

Case Study

Ethernet Private Line Solution replaces Frame Relay

Customer statistics:

- Healthcare industry
- Eight remote sites all needing connectivity back to a host site
- Host site is currently the central repository of data
- The sites are all within a 100-mile radius of each other
- The patient data being shared is highly sensitive and security is of utmost importance
- Uptime is critical from 8am to 6pm
- Customer currently is using frame relay with PVCs from remote sites pointing at the host site. The remote sites run at speeds of 256K
- Customer has IT staff at the host site that must maintain the remote sites. There is no permanent IT staff at the remote sites
- Customer budget is limited. They will not be able to add IT staff to support network applications
- Customer needs to add additional data applications that are run over the new network

How did we arrive at the end proposal?

We looked at the advantages and disadvantages of different network types and compared them to the needs of this customer. The list looked something like this:

Frame Relay Advantages

- Customer can reuse the routers that are in place at the remote sites.
- Customer is familiar with the technology.
- Customer will not have to pay for overlapping networks. Upgrades to the existing frame network should make billing simple.

Frame Relay Disadvantages

- Cost for the overall network increases dramatically when trying to achieve full T1 Port and CIR rates for each site.
- Additional equipment must be purchased for the host site to handle the additional bandwidth coming in.
- There is a single point of failure at the host. If primary access into host site goes down, all sites lose connectivity.

MPLS Advantages

- Customer will likely be able to reuse their existing routers.
- MPLS will allow any site to communicate directly with any other site.

MPLS Disadvantages

- MPLS port and loop rates were higher than expected. Had the network been more geographically diverse, this factor would have been less noticeable, but for sites that were all close together, and yet some distance from the closest POP, the pricing was out of line.
- The host site required considerably greater bandwidth than a T1 in order to guarantee that the host would not be over-utilized. This again drove cost up.
- MPLS requires greater IT overhead to manage all of the routers at each site. The customer was looking to decrease the IT burden, not increase it. This obstacle can be easily dealt with by offering a fully managed network solution.

Internet VPN Advantages

- The pricing to deliver dedicated Internet T1s to each site was competitive.

Internet VPN Disadvantages

- Security concerns. While proper configuration with firewalls, routers and encryption might meet security requirements, this requires tremendous IT overhead.
- Potential speed issues because traffic would run over the Internet.

Private Line Advantages

- Full T1 pipes from host to each remote provide the bandwidth the customer needs without any bottleneck at the host.
- A pricing promotion in that geographic area made the network pricing very attractive.
- No single point of failure.
- Excellent Service Level Agreements (SLAs) are available for private line.

Private Line Disadvantages

- Routers with CSU/DSUs are still required at each site. To decrease IT overhead,

the network needs to be in a fully managed environment, adding to the monthly costs.

Ethernet Private Line Advantages

- Full T1 pipes from host to each remote provide the bandwidth the customer needs without any bottleneck at the host.
- A pricing promotion in that geographic area made the network pricing very attractive.
- No single point of failure.
- No need for routers at all remote sites, which allows the customer to reduce IT overhead.
- Ethernet conversion boxes at each site allow American Telesis another means to test and manage the network with very minimal monthly costs in the network.
- Ethernet allowed customer to use a simple IP scheme so that all sites can easily communicate with all of the other sites without additional burden at the host site.
- Excellent Service Level Agreements (SLAs) are available for private line.

When we compared all the options, Ethernet Private Line gave the customer the most bang for their buck with the fewest concerns. The new Ethernet Private Line network provided 6 times the bandwidth (256Kb*6 = 1,544Kb) into each site with excellent SLAs, no single point of failure and for the same price they were paying for their existing frame relay network. The one concern the customer had, in moving from their existing frame network to a new Ethernet Private Line network from American Telesis, was the potential for duplicate billing on two networks while the transition was completed. American Telesis was able to work with the customer to mitigate this concern.

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