Using an ATM Testbed for Videoconferencing

Milan Nikolic, Calvin Ling, and Ljiljana Trajkovic
{milan, cling, ljilja}@cs.sfu.ca
School of Engineering Science, Simon Fraser University

We are interested in evaluating the performance of audio and video transmissions in IP over ATM networks.

We constructed the ATM testbed that consists of:
- two Newbridge 36150 MainStreet ATM switches
- two Pentium III PCs running Windows 2000
- two Sun Ultra 5 workstations

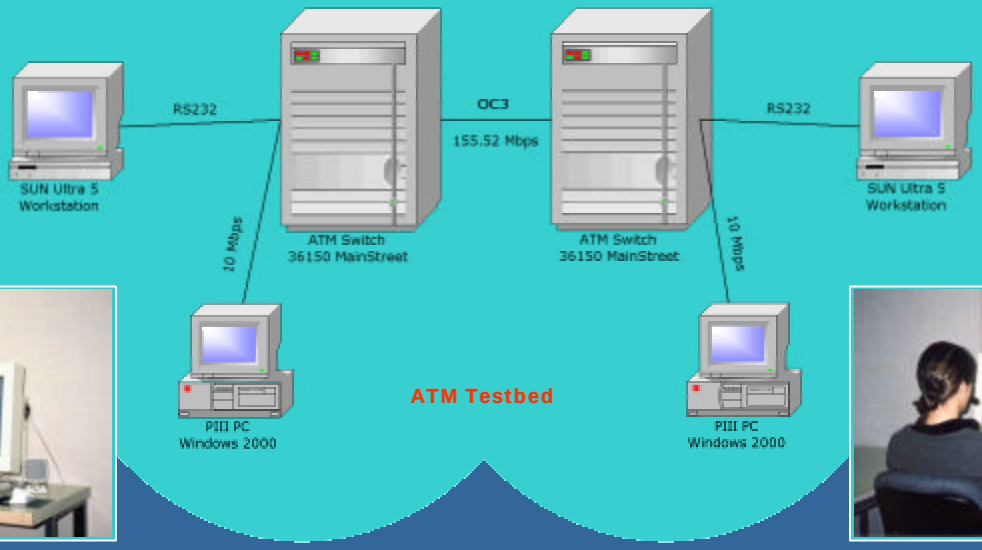
We have created Tcl/Tk and Expect scripts to collect statistics about multimedia traffic traversing the ATM network.

We are currently building a simple network management GUI system.

PCs are connected to the ATM network via Ethernet cards.

SUN workstations communicate with the ATM switches through serial connections.

Videoconferencing system uses point-to-point connection and it is based on H.323 standard.



We are collecting aggregate traffic traces on various time-scales.

We plan to analyze packet delay and delay jitter as two main parameters for measuring quality of service in video applications.

Multimedia videoconferencing with Mbone uses various tools:
- robust-audio tool (RAT) for audio transmissions
- videoconferencing tool (VIC) for video transmissions
- white board (WBD) and network text editor (NTE) as shared workspaces

References:
- Newbridge 36150 MainStreet ATMnet Technical Practices: http://www.cid.alcatel.com/updates/36150/R2_3/MASTER_R2_3.pdf
- Mbone conferencing applications: http://www-mice.cs.ucl.ac.uk/multimedia/software
- Tcl/Tk and Expect scripting languages: http://www.scriptics.com