1 Routing exercises

1. Consider a simple network as shown in Figure 1

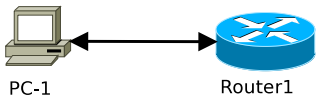

Figure 1: Simple router based network

   (a) Create a similar network in Cisco Packet Tracer and configure it so that the router and the PC can ping each other. Also perform the configuration which allows the PC to telnet to the router.

   (b) Create a similar network in GNS3 and configure it so that the router and the PC can ping each other. While creating network using GNS3 PC3 should be simulated using VPCS. Also perform the configuration which allows the PC to telnet to the router.

2. Consider a router-on-a-stick based network as shown in Figure 2

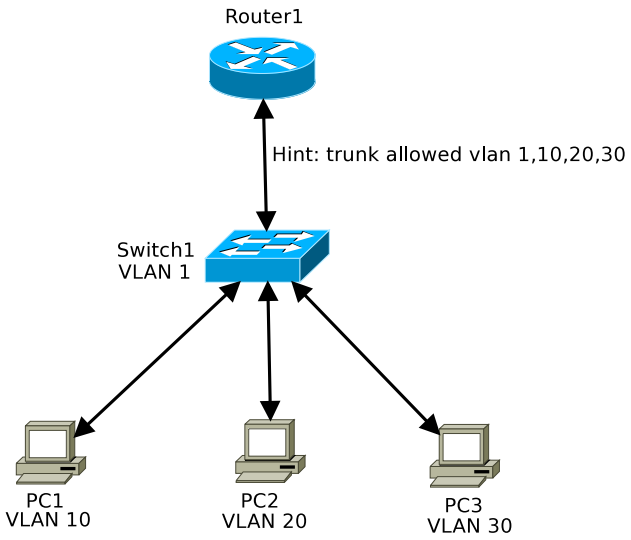

Figure 2: Router-on-a-stick based network

   (a) Create a similar network in Cisco Packet Tracer and configure it so that all devices can ping each other.

   (b) Create a similar network in GNS3 and configure it so that all devices can ping each other. While creating network using GNS3

PC3 should be simulated using VPCS. For simulating a switch you can use EtherSwitch router.

3. Consider a network as shown in Figure 3

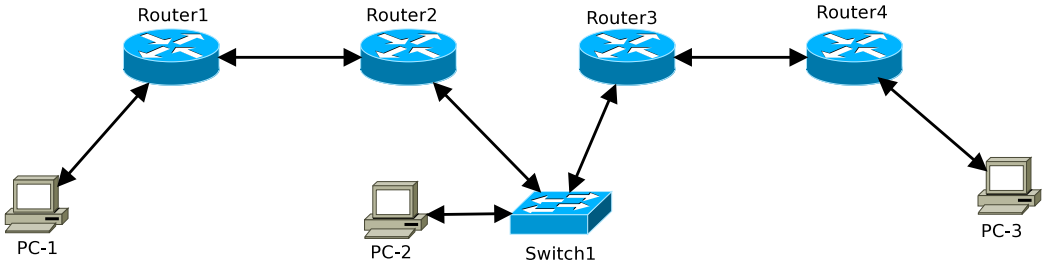

Figure 3: Static routing using routers

(a) Create a similar network in Cisco Packet Tracer and configure it so that all devices can ping each other. You should only use static routing for configuration.

(b) Create a similar network in GNS3 and configure it so that all devices can ping each other. While creating network using GNS3 PC3 should be simulated using VPCS. For simulating a switch you can use EtherSwitch router. You should only use static routing for configuration.

4. Consider a network as shown in Figure 4

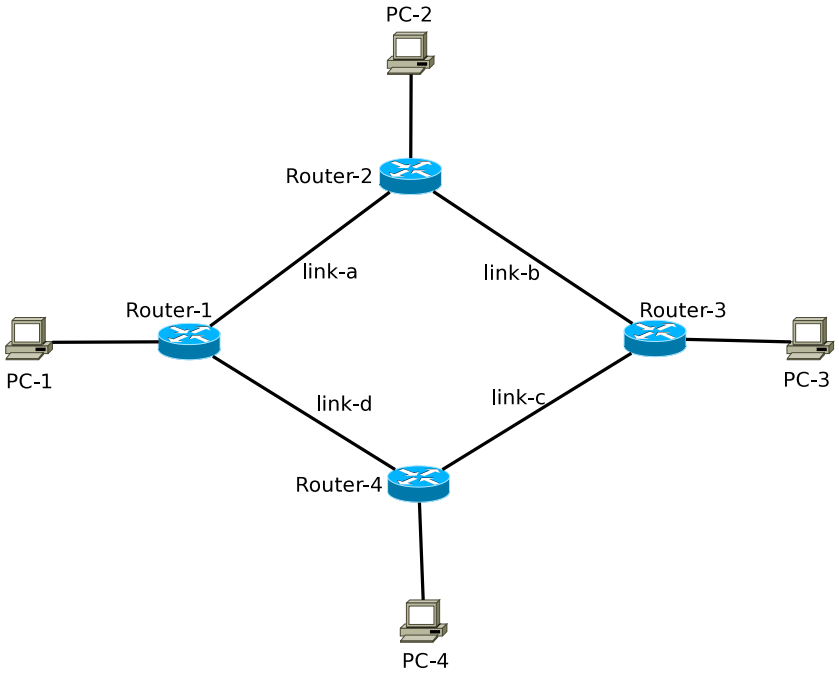

Figure 4: Dynamic routing using routing protocol

(a) Create a similar network in Cisco Packet Tracer and configure it so that all devices can ping each other. You should use configure the network in multiple ways using following routing protocols:

   i. RIPv2
   ii. OSPF
   iii. EIGRP

   Thus, overall three similar networks using three different routing protocols should be made.

(b) Create a similar network in GNS3 and configure it so that all devices can ping each other. While creating network using GNS3 PC3 should be simulated using VPCS. You should use configure the network in multiple ways using following routing protocols:

   i. RIPv2
   ii. OSPF
   iii. EIGRP

   Thus, overall three similar networks using three different routing protocols should be made.

In few of the above case make link a, b, c or d fail randomly and observe whether failure of a single link causes the network to become disconnected. Can you achieve the same with static routing?