sudo mn --custom canvas\_topo.py \

--topo canvas,spines=2,leaves=3,hosts\_per\_leaf=4 \

--controller=remote,ip=127.0.0.1,port=6653 \

--switch ovsk,protocols=OpenFlow13

✅ You’ll see Mininet building switches and hosts, then finally:

\*\*\* Canvas topology ready!

mininet>

**Step 1 — Verify Devices in ONOS**

1️⃣ Open your web browser inside Ubuntu (or on Windows if ONOS GUI is exposed).  
Go to:

http://127.0.0.1:8181/onos/ui

→ Username: onos  
→ Password: rocks

Check:

* **Topology tab** → you should see switches (s1, l1, l2, l3) and hosts.
* **Devices tab** → all OpenFlow devices are shown as “AVAILABLE.”
* **Hosts tab** → lists VLAN/subnet IPs like 10.100.\*, 10.200.\*, etc.

🖼️ *Take a screenshot for your report (Task 1 – Results)*.

**🧾 Step 2 — Check Connectivity in Mininet**

At the mininet> prompt:

nodes

Shows all hosts (e.g. h1\_1\_v100, h1\_2\_v200, …).

Now try pings:

**(a) Ping all**

pingall

👉 You’ll see some hosts not reachable — that’s okay because VLANs isolate traffic.

**(b) Ping within same VLAN**

Example: Video class VLAN 100

h1\_1\_v100 ping -c2 10.100.1.2

Chat VLAN 300

h2\_3\_v300 ping -c2 10.300.2.4

✅ Hosts in same VLAN/subnet should succeed.

🖼️ Screenshot ping results for your **Task 1 – Results** section.

**Step 3 — Add Simple Flow or QoS Rule in ONOS (Task 1 Continuation)**

Use ONOS GUI → **Flows** tab  
or ONOS CLI:

onos localhost

flows

You should see automatically installed flows (from reactive forwarding app).

If you want to show manual control:

curl -u onos:rocks -X POST \

http://127.0.0.1:8181/onos/v1/flows/of:0000000000000001 \

-H "Content-Type: application/json" \

-d '{

"priority": 40000,

"isPermanent": true,

"deviceId": "of:0000000000000001",

"selector": {

"criteria": [

{"type":"ETH\_TYPE","ethType":"0x0800"},

{"type":"IP\_PROTO","protocol":"6"},

{"type":"TCP\_DST","tcpPort":554}

]

},

"treatment": {

"instructions":[{"type":"OUTPUT","port":"2"}]

}

}'

✅ This example steers TCP 554 (RTSP video) to a specific port → shows control-plane capability.

**Step 4 — Validate & Capture Screenshots**

Collect for your report:

| **What** | **Where to capture** | **Why** |
| --- | --- | --- |
| ONOS GUI – Topology | /onos/ui → Topology | Proof of connectivity |
| ONOS GUI – Flows | /onos/ui → Flows | Show control rules |
| Mininet ping results | Terminal | Demonstrate VLAN isolation |
| onos> devices output | ONOS CLI | Verify switches discovered |

**🚪 Step 5 — Exit and Save**

When you’re done testing:

exit

Then:

sudo mn -c

(Cleans up all Mininet instances and OVS bridges.)