

Assignment 7

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Theory Section

ASSIGNMENT-7

1. Explain the difference between static routing and dynamic routing.

| Static Routing | Dynamic Routing |
|-----------------------------------------------------------------|-------------------------------------------------------------------|
| (i) Manually configured by a network administrator. | (i) Automatically updates routing tables using routing protocols. |
| (ii) No extra CPU or bandwidth usage for route updates. | (ii) Consumes CPU and bandwidth due to routing protocol updates. |
| (iii) Small, stable networks where routes don't change often. | (iii) Large, complex networks with frequent topology changes. |
| (iv) Does not adapt to network changes unless manually updated. | (iv) Adapts automatically to network changes. |

2. Why is crossover cable used for router-to-router connections, while a straight-through cable is used for PC-to-switch connections?

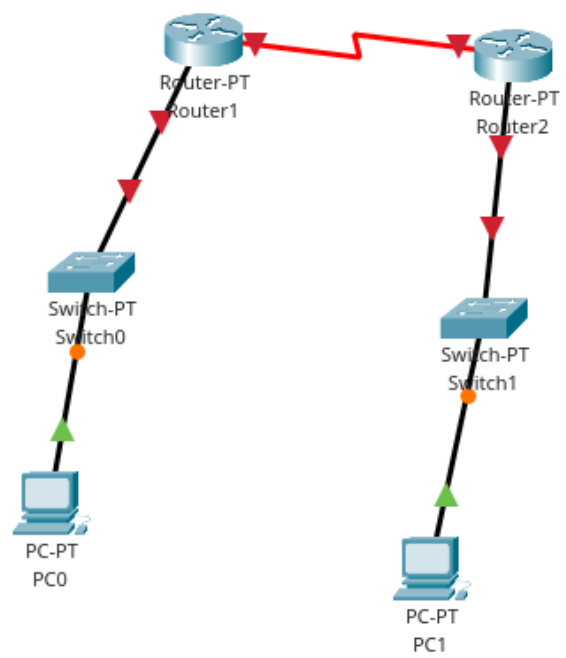
→ Crossover cable:

- used when connecting two similar devices (e.g. router-to-router, switch-to-switch)
- It swaps the transmission (TX) and reception (RX) wires so that the sending end of one device connects to the receiving end of the other.

- Straight-Through cable:-
 - used when connecting different devices.
like PC-to-switch, PC-to-router etc.
 - ensures proper communication without the need for signal crossover.
- 3. Describe the role of a default gateway in inter-network communication.
 - A default gateway is a router that acts as an access point for a local network to communicate with external such as Internet.
 - when an device wants to send data to be destination outside its subnet, it forwards the packet to the default gateway.
 - It then determines the best route to forward the packet to its final destination.

Practical Section

Question 1



Question 2

