



# Resource Allocation in Virtual Desktop Clouds: VMLab-GENI Experiment

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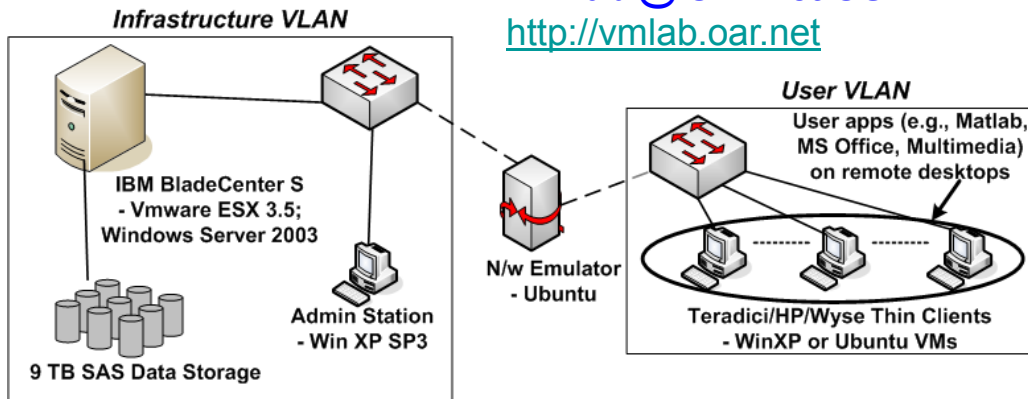
*GEC11 Experimenter Round Table Talk  
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# Topics of Discussion

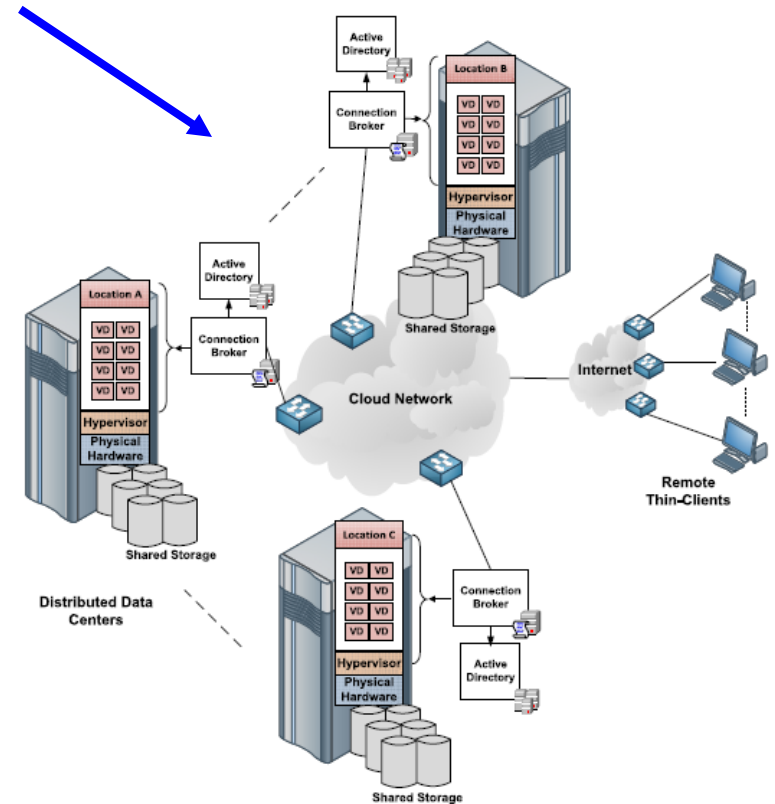
- VMLab-GENI Experiment Context
- GEC10 Experiment Experiences
- GENI Developer Feedback

# VMLab-GENI Experiment Context

VMLab @ OARnet/OSC  
<http://vmlab.oar.net>



- *VMLab* → *GENI*
  - *Measurement & Evaluation* → *Allocation & Management*
  - *Tabletop Experiments* → *Cloud Experiments*

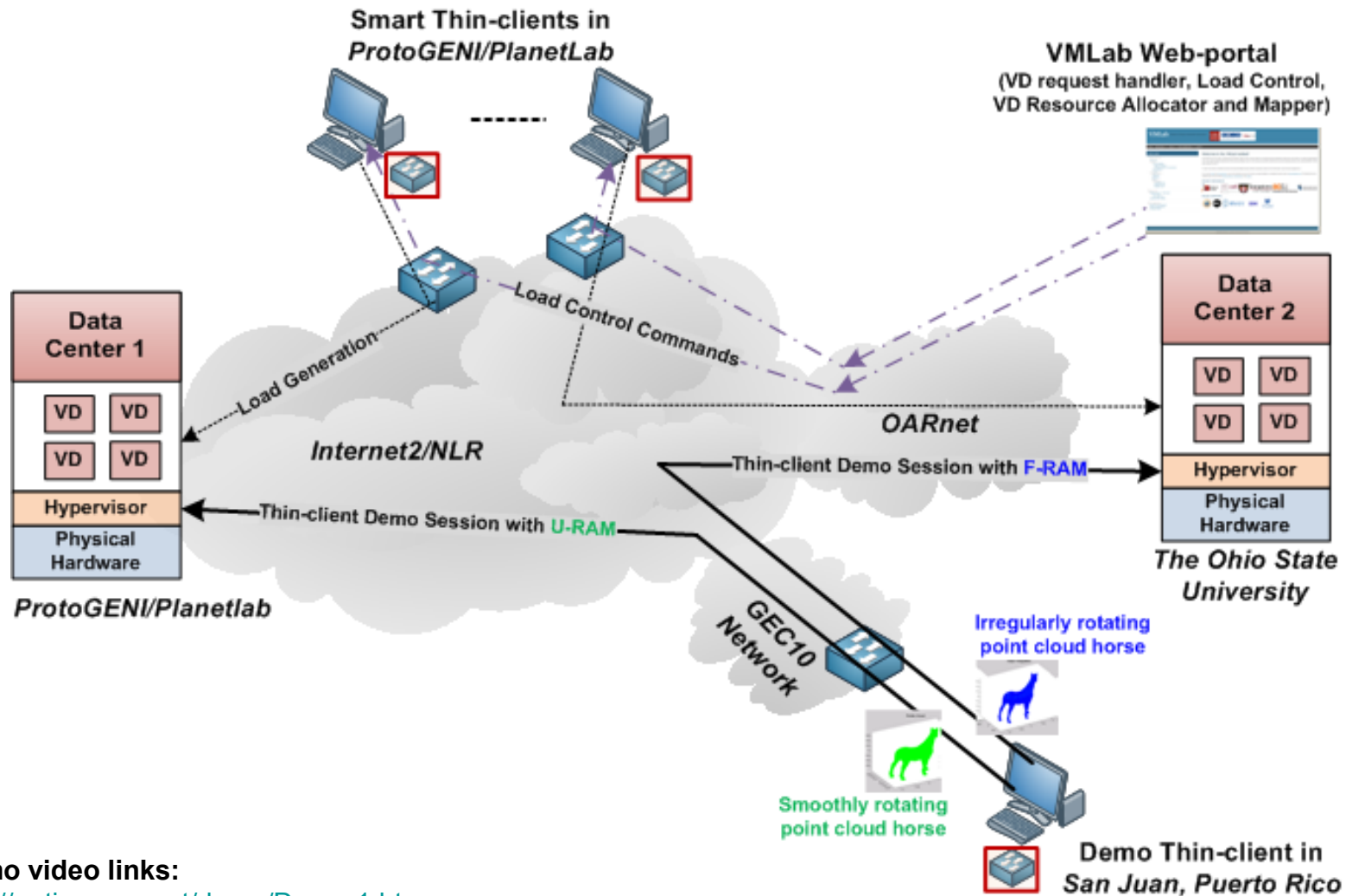


Virtual Desktop Cloud (VDC)  
 in the VMLab-GENI Infrastructure

# GEC10 Experiment Demonstration

- Compared U-RAM and F-RAM performance
- Created a datacenter in VMLab
  - One physical server each in VMLab for U-RAM and F-RAM
- VDC clients on ProtoGENI slice in GEC10
  - Developed a web-portal to launch VDC clients and control network emulation for demonstration
- Leveraged OnTimeMeasure's new metric creation capability
  - [Path-based measurements](#) of network health such as delay, available bandwidth, loss
  - [Host-based measurements](#) from VMware VDI tools such as CPU, memory, number of VM connections

# GEC10 Experiment Demonstration Setup



Demo video links:

<http://ontime.oar.net/demo/Demo-1.htm>

<http://ontime.oar.net/demo/Demo-2.htm>

# GENI Developer Feedback

- Slices setup with distributed datacenters and users – challenges:
  - *Special Needs:*
    - ESXi install in Emulab needed special image loading process
    - KVMoIP box for non-serial console access of a dedicated node
  - *Hardware Incompatibility:* Thin-client nodes setup in PlanetLab was not possible due to lack of X11 support in nodes
- GENI experiment tasks contend with student's time for research and development tasks, course work, ...
  - Need to make the learning of GENI capabilities easier for students
    - Tutorials, Examples, How-tos, “What X project offers experimenters?”
- Each GENI experiment has unique requirements
  - Students are tempted to - “I will write my own scripts for software install, experiment control, I&M, ...”
- Active collaborations with Experimenters and customization may increase adoption – especially true for GENI service developers
  - Teleconferences, Design exchanges, Prototype exchanges, ...