METRObility optical systems
Simply Brilliant Optical Ethernet

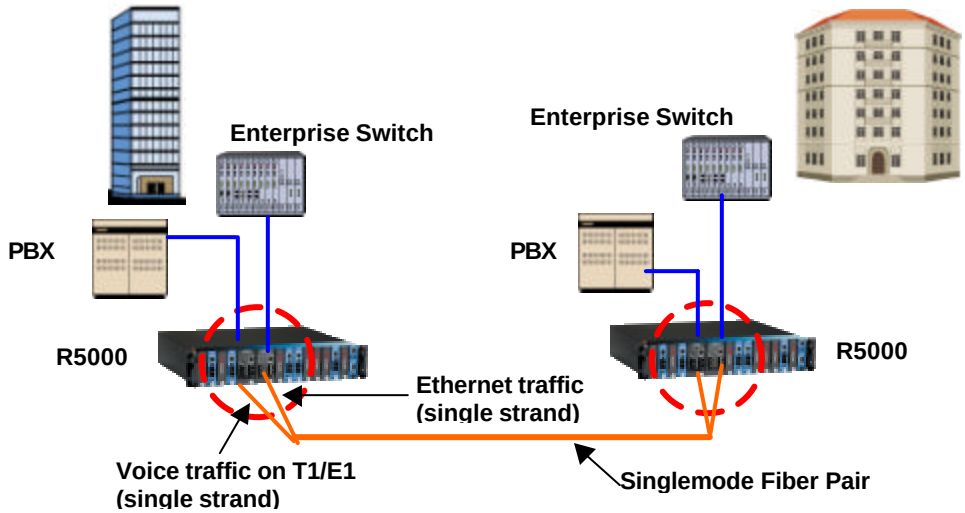
Campus Area Networks
Voice and Data Convergence

The Problem:

Campus area networks are basically extended LANs which require easy connectivity between offices for both voice and data applications. Frequently, companies must purchase multiple TDM lines in order to provide these services at each location. Not only does this add to the on-going expense of leasing separate T1 or T3 lines but also complicates employee's access to the private local area network. Resources which must be shared via the Internet may require a VPN (virtual private network) connection and sophisticated encryption schemes. Further, access speed is limited by the bandwidth of the shared connection, i.e. 1.54Mbps for T1 or 2.048 for E1, so sharing large files becomes a liability.

The Solution:

Metrobility's BWDM (bi-directional wavelength division multiplexing) product line offers both TDM and Ethernet options to allow companies to extend voice and data networks with a fiber pair up to 20km. By splitting the voice traffic and data traffic onto separate wavelengths each on a single strand of fiber, companies can provide both voice and data services to geographically disparate offices on the same pair. TDM traffic maintains its integrity because the clock information is translated by Metrobility's PW (Pulse Width Modulation) scheme for transmission across fiber (see Clock Synchronization). Large data files do not impact voice traffic since 100Mbps data traffic is on one strand, and voice traffic is on the other strand. This minimizes the QoS complexity since voice and data co-exist on a fiber pair, but are not intermixed.



The Benefit:

Metrobility's converged data / voice single fiber network solution offers the reliability, interoperability, and security of a voice network, the benefits of IP, and the manageability of a single network. Metrobility's TDM/BWDM interface takes advantage of the high voice quality technology found in TDM networks and while the 100Mbps/BWDM interface utilizes the efficiencies of TCP / IP protocols in enterprise networks. The ability to connect PBX's directly together enables multiple locations to utilize a single network to transport both voice and data traffic on a single fiber pair offers advantages over a voice over IP solution:

Lower cost: Prioritization and traffic grooming are not required since voice (TDM) traffic is on a separate fiber strand from data traffic. Therefore, the existing investment is maximized by not requiring the replacement of legacy equipment (switches, PBXs, phones and fax machines) with expensive VOIP technology. And, since only one strand of fiber optic cable is required for both data and voice, installation costs are minimized.

Utilization of existing equipment: Use the existing TDM PBX, muxes, etc. No need to install IP telephones or costly VoIP equipment.

Ease of Management: NetBeacon Element Manager provides the ability to manage these network elements through an easy to use Java-based GUI interface, or through any SNMP-based network manager such as HP Open View or Network Node Manager.

Simplification: The network is less complicated to manage because proprietary protocols that require complex configuration are not required. Fewer staff members are required to maintain the network, simplifying support and cutting salary costs.

Product Information

BWDM is available in both line cards and standalone units. Note that each end of the link must be configured with a different receive and transmit wavelength, e.g. -1X at one end and -1Y for the opposite end. All line cards are designed to meet NEBS Level 3 compliance.

BWDM Availability: The later of 30 Days ARO, or August 1, 2002.

T1/T3

Line Card	Standalone	Port 1	Port 2	Transmit/Receive Port 1/Port 2	Max Supported Distance
R105-1X	2105-1X-01	T1 RJ-45	Singlemode Fiber SC	1550/1310	20km
R105-1Y	2105-1Y-01	T1 RJ-45	Singlemode Fiber SC	1310/1550	20km
R115-2X	2115-2X-01	T3 BNC	Singlemode Fiber SC	1550/1310	20km
R115-2Y	2115-2Y-01	T3 BNC	Singlemode Fiber SC	1310/1550	20km

E1/E3

R165-1X	2165-1X-01	E1 RJ-45	Singlemode Fiber SC	1550/1310	20km
R165-1Y	2165-1Y-01	E1 RJ-45	Singlemode Fiber SC	1310/1550	20km
R175-2X	2175-2X-01	E3 BNC	Singlemode Fiber SC	1550/1310	20km
R175-2Y	2175-2Y-01	E3 BNC	Singlemode Fiber SC	1310/ 1550	20km

100Mbps

Line Card	Standalone	Port 1	Port 2	Transmit/Receive Port 1/Port 2	Max Supported Distance
R131-1X	2131-1X-01	TX RJ-45	100BASE-FX singlemode SC	1550/1310	20km
R131-1Y	2131-1Y-01	TX RJ-45	100BASE-FX singlemode SC	1310/1550	20km

10/100

Line Card	Standalone	Port 1	Port 2	Transmit/Receive Port 1/Port 2	Max Supported Distance
R643-1X	2643-1X-01	10/100 TX RJ-45	100BASE-FX singlemode SC	1550/1310	20km
R643-1Y	2643-1Y-01	10/100 TX RJ-45	100BASE-FX singlemode SC	1310/1550	20km

100Mbps Access Line Card

Line Card	Standalone	Port 1	Port 2	Transmit/Receive Port 1/Port 2	Max Supported Distance
R231-1X	NA	TX RJ-45	100BASE-FX singlemode SC	1550/1310	20km
R231-1Y	NA	TX RJ-45	100BASE-FX singlemode SC	1310/1550	20km

For additional information Metrobility's products, contact Metrobility Optical Systems at 1.877.526.2278 or 1.603.880.1833, or visit us at www.metrobility.com.