Cross-Aggregate Resource Reservation with the federated GENI API

Integrated Control of multiple Aggregates with the **GENI API**
FlowVisor and **Opt-In** Manager used for Slicing

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GENI API: Integrated Control

The GENI API is a RPC based mechanism that allows a researcher to receive resource description from and send reservation requests to different types of aggregates. The GENI API has been added to the Expedient and MyPLC Controllers.

OpenFlow Substrate

A network of OpenFlow Switches can easily be sliced into virtual networks that can then be used by researchers for distributed experiments. Connectivity of local hosts is managed via the Opt-In Manager.

PlanetLab Substrate

PlanetLab Nodes provide end-hosts under the control of the experimenter on the virtualized network slice. They can be used together with traffic from users that have opted in to conduct real-world experiments.

Opt-in Manager

The Opt-In Manager provides the local web interface to configure what hosts are part of an experiment. It allows a user or experimenter to decide what traffic belongs to which slice. On the back end it uses the FlowVisor to perform the actual network configuration.

Expedient

Expedient is a pluggable GENI control framework. It provides provides plugins for interacting with aggregates and with users. In this demo, it is configured with plugins to create slices on OpenFlow Aggregates using the GENI API..