



Department of Veterans Affairs Internet2 Lab & Network

Interagency IPv6 Exchange Meeting
August 5, 2010



Agenda



- **VA Internet2 Lab Overview**
- **VA Internet2 Lab Architecture**
- **VA Internet2 Testbed Process**
- **Q&A**



VA Lab



- Establishing a VA research/Lab network
 - Physically separate from the OneVA Enterprise Network

Using Internet2 technologies, network, and services
- Labs will interconnect for the purpose of evaluating, testing, and demonstrating advanced applications prior to VA implementation
- Labs will provide:
 - An environment for the VA to demonstrate existing applications
 - A platform for developing advanced, collaborative applications for VA healthcare and other missions



VA Lab (cont.)



- Solutions will leverage the VA Internet2 connectivity to accelerate collaborative development and bring key solutions that provide improved service to the veteran more quickly
- Central Internet2 Lab in Washington, DC
 - ✓ Cornerstone to the national VA research network infrastructure
 - ✓ Acts as the secure gateway to the Internet2 network for all VA Internet2 Labs
 - ✓ Flexible to service the various functions the lab will need to service
 - ✓ Includes solution development, application testing, solution evaluation, and technology showcase



Capabilities



- **Network** – The network will leverage the underlying capabilities of Internet2 using IPv4 and IPv6 in both unicast and multicast architectures
- **Systems** – The Internet2 Lab will host multiple servers and computing capabilities that will support advanced applications being tested by the VA in collaboration with the Internet2 community
- **Technologies** – As new technologies are provided by vendors and developed by the VA. The Internet2 Lab will provide a testbed for evaluating and certifying their performance, security, and specifications



Capabilities (cont.)



- **Applications** – The Internet2 Lab supports a variety of Internet2 applications including Federated Identity Management and Healthcare apps such as the Nationwide Health Information Network, FCC Rural Health applications, Health Information Exchanges, telepresence, virtualization, and visualization
- **Testing** – the Internet2 Lab will perform test and measurement of network and applications throughout their duration of activity
- **Demonstrations** – Internet2 Labs will be used for demonstrations at VA locations as well as at conferences and exhibits



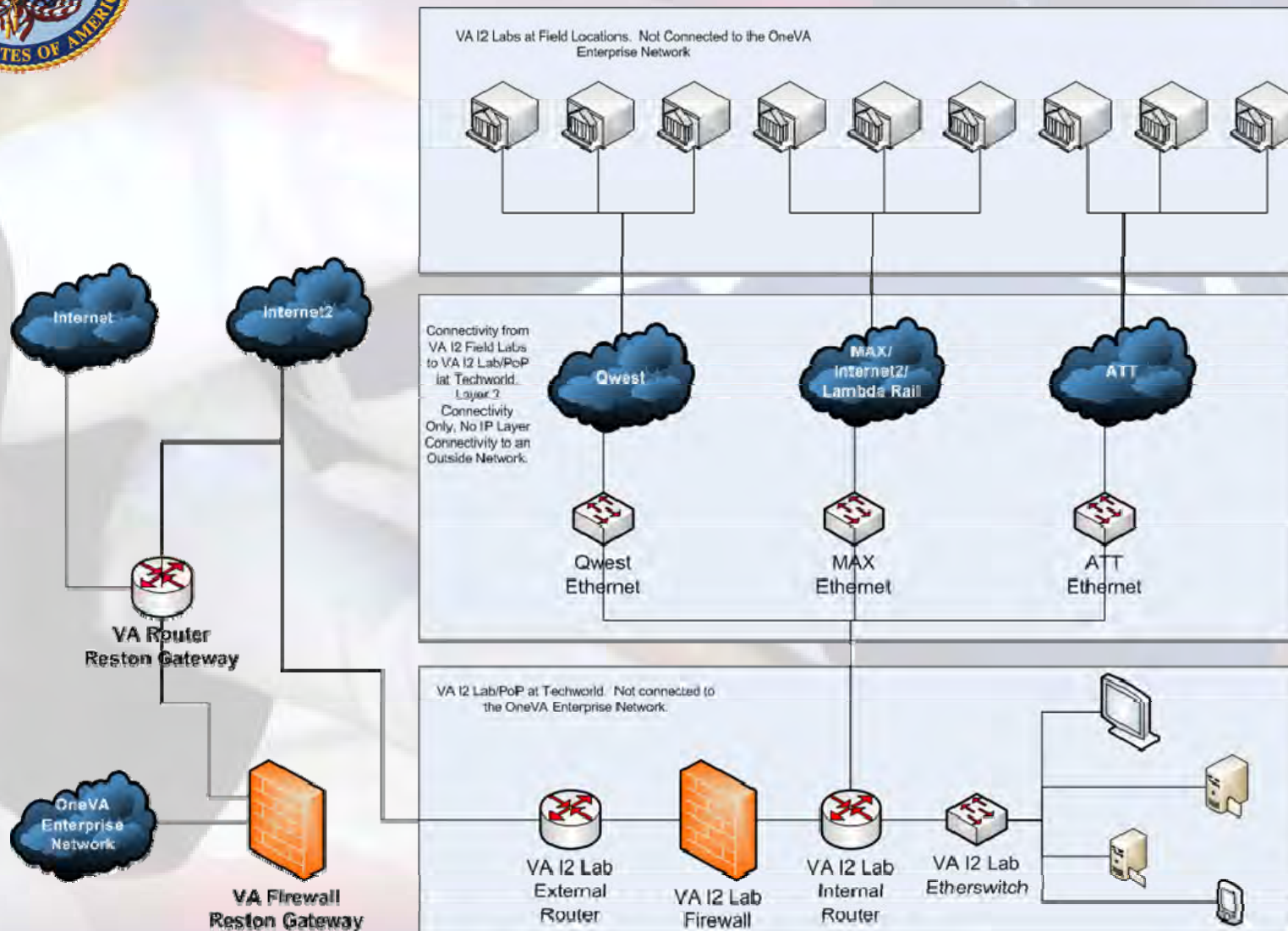
Capabilities (cont.)



- **Research** – the Internet2 Labs will be used for active research activities in developing new capabilities, systems, and software to support the VA mission
- **Operations Management** – the Internet2 Labs will be supported by a team of engineers that will monitor ongoing systems and collaborative applications for VA personnel



High-Level Architecture

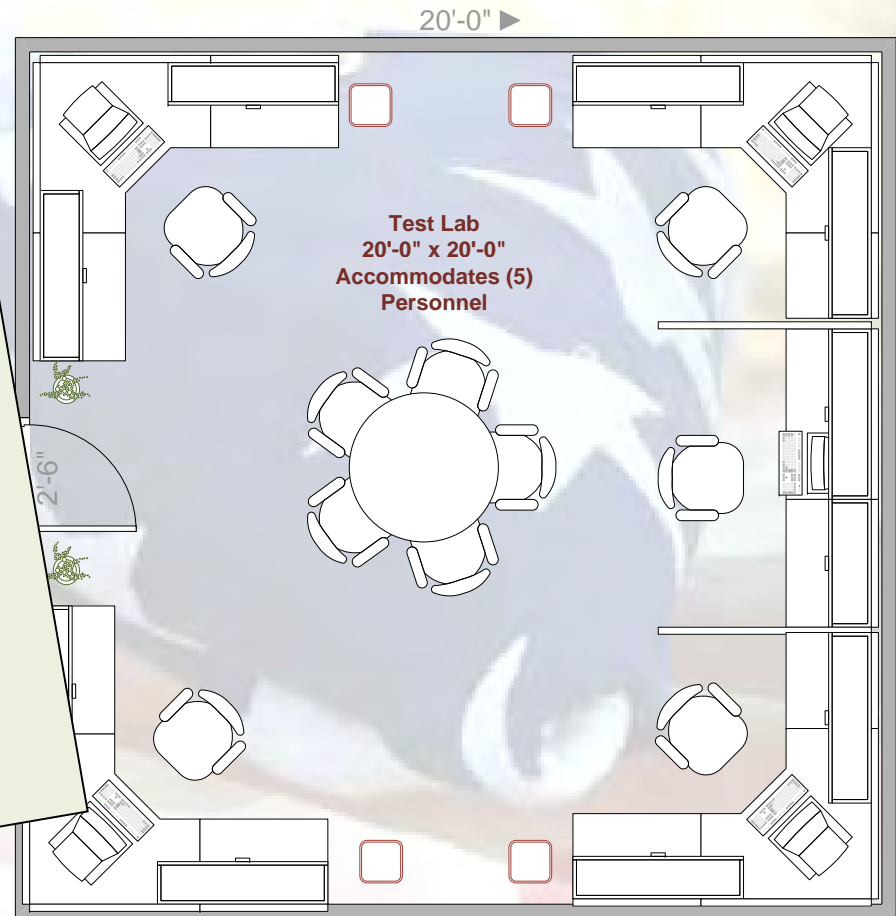




Functional Environment

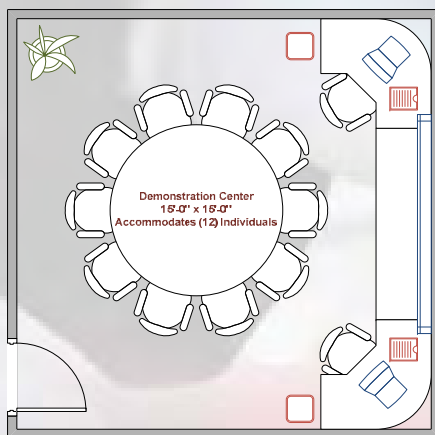
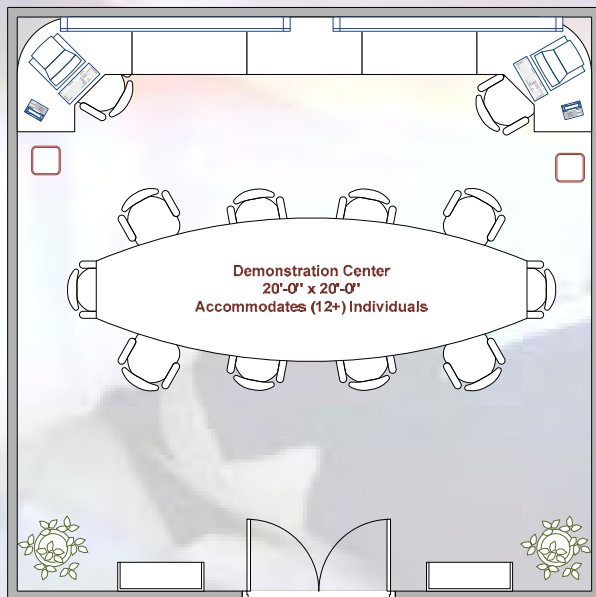


- An Internet-scale router with an integrated firewall
- Virtual Local Area Network (VLAN) capable switch for attaching servers
- Servers and PCs capable of running multiple operating systems and applications
- Secure environment with adequate racks, power, space, cooling
- Mobile demonstration kit with monitors and projector





Demonstration Centers





National Testbed Process



- Faster testing and deployment of applications / technologies
- Greater security (move testing from operational network)
- Save money – central place and service to do this from
- Pool resources & information sharing



Applications and technologies that show greatest value to the VA will be demonstrated



Potential Partners



The VA will enhance current partnerships and build new relationships through the Internet2 Community





Potential Applications



- | | | |
|----------------------------|----------------------------------|--|
| Human-Computer Interaction | Portable Applications | Records |
| Imaging | Portable Workspaces | Survivor Benefits |
| Rendering | Teleconferencing | Burial Operations Support |
| Representation | Communities of Interest Networks | Data Centric Transition for VR&E and Education |
| Forecasting | Hazardous Environments | Document and Correspondence Management System |
| Data Mining | Remote Surgery | IT Infrastructure |
| Scientific Modeling | Education & Training | IPv6 |
| Knowledge Management | Orthopedic Research | Identity Management |
| Symptomology | Spinal Cord Injury | Security |
| Manipulation | Suicide Prevention | |
| Server Consolidation | Pharmacies | |
| Disaster Recovery | On-Line Collaboration | |
| Testing | Electronic Health | |



Questions?