Making BITS-Pilani the Largest IPv6-compliant Campus Intranet in India

An Initiative of the CSD, BITS-Pilani

Project objectives

- To capitalize on the early lead of BITS-Pilani in IPv6 research, development, deployment, testing and 6Bone connectivity
- Making the BITS-Pilani, largest and if possible first fully IPv6-enabled Campus-wide Internetwork
- Reusing the resultant infrastructure for building part of the Grid Computing Testbed for the Project Grid-One

Steps and Methodology

- Volunteer training & documentation
- Administrator Education
- Support-staff training
- Creation of 8x2 hour help-desk
- Division / Unit-wise deployment planning and risk-analysis
- Gradual IPv6 deployment and testing
- Implementation auditing

How to configure various systems?

- Project URL:
  - http://discovery.bits-pilani.ac.in/ipv6/index.htm
- Support documentation:
  - Protocol wise
  - OS-wise
  - Application-wise
  - Security-wise
  - Performance-wise

Steps

- First step is to enable IPv6 in workstations, PDAs etc. by simple configuration. <These nodes may be running on different OSes.>
  - The BITS already has an IPv6-capable router and many IPv6-enabled Switches <enabling needed>.
  - A software router already supports IPv6 address and parameter auto-configuration.
- Next step is to configure various server-class machines.
- Last step is to configure switches, refine VLAN mappings and reconfigure Firewalls, IDS, Gateway etc.

Some simple points

- Internet access to IPv6 users can be provided directly or through a IPv6 Proxy Server.
- IPv6 Proxy Server may be an Apache Server.
- HTTP traffic between client browsers and the IPv6 Proxy server flows on IPv6.
- HTTP traffic from IPv6 Proxy server to non-IPv6 compliant systems / Internet may have to be sent over IPv4.
- There are, at present very few users on campus who are using Internet access through IPv6 but about 4500 users indirectly use it through the DLP mailer.

Thank you!