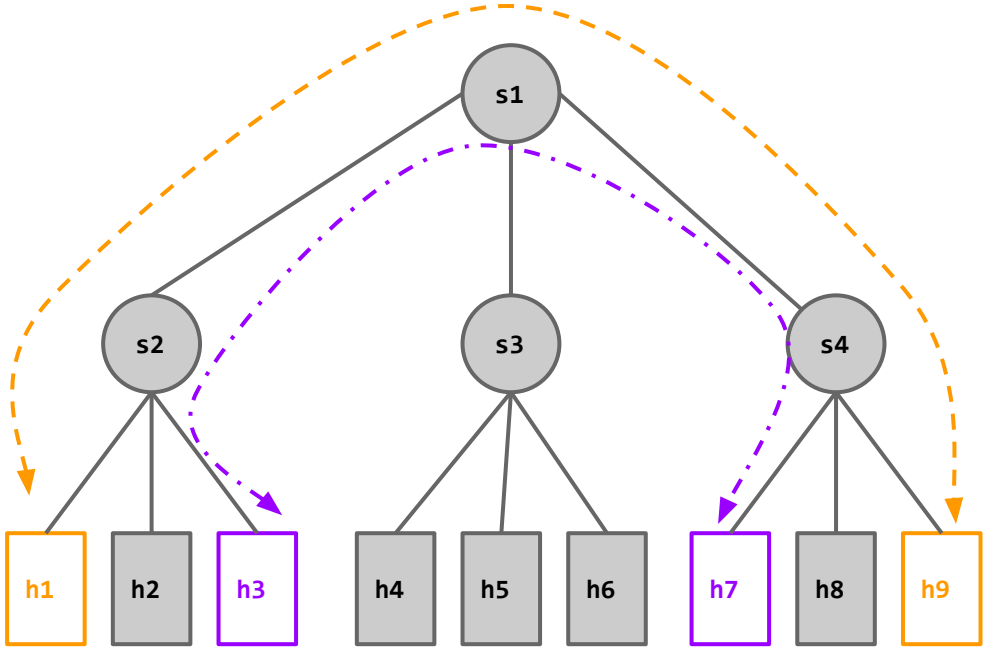
Network Softwarization: Technologies and Enablers

Lab Assignment - 1

Total points: 40

Due date: Jan 21 11:59PM

- Create the network topology using **mininet's** command line options. Do not add any controller for path setup.
- Use **ovs-ofctl** to create two bidirectional paths, *i.e.*, the **orange** path between **h1** and **h9** and the **purple** path between **h3** and **h7**. (no other pair of hosts should be able to communicate).
- After setting up the path run the following from mininet console:
  - `iperf h1 h9`
  - `iperf h3 h7`
- Then run `h1 ping h9`



Link bandwidth = 15Mbps
Link delay = 10ms

Tips/Resources

- Run mininet with **`--arp`** option to statically populate arp table in the hosts.
- A reference for example **`ovs-ofctl add-flow`**:
  - https://docs.pica8.com/pages/viewpage.action?pageId=3086345
- Set an **`idle_timeout`** of **0** so that flows do not expire.

What to submit?

- Put the following files inside a compressed folder named **<lastname_firstname_university.zip>** where university is one of **waterloo, toronto, laval, ets**
- **command.sh** -- File containing the command to create the topology **(10)**
- Files created by the following commands (after path setup):
  - **`ovs-ofctl dump-flows s1 &> s1`** **(5)**
  - **`ovs-ofctl dump-flows s2 &> s2`** **(5)**
  - **`ovs-ofctl dump-flows s4 &> s4`** **(5)**
- Output of **iperf** commands **(10)**
  - Filename: iperf.out
  - One line for each iperf output in the following format:
    - <host_id> -- <host_id>: <reported_bw>
- Average of the first 5 reported round trip times from ping output. **(5)**
  - Filename: **latency.out**
  - One line containing the average round trip time