

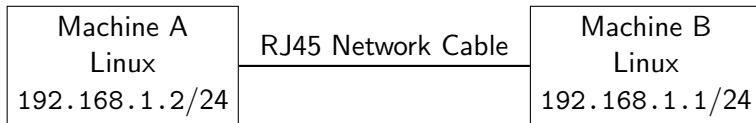
IS2012 Computer Networks

Lab Sheets

Dr. Chamath Keppitiyagama

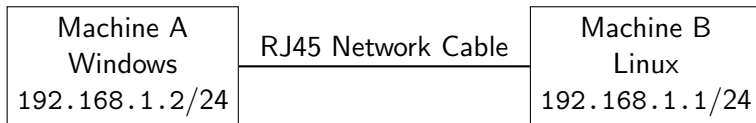
University of Colombo School of Computing

Lab 1.A: Connect two computers using a network cable



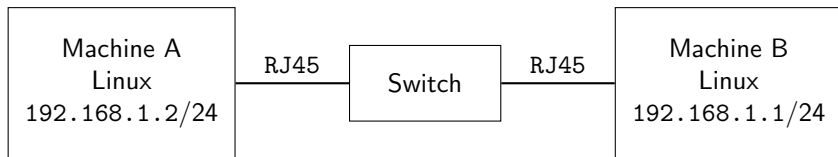
- Connect Machine A to Machine B using an Ethernet cable.
- Log on to Machine A. It is running Linux.
- Open a terminal and use the `ifconfig` (or `ip`) command to configure the Ethernet interface with an IP address.
- Open the Firefox web browser and type the IP address of the Machine B in the address bar.

Lab 1.B: Connect two computers using a network cable



- Connect Machine A to Machine B using an Ethernet cable.
- Log on to Machine A. It is running Windows.
- Configure the Ethernet interface with an IP address.
- Open the Firefox web browser and type the IP address of the Machine B in the address bar.

Lab 2: Connect two computers using an Ethernet switch



- Connect Machine A and B to the switch using Ethernet cables.
- Log on to Machine A. It is running Linux.
- Open a terminal and use the `ifconfig` (or `ip`) command to configure the Ethernet interface with an IP address.
- Use the `ping` command to measure the round-trip propagation delay between the Machines A and B.
- Use `ssh` to log on to Machine B.

Lab 3 A: Internet (Part I)

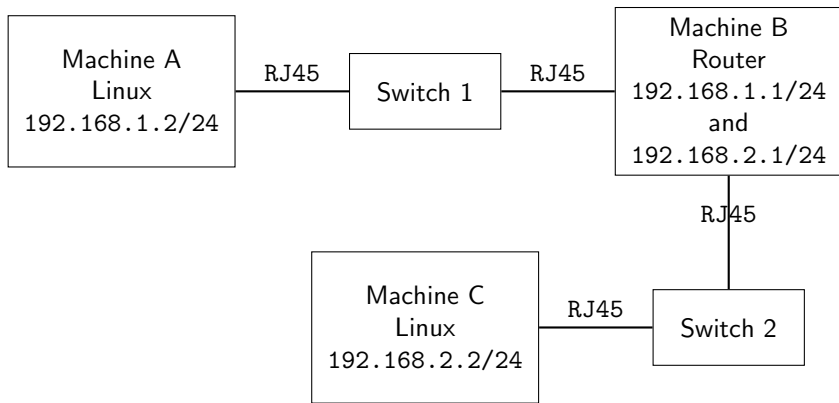


Figure 1: Two networks connected via the Router B

Lab 3 A: Internet (Part I)

- Connect Machine A and one interface of the Machine B (Router) to the switch 1 using Ethernet cables. The router is already configured with the IP addresses. The instructor will indicate the correct interface to be connected to Switch 1.
- Connect Machine C and one interface of the Machine B (Router) to the switch 2 using Ethernet cables. The instructor will indicate the correct interface to be connected to Switch 2.
- Log on to Machine A. It is running Linux. Assign the IP address to the Ethernet interface.
- Log on to Machine C. It is running Linux. Assign the IP address to the Ethernet interface.
- Use the `ping` command to test the link $A \leftrightarrow B$.
- Use the `ping` command to test the link $C \leftrightarrow B$.
- Can you ping from Machine A to Machine B (or vice versa)? Explain.

Lab 3 B: Internet (Part II)

- Quickly setup the two networks in Figure 1.
- Use the `route` command on Machine A to add a route from A to C via B.
- Can you `ping` machine B from A now? Explain.
- Use the `route` command on Machine C to add a route from C to A via B.
- Use the `ping` command to check whether C is reachable from A.
- Run the `traceroute` command on Machine A to discover the path from A to C.
- Log on to Machine C from A using `ssh`.