



Introducing Cisco's Integrated Services Routers



**Secure, Wire-speed Delivery of
Concurrent Services and Applications**

Agenda

- Technology Trends and Momentum for Services
- Cisco Integrated Services Router Portfolio
- Router-Integrated Services
- Summary

Business & Technology Trends

- Businesses are moving toward converged networks for **increased productivity, lower costs**
- Business **communications are becoming richer**: audio, video, collaboration
- **Pervasive security** is mission-critical, as more data and applications move online
- Businesses of all sizes wish to deploy **secure wireless** to enhance mobility
- Web applications are **enhancing access and productivity**
- **Management & service simplification** – must be supported with existing staff



Does Your Customer's Network Foundation Deliver?

The Baseline for Today's Networks



Self-Defending

Security is embedded at every level of the network



Modern Switching/Routing Infrastructure

Resilient, available anywhere and anytime

Scalable, adaptable to support rapid IT growth, enable business agility, simplified operations



Ready for Essential IT Applications

Provides a single, unified communications system supporting Voice, Wireless LAN, Video delivery, real-time collaboration, transaction integrity, data/SW dist..



Simplifies Network Operations

Eases system/service deployments, streamlines ongoing maintenance, speeds problem resolution, and accommodates change readily and reliably



The Cisco Difference: The Value of A Systems Approach



PLATFORM INTEGRATION

- Ease of deployment
- Ease of management
- Ease of training, staffing
- Faster troubleshooting
- Reduced complexity
- Lower capital costs

Benefits of A Systems Approach:



Simplicity
Intelligence
Greater Productivity
Faster Profitability
Maximum Investment Protection



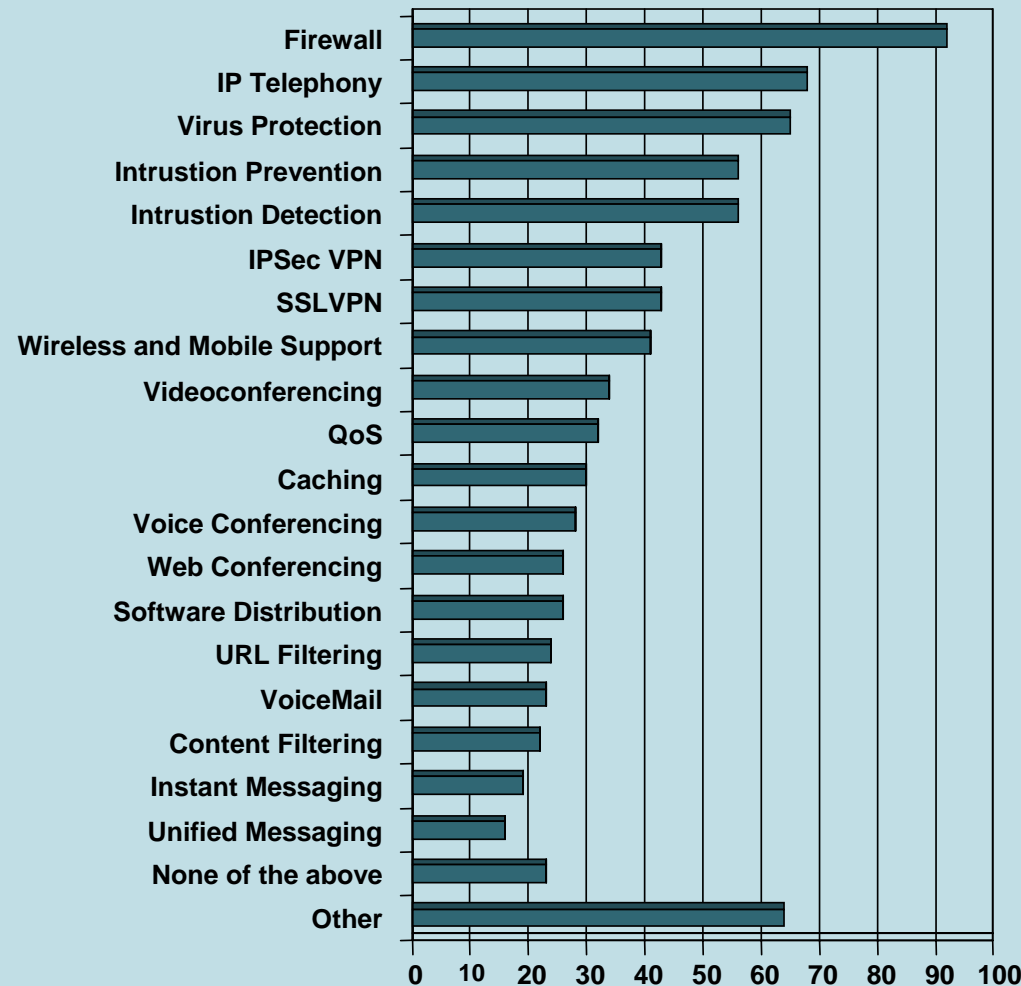
SERVICES INTEGRATION:

- Automation and intelligence
- End to end security
- Higher quality of service
- Faster time to productivity and profitability
- Efficient use of network bandwidth

SMBs and Enterprises Prefer Integrated Services and Applications

- More than 60% of the respondents preferred router-integrated services for their small offices and enterprise branch offices
- Converged data, security, voice and wireless enables customers to protect, optimize, grow their businesses
- Systems approach maximizes operating efficiencies:
 - More time for network planning, design
 - Improve network monitoring and troubleshooting
 - Offload voice and data staff
 - Leverage better pricing/packaging

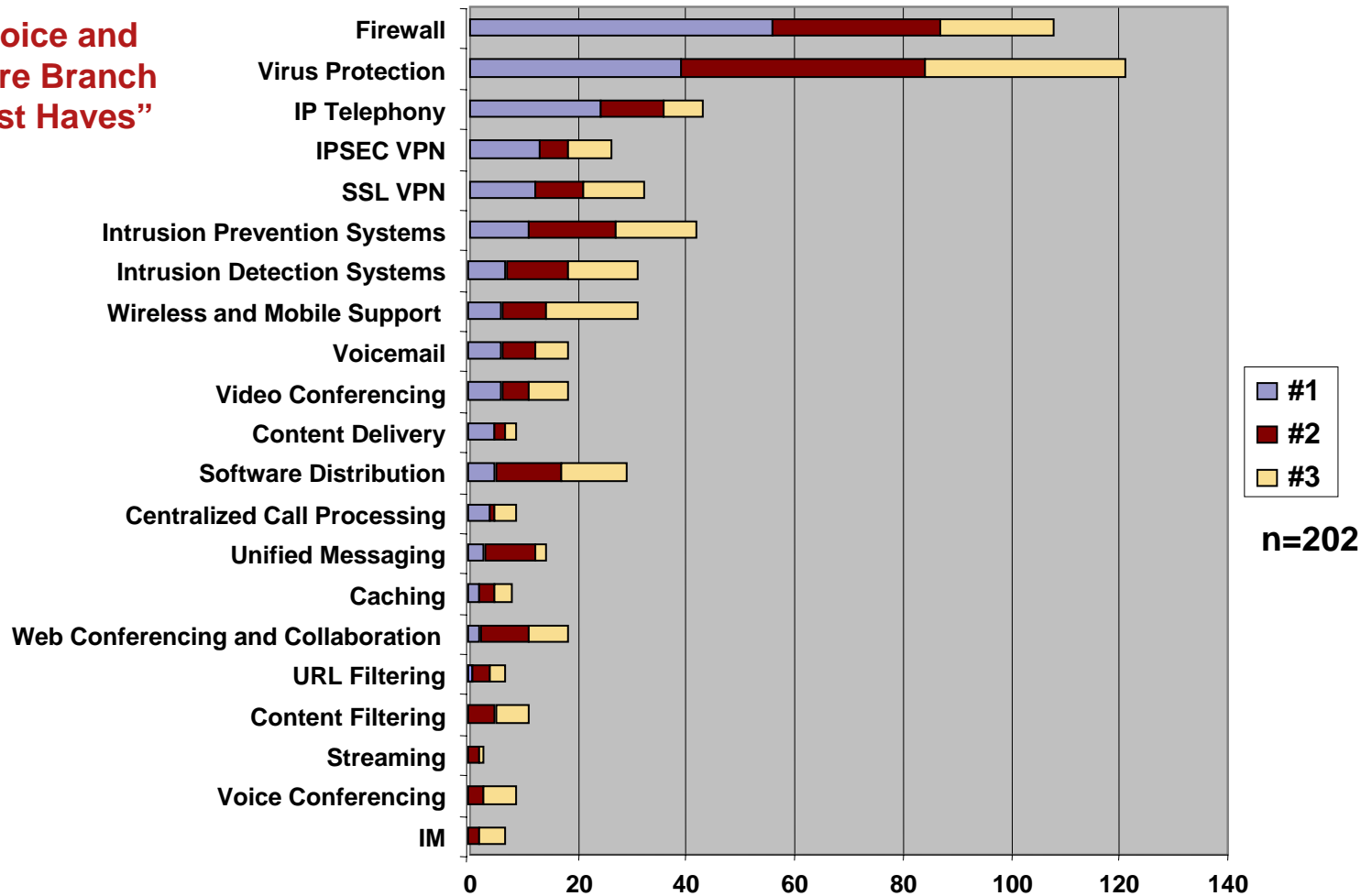
Functions that **Should** Be Router-Integrated



Cisco Survey: Jan 06

Top 3 Priorities for Branch Spending in 2006

Security, Voice and Wireless Are Branch Office “Must Haves”



Source: Yankee Survey Jan 2006

Integrated Services for Businesses of All Sizes

- Cisco **redefines best in class** routing with the industry's FIRST portfolio engineered for **secure, wire-speed** delivery of **concurrent data, voice, video and wireless services**
- Cisco's **integrated systems approach to embedded** services speeds application deployment and reduces operating costs and complexity
- Founded on more than **20 years of innovation and leadership—FIRST** to embed security, voice, and wireless services into a single routing system
- **Integrated Services Routers** provide customers with **unparalleled services performance and investment protection**



Award-Winning Integrated Services Routers

Network Computing 2005 Well Connected Awards Product of the Year— Cisco Systems 2800 and 3800 Series

“...Cisco's new 3800 Series ISRs are products to “die” for this year ... designed with security and Voice over IP, firewall, QoS, intrusion detection, and call processing all without compromising performance.” [Network Computing, April 2005](#)

Network Magazine 2005 Innovations Awards Network Hardware Product Breakthrough Cisco Systems Integrated Services Routers

“The combination of routing, switching, firewalling, NAT, intrusion prevention, (NAC), and encryption capabilities, coupled with its ability to provide a host of telephony services and voicemail, makes the ISR our choice ... ” [Network Magazine, May 2005](#)

CRN 2005 Channel Champions Award in Routing and Switching

“For partners, the introduction of Cisco’s Integrated Services Router platform ... has been significant. “...very few vendors ... are offering solutions that fundamentally change the way companies do business,” said Ron Temske of Localis.

“But Cisco does.” [CRN, April 2005](#)

Interop Tokyo 2005 Best of Show—Cisco Systems 1812W

“1812 W integrates various security features—such as firewall, VPN, IPS—into one box, with excellent cost performance. Designed to have the required features and price to meet Japanese users’ needs, we see Cisco Japan's efforts and commitment to capture Japan market. [Interop Tokyo, 2005](#)

Windows IT Pro 2005 Readers Choice Awards Infrastructure Product of the Year— Cisco Systems 3800 Series [Windows IT Pro, September 2005](#)

2005 Frost & Sullivan Award for Market Leadership Award Cisco Systems Routers

For its role in the enterprise router market. Though Cisco has many competitors, they maintain their leadership, both through the development of new technology and products, and participation in standard’s bodies and partnerships. [Frost & Sullivan, January 2006](#)



Product of the Year!



Traditional Business Solution: Separate Applications and Appliances

Security

Firewall, IPS and VPN
Appliances

Content Delivery

Content Networking

Voice Services

Hybrid / Key System

WAN Connectivity

Branch Access Router

Local Connectivity

LAN Switch
Wireless

Integrated Solution for Advanced Services

Integrated Services Router



Voice Ready

Video Integration

Integrated Wireless

Low Density L2 Switching

Network Analysis

Are You Deploying With The Future In Mind? *Considerations For The Future*

What are the Future Cost Implications of Today's Product Decisions?

- **Essential questions to consider ...**

- Value of service integration

- Value of future proofing

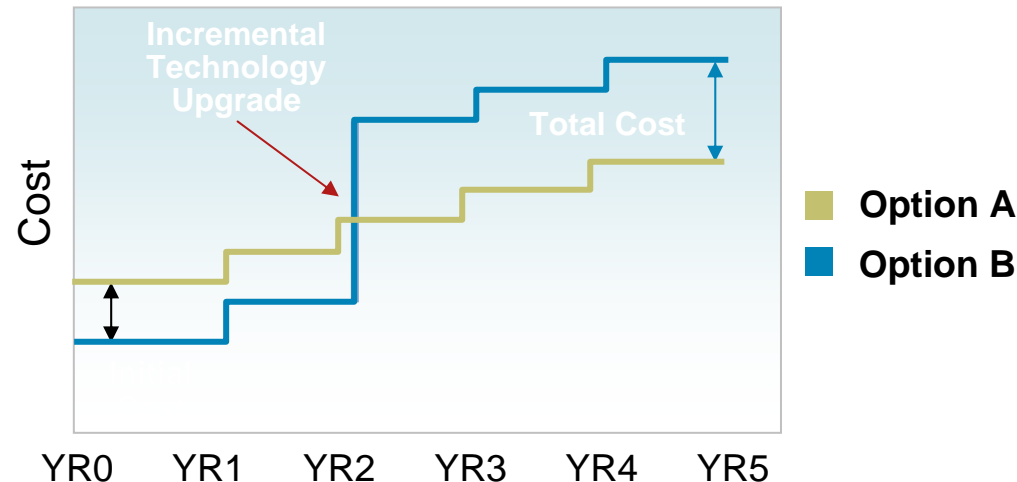
- **Essential variables to assess ...**

- Future Costs

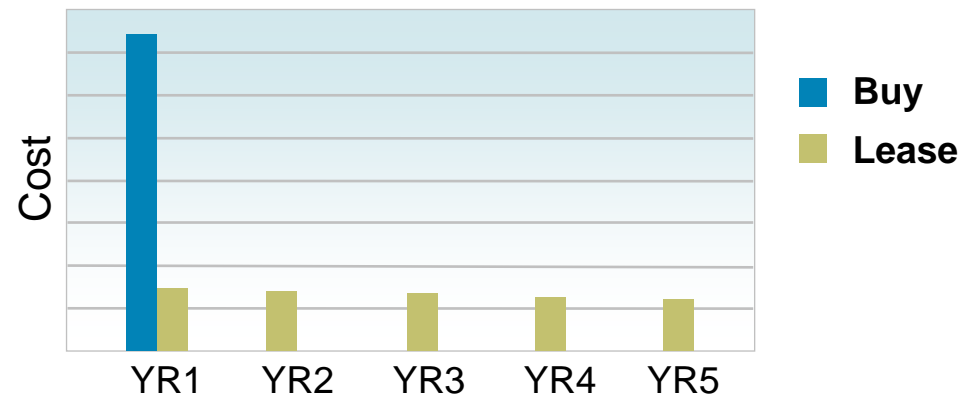
- Net Present Value of Various Alternatives

- Lease vs. Purchase

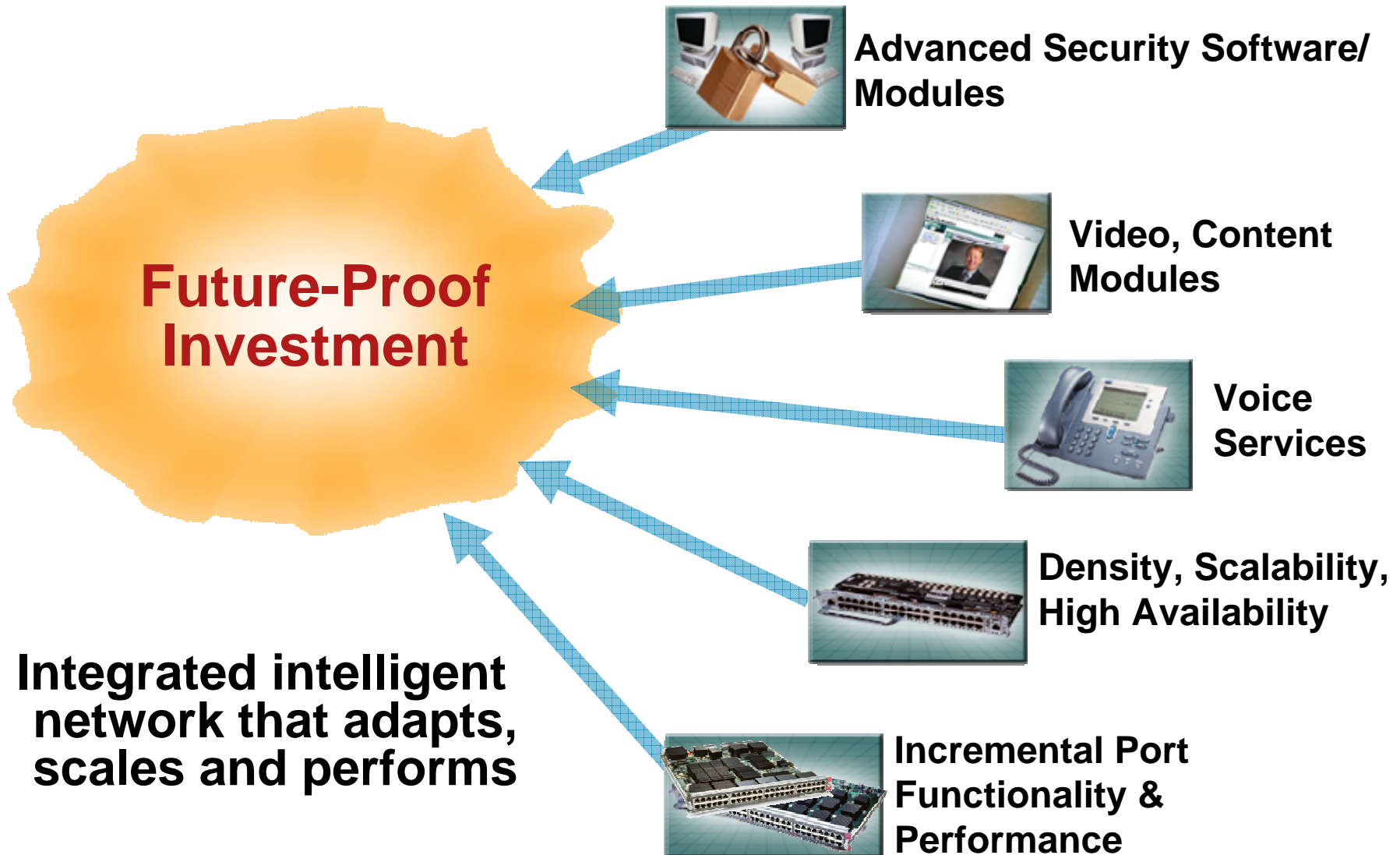
Cashflow for Future Costs



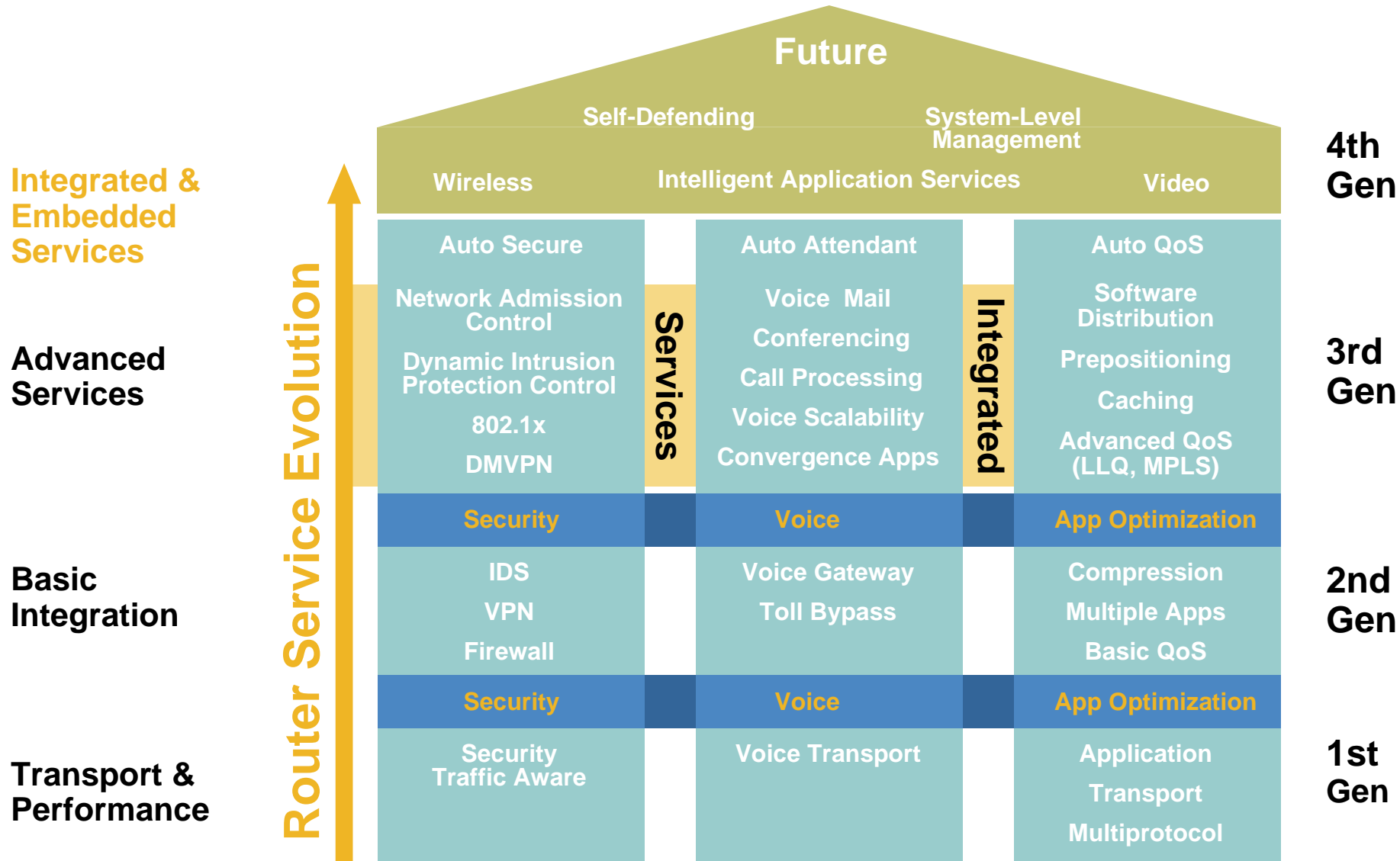
Buy vs. Lease in Today's \$



Building a Foundation to Support Future Requirements



Cisco Evolution: Transport & Performance to Integrated & Embedded Concurrent Services



Cisco Integrated Services Router Portfolio



Cisco's Integrated Services Routers

Secure, Concurrent Services!

Up to... 5X service
density, 7X
performance, 4X
memory!



Embedded
security, tightly
integrated with
voice

Backward
compatibility with
existing router
modules for solid
**investment
protection**



**Integrated
Services
Routers**



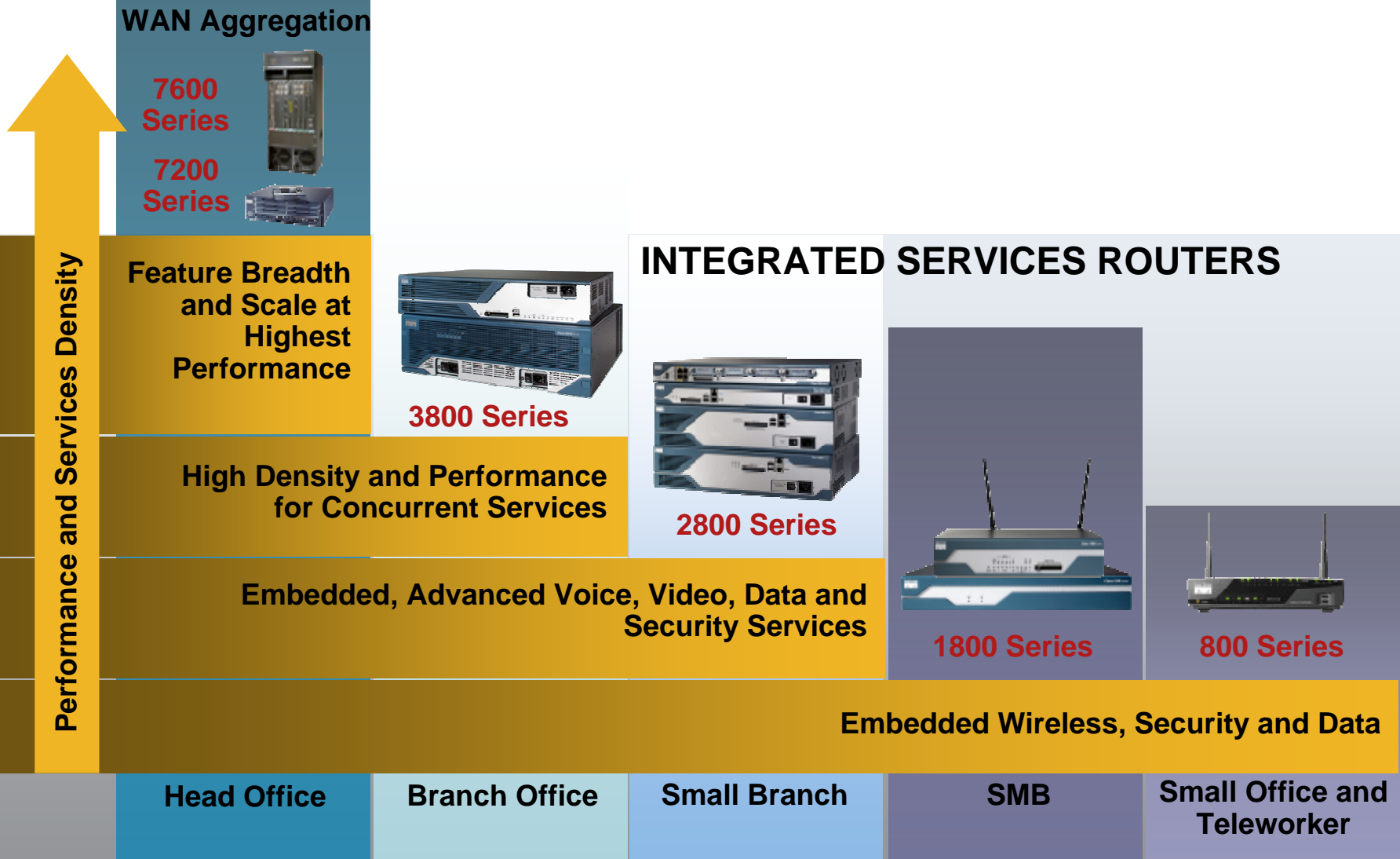
Wireless LAN
available on all
models



Plus **headroom** to
grow!

Extending the Integrated Services Router Portfolio

New Models Ideal for Small Business and Small Offices



Router Integrated Services



The Value of Integration



WIRELESS

Wireline and wireless equivalence
— ubiquitous secure connectivity

Lower Implementation Costs
and TCO
— **simpler to deploy and
manage**



IP COMMUNICATIONS

More effective communication and
collaboration through application
and infrastructure integration

47% savings
— **simpler management,
integration, and operations**

Sage Research, 2003



SELF-DEFENDING NETWORK

Trusted and protected business
applications, legislative compliance

Reduce OPEX by 30-40%
— **investment protection**

NASDAQ internal study, 2004



FOUNDATION TECHNOLOGIES

Integrated, intelligent systems

29% savings through
**OPEX reduction, training,
support, and integration**

Sage Research, 2003

Benefits of IOS for Integrated Services

CISCO IOS BENEFITS

- Manageable, scalable, secure, available, flexible networks
- Integration between Features
- Integration between IP services
- Integration between Services Modules and Routers

SOFTWARE Software Services

HARDWARE Services Modules

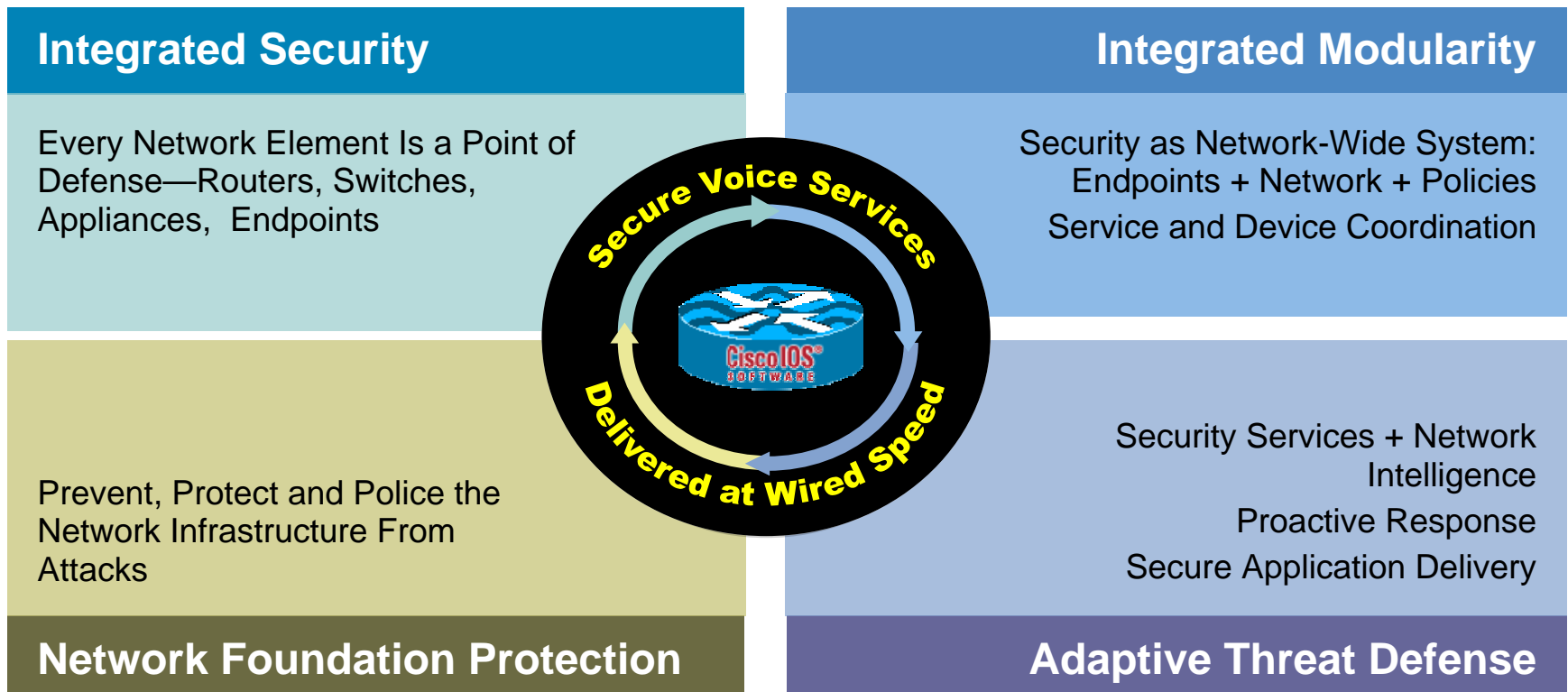


System Benefits

- Simplicity
- Intelligence
- Greater Productivity
- Faster Profitability
- Maximum Investment Protection

Cisco Self-Defending Networks Delivered at Wire-Speed!

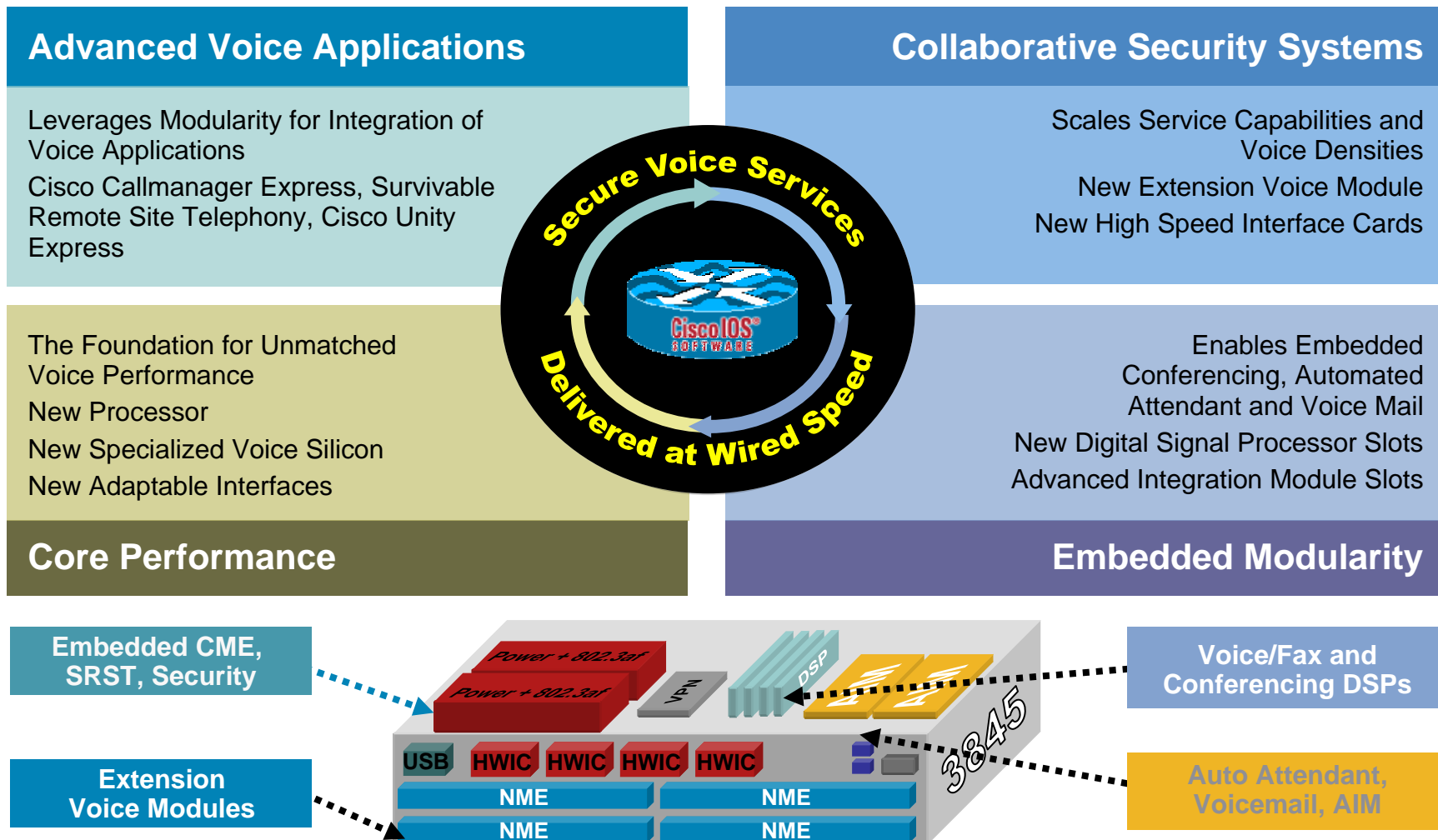
Merging 20 Years of Routing Innovation with Best-of-Breed Security



Cisco IOS Security Protects Routers From the 800 to the 7301 for Pervasive Security Throughout the Network

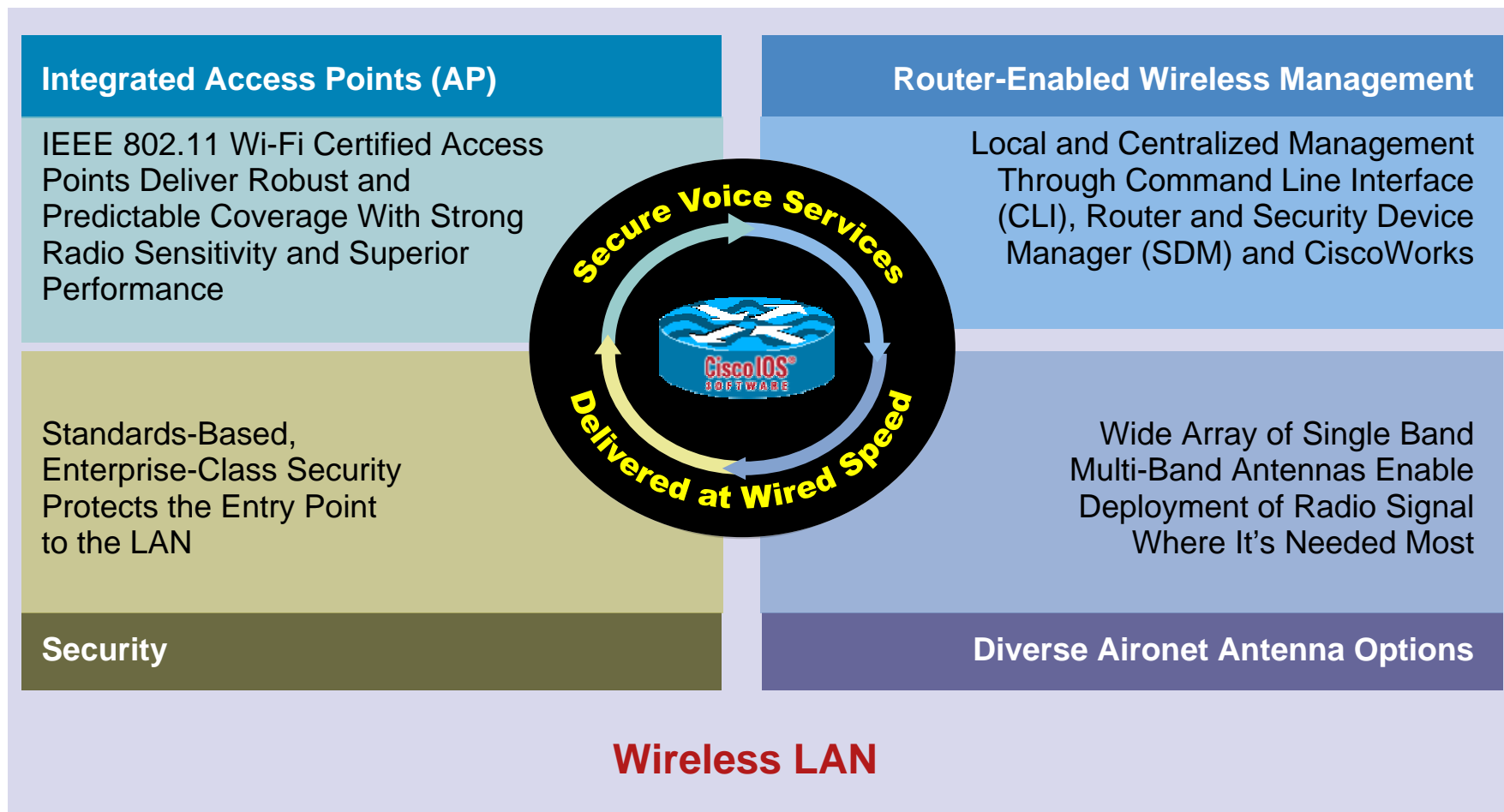
Hardware Innovation Raises Voice Leadership

Affordable, Secure, Scalable Voice Solutions



Enterprise-Class Wireless for Routers

Simple, Flexible, Secure Integrated Wireless Access



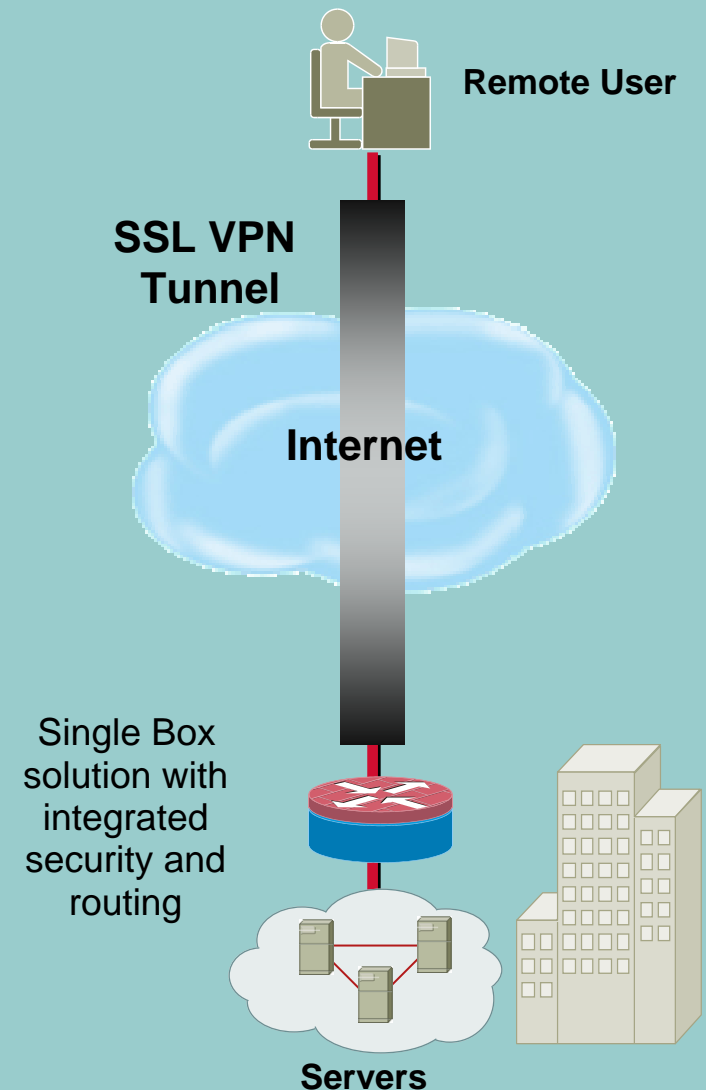
Router-Integrated Services SSL Secure Remote Access

**Industry
First!**

Companies need to enable secure remote access with a minimum of management overhead

Solution: Cisco WebVPN

- Converge IPSec VPNs, V3PN and SSL VPN – Eliminates need for multiple devices to meet the demands of diverse user sets
- Integrated SSL VPN and network security – Provides consistent Security policies throughout with integrated Firewall, IPS, IPSec, Access Control and QoS
- Clientless and Full Network SSL VPN Access - Enables secure connectivity without installing and maintaining PC software
- Available on Cisco 1800, 2800, 3700, 3800, 7200, 7301 Routers - Ideal for 10 to 150 users
- Hardware accelerated SSL VPN for ISR



V3PN: Secure, Toll Quality Voice, Video, Data

Managing separate voice & data networks is costly and inefficient.

Network connectivity is too difficult or expensive to reach remote offices and Teleworkers.

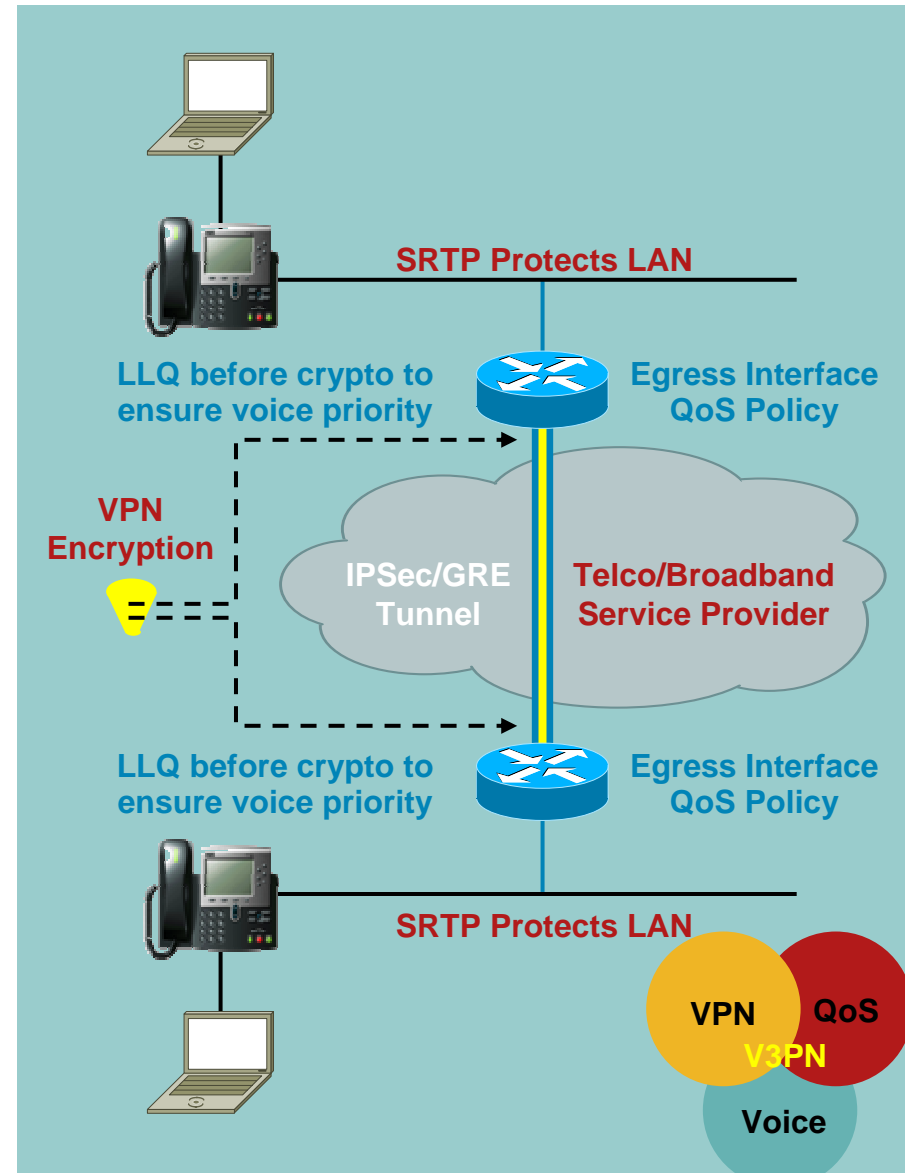
Solution: V3PN

IPSec VPN tunnel built over GRE interface for site to site access

Data, voice and video traffic delivered with QoS policies for latency sensitive traffic

Benefits:

- Connectivity for all locations
- Enhanced security over traditional WANs
- Wirespeed encryption
- Bandwidth conservation
- Toll quality, jitter-free voice and video
- LAN and WAN security
- QoS, SLA and Multicast Support



Dynamic Multipoint VPN (DMVPN)

Secure Meshed Tunnels – Automatically!

Dynamic Multipoint VPN:

Spoke A needs to contact Spoke B, such as:

V3PN Call

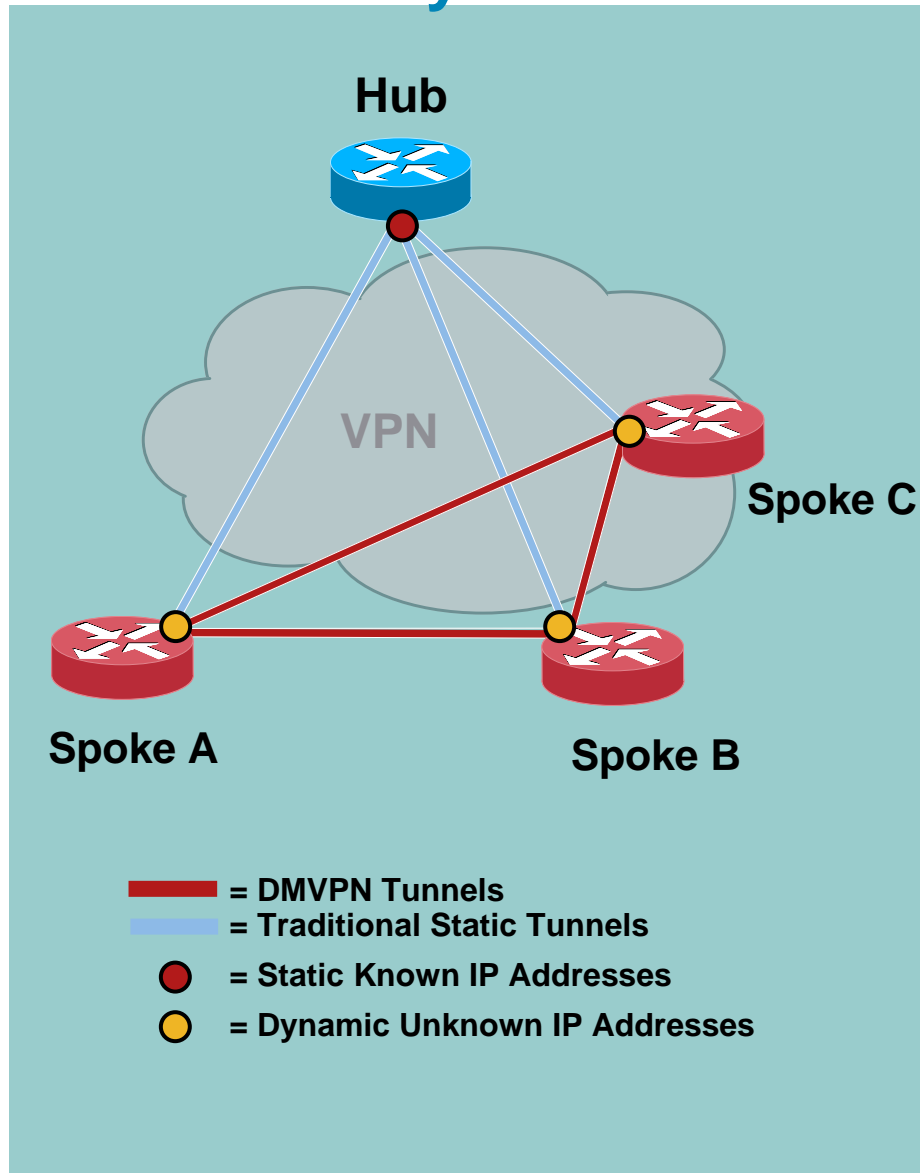
PC Contact to a Server

Learns real address of Spoke B via **NHRP**, **OSPF** or **EIGRP** (routing features)

IPSec VPN tunnel to Spoke B is dynamically built over **mGRE** interface

Benefits:

- Additional Multicast, video traffic supported with GRE
- Full Meshed connectivity with configuration simplicity of hub and spoke
- Preserves (central) bandwidth, minimizes latency

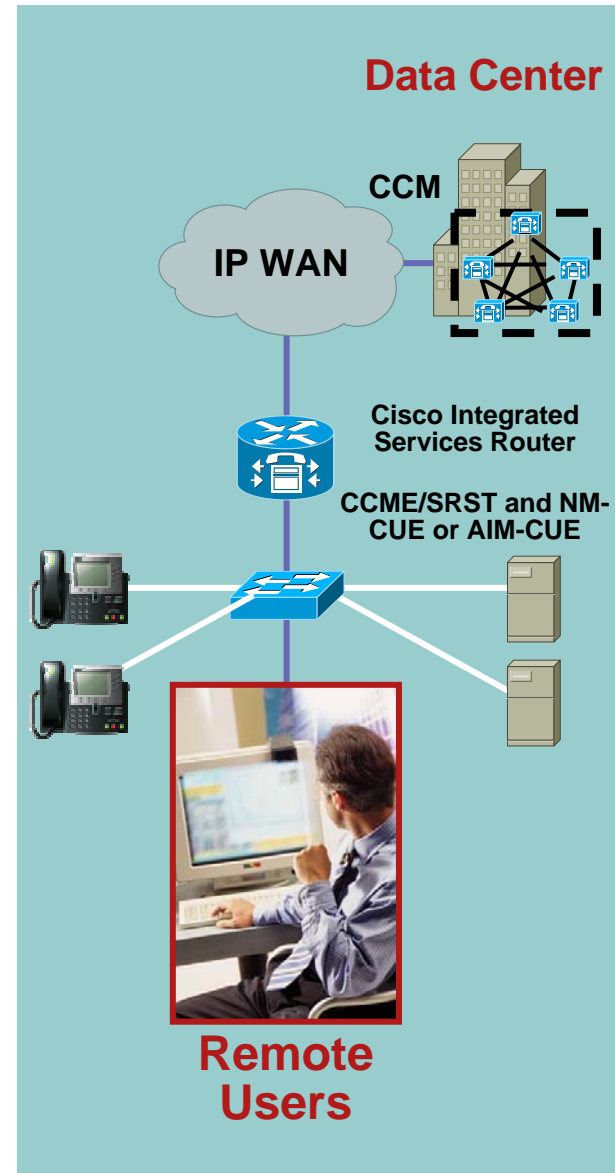


IP Communications for the Enterprise Branch Office

Affordable and robust IP Communications for enterprise branches and small to medium sized businesses

Solution: Cisco CallManager Express (CCME) with Cisco Unity Express (CUE) and SRST with CallManager

- Localized call processing with Cisco CallManager Express (CCME) for up to 240 phones!
- “Failover” localized call processing with Cisco Survivable Remote Site Telephony (SRST) for up to 720 phones!
- Distributed Voicemail via Cisco Unity Express (NM-CUE, or AIM-CUE)
- Etherswitch® Module for Line Powering IP Phones
- Centralized DSP resources for voice connectivity
- Higher digital and analog voice densities



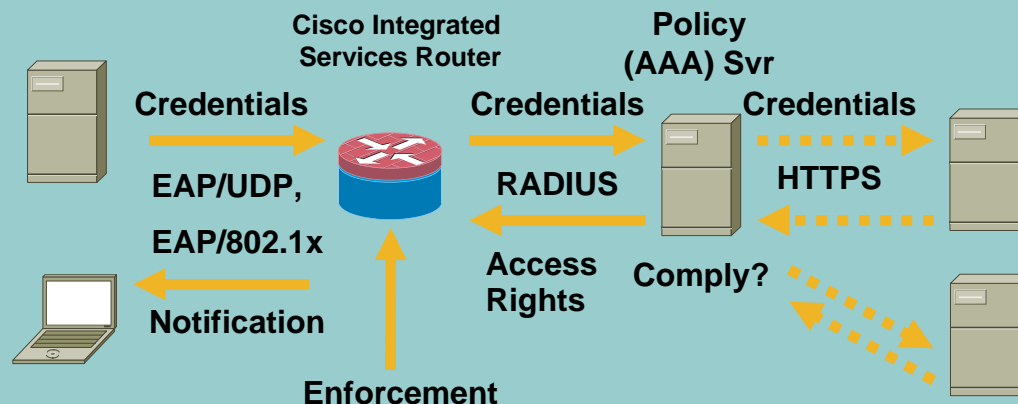
Router-Integrated Services

Network Admission Control (NAC)

Companies need to minimize downtime due to viruses and worms, protect network availability and integrity, manage network access, and enforce security policy

Solution: Cisco Network Admission Control (NAC)

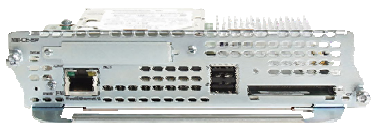
- Reduces IT costs by preventing external and internal threats
- Prevents “contagious” endpoints from infecting network; reduces downtime
- Day-zero protection, increases network availability, resilience, and productivity
- Leverages existing Cisco, antivirus, and endpoint investments
- Integrated Services Router is one of first network devices to enable NAC



Intrusion Prevention Systems

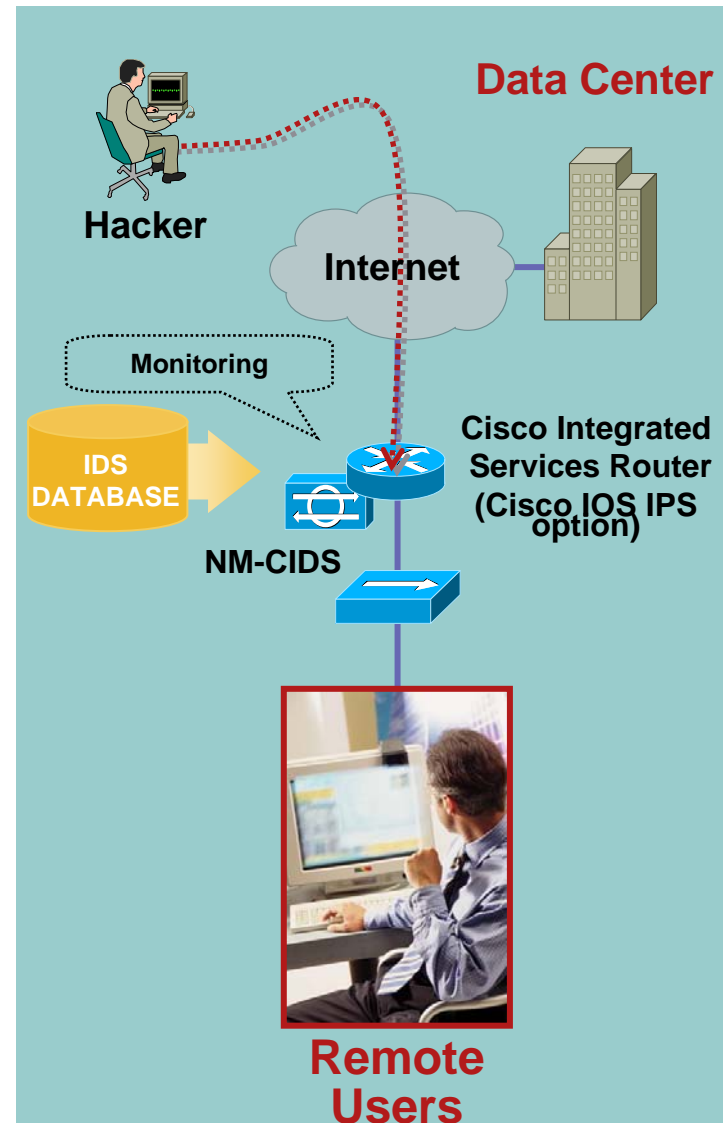
Threat Defense: prevent and respond to network attacks such as worms and virus

- Solution: Intrusion Prevention System (IPS)
- IPS in hardware with NM-CIDS, or software with Cisco IOS IPS
- Cisco IOS IPS: Inline Intrusion Prevention—send alarm, drop packet, reset connection
- Dynamically load customizable signatures
- IDS Network Module stores signature data base locally and captures/logs all events
- External NM FE allows for complete IDS segmented Net/Op and Sec/Op management



NM-CIDS

- ➔ **Dedicated CPU**
- ➔ **Monitors, and Report alarms**
- ➔ **Built in GU for Graphical reports**



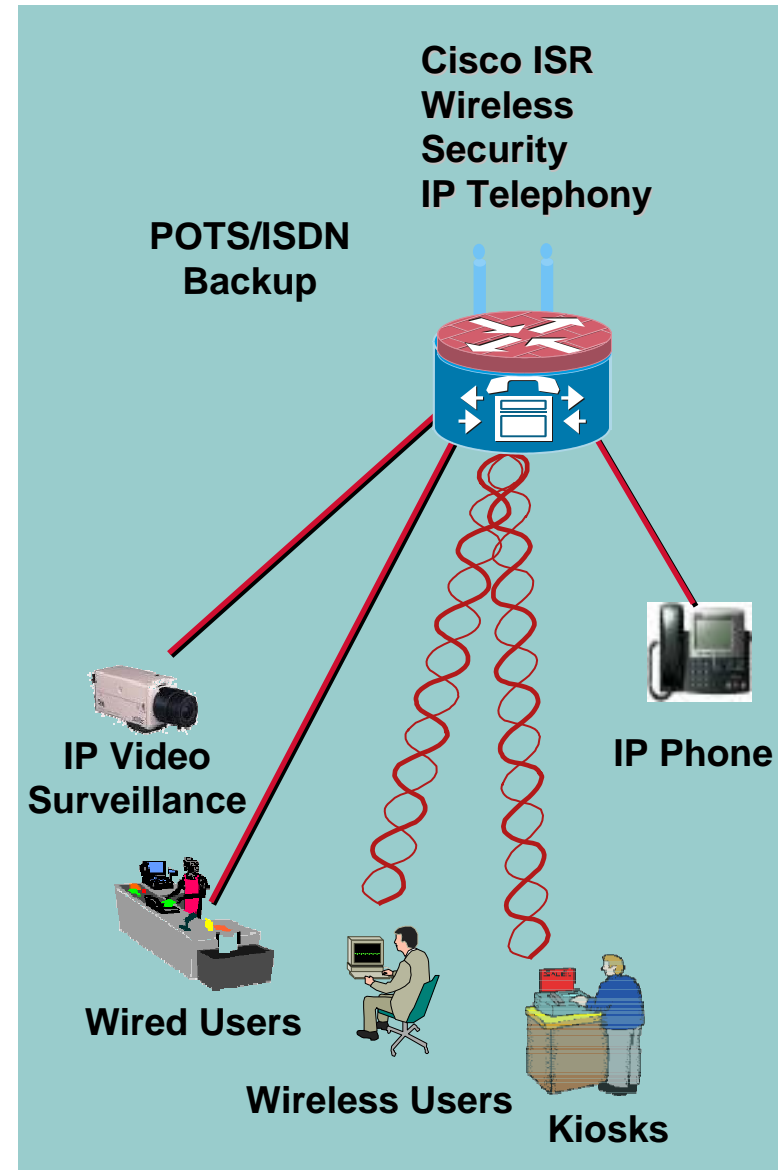
Router-Integrated Services

Wireless Access

Companies need to enable mobile access to critical applications and data throughout the site, while maintaining security.

Solution: Integrated Wireless Access Points and Structured Wireless Aware Networks

- Convenient, easy to deploy integrated access points
- Local LEAP authentication, can take over authentication if RADIUS server is down
- Rogue access point detection to protect against unauthorized access
- Network management via CiscoWorks Wireless LAN Solution Engine



Router-Integrated Services

LAN Switching with Transparent Firewall

Providing LAN segmentation with security in multiple branch sites can be costly and time consuming to deploy

Solution: EtherSwitch (NM-ESW or HWIC-ESW) and Cisco IOS Transparent Firewall

- VLAN and transparent IOS FW enables segmented networks with secure access control
- Simplify subnets, no changing IP addresses on a device by device basis
- Configure the router and integrated switch without visiting the remote site



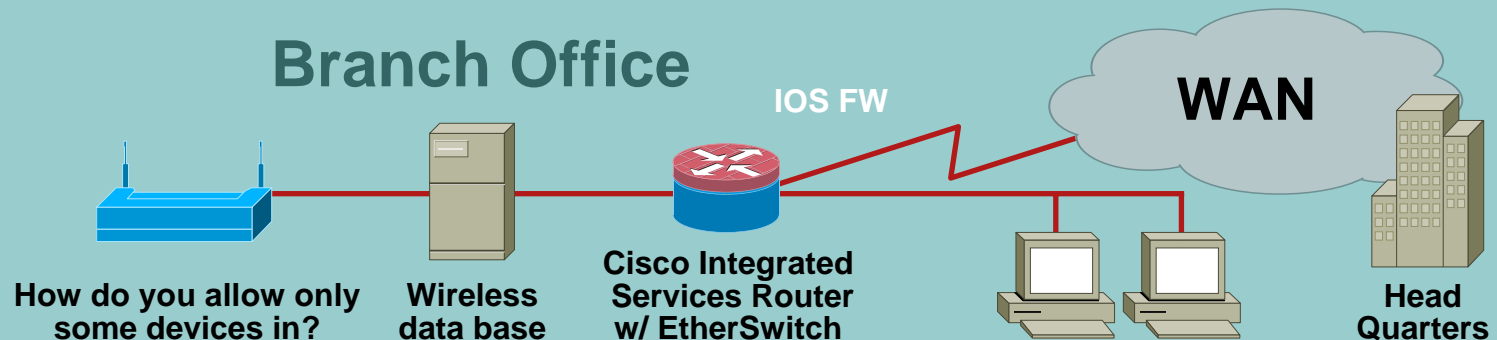
EtherSwitch Services Module

16, 24, or 48 ports of 10/100 Ethernet



EtherSwitch HWIC

4 or 9 ports
of 10/100 Ethernet



Router-Integrated Services

ACNS and WAFS Network Modules (NM-CE)

Web applications, intranet portals, and business video consume expensive WAN bandwidth

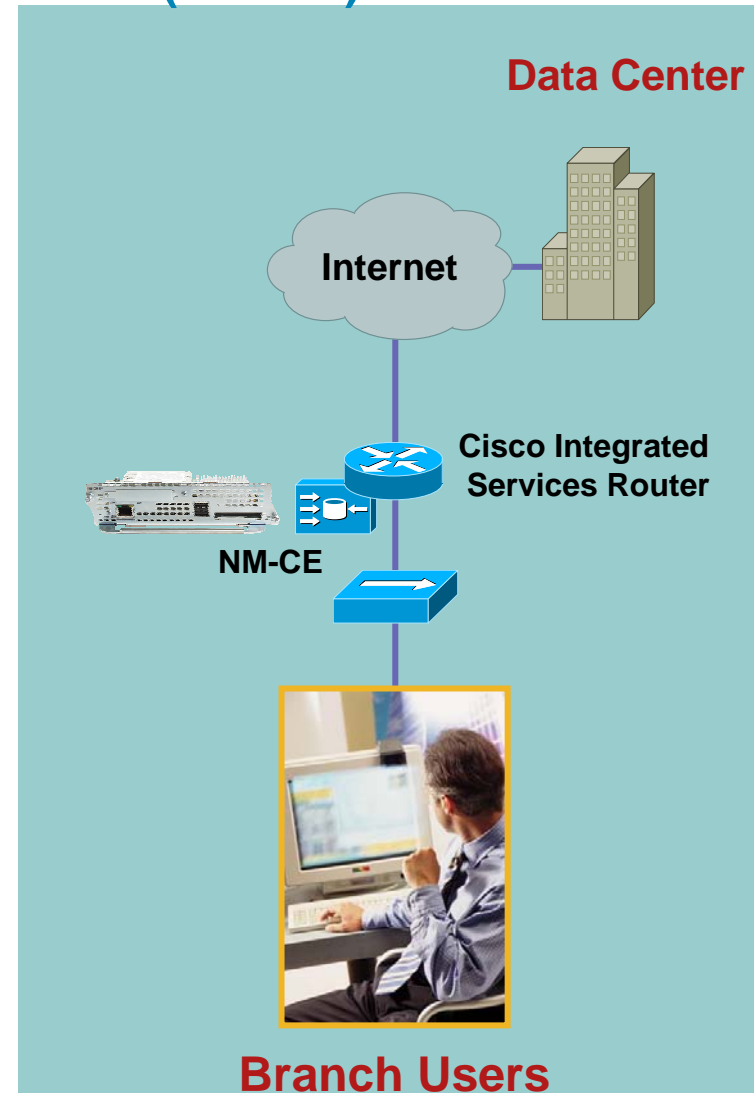
Companies need to manage what the Internet is used for and potential threats from “un-trusted” sites/content

Solution: Cisco ACNS

- **Web application acceleration:**
Siebel, SAP, intranet portals, software distribution
- **Business video:**
Pre-load rich media; deliver RN, WMT, QT, MPEG, ASF, PDF, etc.
- **Web content security:**
Internet and application access control and use policy enforcement
URL filtering with Internet traffic logging and reporting

Solution: Cisco WAFS

- **File Server & Server Consolidation:**
Consolidate file & print servers to reduce costs and increase security
Provide fast access to centralized file servers over WAN



Router-Integrated Services

Circuit Emulation over IP

Companies need to carry non-IP traffic across the IP network to save WAN costs.

Solution: Circuit Emulation over IP

Circuit Emulation over IP imitates a physical communication link across an IP network

Allows the transport of any type of communication over IP

Ideal for TDM or Leased Line replacement and legacy network consolidation



Two versions available:

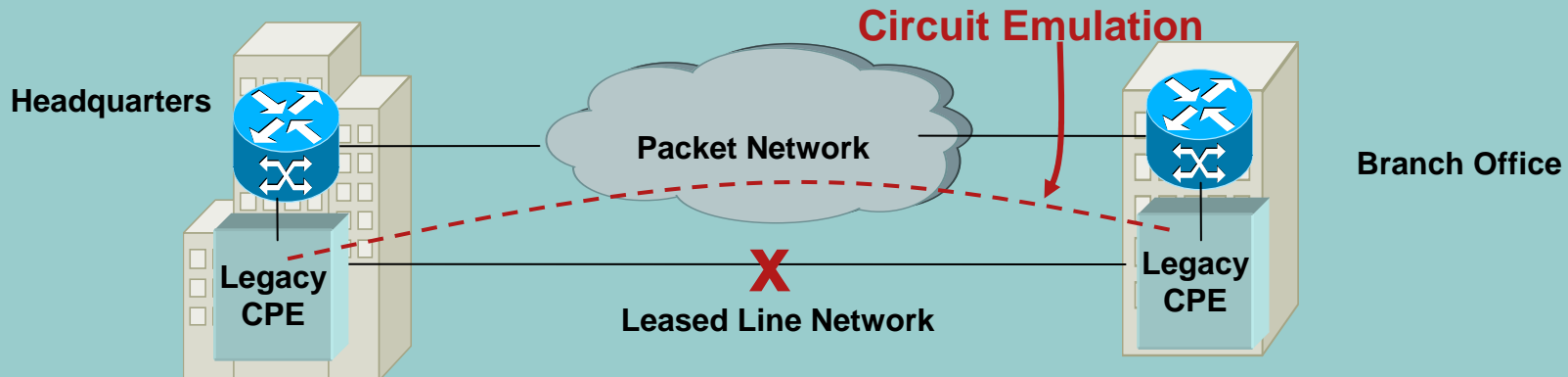
NM-CEM-4TE1

4 T1/E1 ports

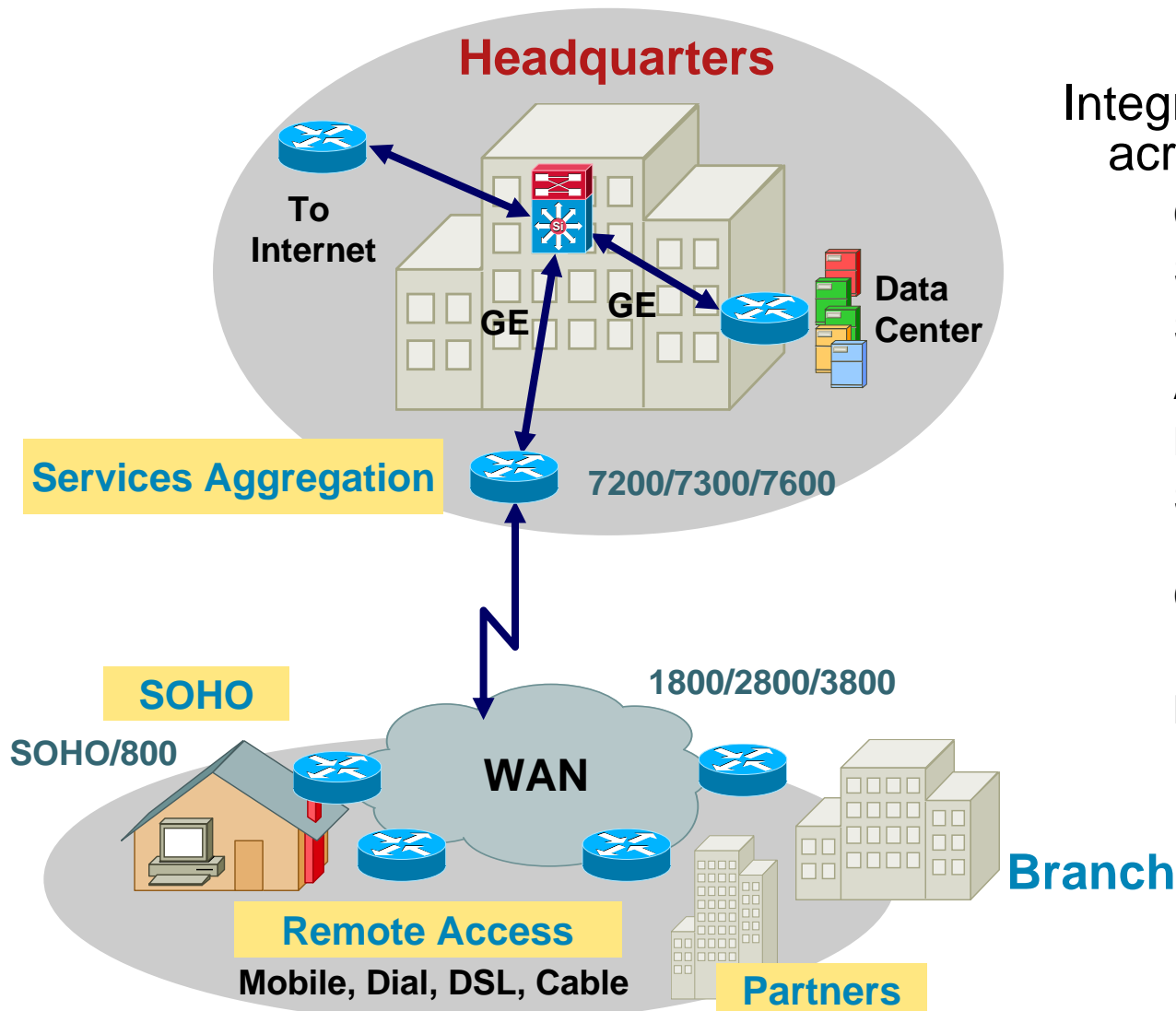
NM-CEM-4SER

4 serial ports

Supports X.21, V.35,
RS232/449/530/530A



Enterprise-wide Integrated Services from Headquarter to the Branch



Integrated services delivery across the WAN

- Converged Voice/Video/Data
- Site to site VPN
- Security
- Advanced QoS
- High Availability
- Services Flexibility
- Integrated GE LAN/Data Center Connectivity
- IP/MPLS Routing
- Multi-protocol WAN Traffic

Cisco Intelligent Routing

- Delivers maximum network value and provides the basis for deploying advanced business applications
- Improved application reliability and performance
- Flexibility to support any future business and applications needs
- More secure network infrastructure
- Reduction of complexity through services integration and common management
- Attractive return on investment with lower Total Cost of Ownership



