EXPERIMENT No.

Aim: To explore static routing configuration through the Kathara emulator

Theory

→ **Brief about Kathara Emulator**

Kathara is an open source network emulation system for showing interactive demos, testing production networks in a sandbox environment, or developing new network protocols.

it's a versatile tools that provides interactive demos and safe space for testing network configurations. and offers a platform for the development of new network protocols, all within an open source framework.

→ **Brief about Static routing and it's advantages, disadvantages**

Static Routing is process in which we have to manually add routes in routing table

Advantages:

1. A cheaper route can be used for routing as no overhead routing is required for router CPU

2. It adds security because only administrator can allow routing to particular networks only.

3. No bandwidth usage between routers.

Disadvantages:

1. For a large network, it's a hectic task for administrator to manually add each route for network in routing table on each router

2. The administrator should have good knowledge of topology as he has to add each route manually

→ Brief about route command, it's use to explore Linux routing tables and it's command line options like add, delete, reject

'route' command is used to check the routing table of the system. It can be used to add, delete and reject routes

`# route add default gw 192.168.25.61`

    This command is ⊘ used to add the above IP address as the default gateway of the device on which the command runs.

`# route delete default gw 192.168.25.61`

    This command is used to delete the added route

`# route reject 192.168.X.X`

    This command will reject or restrict the device from using the specified route.

→ Actual Example with precise command line options to add/delete/reject static routes of host/Gateway/Network with brief explanation

Add : `# route add default gw 192.168.25.61`

Delete : `# route delete default gw 192.168.25.61`

Reject : `# route add -host 192.168.25.129 reject`

    `# route add -net 192.168.2825.128 /255.25.255.192 reject`

The above command line means that except the specified host ID/network ID, all the other routes are accepted. We reject only the specified IP address.