# Lecture 17

**Exercise 1**: What is likely to be the default gateway address for the network 192.168.1.0/24? Could the default gateway be at address 192.168.1.32? Could it be at 192.169.0.1?

- 192.168.1.1 (or possibly 192.168.1.254)
- yes, it's only a convention.
- no, 192.169.0.1 is not in the 192.168.1.0/24 network

**Exercise 2**: Should a router choose the lowest-cost or the highest-cost path when deciding to route a packet? What might be a suitable choice for a cost metric based on the interface data rate?

- higher cost ≡ worse
  ∴ choose lowest-cost path
- $\frac{1}{\text{data rate}}$ would be reasonable: cost is proportional to time required to transmit a certain amount of data

**Exercise 3:** What is BCIT's ASN? What is the largest network associated with this ASN?

from whois.arin.net:

| Autonomous System Number | |
|---|---|
| Number | 4476 |
| Name | BCIT |
| Handle | AS4476 |
| Organization | British Columbia Institute of Technology (BCIT-1) |
| Registration Date | 2009-09-15 |
| Last Updated | 2012-02-24 |

ASN = 4476

| Network Resources | |
|---|---|
| BCITNET-192-2 (NET-192-68-68-0-1) | 192.68.68.0 - 192.68.68.255 |
| BCITNET-192-3 (NET-192-68-69-0-1) | 192.68.69.0 - 192.68.69.255 |
| BCITNET-192-4 (NET-192-68-70-0-1) | 192.68.70.0 - 192.68.70.255 |
| BCITNET-192-5 (NET-192-68-71-0-1) | 192.68.71.0 - 192.68.71.255 |
| BCITNET-192-6 (NET-192-68-72-0-1) | 192.68.72.0 - 192.68.72.255 |
| BCITNET-192-7 (NET-192-68-73-0-1) | 192.68.73.0 - 192.68.73.255 |
| BCITNET-192-8 (NET-192-68-74-0-1) | 192.68.74.0 - 192.68.74.255 |
| NETBLK-BCITNET192 (NET-192-68-67-0-1) | 192.68.67.0 - 192.68.74.255 |
| BCITNET2 (NET-142-232-0-0-1) | 142.232.0.0 - 142.232.255.255 |

largest network = 142.232.0.0/16

**Exercise 4:** If there are 80 routers in a network and each one has three neighbours, how many link costs need to be transferred and stored by each router?

3 neighbours x 80 routers = 240 links total

(not all routing algorithms need all this information)