

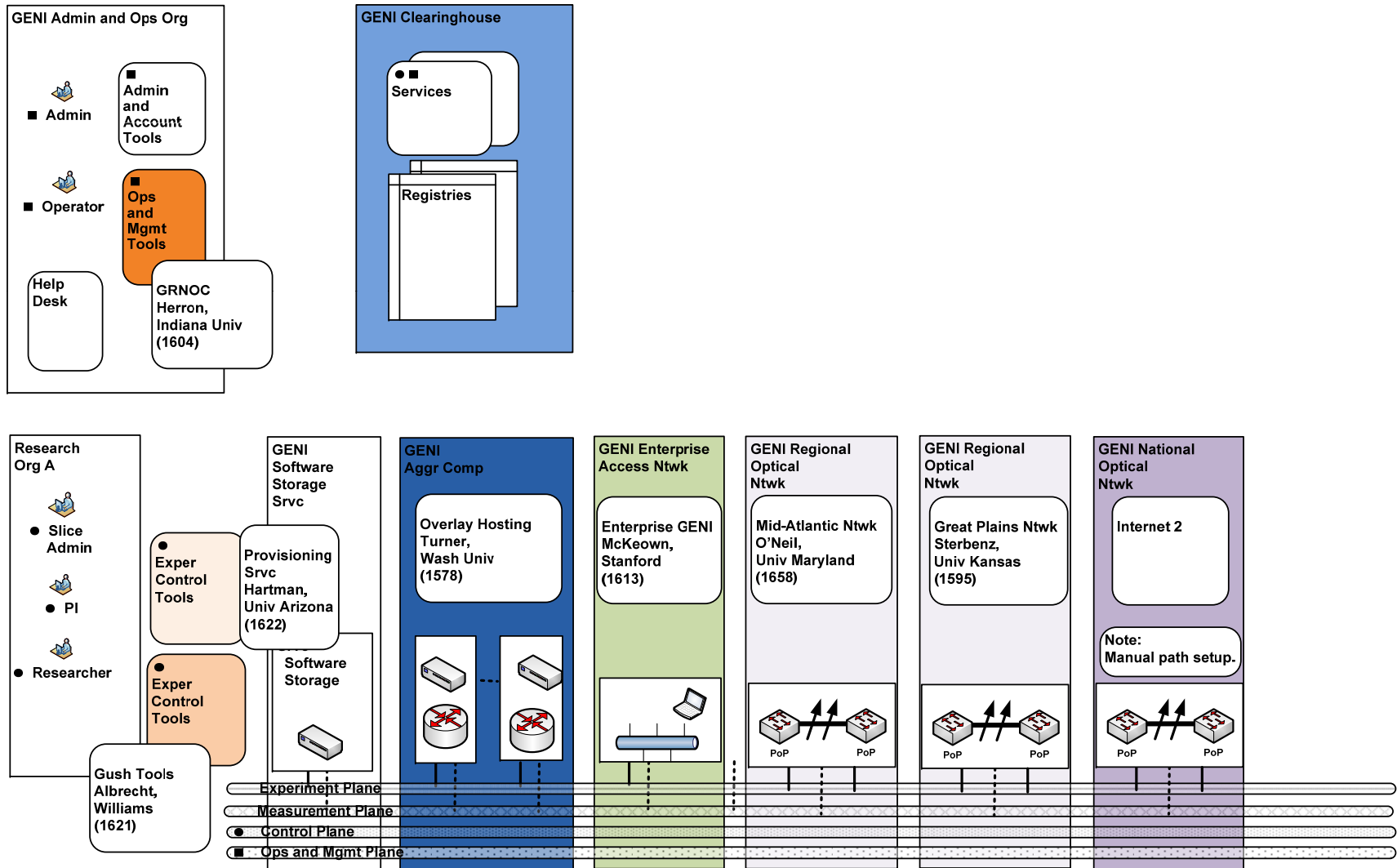


Cluster B Review

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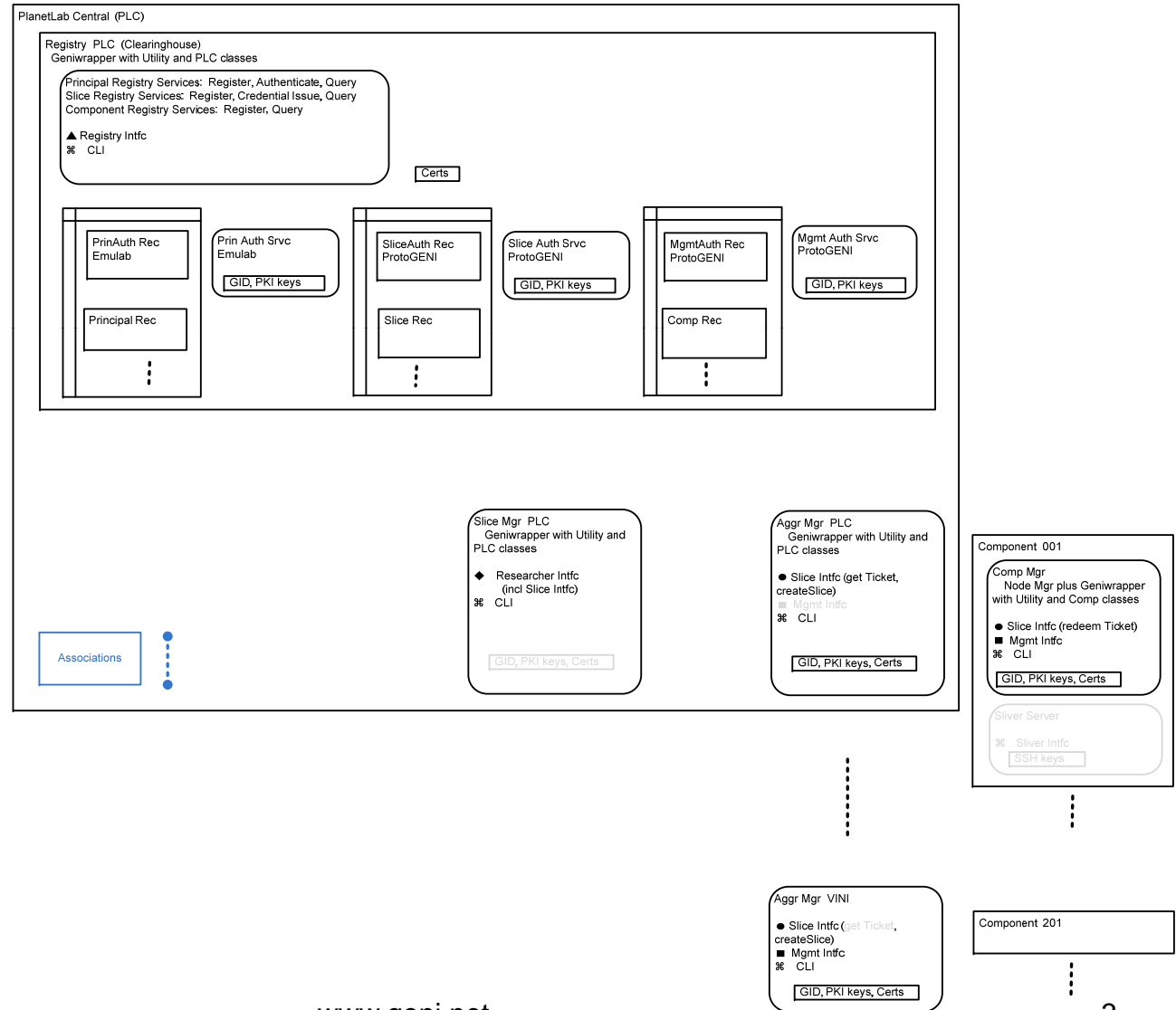
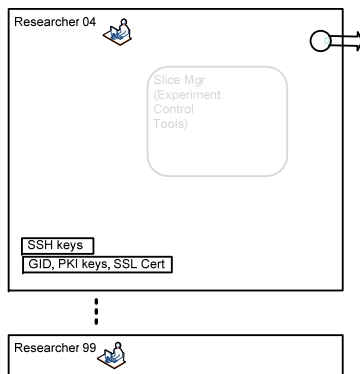
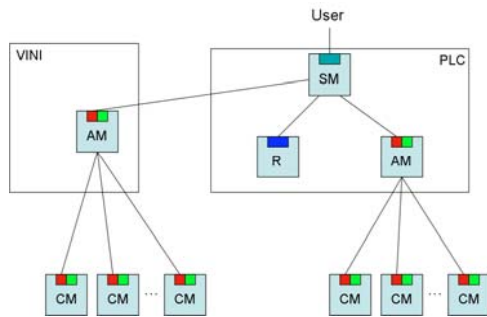


Cluster B Projects





PlanetLab GENI Configuration





Enterprise GENI Configuration

Controlling OpenFlow Networks and NOX: A controller adds and removes flow-entries from the Flow Table on behalf of experiments. Our no-cost partner, Nicira, will provide us with a controller (NOX [14]) for an enterprise network of OpenFlow switches.

NOX maintains a current view of the entire network, including the topology, services offered (e.g., HTTP or NFS), and location of authenticated users.

NOX provides an execution environment in which management applications can access this network view, register for various network events, and manage network components.

NOX also includes other OS-like functionality: allowing multiple management applications to run concurrently, controlling access to the various network resources via permissions, and supporting high-level languages.

Customized Packet Processing in an OpenFlow network: Although commercial OpenFlow switches will not support custom datapaths, it is possible to add customized per-packet processing by (1) force all of a flow's packets to pass through the controller, or (2) route them to a programmable switch that does packet processing – for example, a NetFPGA.

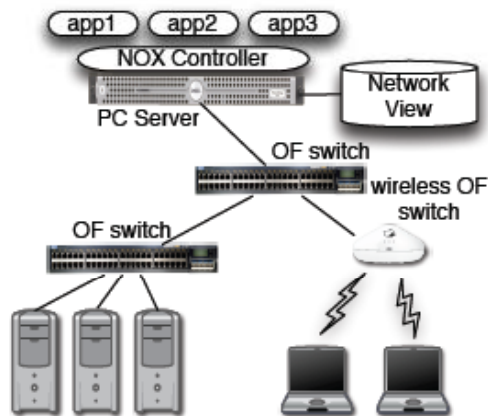


Figure 1: Components of a NOX-based network: OpenFlow (OF) switches, a server running a NOX controller process and a database containing the network view.

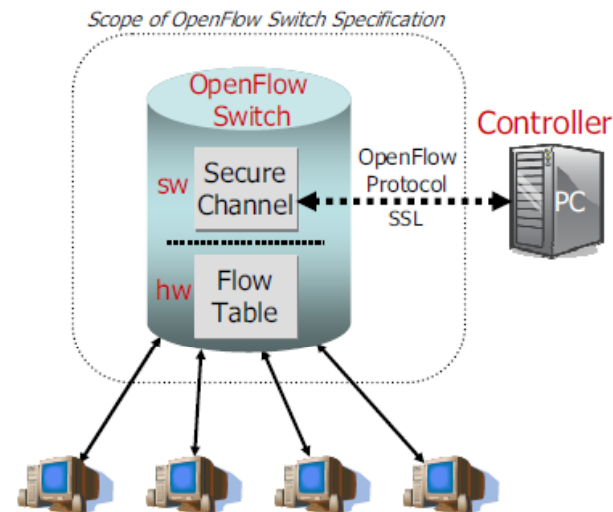
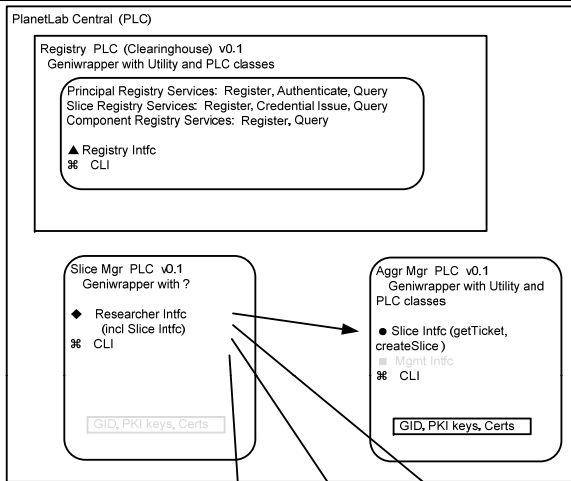


Figure 1: Idealized OpenFlow Switch. The Flow Table is controlled by a remote controller via the Secure Channel.



Cluster B Options for Enterprise GENI

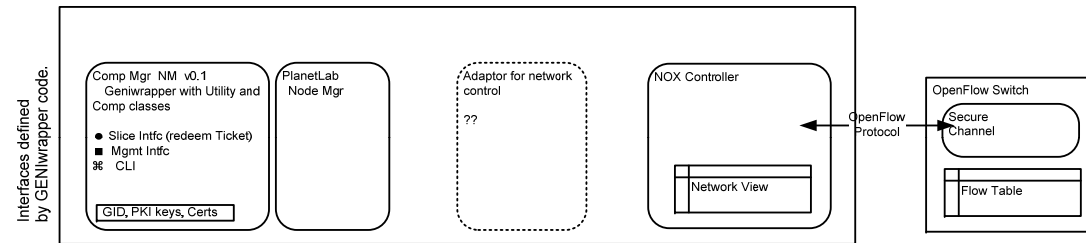


Issue 1:
How is OpenFlow network described in an RSpec?
Connections, topology, endpoints?

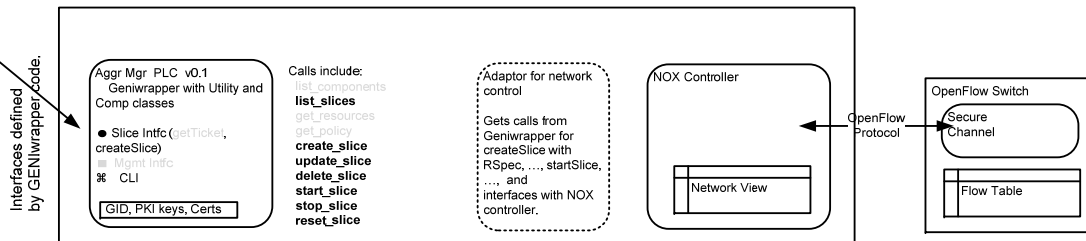
Issue 2:
How is OpenFlow network controlled by PlanetLab
GENI CF? Setup, teardown, verify?

Issue 3:
Who writes adaptor for network control, or new
AggrMgr?

Case 1: Use CompMgr GENIwrapper



Case 2: Use AggrMgr GENIwrapper



Case 3: New AggrMgr

