

Connecting SDN Slices

GRUPPO 23

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Project Idea

Our project aims to represent a cross-section of an internal company network in which there are clients, dedicated servers and administrator users.

The topology is therefore composed of three overall slices

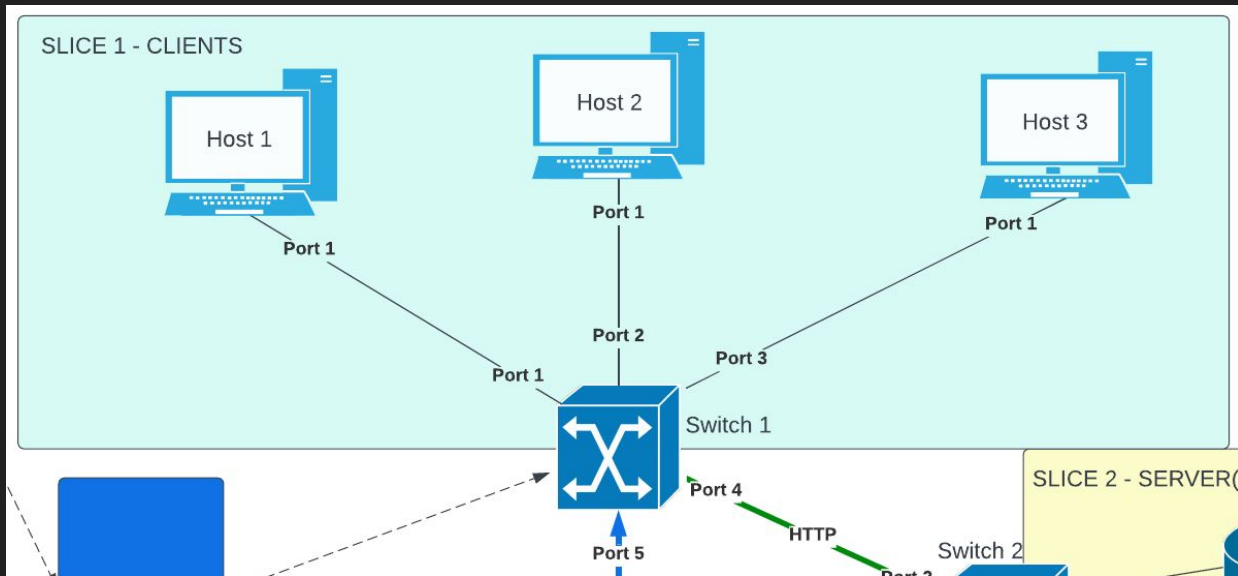
1. clients
2. servers
3. admins

which by nature are separate.

In the clients slice hosts cannot communicate with one another, while this restriction isn't enforced in the servers and admins slice.

Client Slice

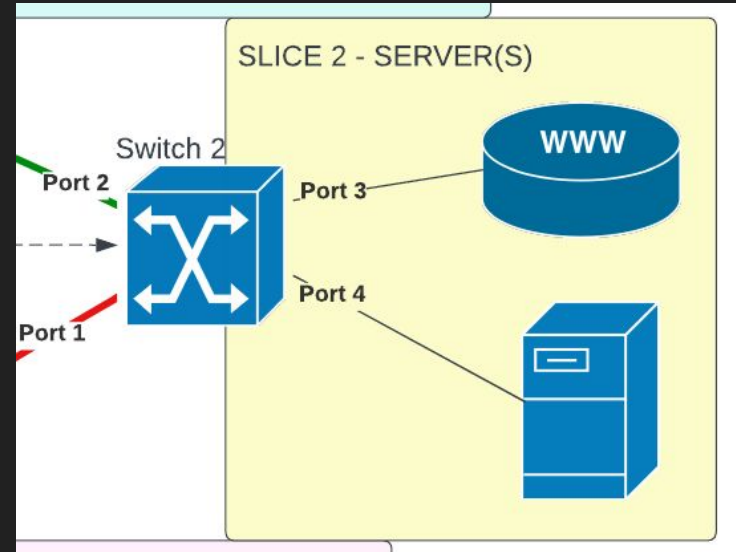
The first slice is dedicated to clients, which will be able to communicate via HTTP towards the servers in slice 2, but will not be able to communicate either with the administrators or with each other.



Server Slice

The second slice contains servers (e.g. an HTTP server, FTP server or database), which may communicate in any way (any) with the administrators.

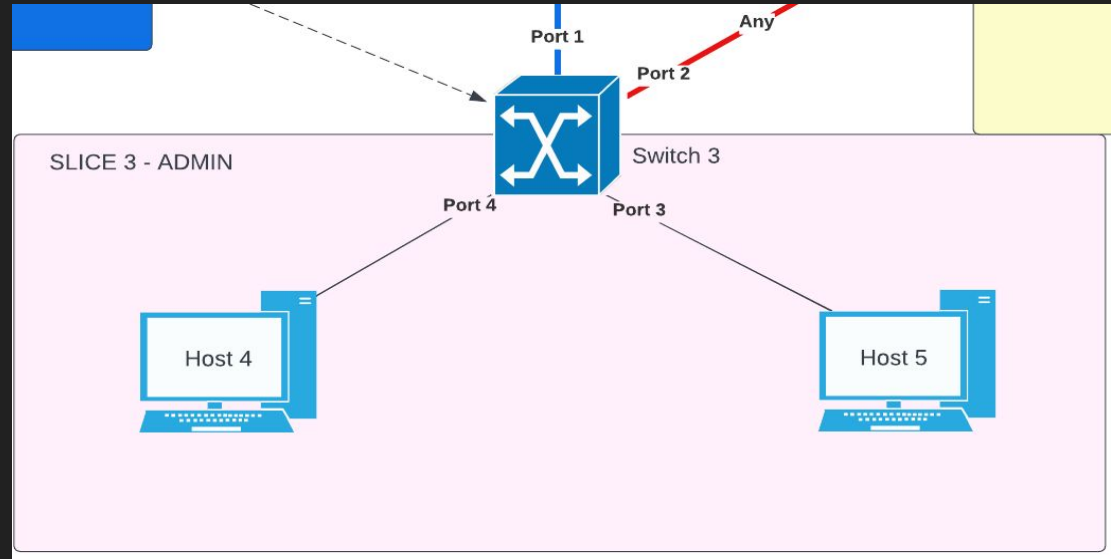
Connectivity with clients can only happen through exposed REST-API via the HTTP protocol.

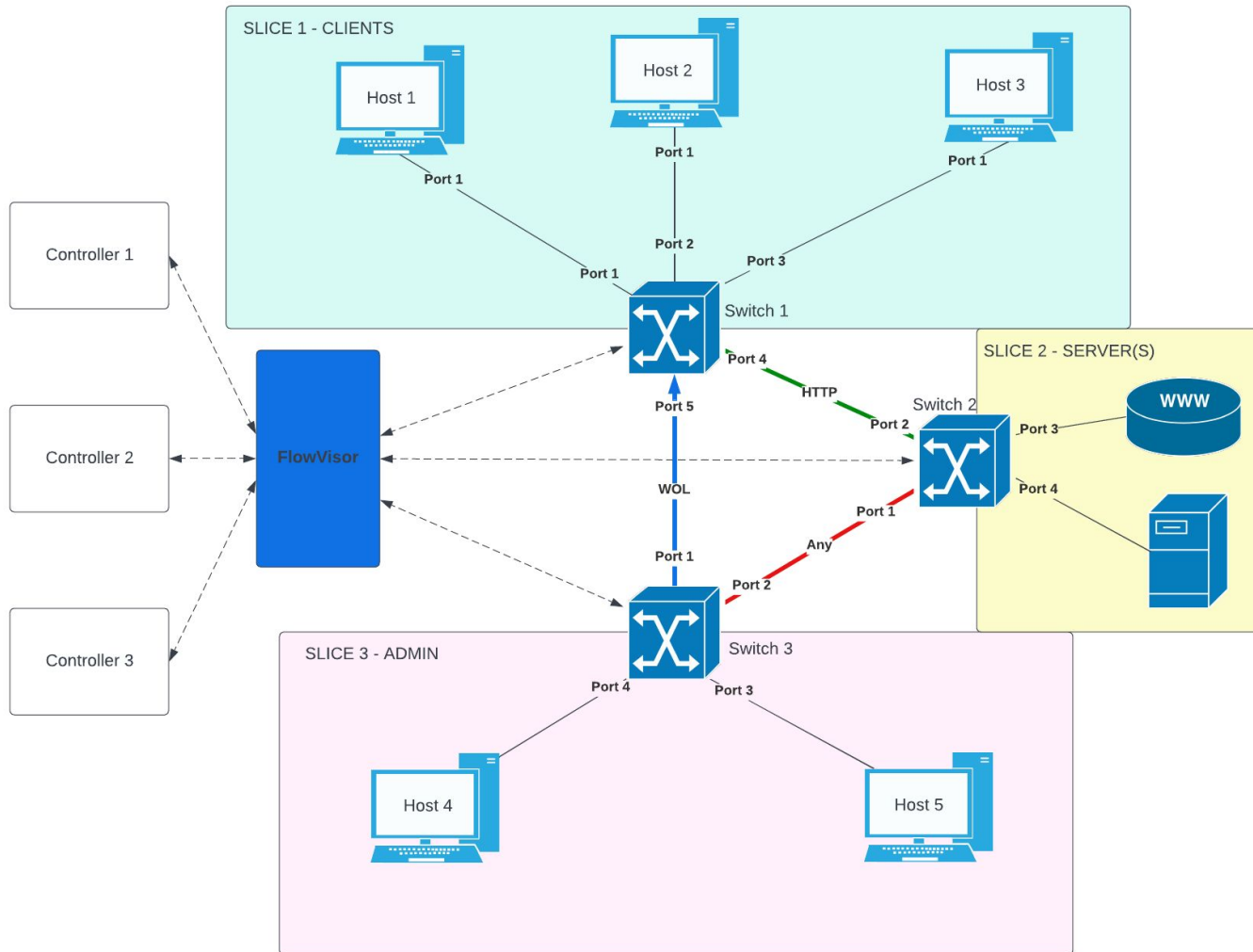


Admin Slice

As previously stated, admins can freely communicate with the servers.

An additional link between the admins and the clients is created in the event that the admins themselves need to communicate directly with the clients, e.g. for wake-on-lan services.





Demo

- Slices connection via flowvisor: ***projectFlowvisor.sh***
- Slices' controllers:
 - Admin slice - ***ryu_admin_slice.py***
 - Server slice - ***ryu_client_slice.py***
 - Client slice - ***ryu_server_slice.py***
- Topology declaration: ***topology.py***

Relevant Links

- Comnetsemu main repo:
 - <https://git.comnets.net/public-repo/comnetsemu>
 - <https://github.com/stevelorenz/comnetsemu>
- Project Github repo:
 - <https://github.com/Gruppo23Networking2/Networking2Project>
- Project document:
 - https://docs.google.com/document/d/19MSsm7-ZyFlkGAamiNYUS0R92S_hDELVkJdM6TXnhm4/edit?usp=sharing