VLAN Lab

Goal

Configure the network such that FIFA and UEFA hosts are on separate VLANs (10 and 20, respectively) to isolate them from one another.

They must be able to ping other hosts in their member VLAN (e.g. FIFA_1 must be able to ping FIFA_2) once you have completed the change.

Accessing hosts and switches

From the proxy machine you have access to, you can connect to any device on your network using the "goto.sh" script.

- To connect to a switch, for example Switch1 in DCN:
  - `./goto.sh DCN S1`

- To connect to a host, for example FIFA_1 in DCN:
  - `./goto.sh DCN FIFA_1`

Transport

- Create 4 groups
  - I'll email the password to each group

- Host IP addresses:
  - Host 1: [GROUP NUMBER].200.[VLAN].3
  - Host 2: [GROUP NUMBER].200.[VLAN].4
  - Host 3: [GROUP NUMBER].200.[VLAN].5
  - Host 5: [GROUP NUMBER].200.[VLAN].6

  - E.g., FIFA_1 in group 1 is 1.200.10.3

Configuring switches

All switches are running Open vSwitch, a popular environment

On each switch, one port has the name `br0` and the corresponding interface has type `internal`. This is a local port used by the host to communicate with the switch. You do *not* need to use this port. The ports to FIFA and UEFA hosts follow the name pattern `X-FIFA_i`, `X-UEFA_i` respectively, with X the AS number and i the host number (e.g. `84-FIFA_2` for `FIFA 2` in AS 84). The ports to other switches have the name `X-SWITCHNAME`, `84-S3` for the port to `S3` in AS 84.

Configuring switches

To print a brief overview of the switch state and its parameters, you can use the following command:

```
ovs-vsctl show
```

(This command also tells you the VLANs each port belongs to.)

To get more precise information about the status of the ports, you can use the following command:

```
ovs-ofctl show br0
```

Configuring switches

To get the current configuration and all the statistics of the switch, you can get a dump of the switch database with the following command:

```
ovsdb-client dump
```

Configuring switches

Below are some commands to adapt the VLAN configuration of a switch.

- To add a port to a VLAN, you can use the following command:
  - `ovs-vsctl set port PORT_NAME tag=10`
  - This will add the port `PORT_NAME` to the VLAN 10. Since `PORT_NAME` is in one VLAN only, the port is an **access** port.

- To add a port to several VLANs, you can use the following command:
  - `ovs-vsctl set port PORT_NAME trunks=10,20`
  - The port `PORT_NAME` will be in _trunk_ mode for VLANs 10 and 20.

- To clear the VLAN configuration on a port, you can use the following command:
  - `ovs-vsctl clear port PORT_NAME trunks`
  - `ovs-vsctl clear port PORT_NAME tag`

North Data Center

IPv4 subnet: X.200.0.0/23
IPv6 subnet: X:200::/32