

CSE 5231 Computer Networks

Class Project Report, Fall 2013

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1. Summary

Short summary of the project

2. Architecture

The architecture and design

3. Execution

Description of how to run the code

A. Topology Definition JSON

```
1 {
2   "nodes": [{
3     "type": "host",
4     "id": "A",
5     "ip": "10.10.20.1",
6     "mask": "255.255.255.0",
7     "mac": "00:B0:D0:86:BB:F7",
8     "mtu": 1400,
9     "gateway": "10.10.20.2",
10    "routing": [
11      {"network": "192.168.25/24", "nextHop": "10.10.20.2"}
12    ]
13  }, {
14    "type": "host",
15    "id": "B",
16    "ip": "192.168.25.20",
17    "mask": "255.255.255.0",
18    "mac": "00:B0:D0:86:F7:BB",
19    "mtu": 1400,
20    "gateway": "192.168.25.10",
21    "routing": [
22      {"network": "192.168.25.15", "nextHop": "192.168.25.15"},
23      {"network": "10.10.20/24", "nextHop": "192.168.25.10"}
24    ]
25  }, {
26    "type": "host",
27    "id": "C",
28    "ip": "192.168.25.15",
29    "mask": "255.255.255.0",
30    "mac": "00:B0:D0:F7:86:BB",
31    "mtu": 1400,
32    "gateway": "192.168.25.10",
33    "routing": [
34      {"network": "192.168.25.20", "nextHop": "192.168.25.20"},
35      {"network": "10.10.20/24", "nextHop": "192.168.25.10"}
36    ]
37  }, {
38    "type": "router",
39    "id": "R",
40    "ports": [{
41      "ip": "10.10.20.2",
42      "mask": "255.255.255.0",
43      "mac": "D0:B0:00:86:BB:F7",
44      "mtu": 1400
45    }, {
46      "ip": "192.168.25.10",
47      "mask": "255.255.255.0",
48      "mac": "B0:00:D0:86:BB:F7",
49      "mtu": 1400
50    }
51  ]
52 }
```

```
52     "routing": [  
53         {"network": "10.10.20.1", "nextHop": "10.10.20.1"},  
54         {"network": "192.168.25.20", "nextHop": "192.168.25.20"},  
55         {"network": "192.168.25.15", "nextHop": "192.168.25.15"}  
56     ]  
57 },  
58 "macTable": [  
59     {"ip": "10.10.20.1", "mac": "00:B0:D0:86:BB:F7"},  
60     {"ip": "192.168.25.20", "mac": "00:B0:D0:86:F7:BB"},  
61     {"ip": "192.168.25.15", "mac": "00:B0:D0:F7:86:BB"},  
62     {"ip": "10.10.20.2", "mac": "D0:B0:00:86:BB:F7"},  
63     {"ip": "192.168.25.10", "mac": "B0:00:D0:86:BB:F7"}  
64 ]  
65 }
```