

---

**Mininet**

**Ethan Iannicelli**

**Apr 19, 2025**

## **CONTENTS:**

## MININET NETWORK

The `LinuxRouter` class represents a router that is a part of the network. Notably, the `net.ipv4.ip_forward` value is set to 1 on initialization.

**class** `layer3_network_code.LinuxRouter`

Bases: `object`

**config**(*\*\*params*)

Sets the configuration for the router. sets `ipv4` forwarding to `true`.

**terminate**()

Run on router termination. sets `ipv4` forwarding to `false`

Our network topography is built in the `NetworkTopo` class. This class extends the mininet `Topo` class, and overrides the `build` function for this program.

**class** `layer3_network_code.NetworkTopo`

Bases: `object`

**build**(*\*\*\_opts*)

Builds the network outlined for this homework. Three LANs represented by routers, each connected to 2 hosts via switches, and all routers connected through the provided IP gateway

To build, run and create routes between nodes, use the `run` function. This function also starts the mininet CLI and cleans up the network on exiting.

`layer3_network_code.run()`

Create network for this assignment. Start the network running, then open the mininet CLI to support running commands and examining network properties. Close the network when the CLI is exited.