FROM THE BITSCONNECT TEAM

AN UPDATE ON THE NEURON NETWORK

Dear Alum,

The goal of the first phase of BITSConnect was to build a gigabit network infrastructure at BITS Pilani. Specifically, the intent was to roll-out

- *10/100 voice-grade data ports to every student room, faculty home, guest house room etc., with limited VoIP roll-out in Phase I.*
- *802.11b wireless access at selected locations*
- *Streaming Media Infrastructure for rich content delivery*

We have achieved all of the goals above. That said, let us review some specifics and current status:

While we have a gigabit network within Pilani, the external bandwidth to the Internet is currently 2 Mbps, up from 1 Mbps last year. BITS has already paid-up VSNL & ERNET for another 2.5 mbps which will improve the total external bandwidth to 4.5 mbps in the next few months. To put things in perspective, top Indian institutes have an external bandwidth of 4-8 mbps, putting BITS in a similar ballpark.

So while data within Pilani travels at Gigabit speeds (1000 Mbps), the bottleneck to the Internet is the 'thinner' external link (2Mbps).

Clearly, this begs the question: Why build a network capable of 1Gbps?

1. The network has been designed with locally-hosted content in mind. Consider on-line lectures, access to the supercomputer, local servers, the soon-to-be-built VLSI Lab infrastructure or even student-hosted content. These require blazing-fast transfers 'local' to Pilani – as applications for BITSConnect evolve, we expect such traffic to be a vast majority of data on the network.

2. We want to build a network that is 'Future-Proof' for many years, when external bandwidths will be significantly higher.

Given the external bandwidth limitations discussed above, it is possible for a few users to completely utilize the external link (say, with a large ftp transfer), bringing internet access for the rest of the campus to a stand-still. Hence, BITS has a policy of 6pm-8am access to students => that allows the external bandwidth to be used by the Institute's network during the working day.

The good news is that we HAVE a solution. As the additional 2.5 Mbps becomes available, we have designed a solution to provision the total external bandwidth so that the student network and Institute network are separated – soon as that happens, it will be possible to remove this time restriction on network access.

ALL data ports are voice-enabled, i.e. it is possible to plug in an IP phone and have telephony access. To start with, we have 250 IP phones on campus. As newer phones become available, the IP Telephony roll-out will continue.

We welcome questions and queries. Technical inquiries may be directed to Prof J P Misra (jpm@bits-pilani.ac.in) or Mukul Chawla (mukul@bitsaa.org).

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The BITSConnect Team
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