:2531:FE00:3100::/60

Guest WIFI Sub-Site ID: 2000:2531:FE00:3110::/60

Ward B Sub-Site ID: 2000:2531:FE00:3200::/56

Nurses/Staff Sub-Site ID: 2000:2531:FE00:3200::/60

Guest WIFI Sub-Site ID: 2000:2531:FE00:3210::/60