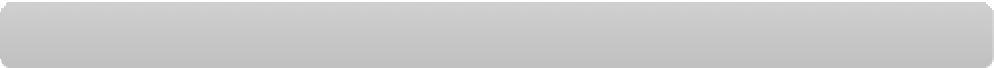




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| --- | --- |
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| **Assignment No** | 6 |



Assignment Number - 06

**Title :** Configuration of router by using router commands and implementation of OSPF 1

**Problem Statement** Using a Network Simulator (e.g. packet tracer) Configure routers for OSPF 1

# Theory :

**Router –** Router is a network device that allows you to direct data traffic to an appropriate destination. Router maintain routing table that contain IP addresses of computers over the network. A router has different components that enable proper functioning.

# Cisco IOS supports various command modes, among those followings are the main command modes.

* User EXEC Mode
* Privileged EXEC Mode
* Global Configuration Mode
* Interface Configuration Mode
* Sub Interface Configuration Mode
* Setup Mode

|  |  |  |  |
| --- | --- | --- | --- |
| **Mode** | **Prompt** | **Command to enter** | **Command to exit** |
| User EXEC | Router > | Default mode after booting. Login | Use **exit** command |
| Privileged EXEC | Router # | Use **enable** command from user  exec mode | Use **exit** command |
| Global Configuration | Router(config)# | Use **configure terminal**  command | Use **exit** command |
| Interface Configuration | Router(config- if)# | Use **interface**  **type *number*** command from  global configuration mode | Use **exit** command to  return in global configuration |
| Sub-Interface  Configuration | Router(config- subif) | Use **interface type *sub interface***  ***number***command from global configuration mode or interface configure mode | Use **exit** to return  previous mode. Use **end** command to return in privileged |

# Some important router Command

|  |  |
| --- | --- |
| **Command** | **Description** |
| Router(config)#interface serial 0/0/0 | Enter into serial interface 0/0/0 |
| Router(config- Connecte to interface | Optional command. It set description on  interface that is locally significant |
| Router(config-if)#ip address 10.0.0.1  255.0.0.0 | Assigns address and subnet mask to |
| Router(config-if)#clock rate 64000 | DCE side only command. Assigns a clock |
| Router(config-if)#bandwidth 64 | DCE side only command. Set bandwidth for |
| Router(config-if)#no shutdown | Turns interface on |
|  |  |

**Configuration of static Routing**

**Router 1 configurationA screenshot of a computer program

Description automatically generated**

**Router 2 configuration**

**A screenshot of a computer program

Description automatically generated**

**LAN using OSPF Protocol**

**A diagram of a network

Description automatically generated**

**Runtime Simulation:**

**A screenshot of a graph

Description automatically generated**

**Conclusion :**

By configuring OSPF in a network, routers can dynamically exchange routing information and calculate the best paths between networks. OSPF uses the link-state algorithm, offering fast convergence and scalability. The implementation of OSPF ensures efficient route distribution and adaptability to network changes.