IBM eNetwork VPN Solutions
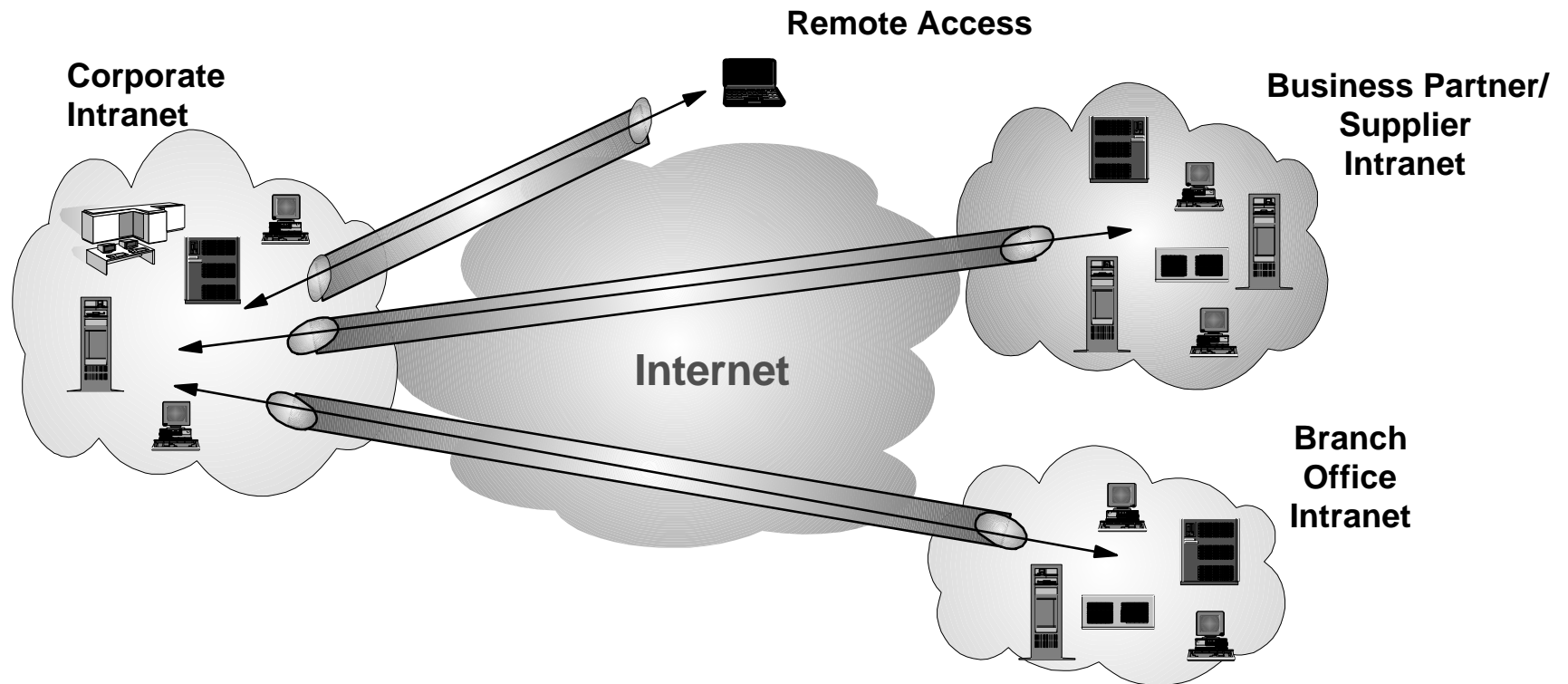
Extend the Reach of Your Network

Agenda

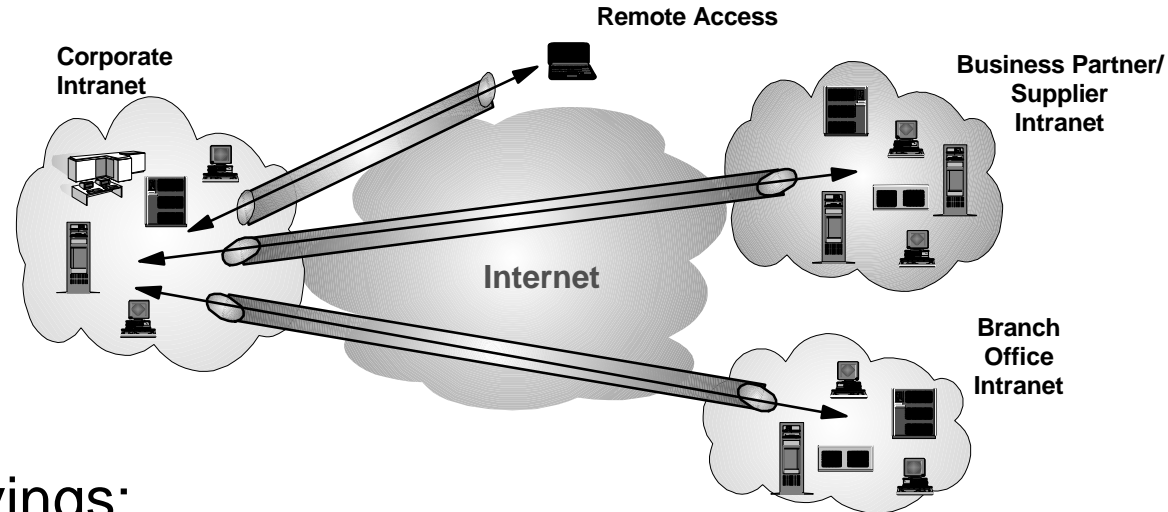➤ Description and Value of a VPN

➤ Internet VPN Technology

➤ IBM's VPN Solutions and Future Enhancements

➤ Summary

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What is a VPN?

Remote Access

Corporate Intranet

Business Partner/ Supplier Intranet

Internet

Branch Office Intranet

- *A VPN (Virtual Private Network) is an extension of an enterprise's private intranet, across a public network (such as the Internet), through the creation of a secure, authenticated and encrypted "tunnel"*

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VPN Customer Value

Remote Access

Corporate Intranet

Business Partner/ Supplier Intranet

Internet

Branch Office Intranet

➤ Cost Savings:
- Cost effective access to the Internet via a local call to an ISP, versus expensive leased lines, long-distance calls and toll-free telephone numbers
- Estimated 20%-47% savings in WAN costs and 60%-80% savings in remote access dial-up costs, per Infonetics Research, Inc

➤ Easy, secure access to enterprise networks and resources:
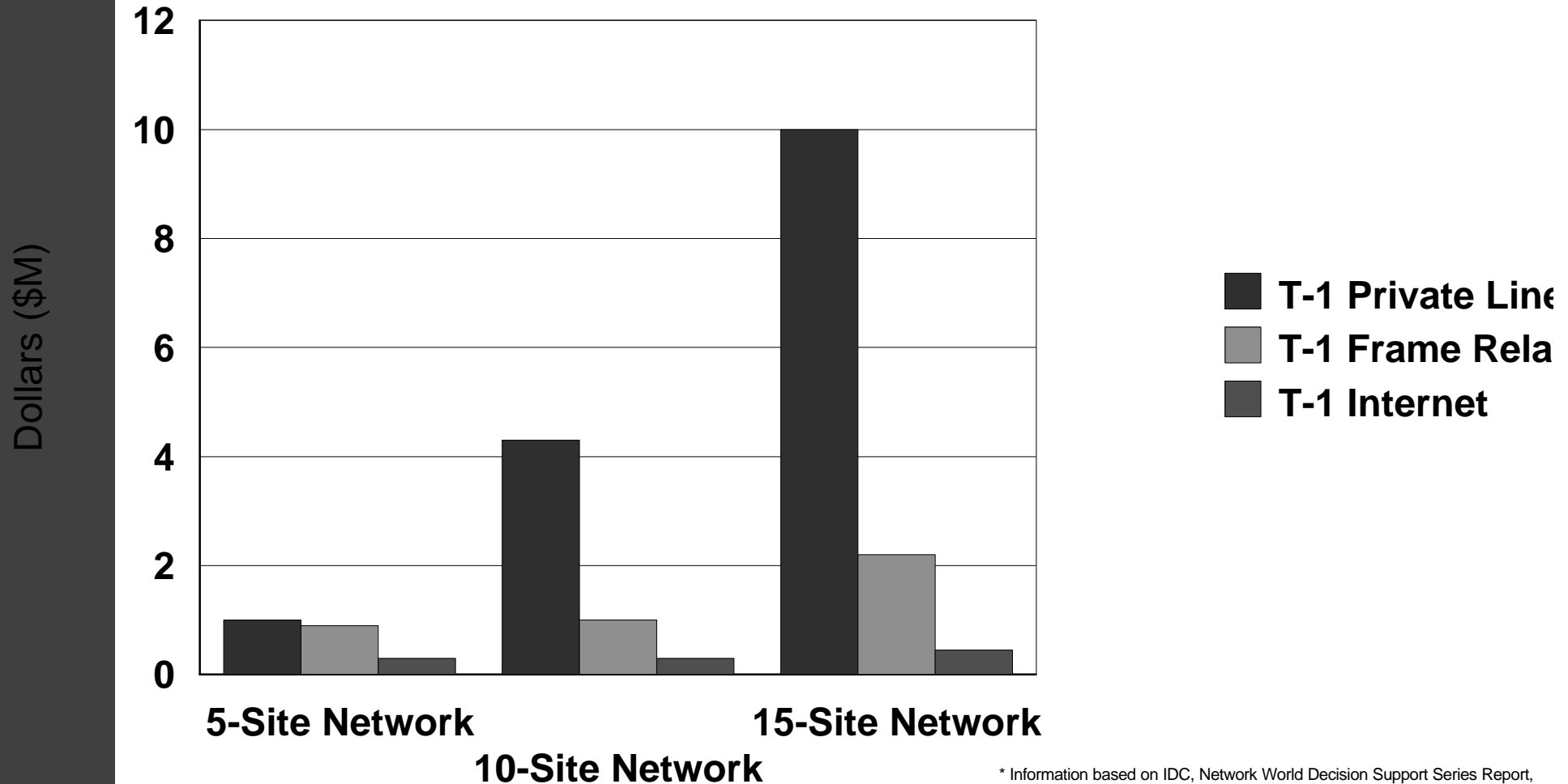- Remote users and remote locations can access required information whenever they need to and from wherever they are

➤ Worldwide Access:
- Internet access is available worldwide, where other forms of connectivity may be either not available or may be more expensive

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*The Dollars and Cents of it ***

Using the Internet as your WAN Backbone has significant price advantages.
Take a look at how the annual costs of private line, frame relay and the Internet
compare.

Dollars ($M)

12
10
8
6
4
2
0

5-Site Network

10-Site Network

15-Site Network

- T-1 Private Line
- T-1 Frame Rela
- T-1 Internet

* Information based on IDC, Network World Decision Support Series Report,
Framingham, Mass as printed in Network World on 9/28/98

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Internet VPN Technology

➤ **Point-to-Point Tunneling Protocol (PPTP)**
- Microsoft's Proprietary Tunneling Technology

➤ **Layer 2 Tunneling Protocol (L2TP)**
- Open, Standards-Based Technology

➤ **Layer 2 Forwarding (L2F)**
- Cisco's Proprietary Tunneling Technology

> *All of the Above Technologies can transport Multiprotocol Data over the Internet, however they all lack inherent Authentication and Encryption.*

➤ **IP Security Protocol (IPSec)**
- Open, Standards-Based, Network Layer Security Technology
- Enables Authentication, Integrity Checking and Encryption
- Can provide automated tunnel set-up, automated secure distribution and automated key refresh using Internet Key Exchange protocol (IKE; previously called ISAKMP/Oakley)
- Is the IETF-chosen security framework for both IPv4 and IPv6 Environments
- Is recommended as the security for PPTP, L2F, and L2TP tunnels

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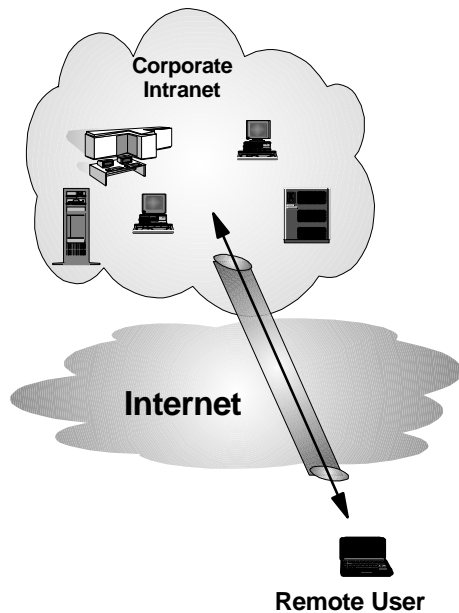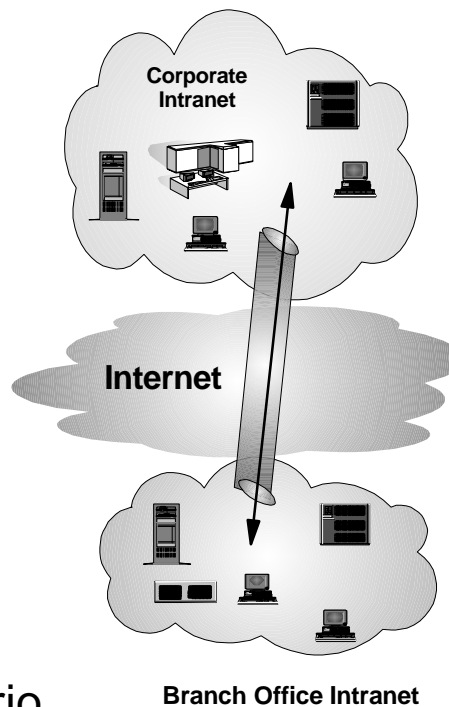# IBM eNetwork VPN Solutions

Available Today

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VPN Business Opportunities

Remote Access

Corporate
Intranet

Internet

Remote User

Branch Office Connection

Corporate
Intranet

Internet

Branch Office Intranet

Business Partner/Supplier Network

Corporate
Intranet

Internet

Business Partner/Supplier Intranets
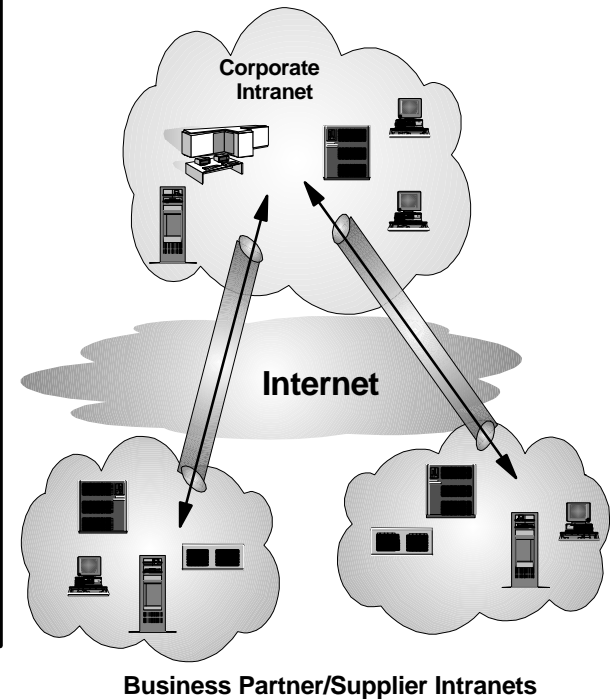
➤ Remote Access Scenario
- Problems: High administrative workload cost, expensive 800 or long distance costs
- Solutions: VPNs exploit world-wide ISP reach and lower connectivity and administrative costs

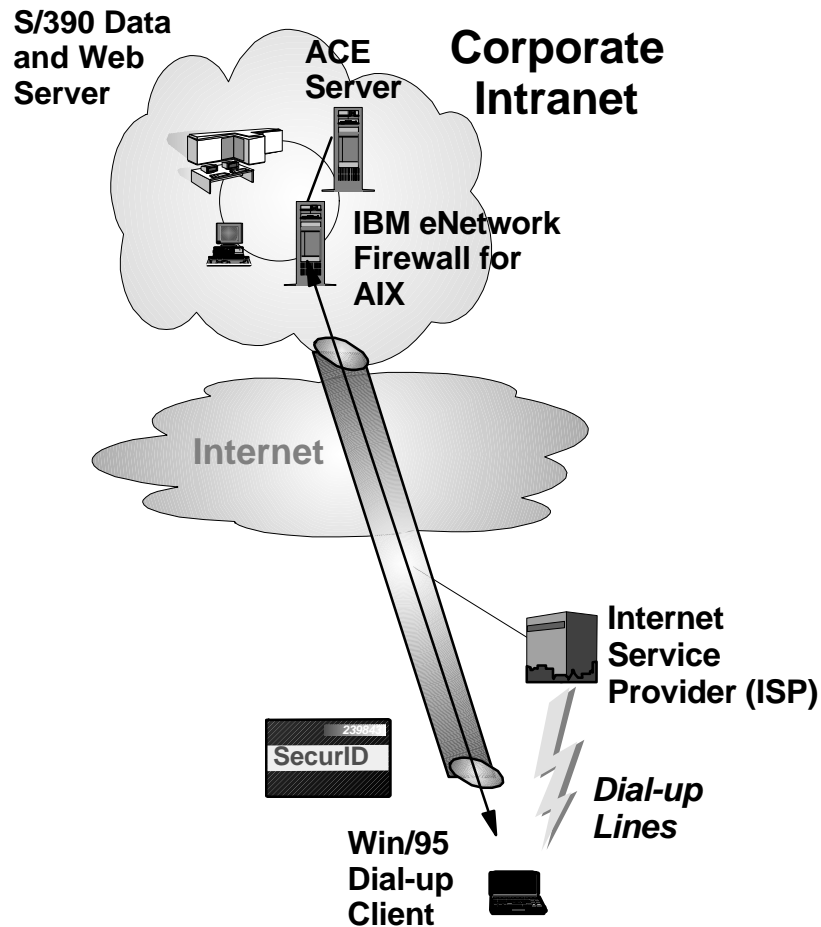➤ Branch Office Connection Scenario
- Problems: Expensive Leased Line connections or part-time dial connections to home office
- Solutions: VPNs provide 24-hour ease-of-use connectivity via inexpensive Internet links

➤ Business Partner/Supplier Network Scenario
- Problems: Set-up/operational cost prohibitively high for smaller business partners; geographic limitations
- Solutions: VPNs provide global, secure, cost-effective, end-to-end inter-company communication via Internet

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IBM Remote Access Solutions

S/390 Data and Web Server

ACE Server

Corporate Intranet

IBM eNetwork Firewall for AIX

Internet

Internet Service Provider (ISP)

SecurID

2398

Dial-up Lines

Win/95 Dial-up Client

Customer Example

At a medical company in Florida, medical sales reps check on customer orders, record sales transactions, and check email from any location.
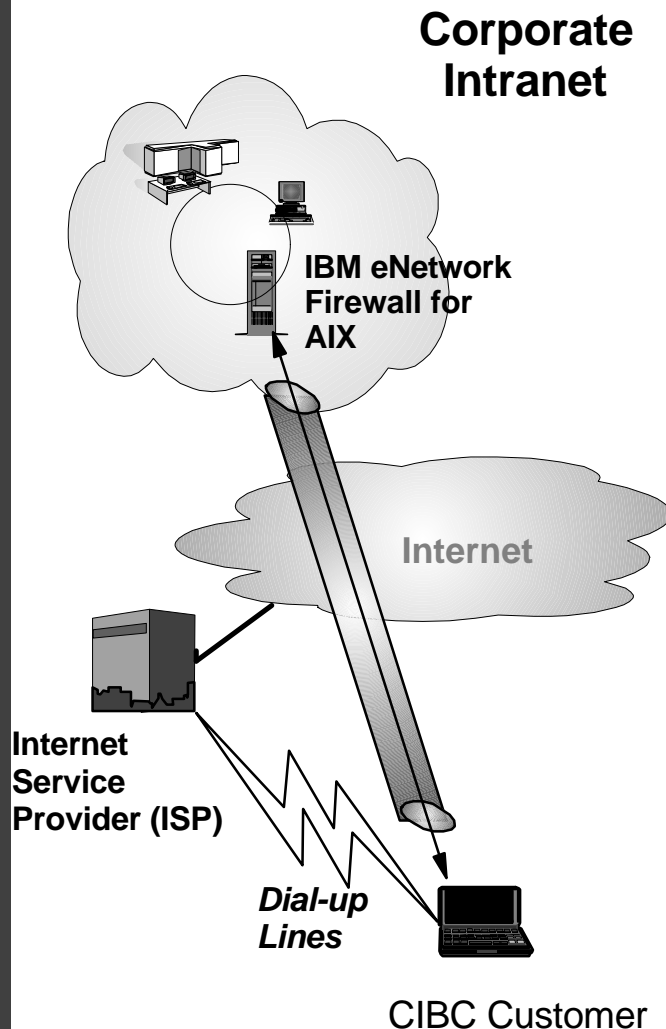
They use a Remote Access VPN over the Internet, with Win/95 Dial-up clients, which are sold as part of the AIX Firewall.

This solution provide sales reps secure remote access to the information they need to do their job effectively.

Remote users can securely access applications and data in the corporate intranet.

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IBM Remote Access Solutions

Corporate Intranet

IBM eNetwork Firewall for AIX

Internet

Internet Service Provider (ISP)

Dial-up Lines

CIBC Customer

Canadian Imperial Bank of Commerce
On-line Banking Success

CIBC offers online PC Banking for their customers. PC Banking lets customers use their home computers and a dial or Internet connection to securely bank online. They can:
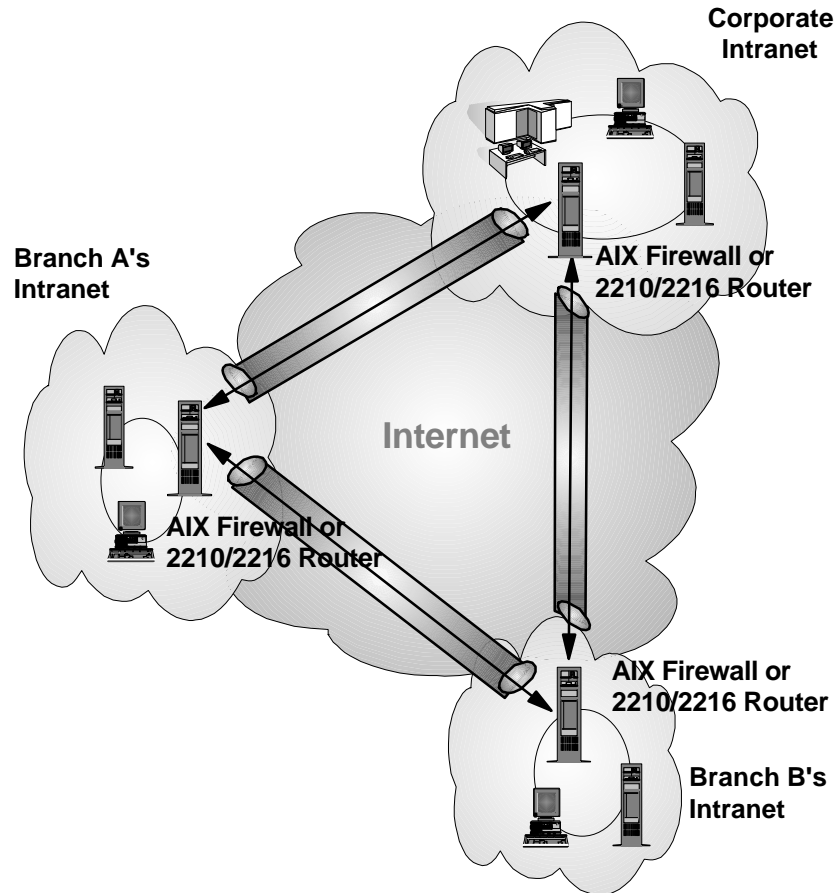
- Check account balances
- Review recent transactions
- Pay bills
- Transfer money between accounts
- Buy CIBC Travel Medical Insurance
- Buy/sell stocks and mutual funds

A year ago, CIBC partnered with IBM for the overall e-business solution, and went from zero to 20,000 online customers in less than a year. They use the IBM eNetwork Firewall for AIX as part of a complete and scalable IBM e-business solution.

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IBM Branch Office Connection Solutions

Corporate Intranet

Branch A's Intranet

AIX Firewall or 2210/2216 Router

Internet

AIX Firewall or 2210/2216 Router

AIX Firewall or 2210/2216 Router
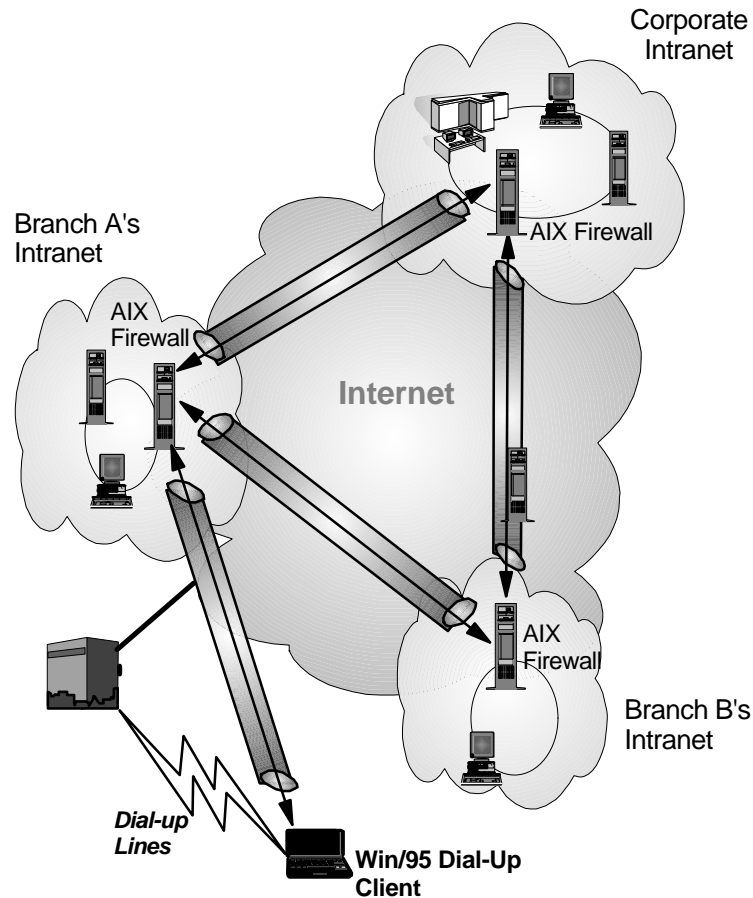
Branch B's Intranet

Customer Example

An airline company established a VPN between 3 sites (New York, Miami, and Colorado), allowing airline employees to exchange files, view flight schedules, and communicate financial information. They implemented this using an AIX Firewall in each of their locations.

Ability to securely and cost-effectively communicate amongst "trusted" geographically dispersed branches, over the Internet

eNetwork Software
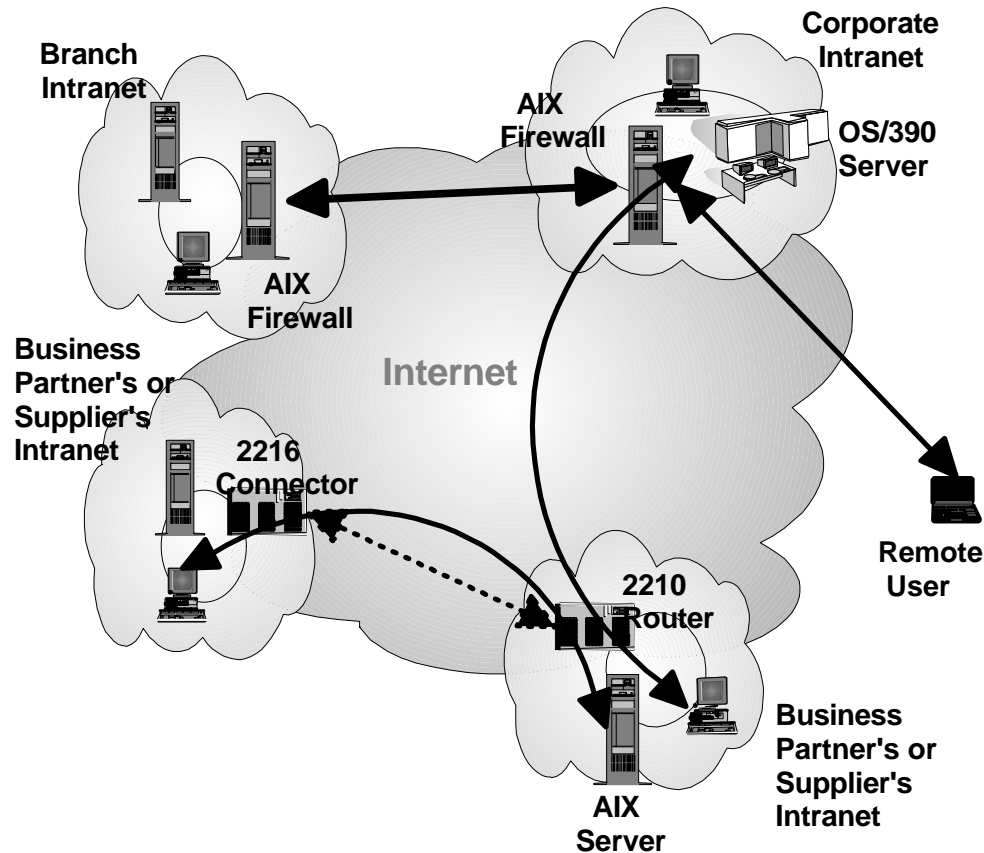
IBM Remote Access/Branch Office Solutions

Internet Operations Center (IOC)

IOC is a leading Internet technology company that provides a broad base of Internet products and services to a wide variety of corporate customers. To meet these needs, IOC uses the IBM eNetwork Firewall for AIX. They will either train the customers to maintai the Firewall or depending on the customer, w continue monitoring the implementation in case of emergency situations.

Today, IOC implements Firewall-to-Firewall Branch Office Solutions and Client-to-Firewal Remote Access Solutions. One of the reasons IOC chose the IBM Firewall is that IBM can support its firewall products and VPN technology on a worldwide basis much more effectively than any other vendor.

IOC leverages IBM Firewall to keep its customers securely connected

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Supplier Network Solutions

Branch Intranet

Corporate Intranet

AIX Firewall

OS/390 Server

AIX Firewall

Business Partner's or Supplier's Intranet

Internet

2216 Connector

Remote User

2210 Router

Business Partner's or Supplier's Intranet

AIX Server

Supplier Network Implementation

Automotive Exchange Initiative (ANX) links their automotive trading partners using Virtual Private Networks (VPNs).

Using VPN connections, more than 10,000 automotive businesses can exchange critical information securely and cost-effectively. The automotive industry is estimating this to be an industrywide savings of $1 billion a year.
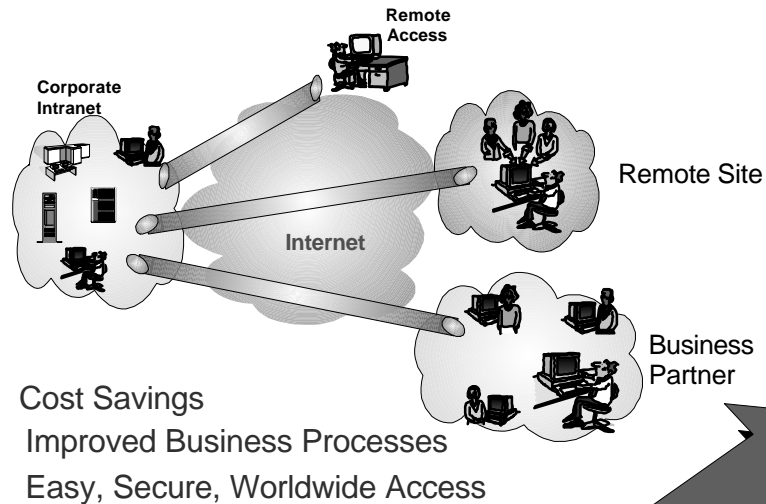
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IBM eNetwork VPN Solutions

Future Enhancements

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IBM eNetwork VPN Directions

Corporate Intranet

Remote Access

Internet

Remote Site

Business Partner

Cost Savings

Improved Business Processes

Easy, Secure, Worldwide Access

Today

➤ VPN Products & Services:
- Firewall (AIX, OS/400)
- Clients with User Authentication via SecurID tokens (Win/95, AIX, OS/2)
- Servers including Firewall Functionality: OS/390, AIX (also with IKE)
- 2210/2212/2216 Routers
- Consulting, Design and Implementation Services

Next Steps

➤ Expanded coverage of VPN offerings:
- Key and Certificate Management
  - ✓ NT & AIX Firewalls; OS/400, OS/390 and AIX Servers; Win/95, Win/98, and Win/NT Clients 2210, 2212, 2216 and 3746 Routers/Ctlrs

➤ Centralized Management
- VPN Policy Configuration & Administration
- Integration into Overall IBM Systems and Network Management Offerings

➤ Open, Standards-Based Quality of Service Enhancements
- Bandwidth Management, Priority Queueing

➤ Expanded Services Offerings:
- Managed VPN Extranet Service Offerings
- Extended Consulting, Design, and Implementation Services

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IBM eNetwork Firewall

IBM's **eNetwork Firewall** is your first line
of defense for Internet Security

- ✓ **Three Firewalls for the Price of One**

    Packet Filtering and Network Address Translation

    Proxies (HTTP, FTP, Telnet, TN3270, WAIS, Gopher, DNS, SafeMail)

    Circuit Level Proxy (SOCKS Version 5 on NT)
- ✓ **Easy to Use Java GUI**
- ✓ **Enterprise Firewall Management**

    Centeralized, Remote Configuration
- ✓ **Virtual Private Network (IPSEC) (AIX)**

    Firewall to Firewall (using IPSec or IBM Tunnel with Key Refresh)

    Firewall to Client   **(FREE** Win/95 IPSec Client)
- ✓ **User Authentication using SecurID card and tokens**
- ✓ **Hardened, Secured Platform**
- ✓ **Network Security Auditing Tool**
- ✓ **Log Monitoring and Alerts**
- ✓ **PLUS - Solutions Partners**

eNetwork Software

IBM Router Products

– IPSec combined with:

   ★ Data Link Switching for SNA Traffic

   ★ Enterprise Extender for Subarea APPN/HPR Traffic

   ★ Layer 2 Tunneling Protocol for Bridging LAN (Netbios, IPX, etc.) Traffic

   ★ Traditional IP Traffic

– Supported over a Multitude of Links Types: FR, PPP, ISDN, X.25, ATM, EN, FastEN, TR, FDDI

Value Proposition:

IBM routers supply the industry's best multiprotocol support for secure connectivity over the internet.

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eNetwork Software

CS OS/390 VPN Support

- IPSec (Msg source authentication & integrity, confidentiality support in a variety of configurations)
  - IPSec delivery:
    - In OS/390 V2R4 shipped as part of Toolkit (Firewall Technologies) based on RFC1825-1829
    - In OS/390 V2R5 integrated into CS OS/390
    - In OS/390 V2R6 transport mode added
    - In OS/390 V2R7 upgraded to 1998-RFC draft level

  - Configurations supported
    - S/390 as a gateway (separate CEC or LPAR) - Tunnel mode
    - Host-to-Host for end-to-end protection - Tunnel mode or Transport mode

- IP Packet Filtering
  - Stack access control

- *Future Direction* - IKE support (Targetted for OS/390 V2R8)
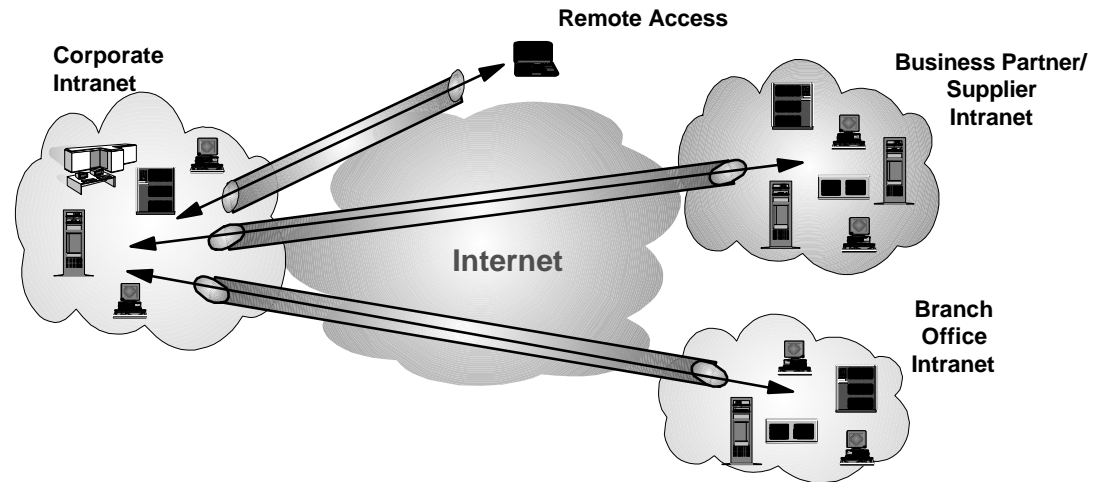 - Dynamic key distribution, session key refresh

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IBM eNetwork VPN
Key Strategic Messages and Differentiators

✓ **Comprehensive, "One-Stop Shopping" VPN Solutions**

- *Widest Range of scalable, VPN-enabled products (Firewalls, Servers, Clients, Routers/Controllers) and services (Consulting, Maintenance, Installation, and ISP Services) in the industry.*

- *Ability to make VPN technology a part of overall IT Solution, instead of an island of functionality*

  - ➤ End-to-End VPNs for security across the Internet and within your intranets
    - Secure IPSec encrypted tunnels from the clients, through the Firewalls and/or Routers, to IBM Servers
    - Multiprotocol Support (via L2TP and/or Enterprise Extender)
  - ➤ IBM's World-Class Security Expertise
    - Committed to leadership/development of open, IETF-based technology
    - Interoperable with other vendors' standards compliant products
  - ➤ Centralized Management
    - VPN Policy-Based Configuration and Administration
    - Integration into overall IBM Systems and Network Management Offerings
  - ➤ Managed VPN Extranet Services Offerings through IGS

eNetwork Software

IBM eNetwork Virtual Private Networks

Remote Access

Corporate Intranet

Business Partner/ Supplier Intranet

Internet

Branch Office Intranet

IBM eNetwork VPNs...

...Extend the Reach of Your Network, Applications & Data

...Enable Secure e-business Communications

IBM Virtual Private Network Information:

eNetwork VPN Solutions: www.software.ibm.com/enetwork/technology/vpn

IBM Routers: www.networking.ibm.com
IBM Firewall: www.software.ibm.com/enetwork/firewall
IBM S/390: www.s390.ibm.com/marketing/g3263036.html
IBM AS400: www.as400.ibm.com/usa/TRENDS/html
AIX Server: www.rs6000.ibm.com/resource/features/1998/aixrite/choose_aix431.html
SecureWay: www.ibm.com/security

eNetwork Software