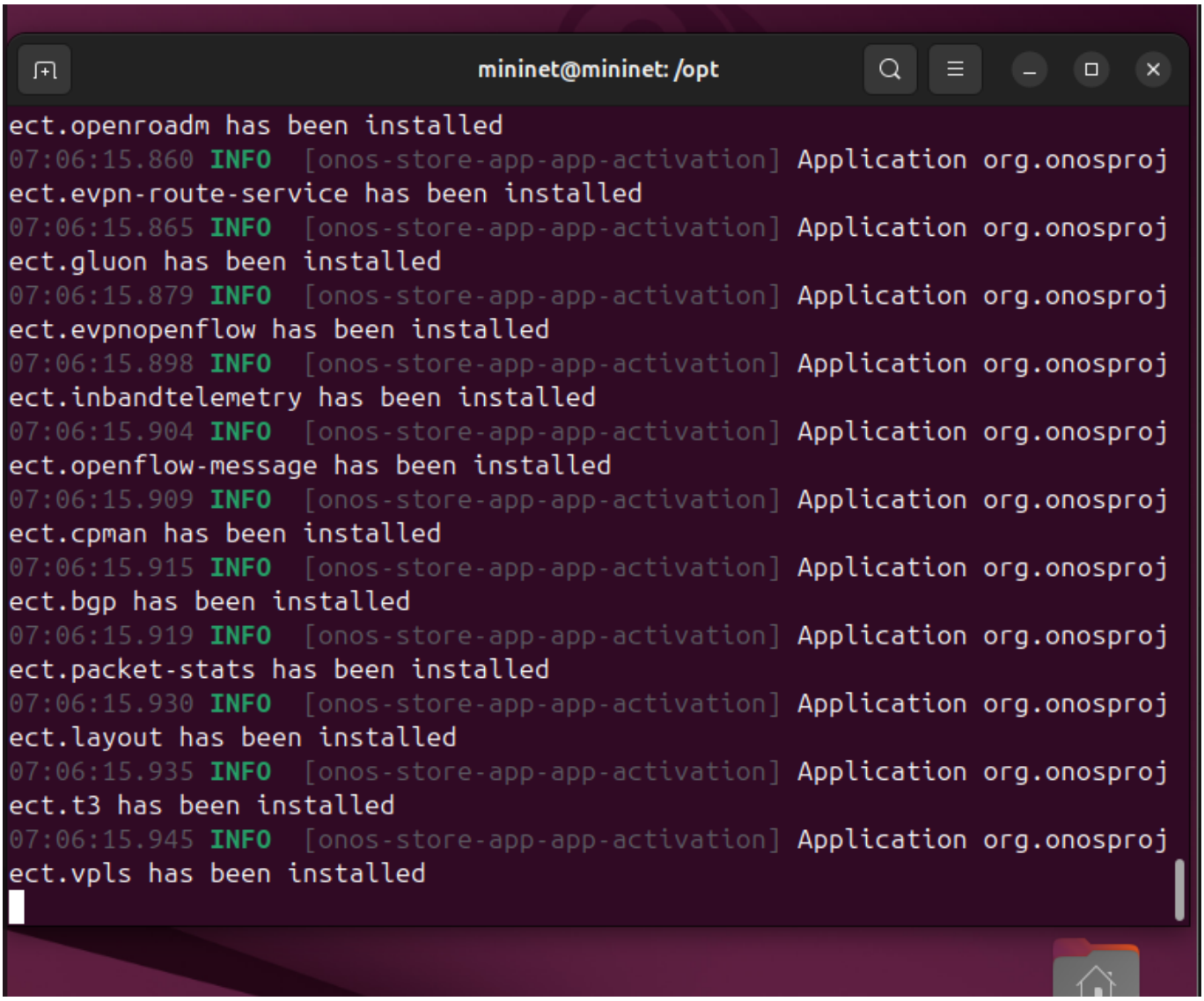
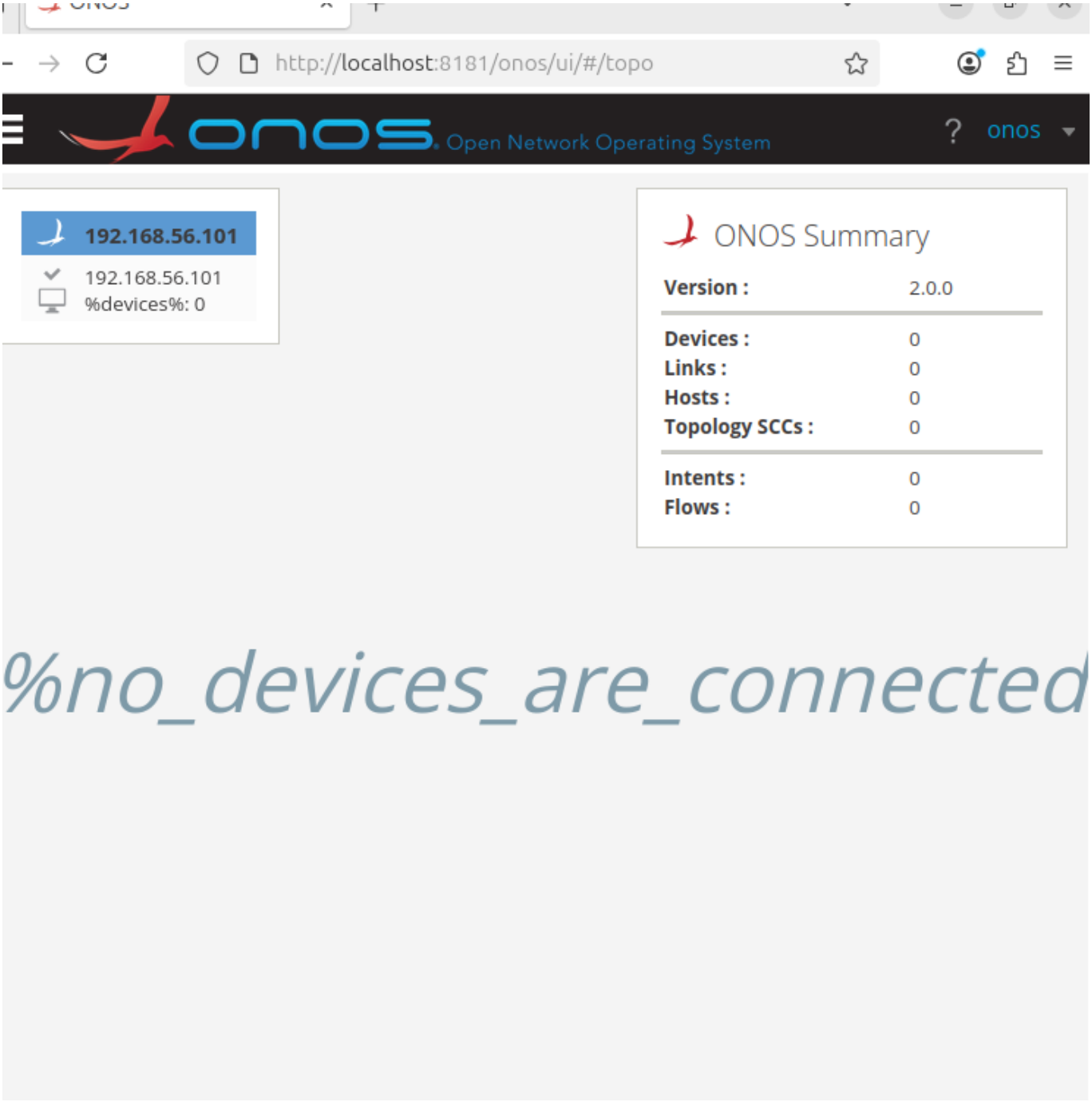
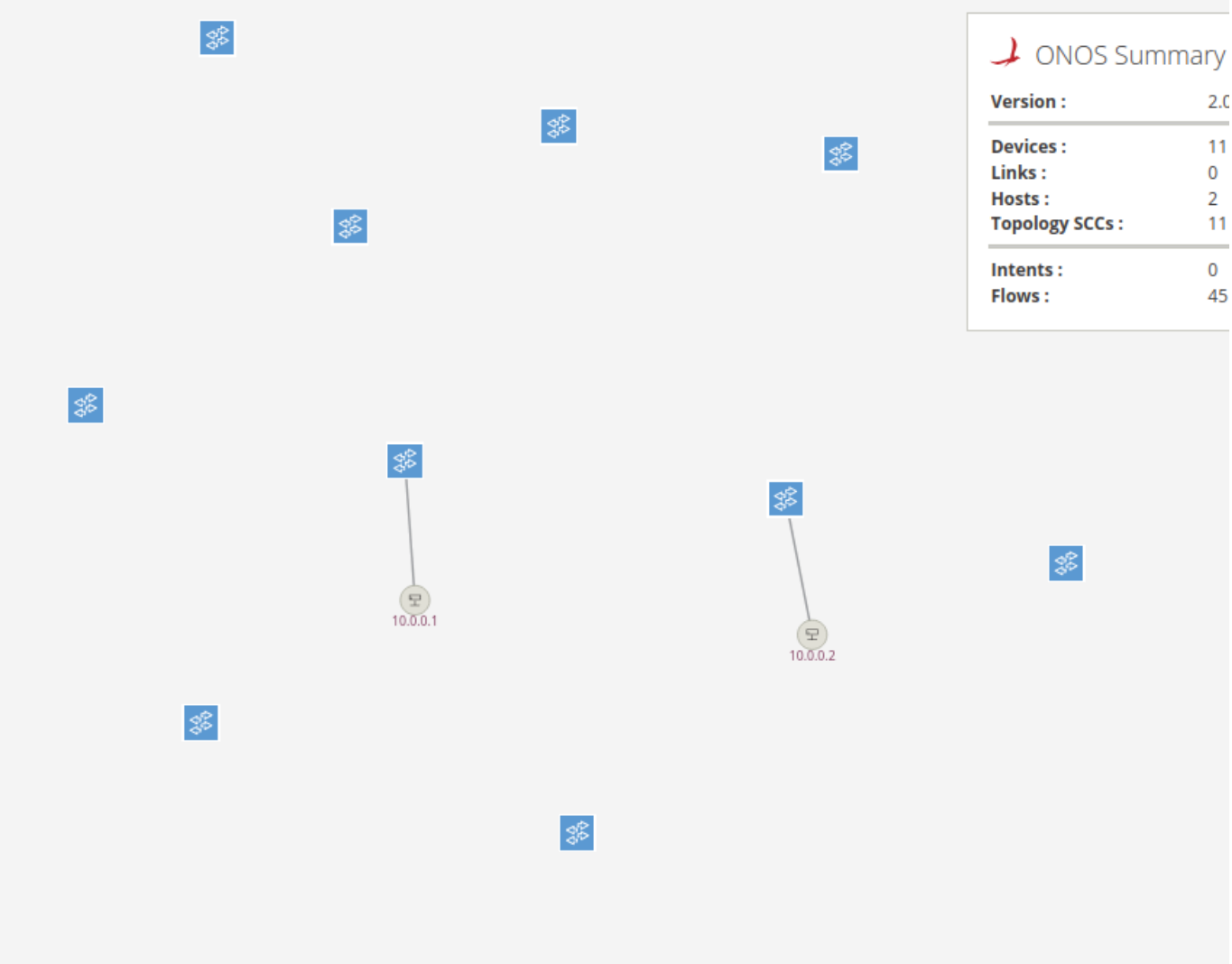
Section 1



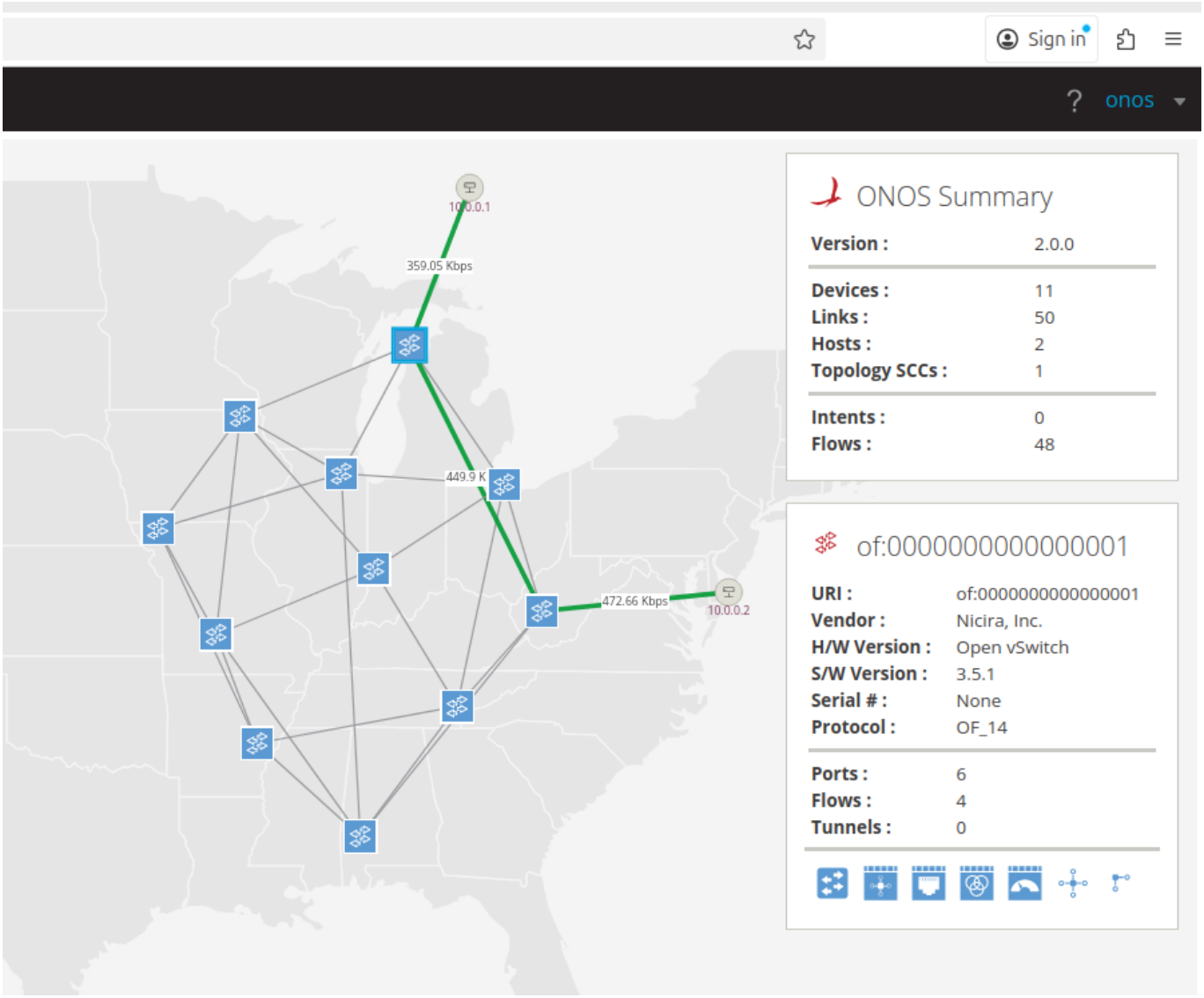
Section 2

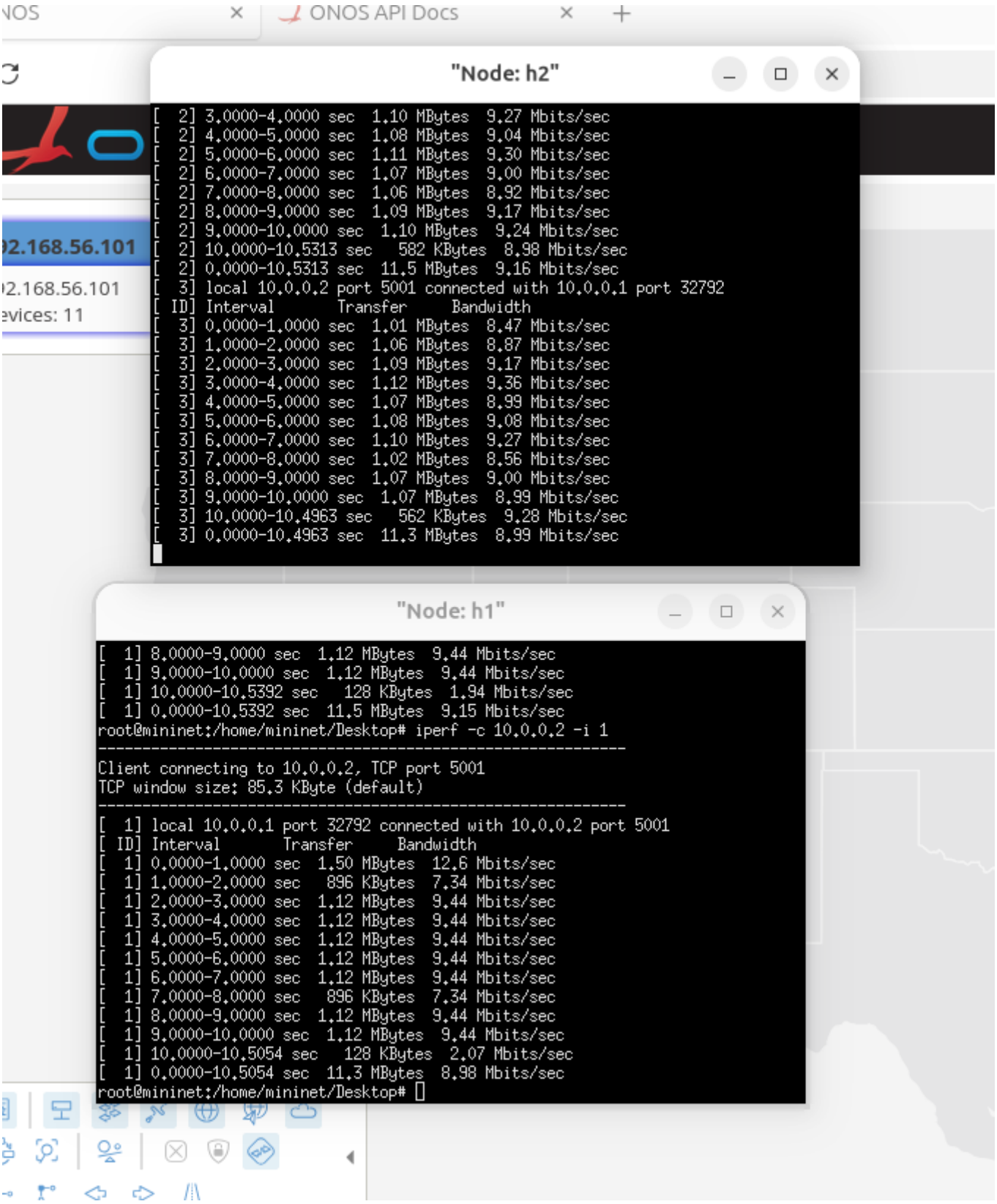

http://localhost:8181/onos/ui/#/topo
onos
Open Network Operating System
onos
192.168.56.101
192.168.56.101
%devices%: 0
ONOS Summary
Version : 2.0.0
Devices : 0
Links : 0
Hosts : 0
Topology SCCs : 0
Intents : 0
Flows : 0
%no_devices_are_connected

Section 3


ONOS Summary
Version : 2.0
Devices : 11
Links : 0
Hosts : 2
Topology SCCs : 11
Intents : 0
Flows : 45
10.0.0.1
10.0.0.2

Section 4


Sign in
onos
10.0.0.1
359.05 Kbps
449.9 K
472.66 Kbps
10.0.0.2
ONOS Summary
Version : 2.0.0
Devices : 11
Links : 50
Hosts : 2
Topology SCCs : 1
Intents : 0
Flows : 48
of:0000000000000001
URI : of:0000000000000001
Vendor : Nicira, Inc.
H/W Version : Open vSwitch
S/W Version : 3.5.1
Serial # : None
Protocol : OF_14
Ports : 6
Flows : 4
Tunnels : 0


NOS
ONOS API Docs
"Node: h2"
[2] 3.0000-4.0000 sec 1.10 MBytes 9.27 Mbits/sec
[2] 4.0000-5.0000 sec 1.08 MBytes 9.04 Mbits/sec
[2] 5.0000-6.0000 sec 1.11 MBytes 9.30 Mbits/sec
[2] 6.0000-7.0000 sec 1.07 MBytes 9.00 Mbits/sec
[2] 7.0000-8.0000 sec 1.06 MBytes 8.92 Mbits/sec
[2] 8.0000-9.0000 sec 1.09 MBytes 9.17 Mbits/sec
[2] 9.0000-10.0000 sec 1.10 MBytes 9.24 Mbits/sec
[2] 10.0000-10.5313 sec 582 KBytes 8.98 Mbits/sec
[2] 0.0000-10.5313 sec 11.5 MBytes 9.16 Mbits/sec
[3] local 10.0.0.2 port 5001 connected with 10.0.0.1 port 32792
[ID] Interval Transfer Bandwidth
[3] 0.0000-1.0000 sec 1.01 MBytes 8.47 Mbits/sec
[3] 1.0000-2.0000 sec 1.06 MBytes 8.87 Mbits/sec
[3] 2.0000-3.0000 sec 1.09 MBytes 9.17 Mbits/sec
[3] 3.0000-4.0000 sec 1.12 MBytes 9.36 Mbits/sec
[3] 4.0000-5.0000 sec 1.07 MBytes 8.99 Mbits/sec
[3] 5.0000-6.0000 sec 1.08 MBytes 9.08 Mbits/sec
[3] 6.0000-7.0000 sec 1.10 MBytes 9.27 Mbits/sec
[3] 7.0000-8.0000 sec 1.02 MBytes 8.56 Mbits/sec
[3] 8.0000-9.0000 sec 1.07 MBytes 9.00 Mbits/sec
[3] 9.0000-10.0000 sec 1.07 MBytes 8.99 Mbits/sec
[3] 10.0000-10.4963 sec 562 KBytes 9.28 Mbits/sec
[3] 0.0000-10.4963 sec 11.3 MBytes 8.99 Mbits/sec
"Node: h1"
[1] 8.0000-9.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 9.0000-10.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 10.0000-10.5392 sec 128 KBytes 1.94 Mbits/sec
[1] 0.0000-10.5392 sec 11.5 MBytes 9.15 Mbits/sec
root@mininet:/home/mininet/Desktop# iperf -c 10.0.0.2 -i 1
Client connecting to 10.0.0.2, TCP port 5001
TCP window size: 85.3 KByte (default)
[1] local 10.0.0.1 port 32792 connected with 10.0.0.2 port 5001
[ID] Interval Transfer Bandwidth
[1] 0.0000-1.0000 sec 1.50 MBytes 12.6 Mbits/sec
[1] 1.0000-2.0000 sec 896 KBytes 7.34 Mbits/sec
[1] 2.0000-3.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 3.0000-4.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 4.0000-5.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 5.0000-6.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 6.0000-7.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 7.0000-8.0000 sec 896 KBytes 7.34 Mbits/sec
[1] 8.0000-9.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 9.0000-10.0000 sec 1.12 MBytes 9.44 Mbits/sec
[1] 10.0000-10.5054 sec 128 KBytes 2.07 Mbits/sec
[1] 0.0000-10.5054 sec 11.3 MBytes 8.98 Mbits/sec
root@mininet:/home/mininet/Desktop#
2.168.56.101
2.168.56.101
evices: 11

Section 5

Flows for Device of:0000000000000004 (5 Total)

Search Search By

STATE	PACKETS	DURATION	FLOW PRIORITY	TABLE NAME	SELECTOR	TREATMENT	APP NAME
Added	0	964	40000	0	ETH_TYPE:arp	imm[OUTPUT:CONTROLLER], cleared:true	*core
Added	0	964	40000	0	ETH_TYPE:lldp	imm[OUTPUT:CONTROLLER], cleared:true	*core
Added	0	964	40000	0	ETH_TYPE:bddp	imm[OUTPUT:CONTROLLER], cleared:true	*core
Added	0	964	5	0	ETH_TYPE:ipv4	imm[OUTPUT:CONTROLLER], cleared:true	*core
Added	0	20	40000	0	ETH_TYPE:ipv4, IP_PROTO:1, IPV4_SRC:10.0.0.4/32	imm[NOACTION], cleared:false	of:0000000000000004

http://localhost:8181/onos/v1/docs/#!/flows/get_flows_deviceId 90%

POST /flows/{deviceId} Creates new flow rule

Implementation Notes

Creates and installs a new flow rule for the specified device.

Flow rule criteria and instruction description: https://wiki.onosproject.org/display/ONOS/Flow+Rules

Parameters

Parameter	Value	Description	Parameter Type	Data Type
deviceId	of:0000000000000004	device identifier	path	string
appId	of:0000000000000004	application identifier	query	string
stream	see JSON below	flow rule JSON	body	Model / Example Value

```
{
  "priority": 40000,
  "timeout": 0,
  "isPermanent": true,
  "deviceId": "of:0000000000000004",
  "treatment": {
    "instructions": [
      {
        "type": "NOACTION"
      }
    ]
  },
  "selector": {
    "criteria": [
      {
        "type": "ETH_TYPE",
        "ethType": "0x0800"
      },
      {
        "type": "IPV4_SRC",
        "ip": "10.0.0.4/32"
      },
      {
        "type": "IP_PROTO",
        "protocol": 1
      }
    ]
  }
}
```

Model Example Value

```
    ]
  },
  "selector": {
    "criteria": [
      {
        "type": "ETH_TYPE",
        "ethType": "0x88cc"
      }
    ]
  }
}
```

Parameter content type: application/json