



3Com® SuperStack® 3 Switch 4400: Supporting LAN Telephony

The Problem— Poor Voice Quality

A LAN-based telephony system can offer many clear benefits, including lower costs, simpler configuration and modification, and more efficient messaging by combining e-mail and voicemail in one system. A key challenge, however, is to ensure that other applications on the network do not compromise the voice quality as they compete for bandwidth.

Lost or delayed packets severely affect the quality of a LAN telephony-based conversation. If a packet gets lost because of over-congestion somewhere in the network, it will cause a “clip-like” sound on the telephone line. Delayed packets also degrade the sound quality of a conversation, and the time lag in communication will become noticeable when the latency exceeds 250 ms.

The Solution

Using its advanced Layer 4 capabilities, the 3Com® SuperStack® 3 Switch 4400 is able to identify voice traffic and prioritize it against time-insensitive data traffic. When used with the 3Com SuperStack 3 NBX® Networked Telephony Solution, all SuperStack 3 Switch 4400 switches in the network will be configured automatically by 3Com Network Supervisor network management software to prioritize voice traffic across the network. It is also possible to use the Layer 4 capabilities with

other LAN telephony systems through manual configuration.

The 3Com SuperStack 3 NBX Networked Telephony Solution can operate in two modes: at Layer 2 (Ethernet) or Layer 3 (IP). Depending on the mode it's using, the NBX Networked Telephony Solution will use ARP, UDP Port 2093, DiffServe Code Point 46, and Ethernet Type 0x8868. The SuperStack 3 Switch 4400 prioritizes all of these types of traffic above time-insensitive data transfers, ensuring high-quality voice traffic by minimizing latency and packet loss.

The SuperStack 3 Switch 4400 can also support third-party LAN telephony systems. For example, Cisco CallManager uses specific ranges of UDP and TCP port numbers, and by manually configuring traffic in these port ranges to be treated as high priority, the same effect can be achieved as with the 3Com SuperStack 3 NBX Networked Telephony Solution.

Want to know more?

For further information on this 3Com SuperStack 3 Switch 4400 feature and its use, please refer to this entry in 3Com Knowledgebase:

<http://knowledgebase.3com.com/division/publisher.asp?id=2.0.72839385.3221790>

