Follow-up on Monday's Tutorial

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Defining the problem

- The volume, mix and # of sources of network traffic are rising!
- The infusion of long, high speed connections without slow start mechanisms and long round trip times will bring new LAN management problems.
- The increasing volume of LAN traffic, coupled with uncontrolled external sources will result in an increase in the variability of LAN demand/utilization.

Refining the problem

- Does this represent a problem?
- When does it occur?
- Where does it occur?
- What are the options for managing it?
- What are the trade-offs in selection a management option?
- Will the management approach work?

Areas needing improvement

- Management of congestion
- Preservation of QoS
- Protection of low priority data against loss and undue delays
- LAN/WAN interoperability

Congestion Management

- 802.3x doesn't go far enough
  - Provides framework for extensions
- Flow Control can be improved to handle
  - Head of line blocking
    - One flow is currently able to impede another flow
    - Need to differentiate flow control on a per flow basis
  - Prioritization
    - Multi-media will encounter unpredictable delays
    - Flow control needs to be able to differentiate priorities

Preservation of QoS

- LANs interact with ATM
  - xDSL increases ATM to the edge
    - Expectation of QoS
    - Shouldn't lose QoS just because we came into LAN
    - Could be a motivation for ATM to penetrate LAN stronghold
- LANs interact with time sensitive apps
  - Need mechanism to communicate QoS needs to lower LAN layers

Protection of traditional (low priority) data

- Big increase of time sensitive traffic
  - Mass deployment of Cable modem and xDSL creating appetite for time sensitive services
  - Proliferation of these apps into the LAN
  - Streamed UDP applications will increase
    - No slow start (instant ramp up)
    - Potential congestion effecting traditional data
      - Buffer overflow, data loss, retransmissions

LAN/WAN Interoperability

- WAN has its own QoS and Flow Control standards
- For LAN/WAN interoperability
  - Essential interoperability issues are:
    - QoS
    - Flow control
  - These services should be ubiquitous

Recommendations for further work

- These issues impact 802 LANs
- Need 802 attention:
  - Establish where the work should be done in 802
- Need to develop solutions for these issues
- Suggest a meeting in Sept 98
- Report progress to IEEE 802 in Nov 98

Conclusions from 802.1 Meeting

- Formation of a team to address QoS/FC architectures
- Working meeting in Sept:
  - Irvine, or
  - In conjunction with 802.1&.3 interim in Austin
- Report progress in 802 plenary in Nov
- Setup reflector

For more information or to get on the reflector

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