Assignment – 2

Given Target Network: -

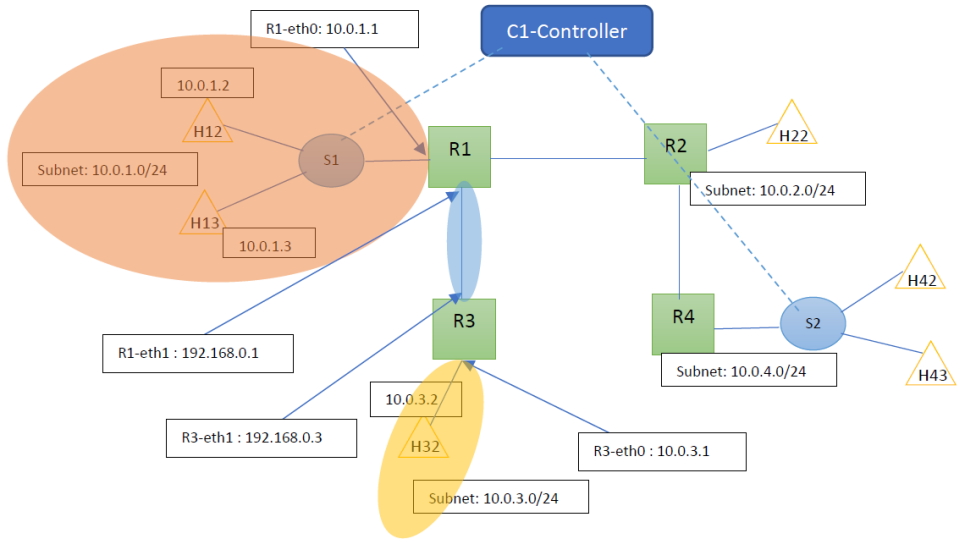


Figure 1- Given Target Network

After assigning suitable IP addresses, our target network looks like this: -

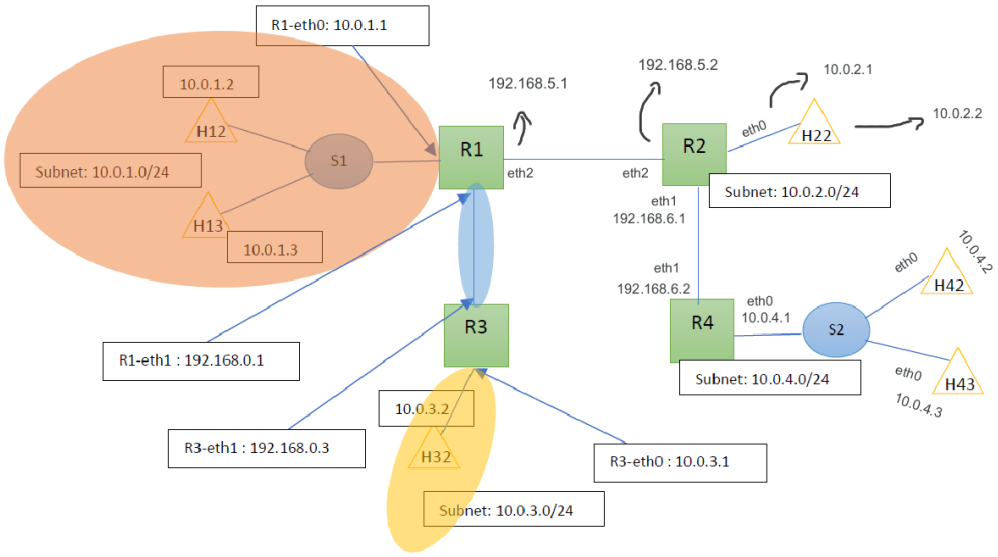


Figure 2 - Modified Target Network

We have used Default Controller instead of ODL because ODL was causing some problems and not giving desired results.

Output: -

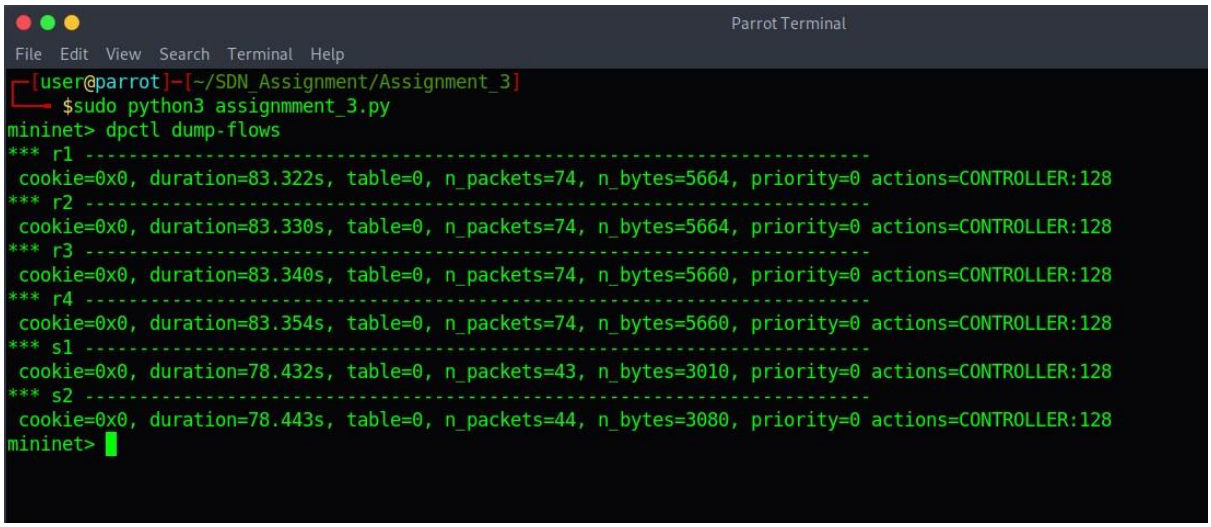


Figure 3 – Default flow rules (dpctl dumps)

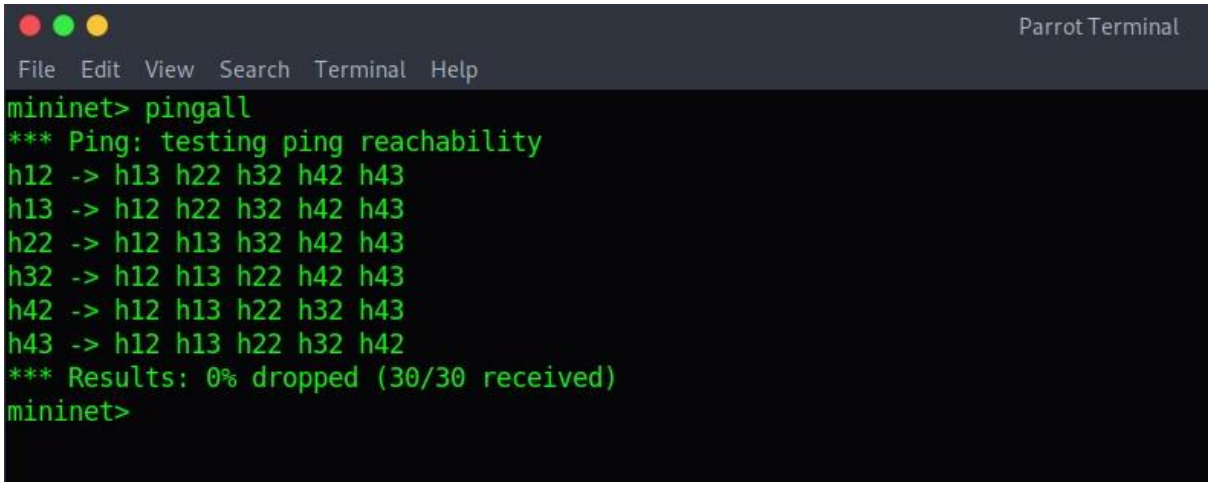


Figure 4 – pingall command output

After executing pingall command, new rules are added into the switches.

Below are the screenshots of the new rules for some of the switches. This is applicable to all the switches. Since the rules list is very long, for output purposes, rules of switches r1 and r3 have been attached below.

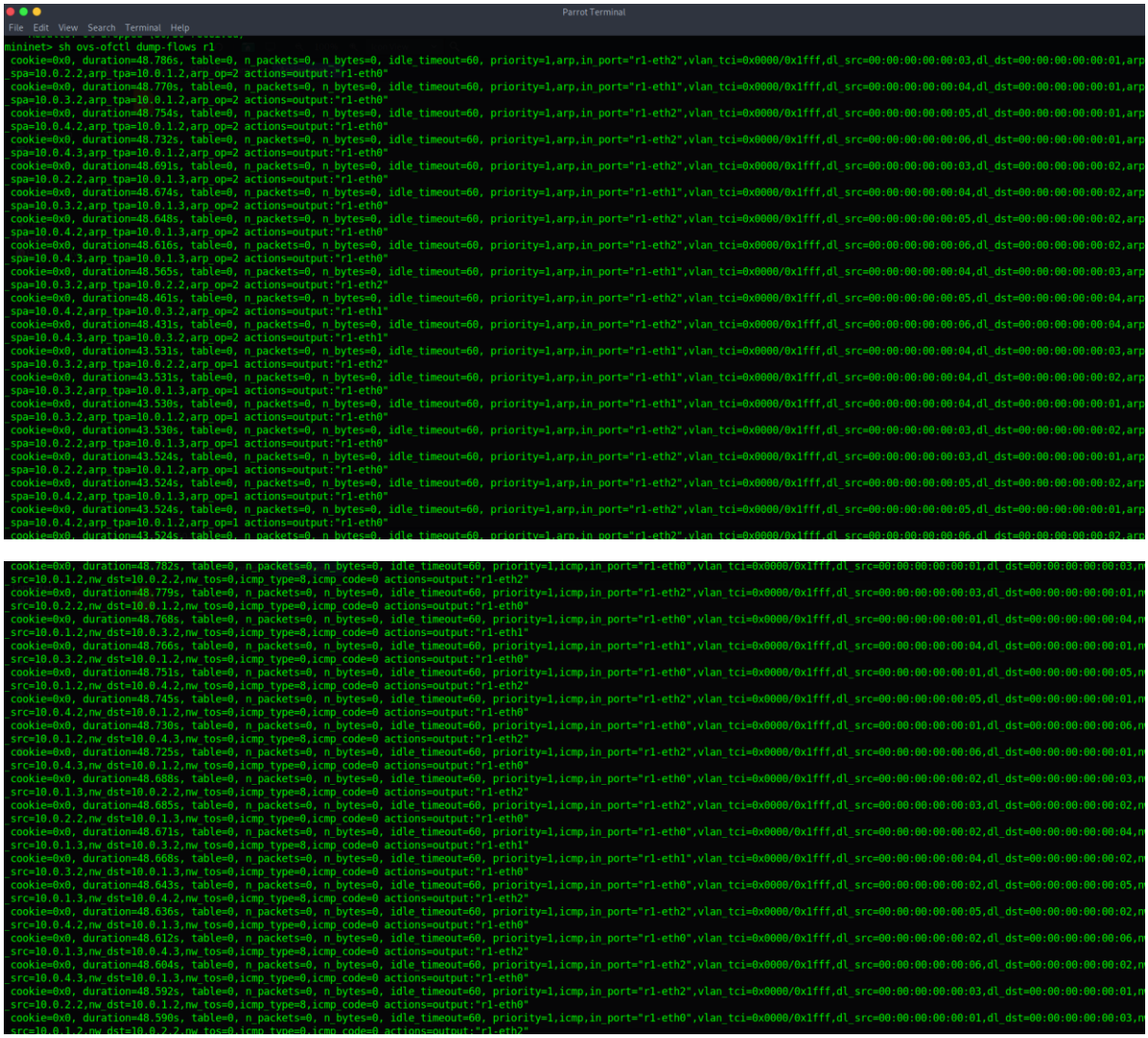
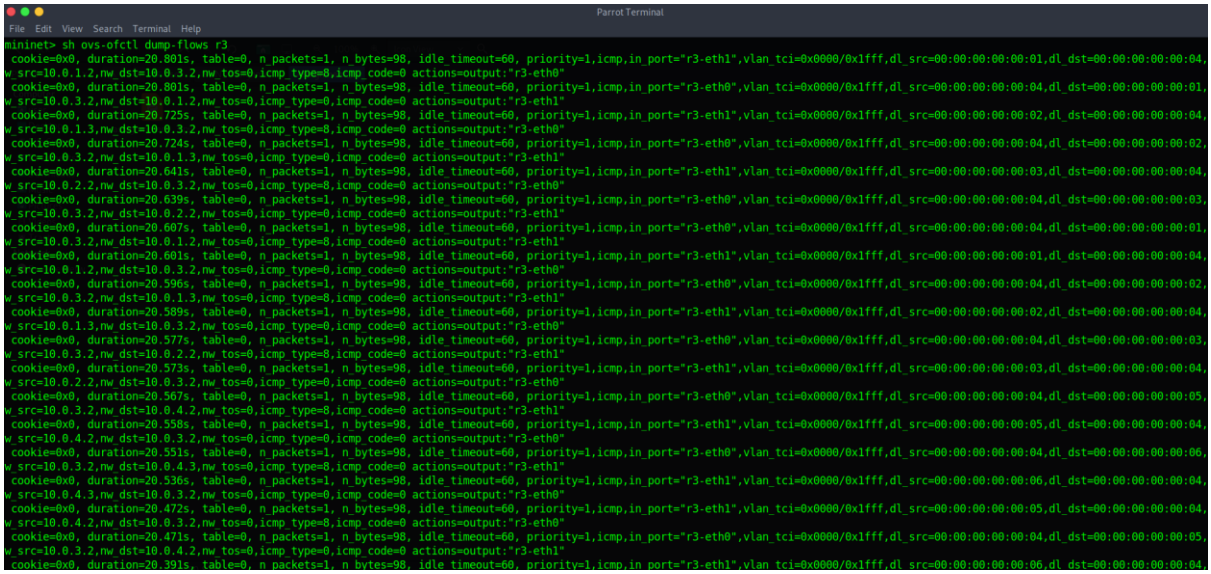


Figure 5 – Rules of switch r1 after pingall



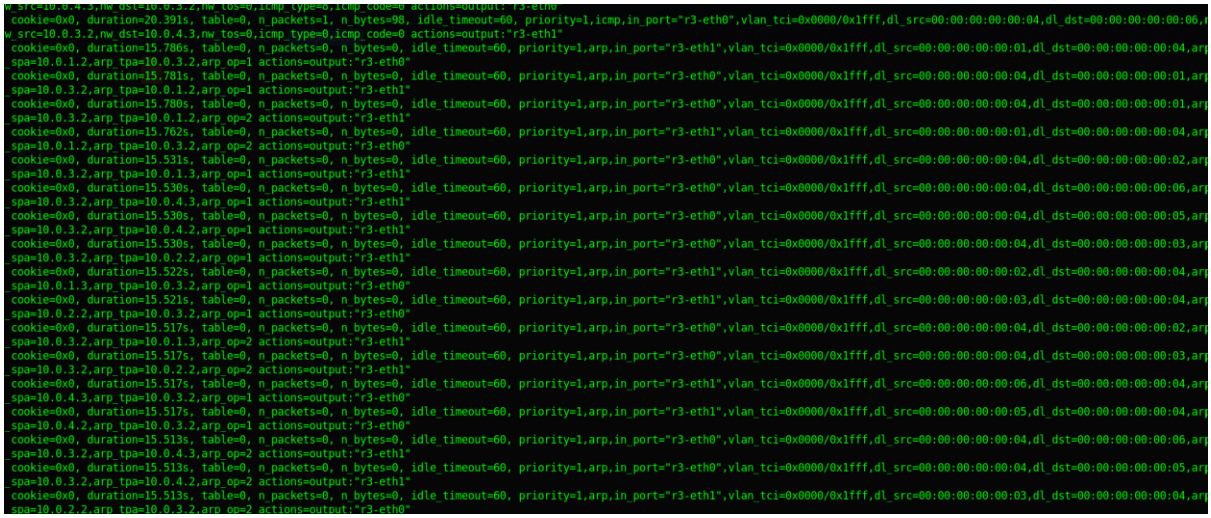


Figure 6 - Rules of switch r3 after pingall

Flow Rules

- ***Default flow rule*** – This rule tells the switch about who to communicate when there is no flow rule added.

- ***Flow Rule Corresponding to ARP Packet***: -
    - *arp_op* – Determines the type of ARP packet identified by the flow rule, i.e., *arp_op* = 1 is ARP request packet and *arp_op* = 2 is an ARP response packet.
    - *arp_spa* – Address of the source IP
    - *arp_tpa* – Address of the target IP

- ***Flow Rule Corresponding to ICMP Packet: -***
    - *icmp_type* = Determines the type of ICMP message. *icmp_type* = 0 is a ping request and *icmp_type* = 8 is a response request.
    - *icmp_code* = Same for both types of ICMP message, i.e., 0. It stands for no code.