

Using an ATM Testbed for Videoconferencing

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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>