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# Agenda

- **Introduction**

Definition, history and deployment

Firewall technologies

- **Product Updates**

Cisco IOS™ Firewall

Cisco Secure PIX™ Firewall

PIX Product Family

PIX Roadmap



# What Is a Firewall?



- A set of hardware and software enforcing security policy at a point on a network
- Perimeter security device
- Commonly capable of Virtual Private Networks (VPN)

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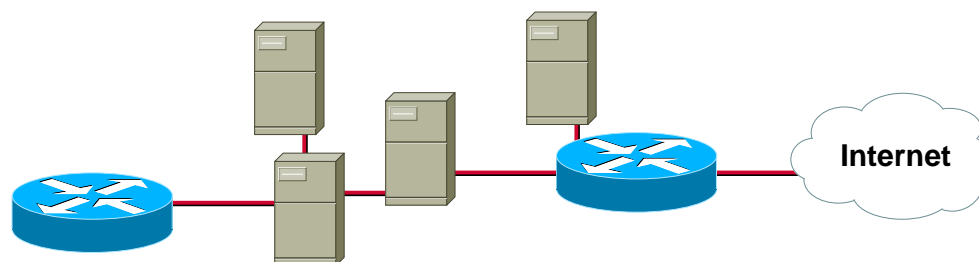
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# History of Firewalls

- Originally a set of custom-configured routers and hosts



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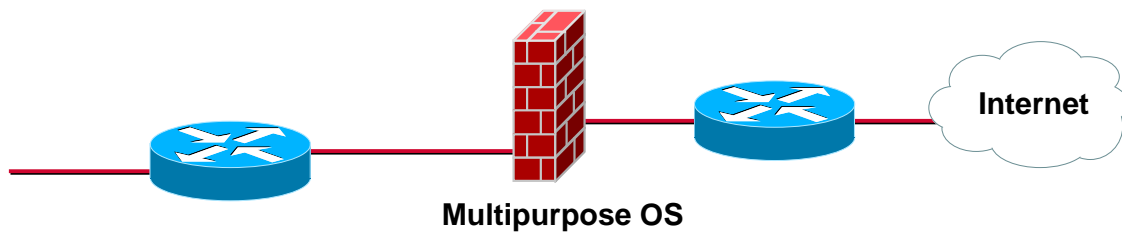
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# History of Firewalls

- Originally a set of custom-configured routers and hosts
- Commercial host-based products followed



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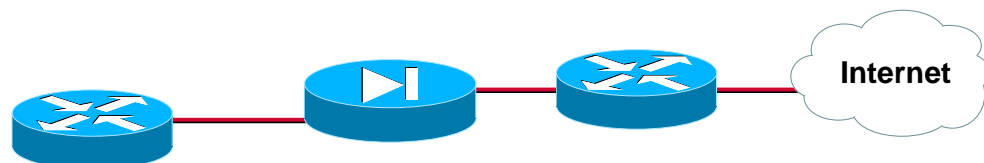
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# History of Firewalls

- Originally a set of custom-configured routers and hosts
- Commercial host-based products followed
- Dedicated appliance now predominant choice



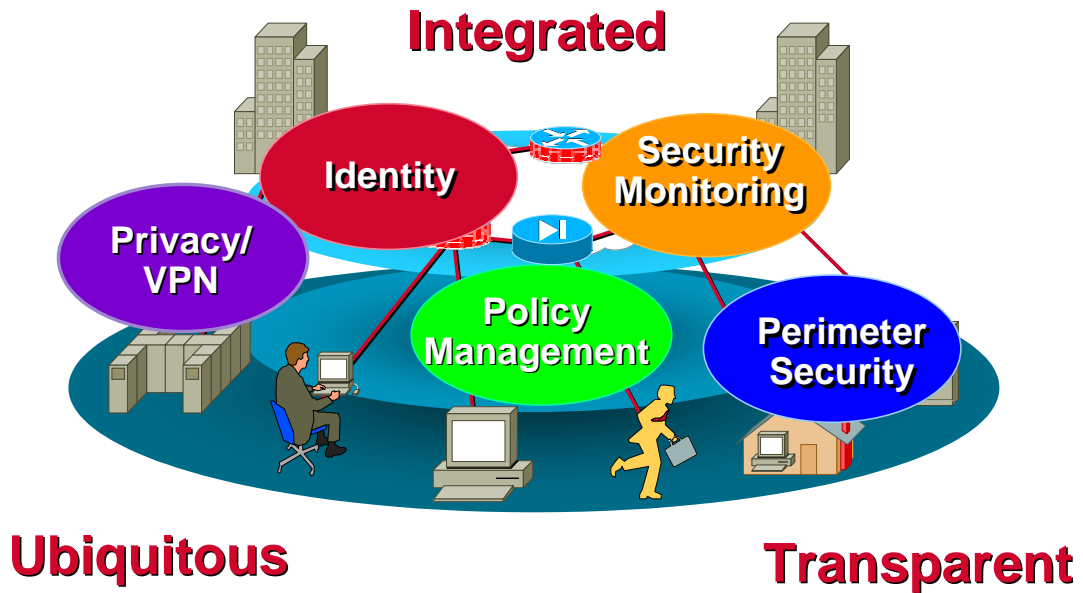
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# The Future of Network Security



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## Firewall Technologies

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# Basic Security Elements

- **Cisco IOS security technologies provide:**

**Perimeter security and access control**

**Identification and user authentication**

**Denial of Service (DoS) protection**

**VPN**

**Auditing**

## Cisco IOS

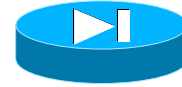


# Existing Cisco IOS Security Technologies

- **Access control lists (ACL)**
  - Reflexive access lists
  - Time-based access lists
- **Network Address Translation (NAT)**
- **VPN technologies**
  - IPsec encryption
  - Tunneling (GRE, L2F, L2TP)
- **Policy-based multi-interface support**
- **Event logging**
- **TACACS+/RADIUS authentication**

# Firewall Technologies

- **Stateful firewalling**



**PIX—Adaptive Security Algorithm (ASA)**

**Cisco IOS Firewall—content-based application control**

**Tracks state of authorized data streams to prevent exploitation**

- **Application awareness**



**“Fixup” protocols**

**Validation of protocol syntax**

# Firewall Deployment



- **“Pervasive Firewalling”**

**Security on every network device**

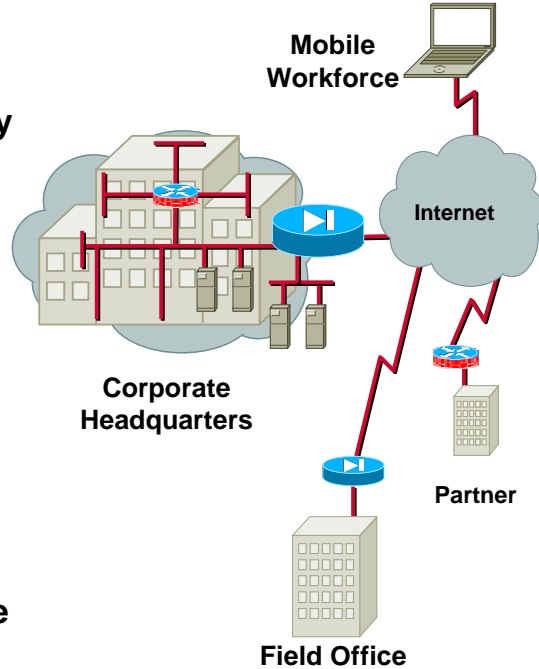
- **Not: “Should I perform security at this network junction?”**

- **Rather: “Why would I not want security on this device?”**



# Cisco Secure PIX Firewall IPsec VPNs

- **Expand corporate intranet**
  - Leverage the Internet for cost savings and increased connectivity
- **Enable mobile users**
  - Increase efficiency
  - Reduce response time
- **DES IPsec at no cost**
  - 3DES for nominal license fee
  - Up to 90 Mbps DES
  - Up to 20 Mbps 3DES in software
  - Up to 70 Mbps 3DES with hardware acceleration



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## Product Updates

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# Firewall Solutions

- **Cisco IOS Firewall**

Integrated firewall solution for Cisco IOS software which combines advanced firewalling and intrusion detection with full routing and WAN access capabilities

- **Cisco Secure PIX Firewall**

Dedicated firewalling in a high-performance, scalable and fault-tolerant dedicated security appliance

## Cisco IOS



# Cisco IOS Firewall

- **Integrated solution**

Combines firewall and routing into one platform—easy add on for existing network administrators

- **No new hardware required—  
one device to manage**

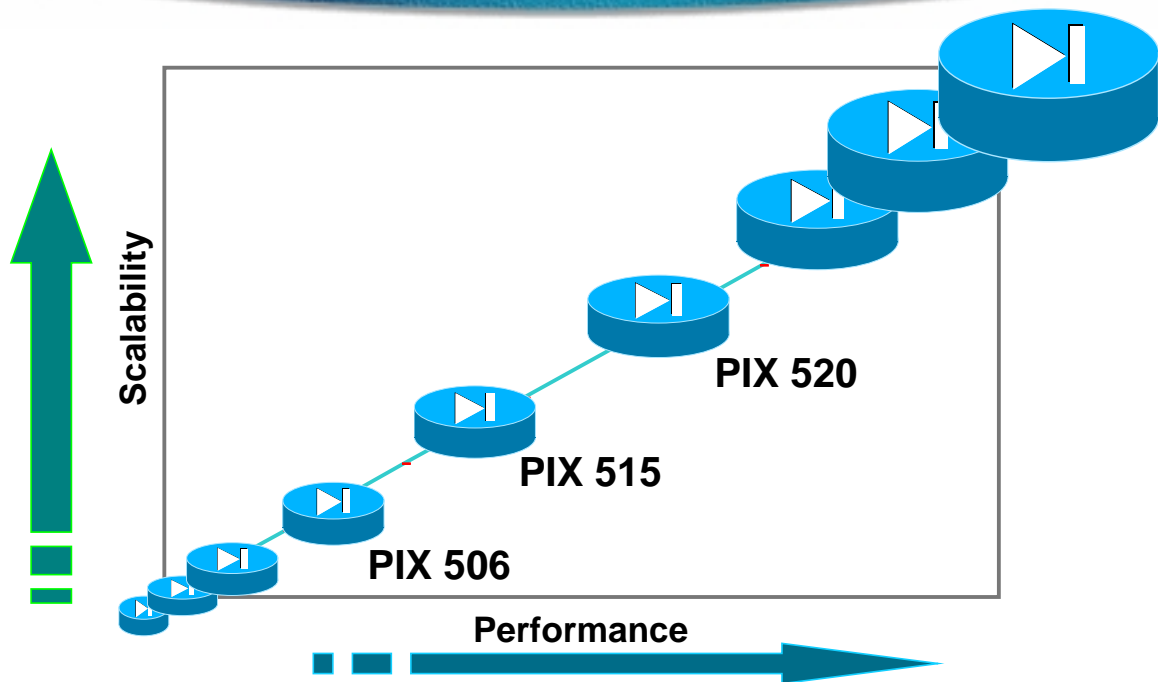
Support for Cisco 800, 900, 1400, 1600, 1700, 2500, 2600, 3600, 7100, 7200 and 7500 routers and RSM for Catalyst 5000 Switch

- **Full routing functionality**

## Cisco IOS



# PIX Firewall Family



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# PIX Gigabit Ethernet Card

- **Designed for large enterprise, hosting services and other high-traffic environments**
- **Up to 387 megabits/second (full duplex) on PIX 520 systems**



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## PIX Encryption Accelerator Card

- **Designed for high-traffic VPN environments**
- **up to 70 megabits/sec at 3DES**

## Cisco Secure PIX Firewall 506

- **Small office firewall**
  - 2–5 person remote office or “power user” home office**
  - Two Ethernet interfaces**
  - 10 Mbps throughput**
  - IPsec 3DES VPN support at 4 Mbps**



## Cisco Secure PIX Firewall 515

- **PIX 515-R**

**Restrictions: No failover, 65,000 connections,  
2 Ethernet interfaces**

- **PIX 515-UR**

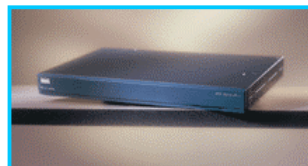
**125,000 connections**

**Up to six Ethernet interfaces**

- **High performance**

**Up to 120 Mbps throughput**

**Up to 6,500 connections per second**



## Cisco Secure PIX Firewall 520

- **Enterprise chassis design**

**Over 250,000  
simultaneous sessions**

**Most flexible  
configuration options**

**Designed for enterprise  
environments**



# Summary

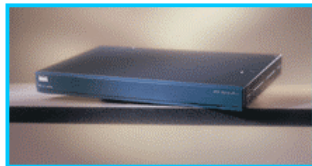
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## Where to Put Each Firewall



### PIX Firewall

- High-volume or sensitive network perimeters
- Dedicated device
  - Multilevel security policy enforcement
- Specific application requirements
  - Unique NAT applications



### Cisco IOS Firewall

- Everywhere you have a router/switch
- Integrated solution
  - Cost effective
- Highly scalable
  - Home office to enterprise
- Intranet protection
- Familiar Cisco IOS configuration

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## Things to Remember

- **Firewalls are one element in securing your network**
- **Defense in depth— not one device alone**
- **Actively audit to monitor for misuse or intrusion**
- **Cisco offers end-to-end network security solutions**



# Cisco Secure Firewall Product Update

## Session 2504

## Thank You



# Please Complete Your Evaluation Form

## Session 2504

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# CISCO SYSTEMS



## EMPOWERING THE INTERNET GENERATION<sup>SM</sup>

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