Ascend

APPLICATION NOTE

Pipeline 220

Covering Router and "Toaster" Modes

Enterprise Access Business Unit

ASCEND

Table of Contents

1. Introduction 1

2. Pipeline 220 Application in Standard Router Mode 1

3. Pipeline 220 in "Toaster" Mode 2

4. Higher Density Applications 4

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1. Introduction

With its high-speed CPU, dual Ethernet segment support, integrated WAN port, and broad array of software features, the Pipeline® 220 is a powerful but flexible access router that can operate in a large variety of network topologies. The purpose of this application note is to briefly describe the key applications that are supported by the Pipeline 220, to show exactly how the Pipeline 220 fits into different network environments, and to identify the benefits of using the Pipeline 220 in these roles.

2. Pipeline 220 Application in Standard Router Mode

Incorporated into the standard product, the Pipeline 220 now has an integrated stateful inspection SecureConnect™ Firewall and complete support for 40-bit IPSec encryption for virtual private networks (VPNs). The Pipeline 220 is the cost-effective and secure solution for mid-size companies and branch offices that want secure Internet access and VPN capabilities, but don't want the high cost and additional network management burden of third-party firewalls and VPN equipment.

The Pipeline 220 incorporates all the features that a company needs for secure VPNs and Internet networking in a single access router. The SecureConnect Firewall software and dual Ethernet connectivity on the Pipeline 220 provides easy access from the Internet to a local Web server, while providing a high-security firewall for your primary LAN to keep hackers out. At the same time the VPN support on the Pipeline 220 allows cost-effective encrypted tunnels over the to Internet for remote access by remote workers, and for interconnecting remote offices.

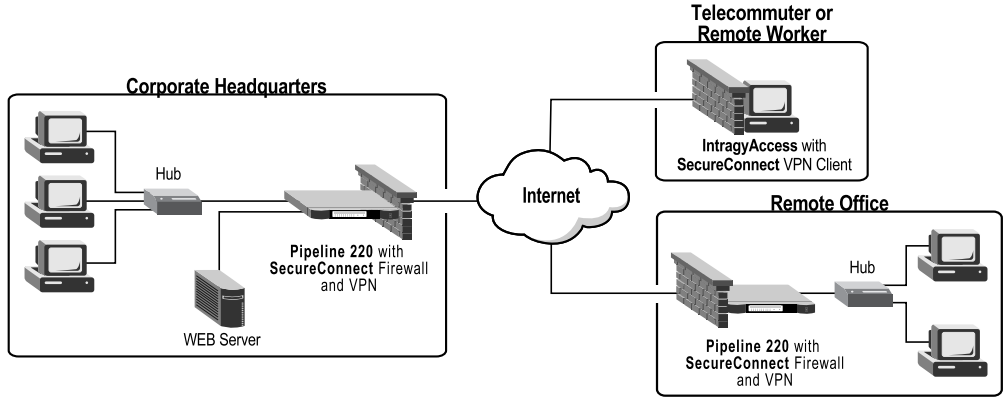


Figure 1 – Secure VPN Corporate Network

In standard router mode, the Pipeline 220 provides:

- T1-speed access to the Internet or to a remote network
- Cost-effective integration of all routing, firewall, and VPN software that the typical business needs
- Simple integrated configuration of the routing, firewall, and VPN features
- Minimal network management – No additional hardware to support firewalls and VPNs

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3. Pipeline 220 in “Toaster” Mode

In addition to providing standard Internet access, the Pipeline 220 can provide cost-effective firewall and VPN support in networks that already have access routers. With dual Ethernet LAN ports, the Pipeline 220 can be dropped into any existing network (behind the access router) and its high-speed CPU can be dedicated entirely to the task of providing firewall and VPN services. In small- to mid-size companies, the Pipeline 220 can be used for VPN tunnel initiation and termination in each of the major offices.

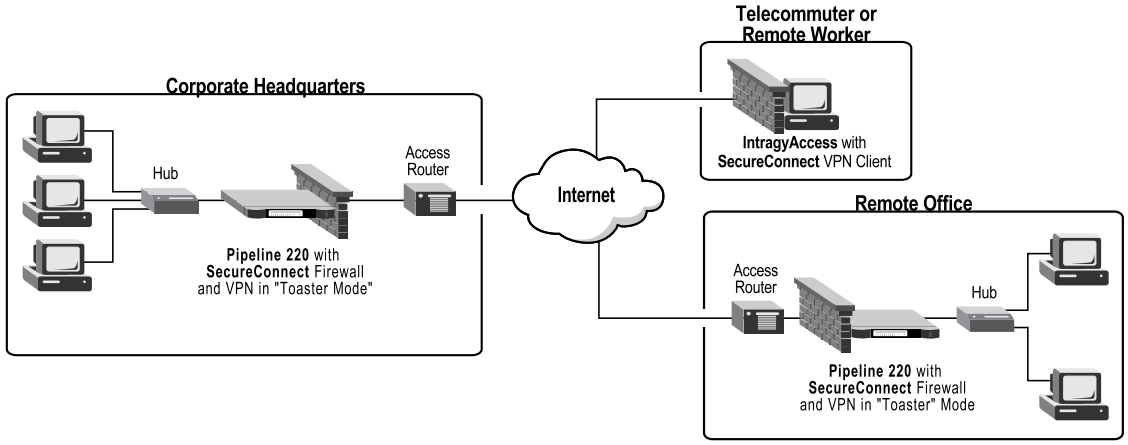


Figure 2 – Mid-size multi-office corporate VPN/firewall application

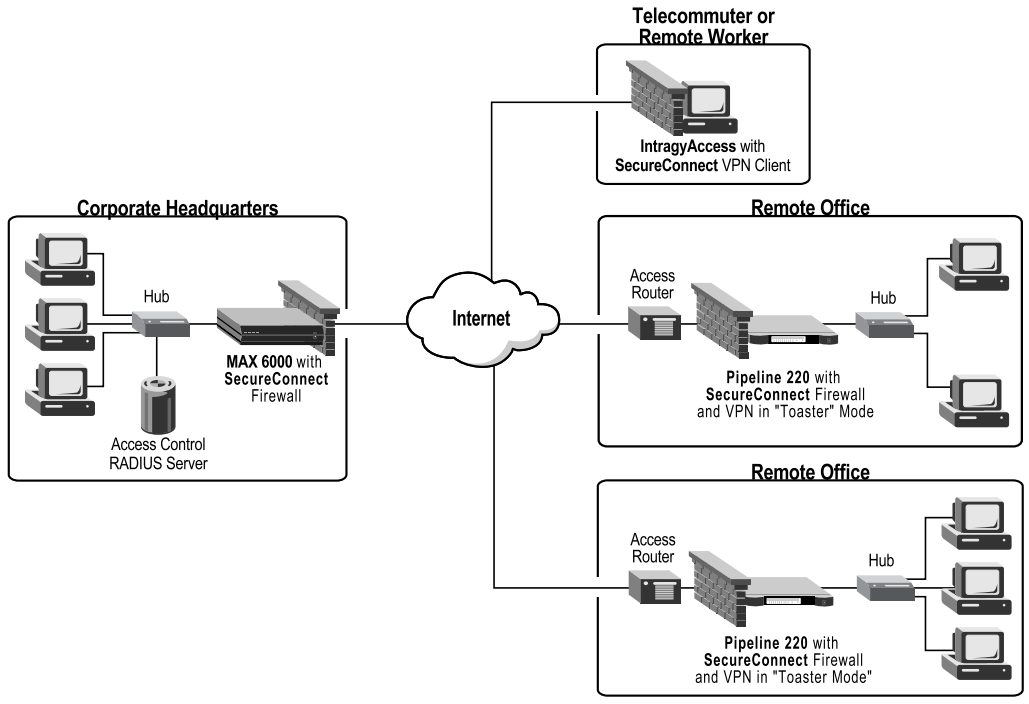


Figure 3 – Large multi-office corporate VPN/firewall application

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The benefits of using the Pipeline 220 in “Toaster Mode” are:

- **Troublefree integration with existing network –** Simply configure the Pipeline 220 features you want and then plug it into the LAN using the two available Ethernet ports.
- **Cost-effective Firewall/VPN –** With its integrated featureset, the Pipeline 220 can be just as cost-effective as a firewall and VPN server as if it were dedicated to Internet access, VPN, firewall, or any combination of the three.
- **Higher performance –** The CPU processing power is entirely dedicated to providing firewall and VPN services, thereby allowing higher performance and throughput.
- **Reliability –** Unlike many PC or server-based firewalls, the Pipeline 220 has no moving parts and can reliably provide your network the security it needs over the long term.
- **Backup WAN routing –** Should the main access router ever fail, you can quickly and easily move the WAN access link to the Pipeline 220 and resume network connectivity.
- **Simple installation and management –** With integrated SecureConnect Firewall and VPN capability, you only need to configure and manage a single device, saving valuable time during initial install as well as over its operational life.

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4. Higher Density Applications

In addition to scaling up with functionality as your network needs grow to include firewall and VPN capabilities, The Pipeline 220 can be combined in flexible configurations that meet new networking needs as your company grows. Companies can start with a single Pipeline 220 to service the complete access routing, firewall, and VPN needs of small- to mid-size company, and then additional Pipelines can be added as bandwidth and usage requirements dictate.

In the example below, a mid-sized company has started with a single Pipeline 220 at corporate headquarters to service the connectivity needs of the corporate headquarters as well as a remote office connected via a VPN. As the corporate headquarters internetworking needs grew they added a second Pipeline 220 to terminate another T1 circuit, and dedicated a single Pipeline 220 in “Toaster Mode” behind the two access routers to provide the best possible performance for firewall and VPN applications. In this way the company has cost-effectively met the demands of workers using VPN-based Internet remote access while travelling.

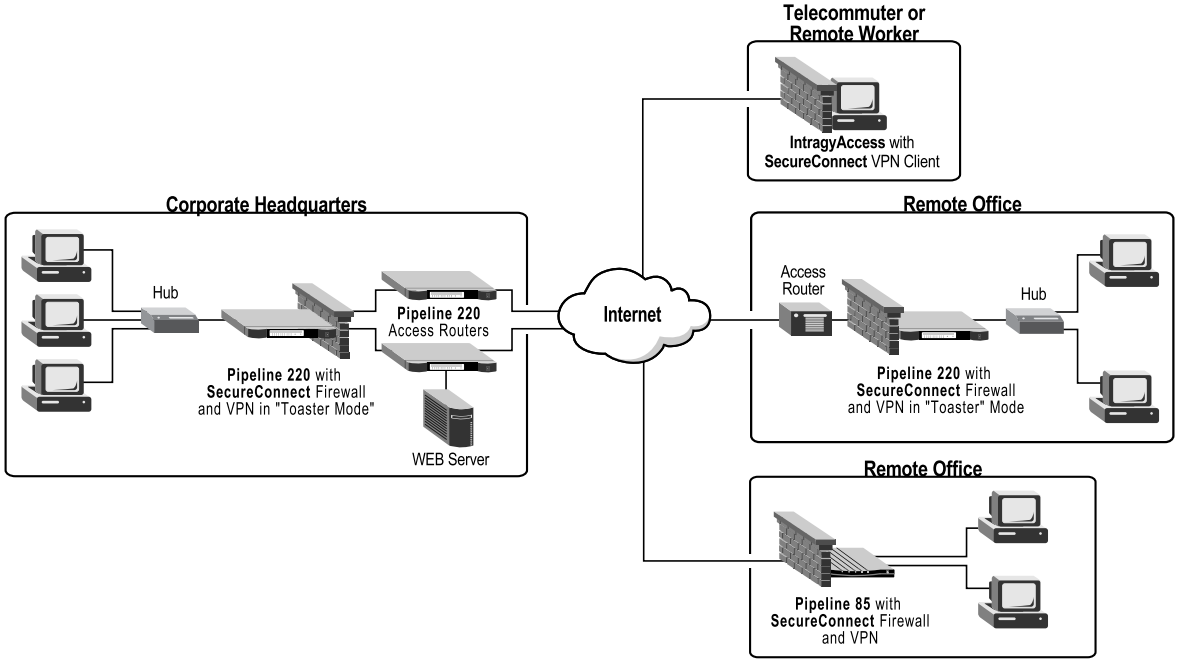


Figure 4 – Pipeline 220 applications in a growing company

Benefits of the Pipeline 220 in this application include:

- **Simple installation –** With integrated firewall and VPN capability, you only need to configure and manage a single device, saving valuable time during initial install as well as over its operational life.
- **Lower support burden –** Minimized network management task because there is additional hardware to support for firewall and VPNs.
- **Flexibility –** Flexible placement and installation options for all Pipeline 220 products.
- **Backup WAN routing –** Should the main access router ever fail, you can quickly and easily move the WAN access link to the Pipeline 220 and resume network connectivity.

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