

**VICE PRESIDENT & ASSOCIATE PROVOST
FOR INFORMATION TECHNOLOGY**



Welcome to Texas A&M University

Internet2 Joint Techs
February 2, 2009

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Texas A&M at a Glance

- Land-, sea-, and space-grant university
- The state's oldest institution
- Sixth-largest university in the country with more than 48,000 students
 - Branch campuses in Galveston and Qatar
- University's endowment ranks in the top five nationally among public institutions

Texas A&M Nationally Recognized Graduate Programs

- According to *U.S. News and World Report*
 - The Dwight Look College of Engineering is ranked among the top seven public graduate schools in the nation
 - These Texas A&M graduate programs are ranked in the top ten nationally
 - Veterinary Medicine
 - Statistics
 - Chemistry
 - Political Science

Emphasis on Research

- More than \$604 million in annual research expenditures
 - #3 in NSF rankings for universities without a medical school
- \$800 million in new construction including facilities for life sciences, physics, veterinary medicine, agriculture, and engineering

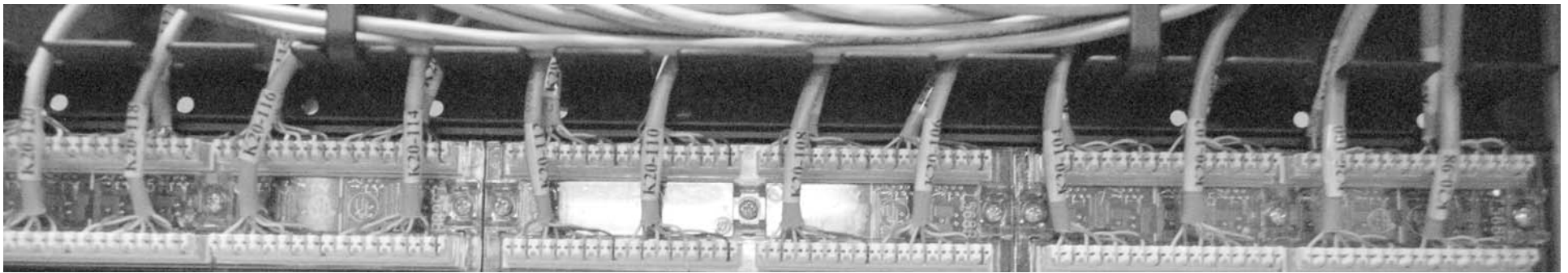


Texas A&M University System

- The Texas A&M University System
 - 9 Universities
 - 7 State Agencies
 - 1 Health Science Center
- Physical presence in 248 of Texas' 254 counties
- Educates more than 109,000 students each year
- Employs about 27,000 faculty and staff

Texas A&M Campus Network

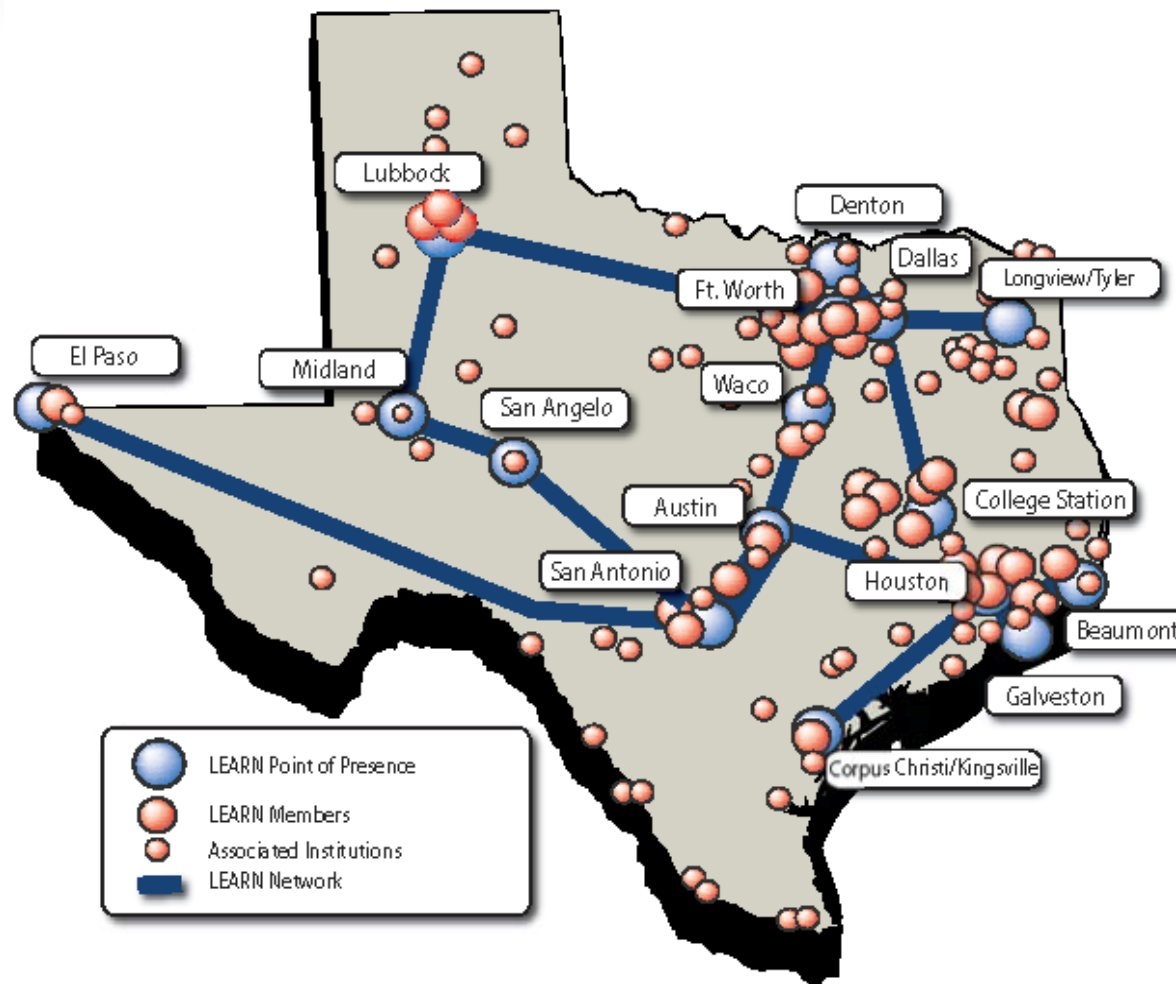
- Wired Network
 - 10 Gbps backbone
 - 50,000 computers
 - 90,000 wired ports
- Gateway to regional and national networks
- Wireless Network
 - 11 million square ft. of wireless access
 - 340+ buildings with wireless access across 5200 acres



Lonestar Education and Research Network (LEARN)

- LEARN Regional Optical Network
 - Non-profit collaboration of Texas higher education
 - Optical network with IRU's and owned DWDM infrastructure
 - New dim fiber partnership in West Texas
 - Connectivity to Internet2 and NLR and statewide peering
- Provides
 - Dedicated Wavenet Services
 - Collocation Services
 - FrameNet Services
- The 34 members of LEARN represent
 - 37 public universities
 - 5 private universities
 - Texas Assoc. of Community Colleges and K-12 TETN Network
- LEARN serves 94% of the students in Texas public four-year institutions and 58% of all higher education students statewide

The State of Texas and LEARN



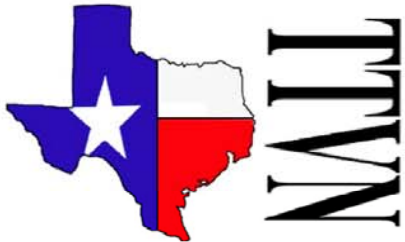
TTVN – The Texas A&M University System WAN

- TTVN is the wide-area data and videoconference network that serves
 - The nine A&M System university campuses in Texas
 - The Texas A&M Health Science Center's eight campuses and centers
 - The seven TAMUS Agriculture and Engineering State Agencies
 - Texas A&M University at Qatar
 - TAMU's centers in Mexico City and soon Costa Rica
 - Affiliated universities, community colleges, K-12
- TTVN provides
 - Data services, operations, and engineering for commodity Internet, Internet2, NLR, and statewide intranet
 - Videoconference scheduling, engineering, technical support, end-user support, multipoint bridging, streaming – live and archive, Web conferencing, ISDN/H.320 gateway, and repair
- <http://ttvn.tamu.edu>

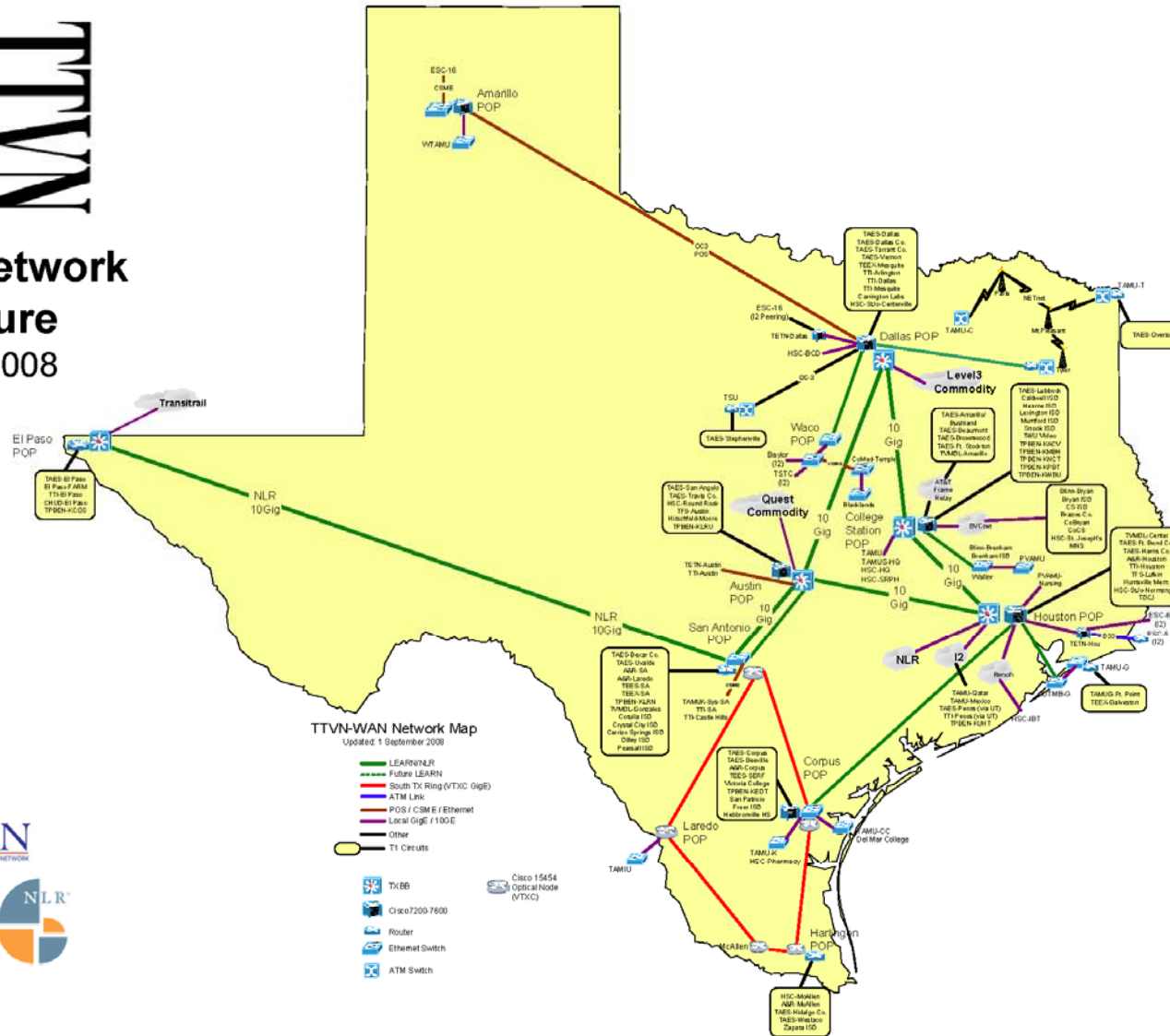
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**TEXAS A&M
UNIVERSITY**



Enterprise Network Architecture September 2008



Texas Network Collaboration

- Texas A&M and University of Texas Systems share a 10 Gbps backbone (LEARN infrastructure) and ISPs in Dallas and Austin
 - Great collaboration that dates back to the early 90's with a shared DS3 for commodity Internet
 - UT and A&M statewide ATM backbone in 2001
 - Worked together to establish LEARN
 - Dim fiber ring in South Texas with shared 10 Gbps lambda initially: Corpus Christi, McAllen, Laredo, San Antonio
- Supercomputing '08
 - Brought 240+ Gb to conference floor in Austin
 - Deployed 100G lambda over LEARN optical fiber
 - Provided diverse paths into Austin
- CALEA
 - One contract, multiple universities
 - Potential RON service

Texas Network Collaboration

- VOIP Internet2 Technology Evaluation Center
- University of Texas Arlington Tier 2 LHC site
- Teragrid connection for Texas Advanced Computing Center (TACC) in Austin

Network Researchers at Texas A&M

- Computer Science and Engineering
 - R. Bettati: distributed real-time systems, communications protocols, traffic analysis, anonymity and privacy
 - J. Chen: algorithms and complexity, network optimization and security
 - S. Liu: real-time distributed computing, network performance and security
 - D. Loguinov: real-time video streaming, congestion control, P2P, Internet traffic measurement
 - U. Pooch: network and computer system security
 - V. Taylor: OptIPuter
 - J. Welch: algorithms and lower bounds for distributed computing system, in particular mobile and ad hoc networks
- Electrical and Computer Engineering
 - N. Reddy: network protocols and security and active storage systems
 - S. Shakkottai: graphical models for networks, wireless ad hoc networks, P2P, measurement & analysis
 - A. Sprintson: network survivability, QoS routing, security of wireless networks
 - X. Zhang: mobile wireless networks, wireless sensor and ad hoc networks
 - P. Cantrell: too long as a CIO....
- Academy for Advanced Telecommunications and Learning Technologies
 - G. Almes: design of advanced WAN's, network performance measurement and analysis
 - W. Marti: Internet2 ITEC, campus research network design, virtual network lab
 - W. Magnussen: Internet2 ITEC: NG 911, VoIP services integration and disaster recovery

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Have a Great Joint Techs!

