Virtual-Private Networks (Vpns) Encyclopedia Article

Virtual-Private Networks (Vpns)

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Virtual-Private Networks (Vpns)

Virtual-private networks or VPNs are public networks that function like private networks. VPNs operate by drawing on software-defined intelligence embedded at strategic points in a carrier network (such as those provided by AT&T, MCI Worldcom, or Sprint) forming part of the backbone of the **Internet**. In other words, VPNs use publicly shared facilities but allow for the creation of privacy over them. VPNs are usually Internet Protocol (IP)-based networks (i.e., using portions of the public Internet) that use encryption and tunnelling to achieve privacy of **data**. VPNs can also achieve privacy through a variety of intelligent mechanisms such as flexible routing of calls to different locations when nodes experience peak-hour traffic congestion, screening telephone numbers by location or by time of day, and automatically identifying telephone numbers. VPNs are becoming increasingly attractive to corporations, since they allow for private corporate data to be transmitted privately, while offering the cost effectiveness, network maintenance, network management, and diverse voice and data services that a large carrier network can provide.

Three kinds of VPNs currently exist: Remote Access VPNs, through which travelling corporate users can securely connect with their own corporate network; **Intranet** VPNs, where different branch offices can securely network with each other and connect to their corporate network; and Extranet VPNs, which extend an enterprise's corporate network to include partners, suppliers, and customers. VPNs are virtual because the network is dynamic, with connections set up and dissolved logically, as needed, over the physical infrastructure of the carrier network or Internet. There are no permanent, hard-wired, end-to-end connections in a VPN, as in a **Local-Area Network** (**LAN**) or **Wide-Area Network** (WAN). Instead, connections between corporate sites using a VPN are created and dissolved as needed, allowing bandwidth and other network resources to be utilized by other network users, when not in use by the corporation.