

# **I love my RAS because...**

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*by Norman Ireland*

Recent studies which suggest that virtual private networks (VPNs) will soon replace remote access server (RAS) systems typically arrive at their conclusions by examining only one side of the network: the enterprise customer's data center. The studies fail to describe the true implementation of VPNs—or of RAS systems for that matter—and miss the mark when advising users. Users want the facts, not "the truth." Which Came First, the RAS or the ISP? Every telecommuter, mobile user, and customer wanting to temporarily access the Internet or a corporate intranet does so through a connection between a dial-up analog modem or ISDN terminal adapter and a RAS. RAS systems are the foundation of the Internet service provider (ISP) business. ISPs like AOL, PSINet, and UUNet build robust RAS systems to ensure that customers can dial-up to the Internet when a dedicated connection is unavailable or unaffordable.

## **RAS Systems Enable VPN Services**

Given our basic affinity for switched services, the technology step from RAS to VPN is a likely one. Both systems use RADIUS authentication to ensure basic connectivity. VPN goes a step further by encrypting the traffic through a "tunnel." This "virtual circuit"-like property is akin to running Frame Relay (FR) over last-mile leased lines. Neither Frame Relay nor leased lines have shrunk in market share. In fact, as wildly successful as Frame Relay has been, leased lines still command the bulk of carrier data revenues, garnering more than SMDS (switched multimegabit data service), Frame Relay, and ATM (asynchronous transfer mode) combined. Frame Relay and leased lines revenues have grown as the purchase of the product (Frame Relay) fueled the increased use of the underlying infrastructure (leased lines).

## **VPN: A Technology or a Product?**

In the early days of fast packet services, there were many seminars and tutorials presented that pitted SMDS against FDDI (fiber distributed data interface), then SMDS against Frame Relay, and eventually, Frame Relay against ATM. Didn't we learn our lesson from the confusion in the early half of the 1990s? The fact is, that SMDS, Frame Relay, ATM, and, for that matter, IP, all share a common partner—the broadband network infrastructure. It is on this infrastructure that all virtual-circuit products reside. An IP VPN is

simply another VC-based product. RAS systems allow dial-up users to establish VPNs across the broadband network infrastructure. The fact is that RAS is the technology enabler that is essential for the successful delivery of the end product. The end product is VPN services. VPN's similarity to Frame Relay makes one wonder: Since FR technology did not receive its due until service providers offered it as a product, will VPNs require the same investment ? We believe so. VPN is not a technology; its combined attributes provide it the potential to become the next significant product in the communications industry. What customer would pass up a product, which delivers:

- Global availability;
- Single number portability;
- Secure access from any service provider;
- Point-to-multipoint connections;
- Prioritized virtual connections; and
- a QoS mechanism.

VPNs are an even more compelling product when we recognize that they are delivered across the largest, low-cost, redundant network infrastructure—the global Internet. Certainly any carrier or ISP who is able to offer all these value-added services in a VPN product would be admired. But the carrier who delivers the product over both leased line (T1 or FR) and dial-up (RAS) access will win the enterprise's respect and its business. RAS systems are here to stay because they provide the infrastructure for a ubiquitous VPN product.

### **What Does the Future Hold?**

I love my RAS because . . . it allows me to connect to VPNs.

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