Docker image for server:

Build docker image tag with server.

Here chat server and ftp server both are installed.
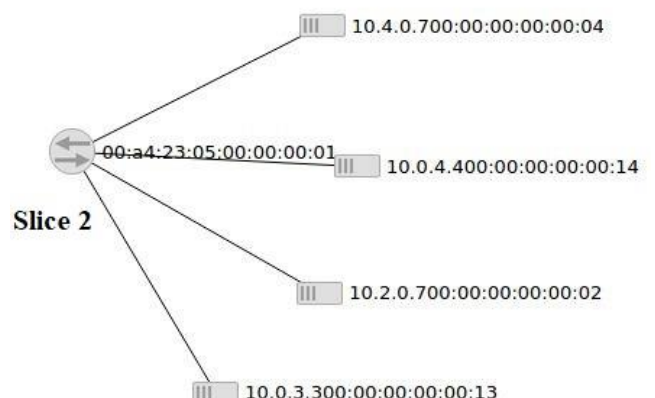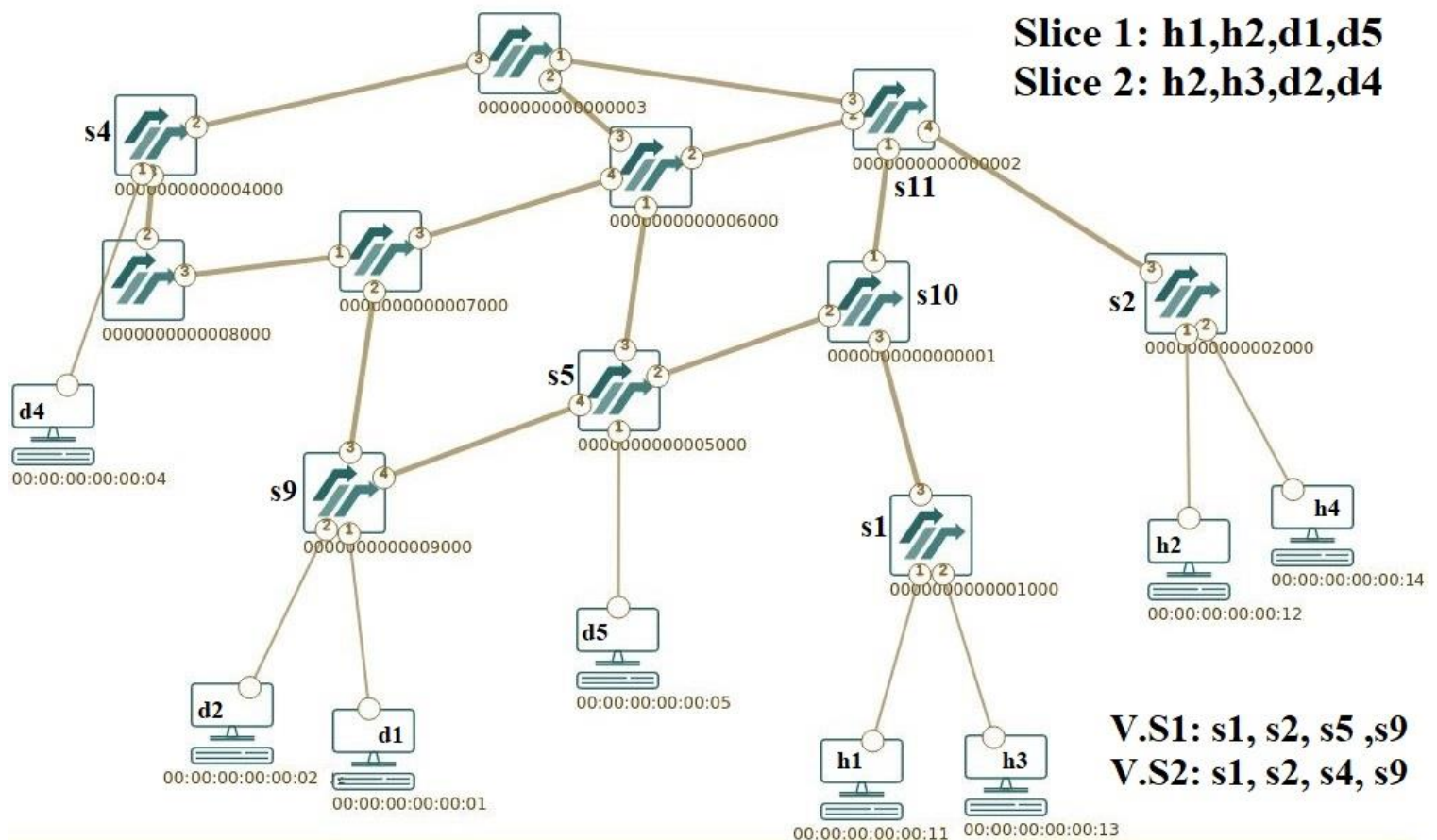
Docker image for client:

Build docker image tag with client.

Approach with Virtual Network:

OpenVirteX hypervisor

Floodlight Controller

Slice 1: h1,h2,d1,d5
Slice 2: h2,h3,d2,d4

V.S1: s1, s2, s5 ,s9
V.S2: s1, s2, s4, s9

s4 — 0000000000004000
0000000000003
0000000000006000
s11 — 0000000000002
s10
0000000000000001
s2 — 0000000000002000
0000000000008000
0000000000007000
s5 — 0000000000005000
s9 — 0000000000009000
s1 — 0000000000001000

d4 — 00:00:00:00:00:04
d2 — 00:00:00:00:00:02
d1 — 00:00:00:00:00:01
d5 — 00:00:00:00:00:05
h1 — 00:00:00:00:00:11
h3 — 00:00:00:00:00:13
h2 — 00:00:00:00:00:12
h4 — 00:00:00:00:00:14

Slice 1
- 10.5.0.7 00:00:00:00:00:05
- 10.1.0.7 00:00:00:00:00:01
- 00:a4:23:05:00:00:00:01
- 10.0.1.100:00:00:00:00:11
- 10.0.2.200:00:00:00:00:12

Slice 2
- 10.4.0.7 00:00:00:00:00:04
- 00:a4:23:05:00:00:00:01
- 10.0.4.400:00:00:00:00:14
- 10.2.0.7 00:00:00:00:00:02
- 10.0.3.300:00:00:00:00:13

Approach with SDN Controller only:

RYU Controller

Intrusion detection: Snort IDS

Slice 1: h1, h2, d1(Chat Server)
Slice 2: h3, h4, d1(FTP Server)