

Name of the client: BSNL, Pune

What was the customer's requirement?

BSNL-Pune has implemented Customer Service Management System (CSMS), which is integrated on high-end server connected to an existing central site Router in Pune. The Central site Router was already being accessed by 80 sites across Pune District (rural as well as urban territories). The 80 sites are exchanges, which are a mix of BSNL owned ones as well as exchanges that are leased.

In view of an upcoming requirement, BSNL-Pune floated a tender for connecting 20 additional sites to the existing central setup in Pune. BSNL-Pune was keen on a cost-competitive, performance based solution, which would also be truly compatible to the existing WAN network in place.

The new 20 sites aimed at extending the existing WAN networks of BSNL's CNMS, soft directory services applications etc.

Possible connectivity Solutions

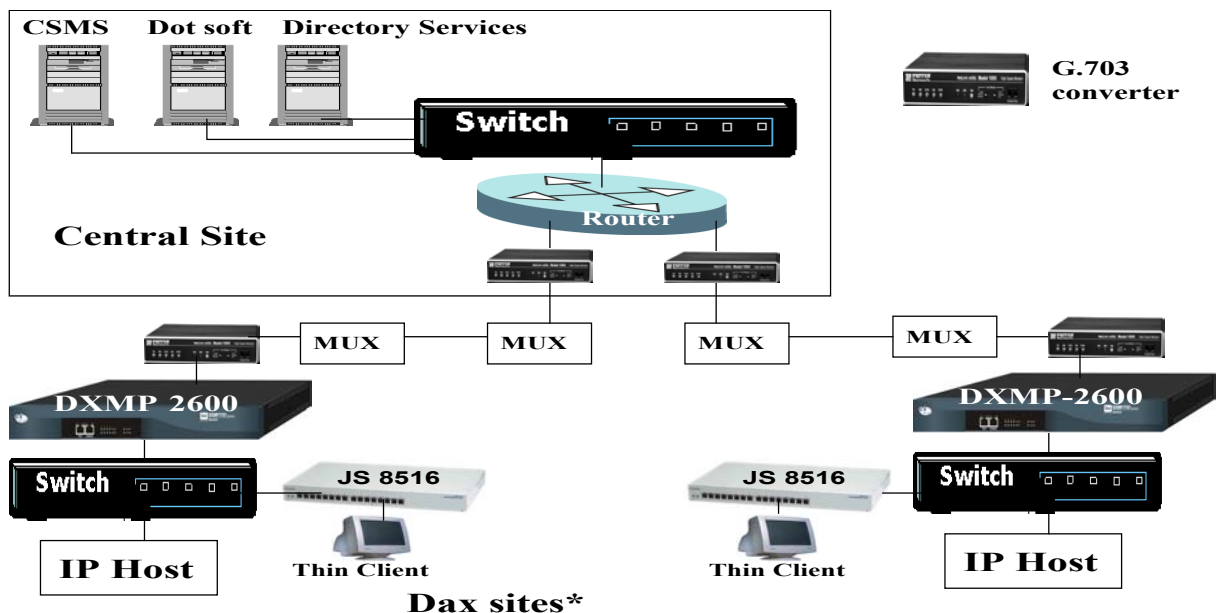
The remote user from the dumb terminal (thin Client) would be connected to a Terminal server, which connects to local LAN through hub / switch. The hub / switch connects to a router, which runs 64 Kbps "always-on" leased line link to the central site router. Data processing and back-up in the server would happen at the central site.

Dax proposed Network Access serial servers (Dax Perle JS 8516), Modular Aggregation series routers from its DXMP-2600 series and G.703 WAN interface converters.

Our recommended solution with products suggested:

Since the existing core network was designed on proprietary WAN protocols like HDLC, EIGRP, the only option was to provide routers that would seamlessly inter operate with the existing central site routers. Dax Maipu Routing solution turned out to be the obvious choice, owing to its extremely easy and true compatibility with most routing vendors.

The routers connected to network access serial servers through the local LAN at every location to realize the Terminal server requirement.



* 2 out of the 20 Dax sites are shown above

Challenges faced during solution implementation:

- During the Router installation, the customer was having problems in the links. Dax swiftly figured this out to be the loop in the line, which was subsequently addressed.
- Dax Maipu's serial HDLC protocol was made to work seamlessly with the existing central site HDLC setup without disturbing the existing WAN set-up.
- As the dumb terminals login to the server, the server assigns a different TTY number for each session. This was addressed with the service of "Reverse Telnet", while the UNIX based utility pertaining to existing Terminal servers in the network was used (since the customer did not want to manage different kind of softwares). Once this was addressed, the customer came up with a cable mis-match owing to the existing terminal servers. This was taken care by providing an appropriate RS232 based converter. With this, the user was able to assign a particular TTY number for each port (dumb terminal) irrespective of the number of times it logged out and logged in and also working seamlessly with the existing Terminal servers.

Key benefits articulated by the customer:

1. Huge price advantage compared to existing central site routers ensured cost-competitive, yet uncompromised solution.
2. A totally network-engineer friendly and compatible WAN network with the existing setup ensured quick transition from the existing WAN to enterprise Dax network.
3. Surge protection feature of Dax Perle Network Serial access servers helped to decrease the failure rate arising out of power fluctuations.
4. Multiple applications running on the same WAN links ensured all-in-one solution from Dax
5. The scalability of the solution to high-speed WAN links (2 Mbps) and the option of adding more WAN links as needed to the existing setup meant that the user's investments are well protected.
6. A comprehensive 3 year warranty ensured total peace of mind for the customer.

Imp: The appreciation letter given by BSNL-Pune immediately after the installation of the first site is enclosed herewith.



BHARAT SANCHAR NIGAM LIMITED, PUNE
% DIVISIONAL ENGINEER (COMPUTER), 7th FLOOR,
MHS BHAVAN, PUNE - 411 001.

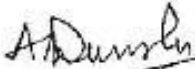
Kind Attn: Mr. Pramesh Gupta Sr. Executive Telecom (Dax Networks Limited.)

TO WHOMSOEVER IT MAY CONCERN.

This is to certify that BSNLPune has placed purchase order for 20 No's of Dax Maipu (DXMP 2600) routers and have currently installed 1 Router and is working fine as per our requirement and Interoperating 100% with the Cisco routers; the great feature about these router is the command lines similar to Cisco.

These routers are deployed for our Customer Service Management System (CSMS) WAN Network and are satisfied with the product features, performance and support extended.

Good luck to you and your team.


Divisional Engineer (Computer) 26.05.04
Bharat Sanchar Nigam Limited,
7th Floor, MHS Bhavan, Pune - 1.