



# **MAX 2012 and 2024 Family WAN Access Switch**

# MAX 2012 and 2024

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# MAX 2012 and 2024

## Introduction

### ▲ Builds on Ascend's continued commitment to corporations/businesses

- Full functionality with low entry price
- Fixed configuration, easy-to-install

### ▲ Provides complete remote networking solution

- High-performance platform with Series56™ Digital Modems
- Bundled Remote Networking Software
- Integrated, dynamic firewall

### ▲ Scalable architecture protects investment

- Modular switch for analog and digital access
- Software upgradable architecture
- MAX stack for multi-chassis management

# MAX 2012 and 2024

## Product Overview

### ▲ **Fixed-configuration systems for T1/PRI networks**

- MAX 2012: one T1, one leased line T1 or V.35, one 12-port Series56 Digital Modems
- MAX 2024: one E1, one leased line T1 or V.35 , two 12-port Series56 Digital Modems

### ▲ **Utilizes Series56 Digital Modems**

- K56flex and V.34 support

### ▲ **Complete Ascend access feature set**

### ▲ **Unprecedented price point**

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## Product Overview - Ultimate Access Functionality

### ▲ Industry-leading security functionality

- Integrated Secure Access™ Firewall
- Extensive Virtual Private Network (VPN) support
- Ascend Access Control™ (extended RADIUS)

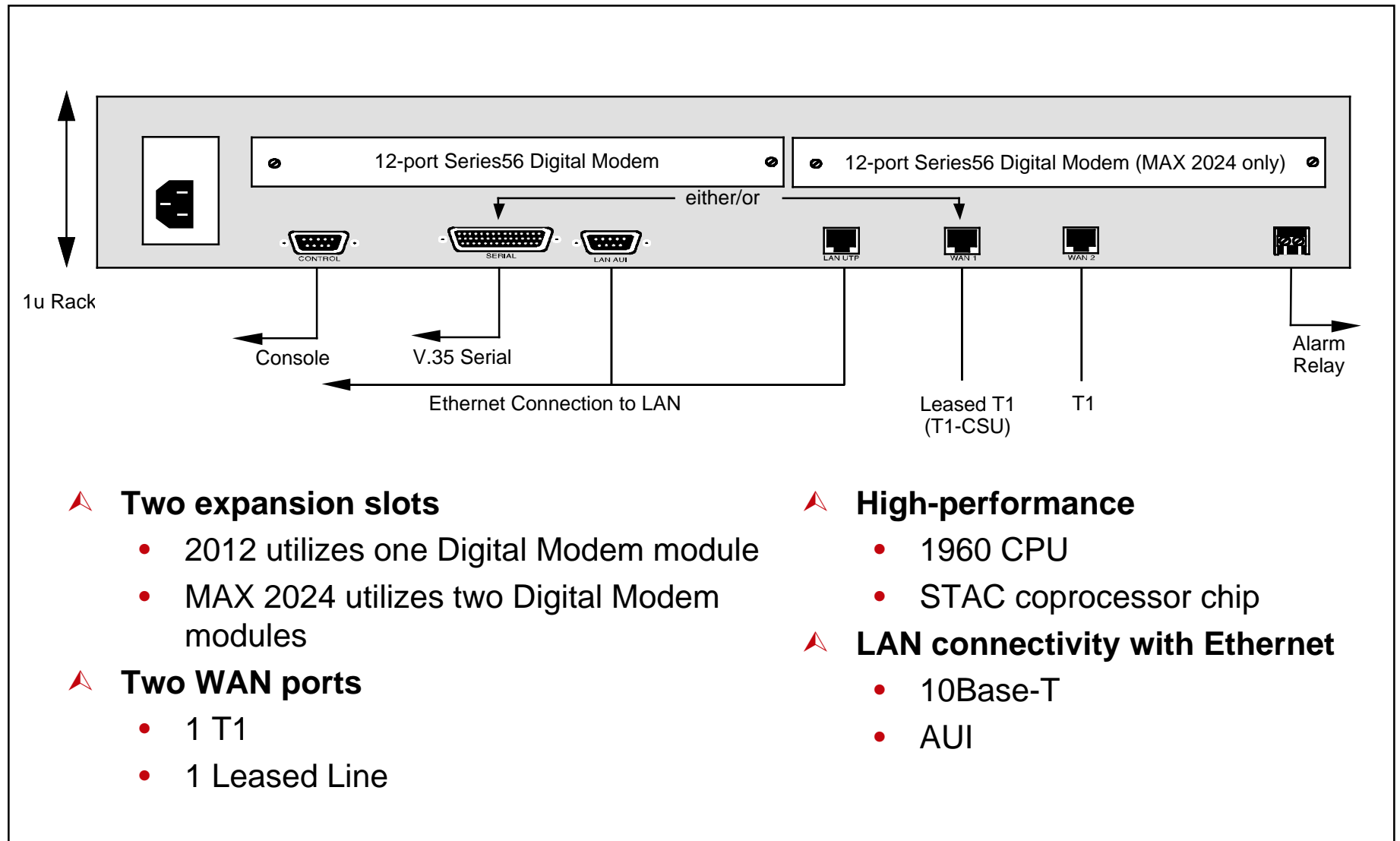
### ▲ Maximum network flexibility

- Remote Networking Software
  - MultiProtocol routing for IP, IPX and AppleTalk access
  - MAXLink Pro™ client software for dial access
  - MAXDial™ for LAN-based dial/fax out capabilities
- Scalability with MAX Stack
- Hybrid Access™ 2000, and ISDN PRI signaling

### ▲ Standard Java-based configurator

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## Architecture - Hardware Configuration



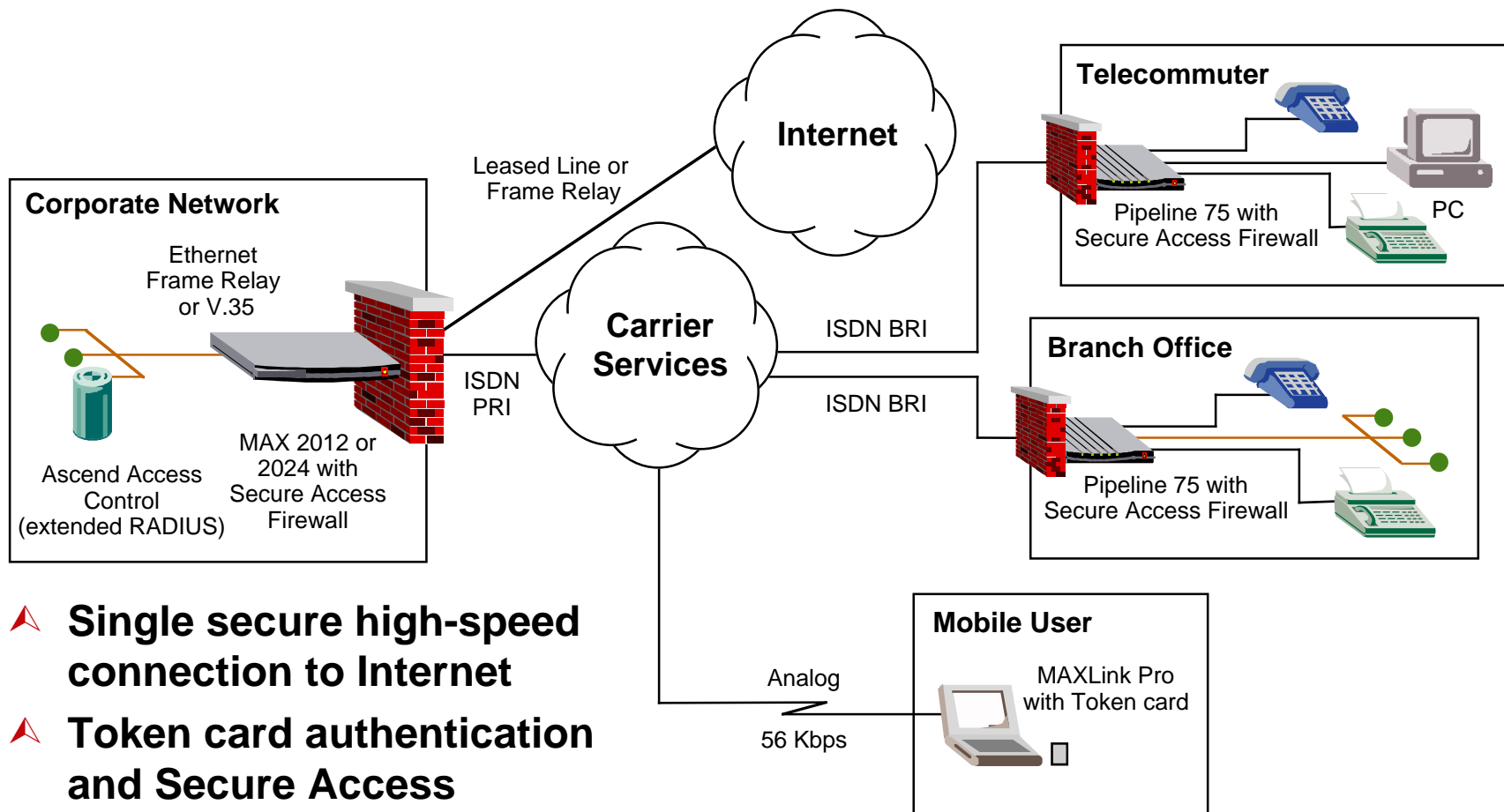
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## Secure Networking - Integrated Secure Access Firewall

- ▲ **Dynamic “stateful inspection” firewall**
- ▲ **Explicit permit and deny**
- ▲ **Rules adapt to type of traffic**
  - Network address, host names, UDP, TCP, ICMP, source/destination ports, send/receive direction, TCP session state, time, application port number, etc.
- ▲ **Eliminates need for proxy application gateway**
- ▲ **Secure Access Manager (configuration utility)**
- ▲ **Comprehensive audit trails for tracking**

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## Secure Networking - Corporate Internet Gateway



- ▲ **Single secure high-speed connection to Internet**
- ▲ **Token card authentication and Secure Access Firewall and Extended RADIUS capabilities**



# **MAX 2012 and 2024**

## **Secure Networking - Virtual Private Networking**

### **▲ Ascend Tunneling Management Protocol (ATMP)**

- GRE tunneling
- Mobile-IP
- IPX protocol spoofing

### **▲ Frame Relay Direct**

### **▲ Point-to-Point Tunneling Protocol (PPTP)**

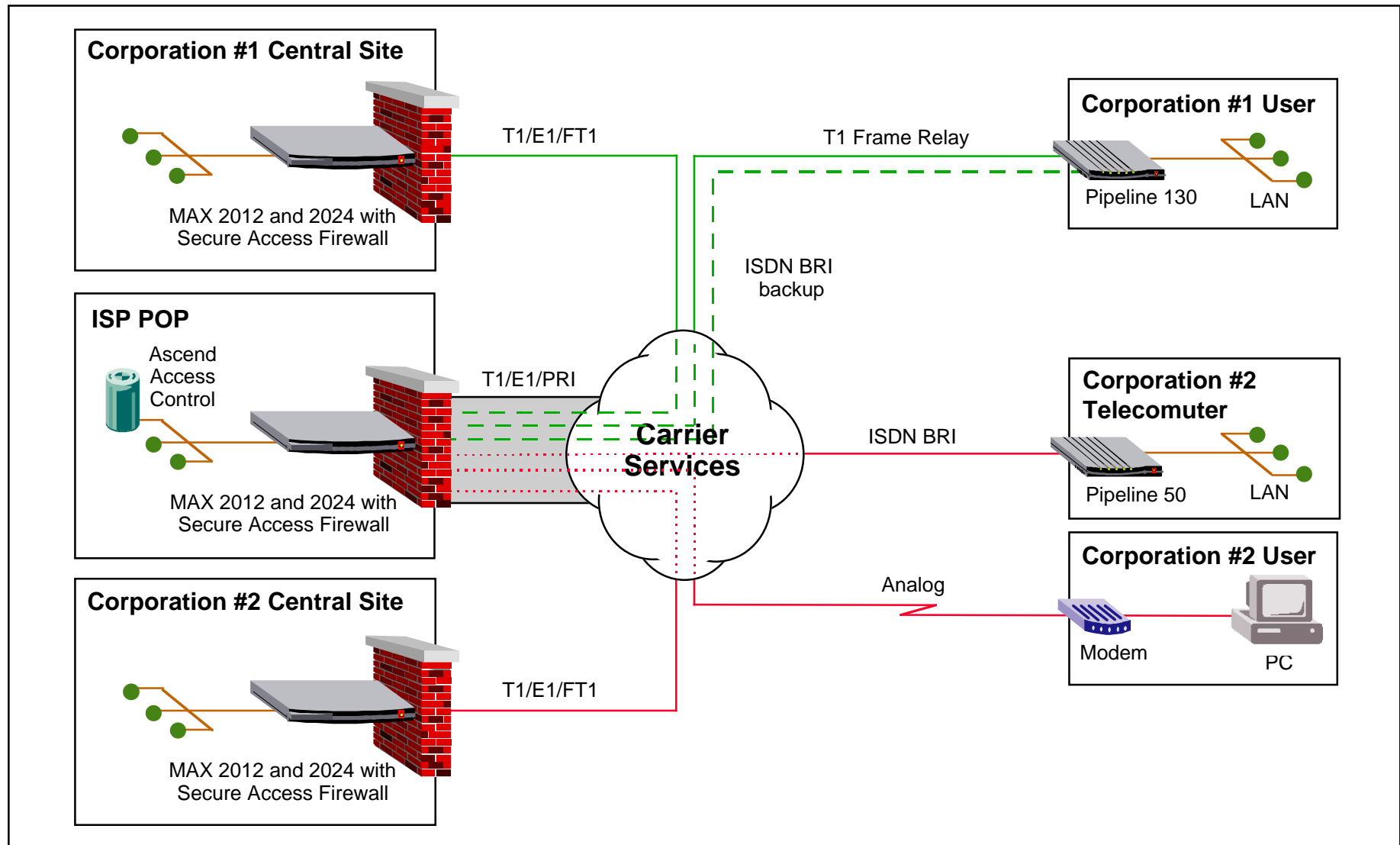
### **▲ Raw TCP tunneling**

### **▲ IP Direct**

### **▲ Extended RADIUS authentication and profile management**

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## Secure Networking - Virtual Private Networking



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## Remote Networking Software

### ▲ Multiprotocol Routing

- IP
- AppleTalk
- AppleTalk Remote Access
- IPX (with local spoofing)

### ▲ MAXDial

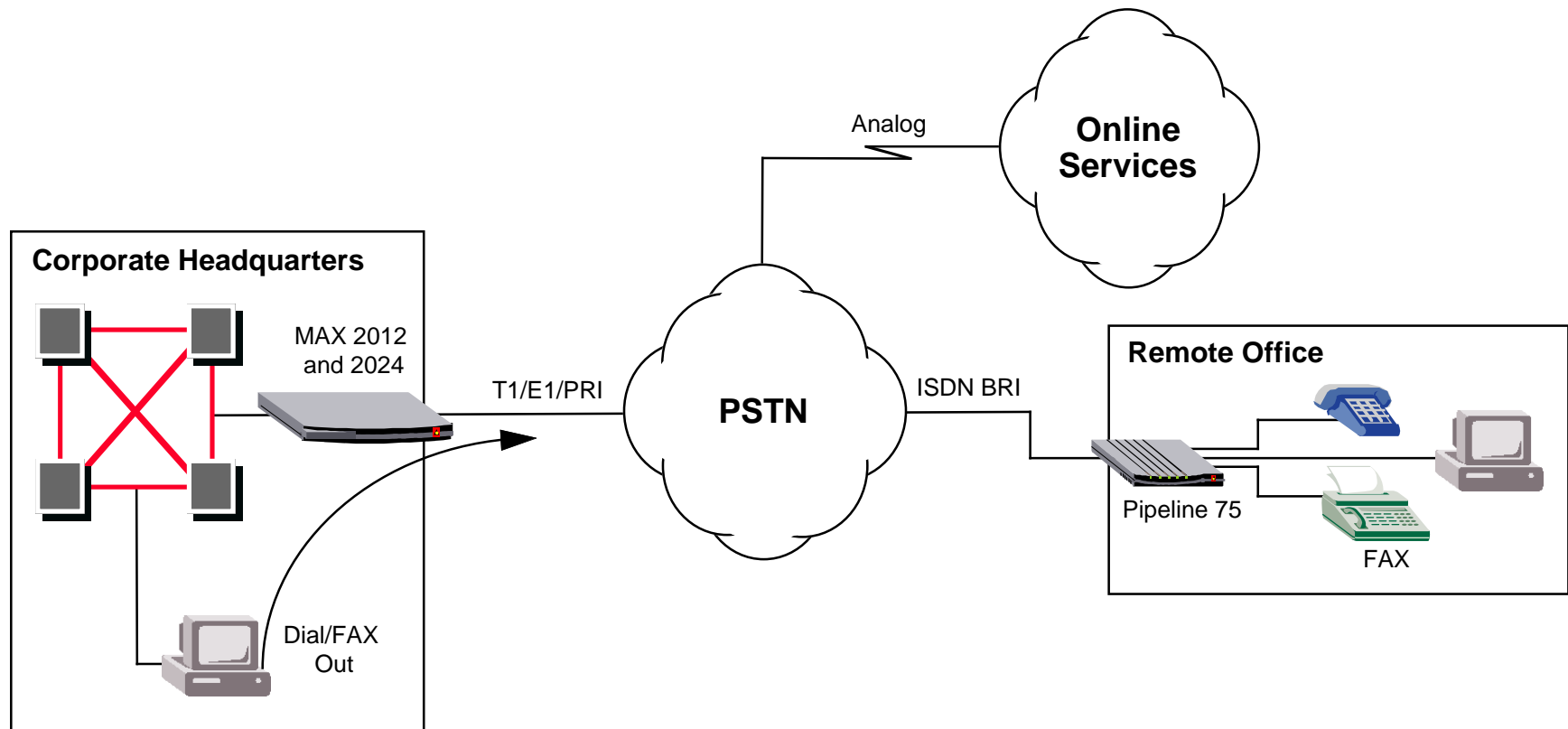
- LAN-based data / class 3 fax out-dial
- Win 3.X, Win95 support
- AT command support

### ▲ MAXLink Pro

- Remote node access client
- Award-winning software package included

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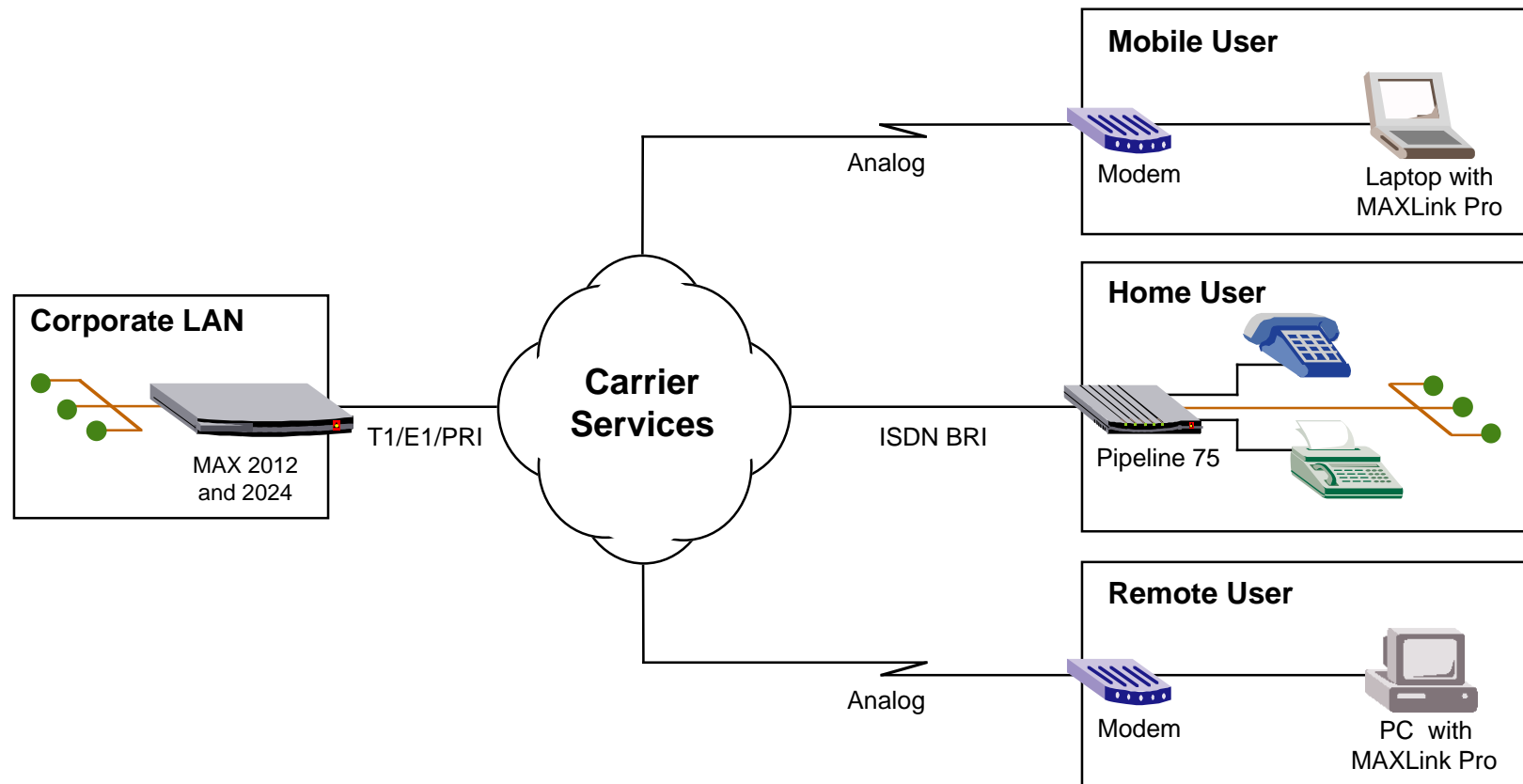
## Remote Networking Software - MAXDial



- ▲ LAN access to online services (AOL, MSN, etc.)
- ▲ Group 3 fax from LAN-based workstation

# MAX 2012 and 2024

## Remote Networking Software - MAXLink Pro



- ▲ Seamless access to network resources from remote location
- ▲ Award-winning complement of software included

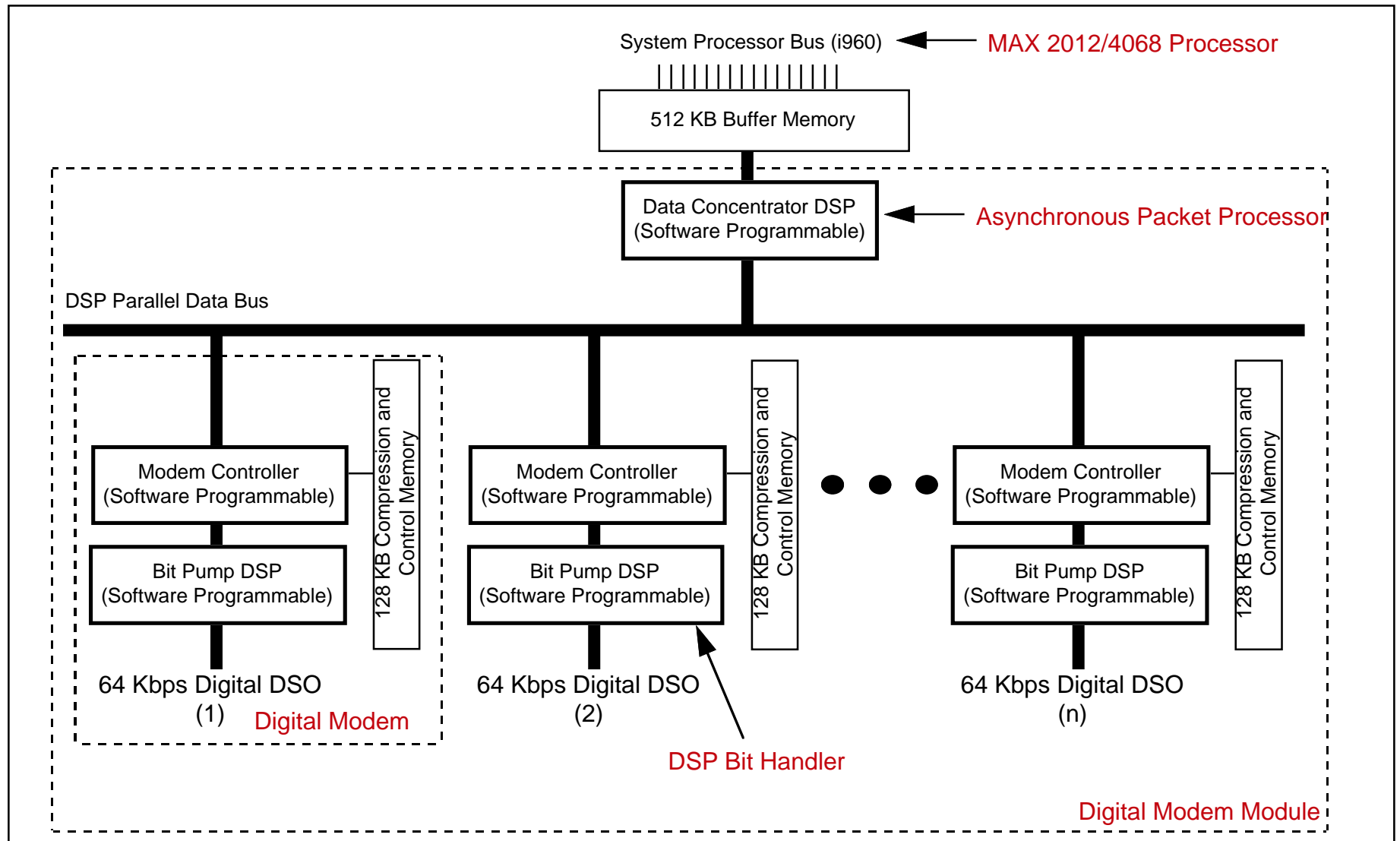
# **MAX 2012 and 2024**

## **Series56 Digital Modems - Overview**

- ▲ Digital modems designed with Rockwell K56flex technology**
- ▲ Simultaneous 33.6 Kbps and 56 Kbps access speeds**
- ▲ High-performance DSP-based hierarchical processing**
- ▲ V.42 Error Correction and V.42*bis* Compression**
- ▲ MNP10 EC and GSM for cellular calls**
- ▲ Software upgradable for long-term hardware viability**
  - Upgrade to any 56K standard as current standards evolve
  - Series56 hardware investment protection

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## Series56 Digital Modems - Architecture



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## Series56 Digital Modems - Enhanced System Architecture

### ▲ **New hierarchical three-processor architecture**

- Layer-3: MAX 2012 and 2024 system processor
  - Handles packet forwarding and routing
- Layer-2: Asynchronous packet processor
  - Dedicated DSP per digital modem module
  - Significantly unburdens main system processor
- Layer-1: DSP bit-pump
  - Dedicated DSP per digital modem for bit handling
  - Dedicated microcontroller for modem control functions



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## Management - Options

### ▲ **Java-based configurator**

- Java-based management and configuration

### ▲ **SNMP-based management**

- SNMP MIB-2 with exhaustive set of extensions

### ▲ **Easy-to-Use menu interface**

- Accessible via Telnet (intranet/Internet or Dial-up), Local RS-232
- Setup and monitor from same screen

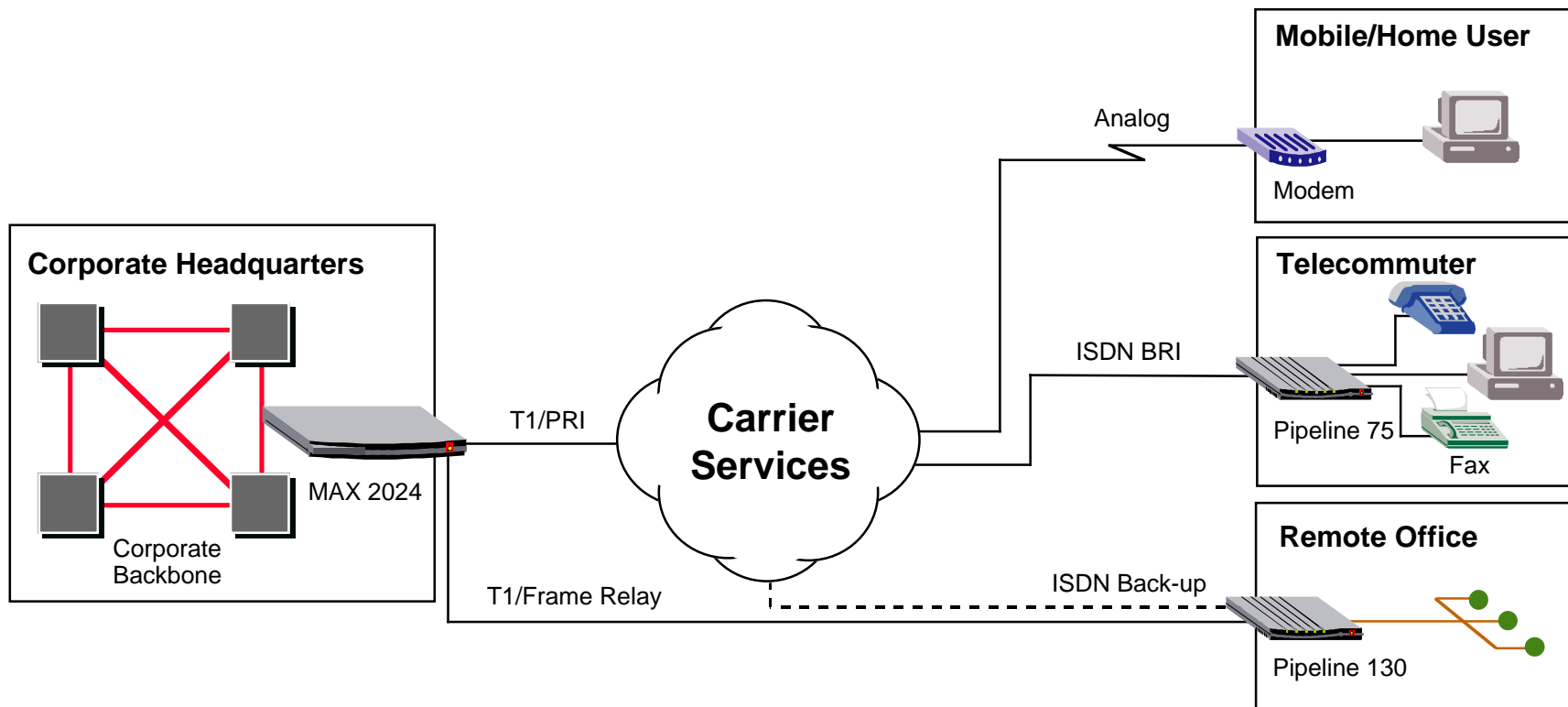
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## Applications

- ▲ **Full-featured WAN access for corporate/business networks**
  - ◆ Remote corporate access
  - Local and remote Internet access
  - Remote Internet Gateway
- ▲ **Proven technology in corporate, carrier and ISP Networks**

# MAX 2012 and 2024

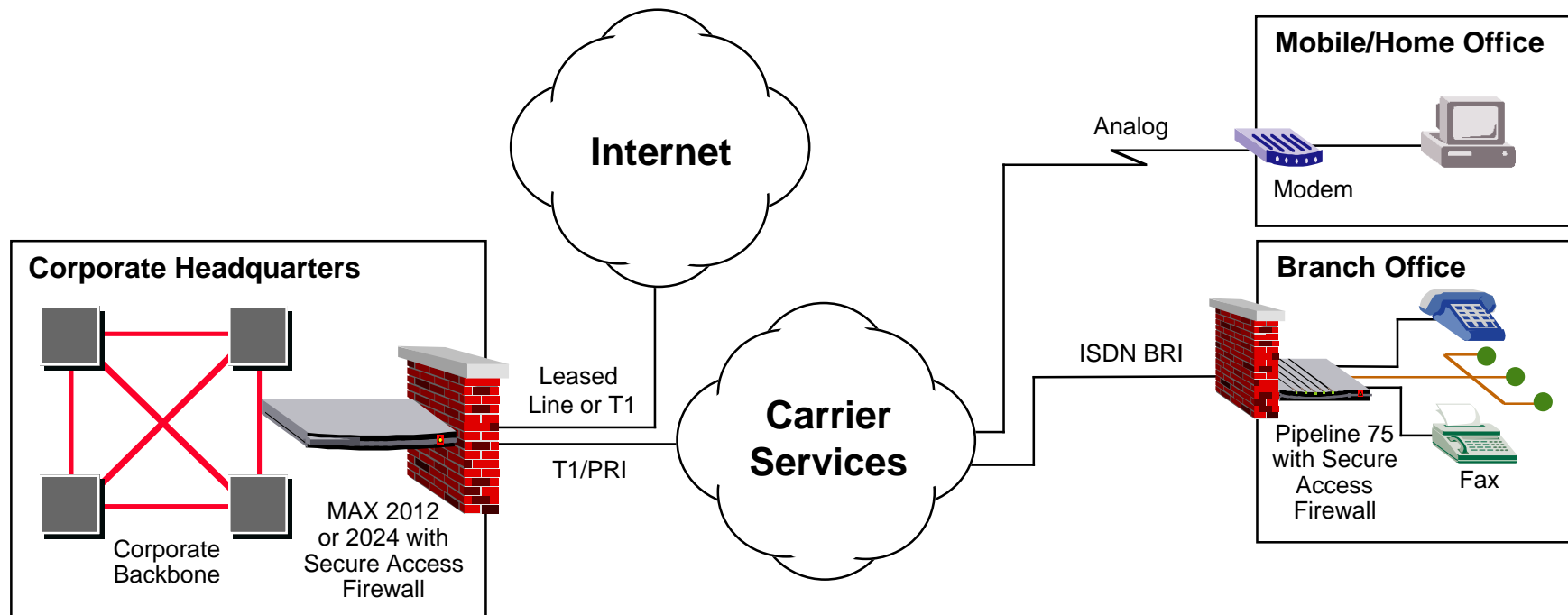
## Applications - Remote Corporate Access



- ▲ **Multiple concurrent sessions (analog/digital)**
- ▲ **High-speed connection to remote sites**
- ▲ **Up to 24 dial-up connections to mobile users and telecommuters**

# MAX 2012 and 2024

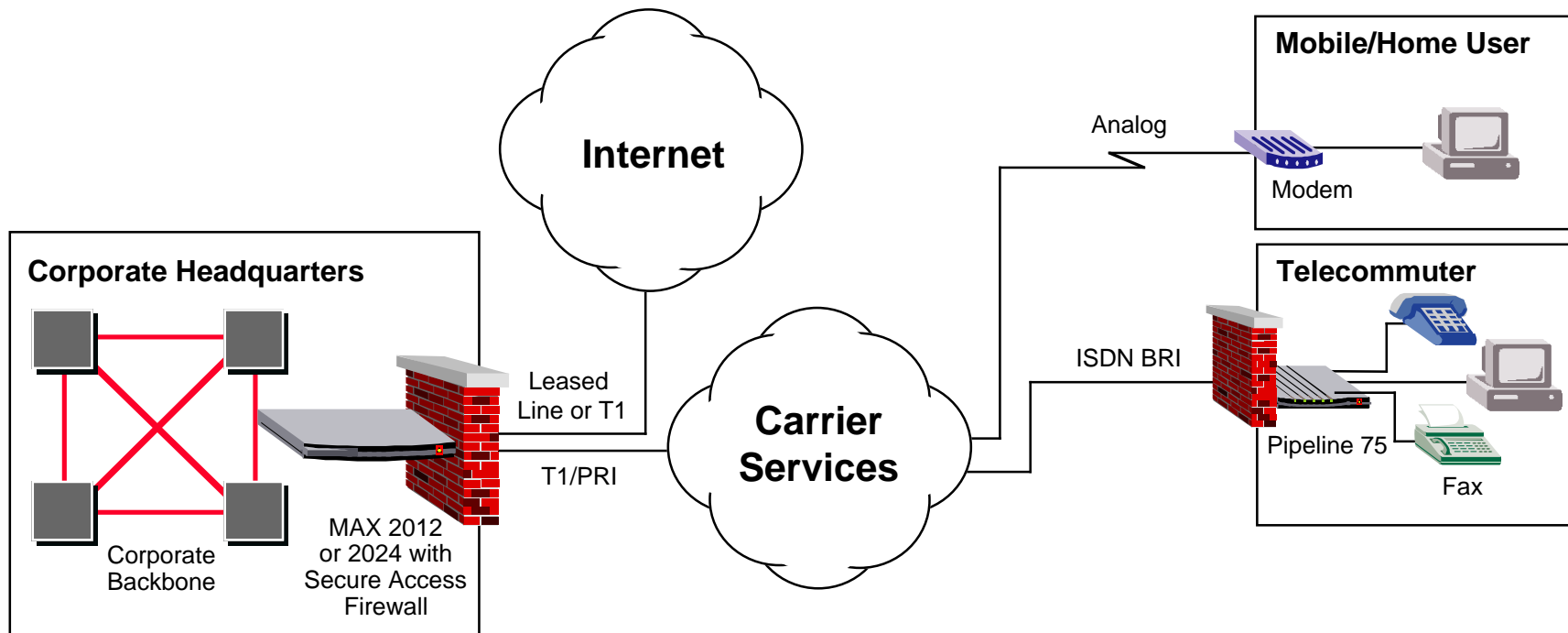
## Application - Local and Remote Internet Access



- **Local and remote Internet access**
- **Concurrent remote / telecommuting functions**
- **MAXDial gives LAN-based users ability to dial/fax out**
- **Integrated dynamic firewall for end-to-end security**

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## Application - Remote Internet Gateway



- ▲ Internet access for remote users
- ▲ Concurrent remote / telecommuting functions

# MAX 2012 and 2024

## Key Features

### ▲ Routed LAN protocols

- TCP/IP w/RIP, RIPv2, IPX, AppleTalk

### ▲ WAN protocols and connectivity

- PPP, Async PPP, SLIP, C-SLIP, V.120 Async, ARAP
- D4-to-ESF signaling conversion, DS-0 cross-connect, Multirate, PPP-to-Frame Relay gateway

### ▲ Bandwidth Management

- MultiLink PPP (MP), MultiLink Protocol Plus™ (MP+), TCP header compression, BACP, bandwidth on demand, IPX spoofing, dynamic IP addressing
- Dial backup, SNMP MIB2, Call Detail Recording (CDR), ISDN event log, alarm relay, Telnet, Syslog

### ▲ Security

- Ascend Access Control (extended RADIUS), RADIUS, TACACS, TACACS+, PAP, CHAP, MS-CHAP, token card, CLID, packet filters, PPP call-back, multi-level terminal server authorization, username/password

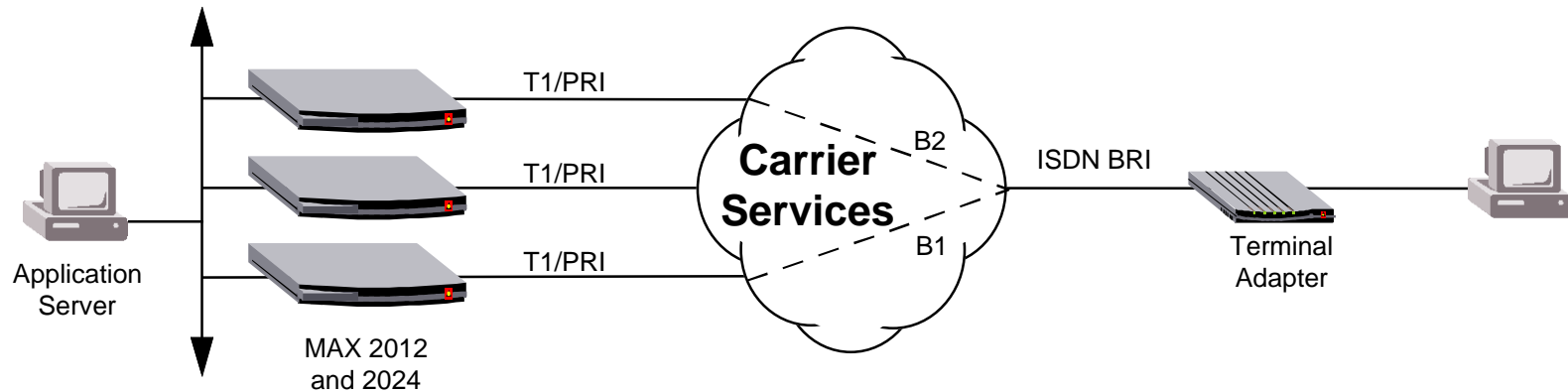
### ▲ Remote Networking Software

- Multiprotocol routing adds IPX and AppleTalk support
- MAXDial (LAN-based data/fax out-dial)
- MAXLink Pro (remote node access client)

### ▲ Secure Access Firewall

# MAX 2012 and 2024

## Key Features - MAX Stack



- ▲ **Multiple MAX systems operating as single logical unit**
- ▲ **Shared-resource operation**
  - Shared OP pools
  - MP/MP+/BACP calls span stack
  - Single virtual Network Access Switch

# MAX 2012 and 2024

## Configuration and Pricing

Model Number	Product Description	List Price
<b>MX20-T1-12</b>	MAX 2012 with two T1 interfaces with integrated CSU. Includes a 12-port Series56 Digital Modem module.  Software includes Multiprotocol Routing (IPX and AppleTalk), MAXDial, MAXLink Pro, Secure Access Firewall and a Java-based configurator	\$ 8,400
<b>MX20-T1-24</b>	MAX 2012 with two T1 interfaces with integrated CSU. Includes two 12-port Series56 Digital Modem modules. Software includes Multiprotocol Routing (IPX and AppleTalk), MAXDial, MAXLink Pro, Secure Access Firewall and a Java-based configurator	\$13,920
<b>MX-SL-12MOD-S56</b>	12-port V.34 and K56flex slot card	\$ 5,700
<b>MX20-SO-ISDN</b>	Software Option - Enables ISDN PRI signaling	\$ 1,000
<b>MX20-SO-HA24</b>	Hybrid Accesss 2000 Software Option - Enables ISDN PRI signaling, Digital Access, and Frame Relay support	\$ 1,500
<b>MX-SO-VPN</b>	Virtual private networking software option - Enables ATMP and PPTP	\$ 1,500
<b>AAC-CD</b>	Access Control - Enables extended RADIUS support	\$ 3,000