ProtoGENI Backbone Plans and Status

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GEC5

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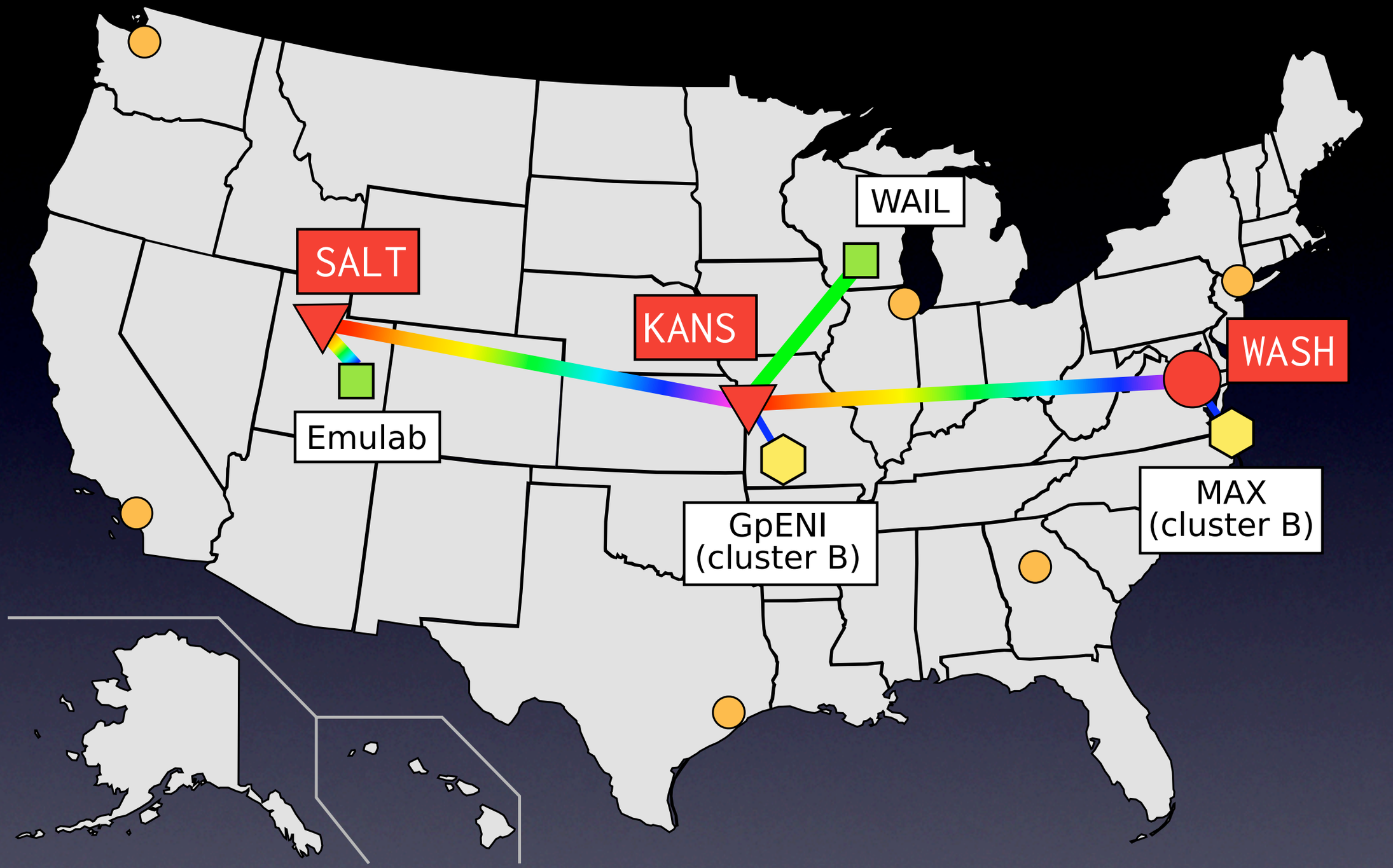

SALT
WAIL
KANS
WASH
Emulab
GpENI
(cluster B)
MAX
(cluster B)
High-degree node
Low-degree node
Other I2 router site
(future expansion)
SALT
Internet2 POP
Regional Network
Campus/Lab
10Gb Layer-1 λ (dedicated)
10Gb Layer-2 Ethernet (shared)
1Gb Layer-1 patch (dedicated)

ProtoGENI Backbone Node

HP ProCurve 5406zl Switch

10Gb X2 x4

10Gb X2 x4

1Gb Cu x20
1Gb SFP x4

1Gb Cu x20
1Gb SFP x4

NetFPGA

NetFPGA

PC

NetFPGA

NetFPGA

PC

7

To GpENI

To
WAIL

To HOUS
(future)

Internet2
Wave
System

Infinera

Infinera

Infinera

To SALT

To WASH

Internet2 Observatory Switch

Internet2 IP Router

SPP Chassis

Backbone Control

- Switches will be controlled by AM at Utah
  - `snmpit`, Emulab switch control tool
- CM interface and ProtoGENI RSpec
  - Available to cluster B members too
- For Emulab edge sites, will support VLAN stitching of experimental nets

Backbone Provisioning

- Will start with conservative BW allocation
  - May revisit this later
    - Tracked in ProtoGENI DB
- Enforced by switch port speed, end hosts in some cases
- Will provide port counters to GMOC

Status

- Hardware procurement going slow
- First node deployed planned in August
- Next 2 might have to wait until September
- Luckily (?), year 2 starts soon
  - Priority to sites near likely connections to other projects/campuses (3 more)

Connecting

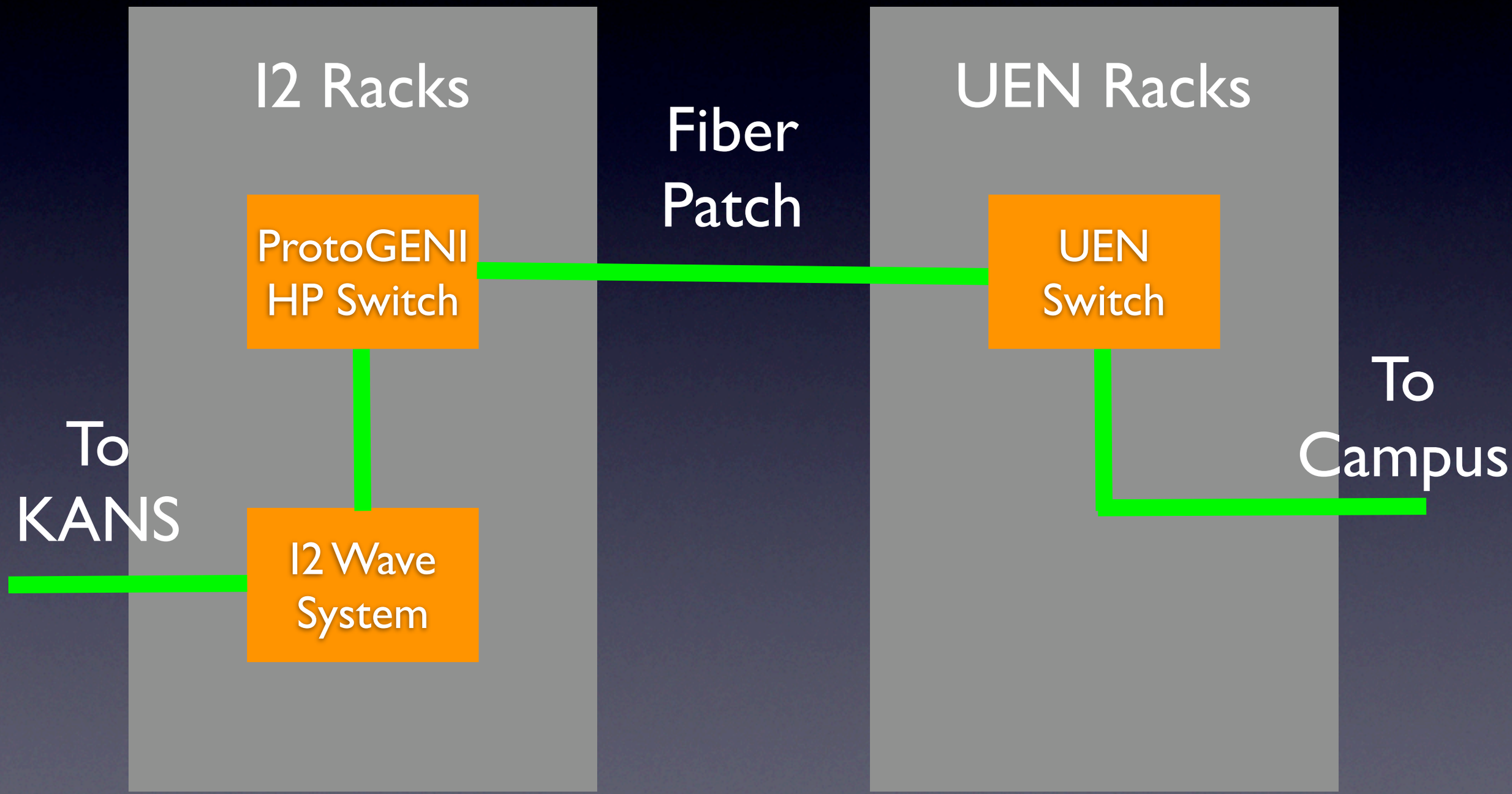
Who Gets Involved?

- Your lab/department (LAN)
- Campus (probably need to cross campus)
- Regional network (connects campus to I2)
- Internet2 (Patch between regional an PG)
- ProtoGENI (switch port)

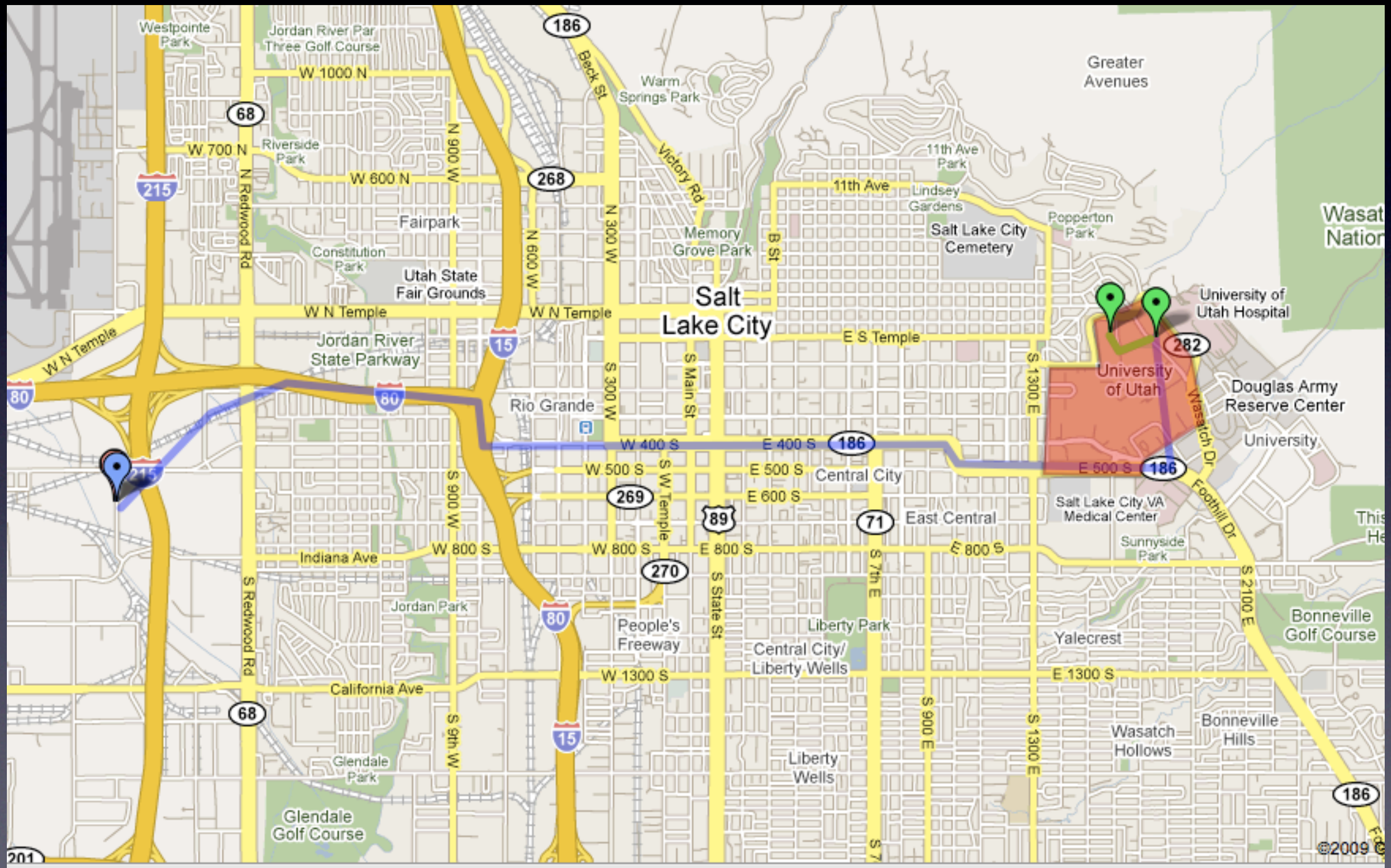
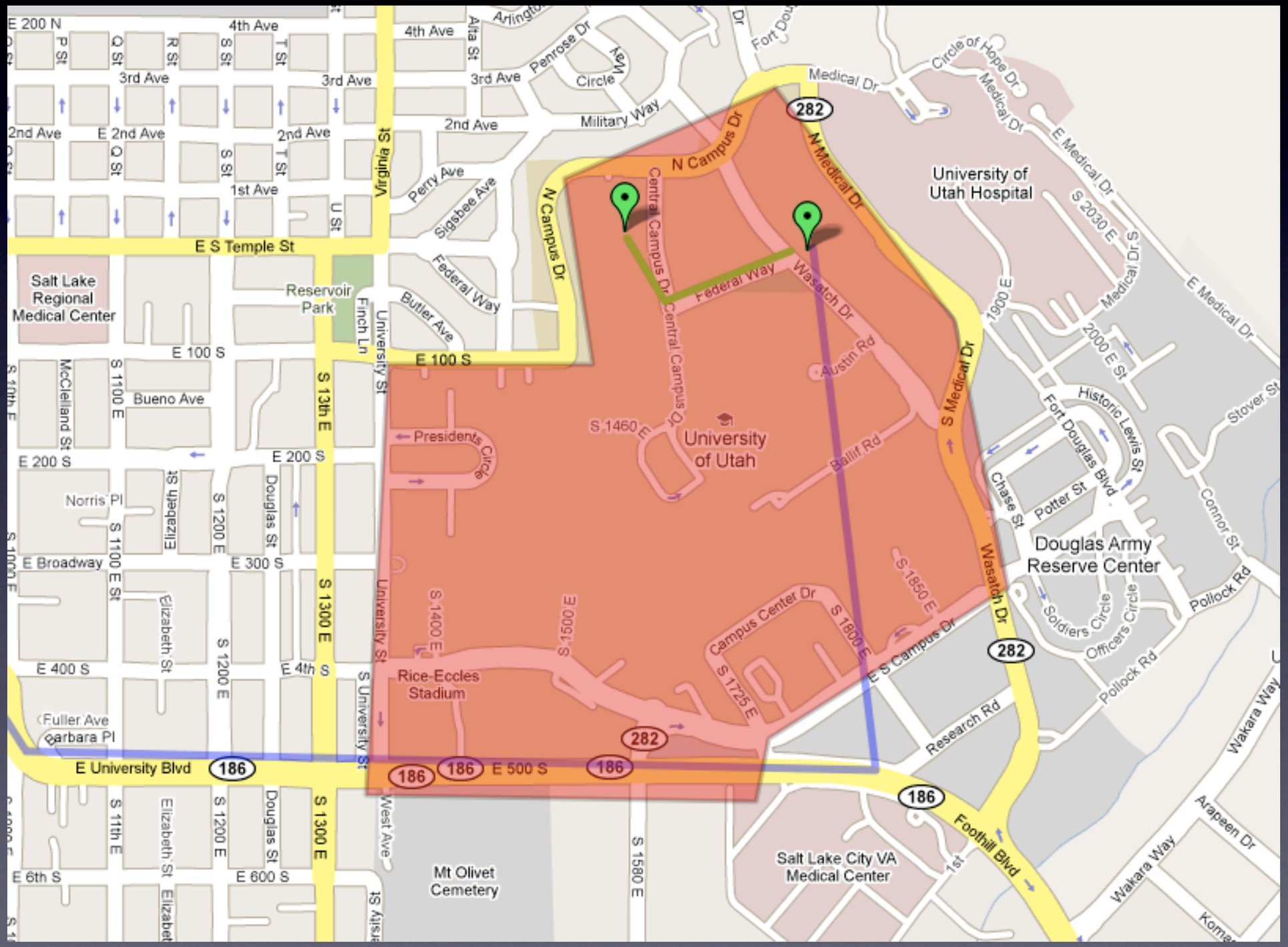
Find Out

- Who is your regional?
  - Can they provide layer-2 connectivity?
  - Can it be exclusive (preferred)?
  - Where do they connect to I2?
  - Additional physical connections needed?
- Is your campus on DCN?
- How would you get across campus?

Utah: L3 POP


I2 Racks
UEN Racks
Fiber
Patch
ProtoGENI
HP Switch
UEN
Switch
To
KANS
I2 Wave
System
To
Campus

Utah: Cross-City



Utah: Cross-Campus