

Center for Information Technology Integration
Statement of Work
May 2, 2006

This statement of work constitutes the joint understanding of CITI (now in the School of Information) and ITCOM in pursuing a continuing research and development partnership.

Statement of Work

CITI's previous work, performed under a CITI/ITCOM MOU dated December 22, 2004, extended the Network Testing and Deployment (NTAP) framework for secure invocation of network testing tools on remote platforms. The extensions included host endpoint testing to enable "first mile" performance testing using Richard Carlson's Network Diagnostic Tool (NDT), secure periodic network testing using renewable short-term credentials derived from the user's long-term credentials, addition of the `owamp` and `tcptraceroute` tools, and addition of incremental and overall path testing modes.

The primary goals of the partnership for the remainder of FY 2006 are to investigate 10 Gbps operation and add the capability to capture network test packets for further analysis.

These goals are implemented in the following tasks.

Task 1: Demonstrate NTAP Operation with 10 Gbps Ethernet Hardware

CITI will investigate and demonstrate operation of NTAP PMPs using 10 Gbps hardware. Previous performance tests of server internal hardware have shown that a Dell 2650 platform can drive data at somewhat over 2 Gbps through the local loopback interface. To meet the challenge of testing 10 Gbps links adequately, CITI will investigate strategies for operating PMPs at higher speeds, including multiple NICs and operating system and NIC tuning.

Task 2: Packet Capture

Capturing packets transmitted during a test provides additional information useful in diagnosing network problems. CITI will augment the NTAP framework to capture packets using `tcpdump` on a PMP and store them locally or pass them back to the NTAP portal for post-processing using tools such as `tcptrace`.

Milestones and Deliverables

May 1, 2006

Task 1, 2 begin

June 30, 2006

Task 1 deliverable: Report on NTAP performance at 10 Gbps and demonstrated operation of NTAP platform with 10 Gbps hardware.

Task 2 deliverable: Packet capture capability implemented in NTAP framework.