Cyberinfrastructure and Large-Scale Network Testbeds

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Abstract: Historically, testbeds have played a pivotal role in the advancement of networking research, accelerating the progression from early design and prototyping to broader deployment and operational insertion. This talk will describe some of the major NSF-supported testbed network efforts aimed at serving the scientific and engineering community.

Summary: Historically, testbeds have played a pivotal role in the advancement of networking research, accelerating the progression from early-concept design and early prototyping to broader deployment and operational insertion. The classic example is the creation and the evolution of ARPANET, which enabled testing and validation of early packet switching concepts. NSF has recently launched several major experimental testbeds for benchmarking new techniques in optical and wireless networking, as well as information security and flexible service creation. NSF is also expected to lead the creation of the national “Cyberinfrastructure” that will link far-flung scientific instruments, sensors, data repositories, and high-end computational resources over high-performance networks and to make these resources widely available to the scientific and engineering research community. This talk will describe some of the key NSF network testbed efforts together with the future plans for the Cyberinfrastructure.