

## **NC-ITEC Status Report**

*Fourth Quarter 2003*

### **Current Abilene Activities**

#### **MPLS Service Evaluation**

- Description – Evaluate the potential for providing Layer 2 services across Abilene using MPLS.
- Components – Test-bed between Centaur Lab @ NCSU and IU NOC lab.
- Status – Base test-bed tunnel operational. Initial end-to-end configuration and tester setup in process. Test planning and requirements gathering in process.
- Resources – John Moore (NC-ITEC), Chris Heermann(I2), Jon-Paul Herron (IU NOC), Brian Kerkhoff (Juniper).
- Schedule – Phase 1 report target date 2/04. Ongoing test as requirements evolve.

#### **Abilene Measurement Platform (I2 Network Observatory)**

- Description – Deployment of Abilene measurement and management development platform at Centaur Lab @ NCSU.
- Components – Mock-up of Abilene node (including T640, NMS machines, terminal server and rack LAN).
- Status – Platform operational and accessible through NCSU campus network. Configuration changes in process to provide support for higher bandwidth testing and MPLS work (see above).
- Resources – John Moore (NC-ITEC), Chris Small (Abilene NOC), Chris Heermann (I2), Matt Zekauskas (I2).
- Schedule –Config changes target 2/04.

#### **IS-IS Monitor Testing**

- Description – Test IS-IS monitoring tool before deployment on Abilene.
- Components – Monitoring tool developed by Japanese researchers (based on isisd) to be tested on NMS machine with input from routers on Juniper test-bed.
- Status – Test planning in process.
- Resources – Chris Heermann (I2), Matt Zekauskas (I2), John Moore (NC-ITEC).
- Schedule - TBD

#### **Advanced Restoration Services**

- Description – Evaluate optimization of Abilene resiliency. Focus on Juniper fast IGP convergence and graceful restart features. Extension of work started last year to evaluate IGP optimizations for Abilene upgrade transition.
- Components – Lab test of both features at Centaur Lab @ NCSU. Possible pilot implementation and test on Abilene.
- Status – On hold (priority bumped to accommodate MPLS work).

- Resources – TBD.
- Schedule – TBD.

### **ICMP Error Collector**

- Description – Collect ICMP Error statistics from backbone routers.
- Components – Host data collection server at Centaur Lab.
- Status – Not implemented. Last response from Juniper on server availability in October.
- Resources – TBD
- Schedule - TBD

### ***Related Activities***

#### **Metro 10 Gigabit DWDM Deployment Testing**

- Description – Deployment test for new Cisco 15454 infrastructure being installed in RTP area.
- Components – Distributed test using Spirent Communications test gear for both lambda and switch-to-switch testing.
- Status – Ongoing testing as deployment proceeds.
- Resources – John Moore (NC-ITEC). Collaboration with NCSU faculty and NCNI staff members.
- Schedule – Full FCS deployment target 1/04. Further testing schedule TBD.

#### **NCNI IPv6 Infrastructure Update**

- Description - Test and deploy native IPv6 services on NCNI GigaPOP.
- Components – Lab test at Cisco RTP. Deployment and test on NCNI.
- Status – Lab test completed. Native connection to Abilene up. Distribution of IPv6 connectivity to all NCNI campuses in process.
- Resources – John Moore (NC-ITEC), Justin Church (NCREN).
- Schedule – Target 2/04.

#### **Centaur Lab Bypass Subnet**

- Description – Ongoing support of a high-bandwidth connection point for network research that bypasses the NCSU campus network.
- Components – Deploy switch and routers in Centaur lab and host test machines.
- Status – Current participants: FAST performance tester (Steven Low- Cal Tech and Stanislav Shalunov- I2), University of Oregon E2E performance server (Joe St. Sauver - U of O), Apparent Networks AppareNet Sequencer (Loki Jorgensen), Internet Backplane Protocol Node (Micah Beck – UT Knoxville), Visualization cluster (John Blondin – NCSU), Abilene MPLS test router (see above).
- Resources – John Moore (NC-ITEC).
- Schedule – Ongoing.

#### **Large MTU Performance Evaluation**

- Description – Evaluate TCP performance as a function of path MTU (up to 9000 bytes) over the wide-area.

- Components – Testing between partner entities using commercial and open-source tools. Usually requires network re-configuration in partner networks to get a “jumbo-clean” path.
- Status – Testing ongoing as time allows.
- Resources – John Moore (NC-ITEC), Kevin Walsh (CA-ITEC), Dave Hartzell (NASA Ames), Woojin Seok (KISTI), Loki Jorgensen & Chris Norris (Apparent Networks), Bill Rutherford (BCIT) and Bill Jones (UT Austin).
- Schedule – No committed schedule.