FUTURE INTERNET TESTBEDS
EXPERIMENTATION BETWEEN
BRAZIL AND EUROPE

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Conselho Nacional de Desenvolvimento Científico e Tecnológico

COOPERATION

IP Routing Experimentation Across Federated FIBRE Islands

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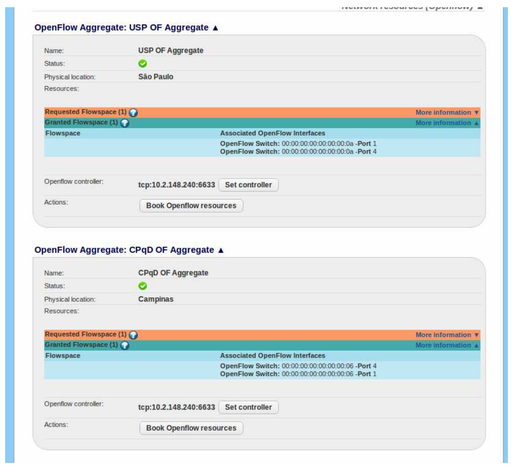
The demonstration shows the federation of FIBRE islands to run an experiment that requests a slice of interconnected OpenFlow switches to which end-hosts are attached. One of the islands runs an OpenFlow controller with the RouteFlow application that provides the virtual IP control plane instances (OSPF) which compute the routing information for the underlying federated OpenFlow infrastructure. No code changes are required in the experimenter's routing application. The experimenter is able to control and visualize the configuration of the experiment, e.g., the requested network topology. Accessing the allocated VMs end-to-end connectivity is verified and tests show line-rate performance (2ms RTT).

- Islands provide physical NetFPGAs as OpenFlow resources and virtual machines as attached end-hosts
- Experimenter configures the desired datapath slices and runs its OpenFlow control application
- Federation achieved through the FIBRE CMF provides a unified cross-island experimental setup

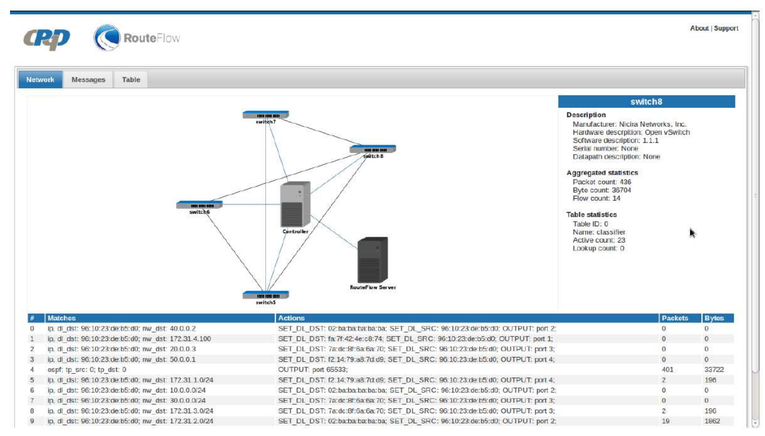
Live demonstration setup

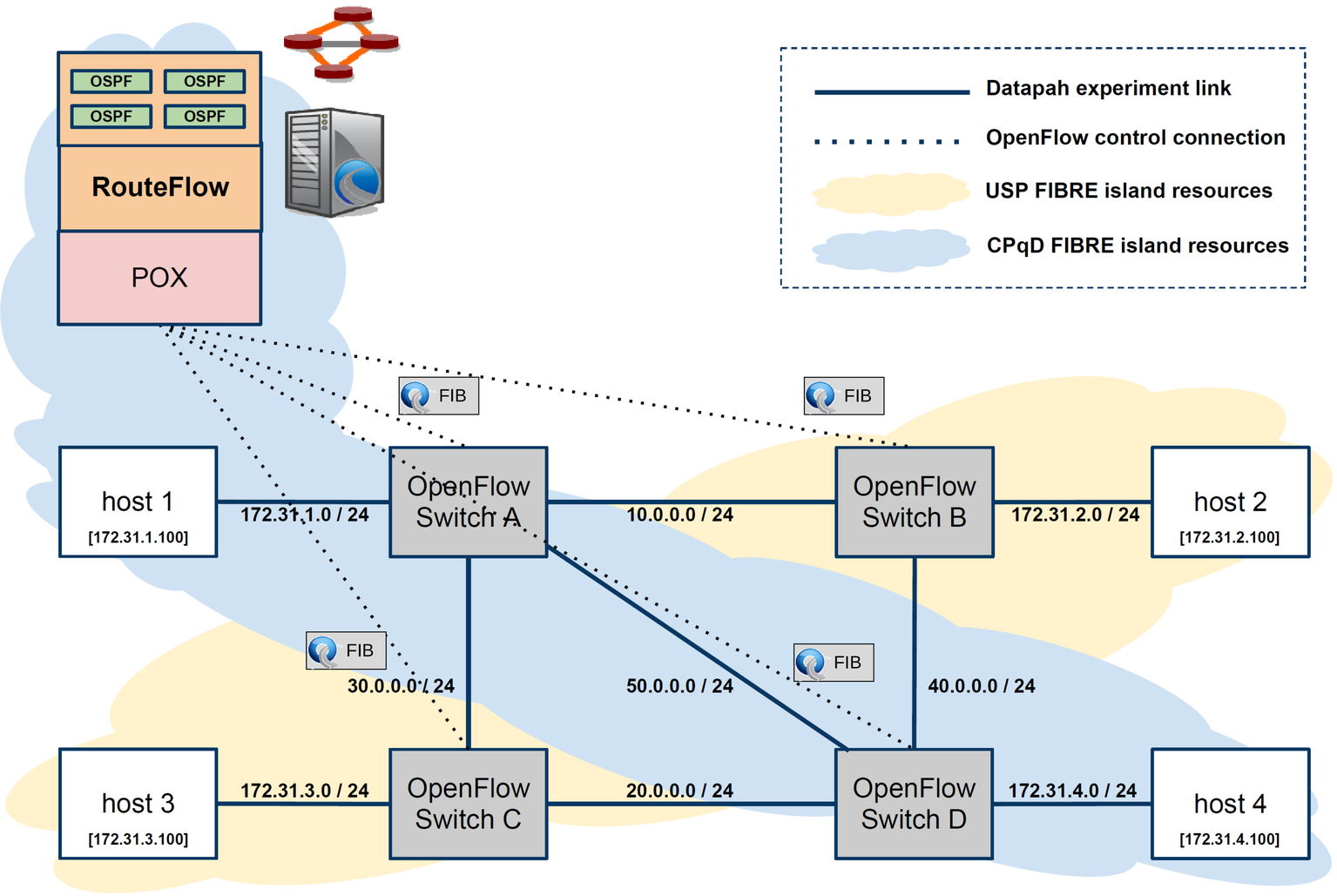
FIBRE Aggregate



FIBRE Slice

RouteFlow GUI





VM end-to-end PING

RouteFlow

From a “dumb” OpenFlow switch collection to an IP OSPF routed network ready for innovation!

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