

GENI Network Stitching Engineering Meeting

Leads: Tom Lehman, Aaron Helsing
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www.geni.net

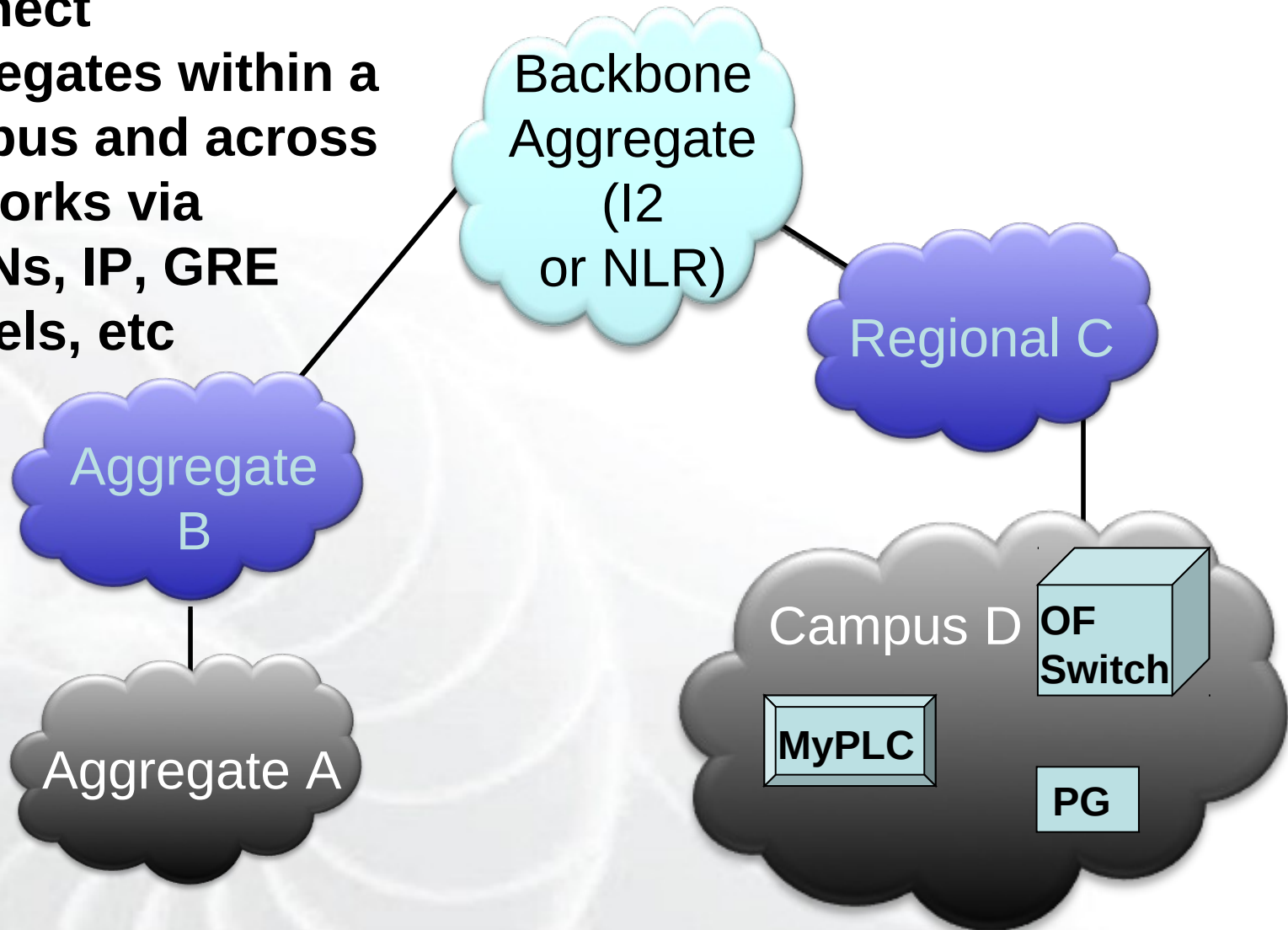
GENI Network Stitching: Introduction

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- Introduction – Aaron Helsing
- Background & Proposal – Tom Lehman
- Invited Discussion – Rob Ricci
- Invited Discussion – Ilia Baldine
- Invited Discussion – Rob Sherwood
- Discussion – All
- Summary & Wrap Up – Aaron Helsing

- Prior to GEC 10:
 - Tom discussed stitching with a few key stakeholders
 - Generated a consensus proposal
- Who was involved in the pre-GEC10 discussions?
 - ProtoGENI – Rob Ricci
 - Orca – Jeff Chase, Ilia Baldine
 - OpenFlow – Rob Sherwood
 - GPO Operations – Heidi Picher Dempsey
- Our goal today is:
 - to engage in informed discussion and
 - to make **concrete engineering decisions.**

**Connect
aggregates within a
campus and across
networks via
VLANs, IP, GRE
tunnels, etc**



- Stitching with VLANs is challenging both technically and organizationally
 - Currently configuring VLANs to connect resource in multiple aggregates is a highly manual process
- Current implementations vary and do not interoperate
- There is substantial agreement on many points

- Stitching has two parts:
 - Automating the mechanics of configuring switches & providing connectivity
 - Negotiating stitching resources among aggregates & associating those resources with a slice
- Today we are discussing the latter
 - How do you find a path through the network, reserve that path, and associate it with a slice?
 - Proposal does NOT:
 - Provide a solution for the problem of configuring switches
 - Dictate that campuses solve the problem

- Network stitching is not a unique problem to GENI
 - ION, Sherpa, Grid community, ...
 - Leverage their work
- Proposal is intended to be modest
 - Start where the mechanics are already in place
 - Roll out software methodically
 - Get feedback as we go
- IF the proposal is accepted
 - Some control frameworks will add this during 2011
 - Aim for initial interoperability demo at GEC12

- Common GENI Stitching proposal
 - Influenced and shaped by Orca, OpenFlow and ProtoGENI
- Proposal Scope
 - Finding network paths in GENI
 - Reserving network stitching resources
 - Stitching with VLANs (because it is a difficult and common case)
 - Tunnels, OpenFlow may follow
- Starts from existing work
 - Supports the way CFs & networks do business already
 - Leverages the experience of the broader community
 - Satisfies the 90% case, while leaving room to add support for harder cases

- Architecture as in the Overview document
 - Use a common schema
 - 6 key functions
 - Use a common API
- Details to work out
 - Draft schema proposed for discussion
 - Common Stitching API
 - Actively discuss via email and phone after this GEC
- Formal acceptance of Stitching API at GEC11

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