SDN Project

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Documentation

We have composed the whole setup using different modules to run the network setup provided in the given topology file.

We have 4 modules, one each for load balancing, a learning switch, a firewall and a packet analyser.

For firewall, we are using the controller to check the packet header against a set of conditions. If the packet matches we drop it, else we flood it. Flooding it works, because it only sends it to the next switch, as it won't send it back to the port where it came from. This happens at switches S1 and S2.

For Learning switch, we are using the standard learning switch mechanism, by keeping a mapping between port and mac address.

A load balancing has been implemented by keeping a list of live servers with their IP address, MAC address and switch port it is connected to. This is done by using ARP packets to check whether the servers are alive or not. Then, when the packet is sent to the virtual IP, or appears to be coming from the virtual IP, we rewrite the flow entries.

For the packet analyzer, we are querying the switch for flow entries and then parsing the results and storing them in a consistent variable on the controller.