



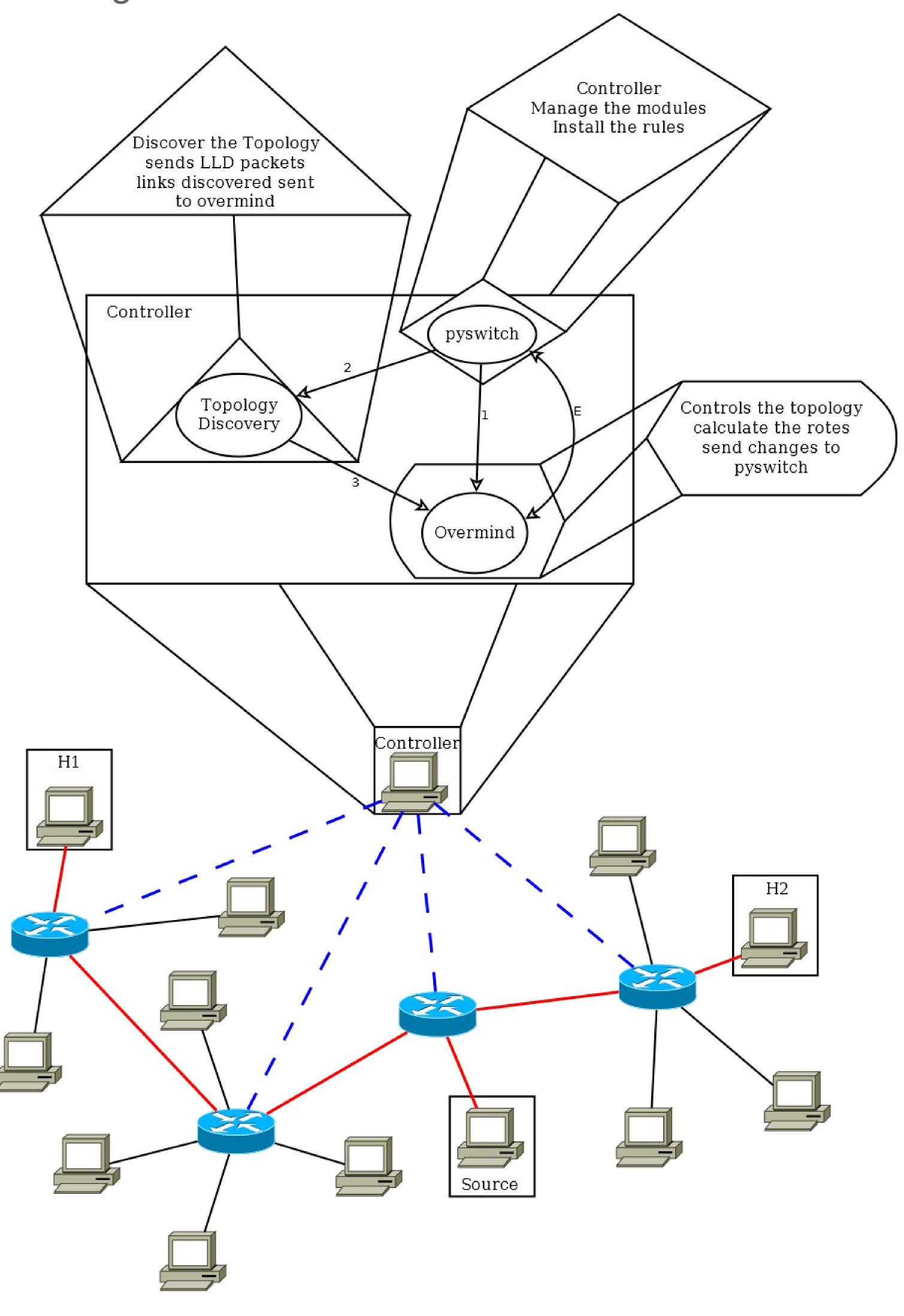
CastFlow: a lightwheight approach to multicast in Openflow

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OBJECTIVES

- 1. Propose and develop an optimized multicast openflow solution
- 2. Take advantage of openflow **centralized** solution to calculate as much as possible **beforehand**
- 3. Reduce the overhead of the most frequent operations (entry and exit of host, source changes) in expense of the least frequent ones like topology changes



- 1: Instantiates
- 2: Register Overmind to receive link events
- 3: Sends link events
- E: Events including entry and exit of hosts, changes on topology and source change

Control network

Routes being used

CastFlow environment

- 1. Using Openflow version 1.0
- 2. Implemented using Nox controller framework
- 3. Currently runs on linux Debian Squeeze
- 4. The programming language chosen was python 2.6
- 5. Using Networkx library to manage the graph

Event	Action
Add host	1. Updates graph
	2. Iterates fron the host to source setting the rules to add the flow
	3. Sends rules to be installed
Remove host	1. Updates graph
	2. Iterates from the host to source setting the rules to remove the flow
	3. Sends rules to be installed
Change source	1. Remove all hosts
	2. Change the source of the topology
	3. Add all hosts

FUTURE WORK

- 1. Further **improvement** of the implementation including performance boosts and failproof
- 2. Port Castflow to other controller frameworks like Pox or Floodlight
- 3. Using the **IGMP** messages for group management instead off a castflow event