Introducing Cisco's Integrated Services Routers
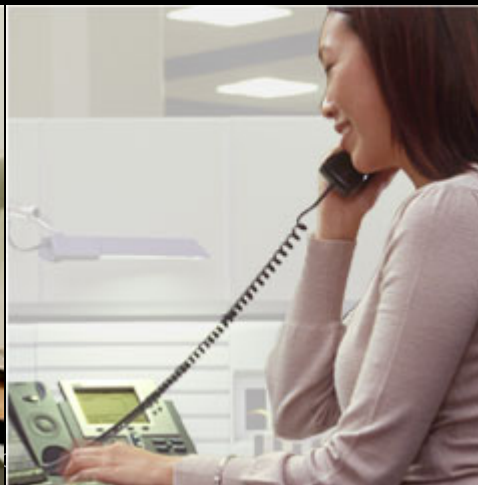
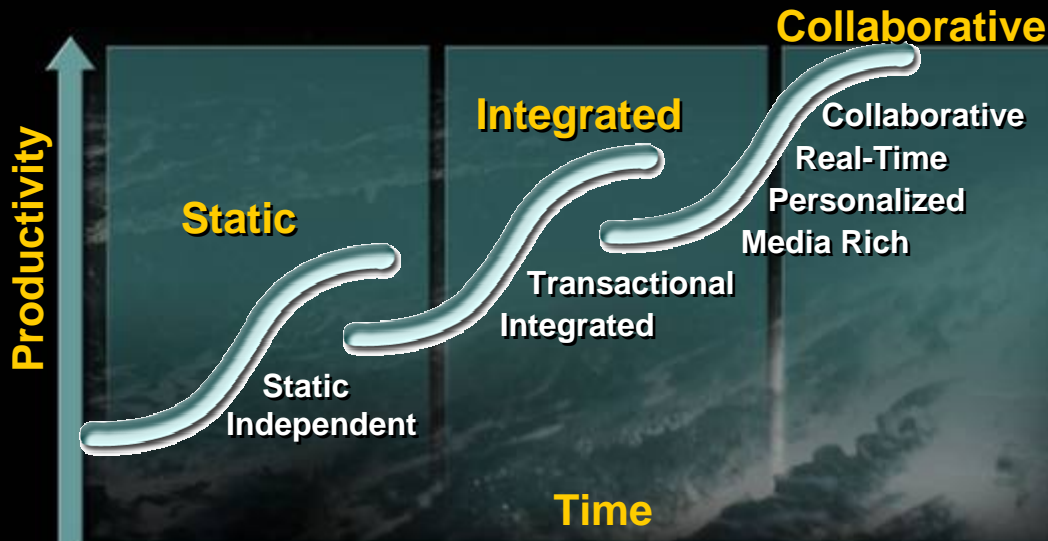## Secure, Wire-speed Delivery of Concurrent Services and Applications

Agenda

- **Market Trends and Momentum for Services**

- **Introducing Cisco's New Integrated Services Routers**
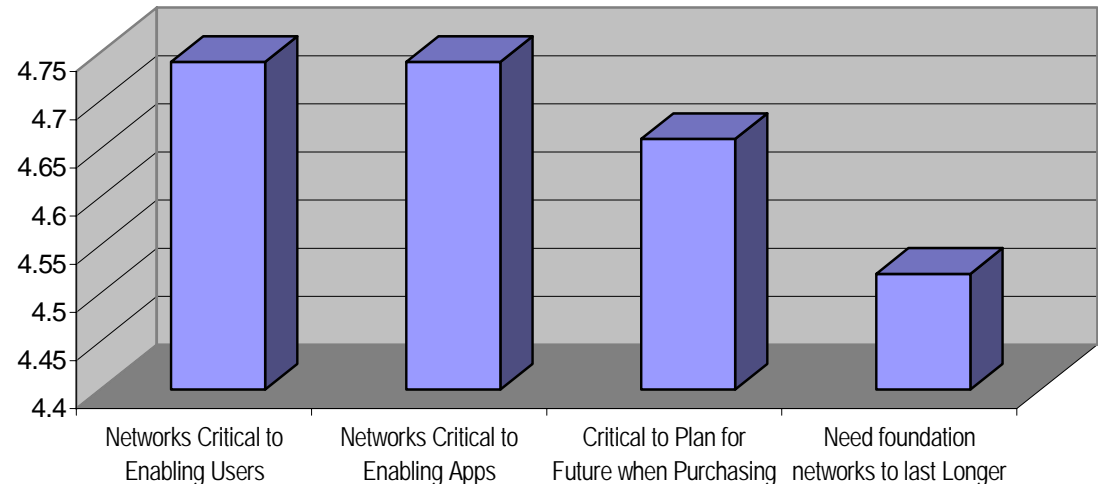
- **Security Overview**

- **Summary**

Rapid Adoption and Deployment of Web Applications, New Network Demands

Collaborative

Integrated

Static

Static Independent

Transactional Integrated

Collaborative Real-Time Personalized Media Rich

Productivity

Time

Web applications accelerate productivity and growth, but place NEW demands on network

The network is critical to enabling users and applications; planning for the future is a must!

Networks Critical to Enabling Users	Networks Critical to Enabling Apps	Critical to Plan for Future when Purchasing	Need foundation networks to last Longer

Cisco Survey May 2004 (Mean Score; n=107)

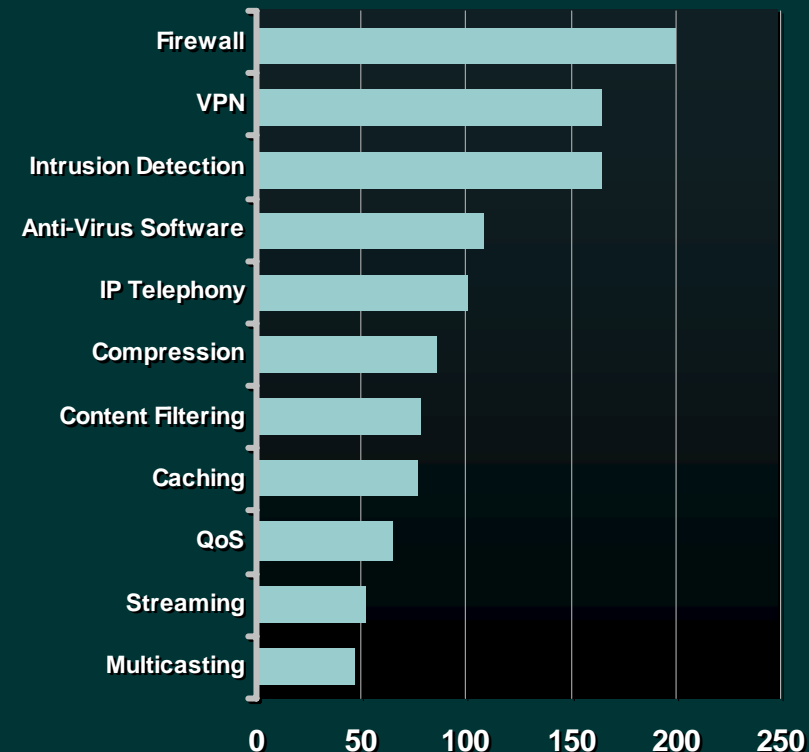# SMBs and Enterprises Prefer Integrated Services & Applications

- **More than half** of the respondents **PREFERRED router-integrated services** for their small offices and enterprise branch offices

- **Converged data, security, voice** enables customers to protect, optimize, grow their businesses

- **Systems approach** maximizes operating efficiencies:

ANN TAYLOR

GST

BloodSource

Functions that SHOULD be router-integrated n=331

	0	50	100	150	200	250

- Firewall
- VPN
- Intrusion Detection
- Anti-Virus Software
- IP Telephony
- Compression
- Content Filtering
- Caching
- QoS
- Streaming
- Multicasting

Yankee Survey: June 03

A New Router Portfolio That Extends Integrated Services to Businesses of All Sizes
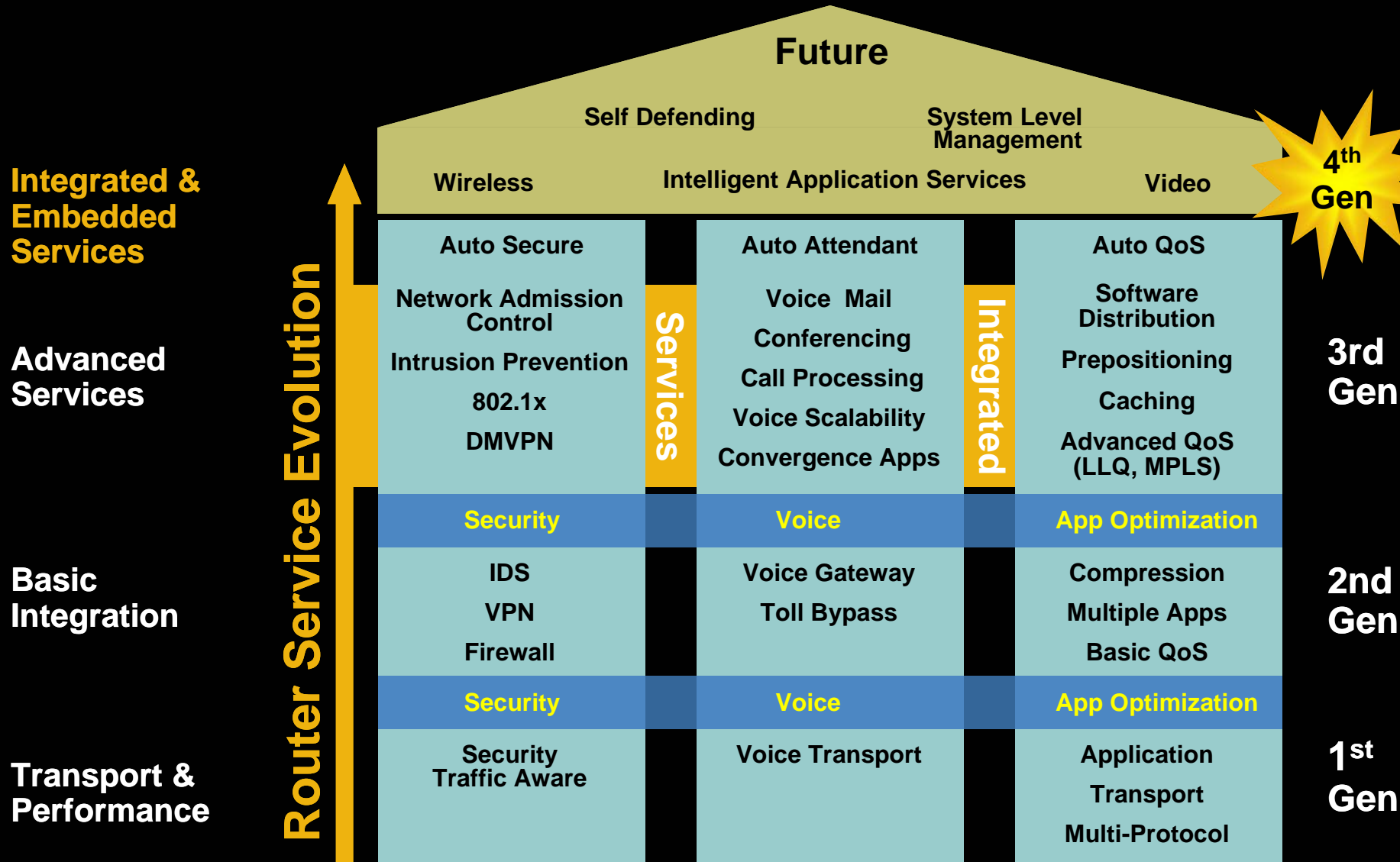
- Cisco **redefines best in class** routing with the industry's FIRST portfolio engineered for **secure, wire-speed** delivery of **concurrent data, voice and video services**

- 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 and voice services into a single routing system

- **Integrated Services Routers** provide customers with **unparalleled services performance and investment protection**

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

Future

Self Defending   System Level Management

Wireless   Intelligent Application Services   Video

4th Gen

Integrated & Embedded Services

Router Service Evolution

Services	Wireless	Voice / Integrated	App / Video
Advanced Services — 3rd Gen	Auto Secure Network Admission Control Intrusion Prevention 802.1x DMVPN	Auto Attendant Voice Mail Conferencing Call Processing Voice Scalability Convergence Apps	Auto QoS Software Distribution Prepositioning Caching Advanced QoS (LLQ, MPLS)
	Security	**Voice**	**App Optimization**
Basic Integration — 2nd Gen	IDS VPN Firewall	Voice Gateway Toll Bypass	Compression Multiple Apps Basic QoS
	Security	**Voice**	**App Optimization**
Transport & Performance — 1st Gen	Security Traffic Aware	Voice Transport	Application Transport Multi-Protocol

Cisco's New Integrated Services Routers

Secure, Concurrent Services At Wire-speed!

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

Embedded **security**, tightly integrated with **voice**

Integrated Services Routers

Backward compatibility with existing router modules for solid **investment protection**
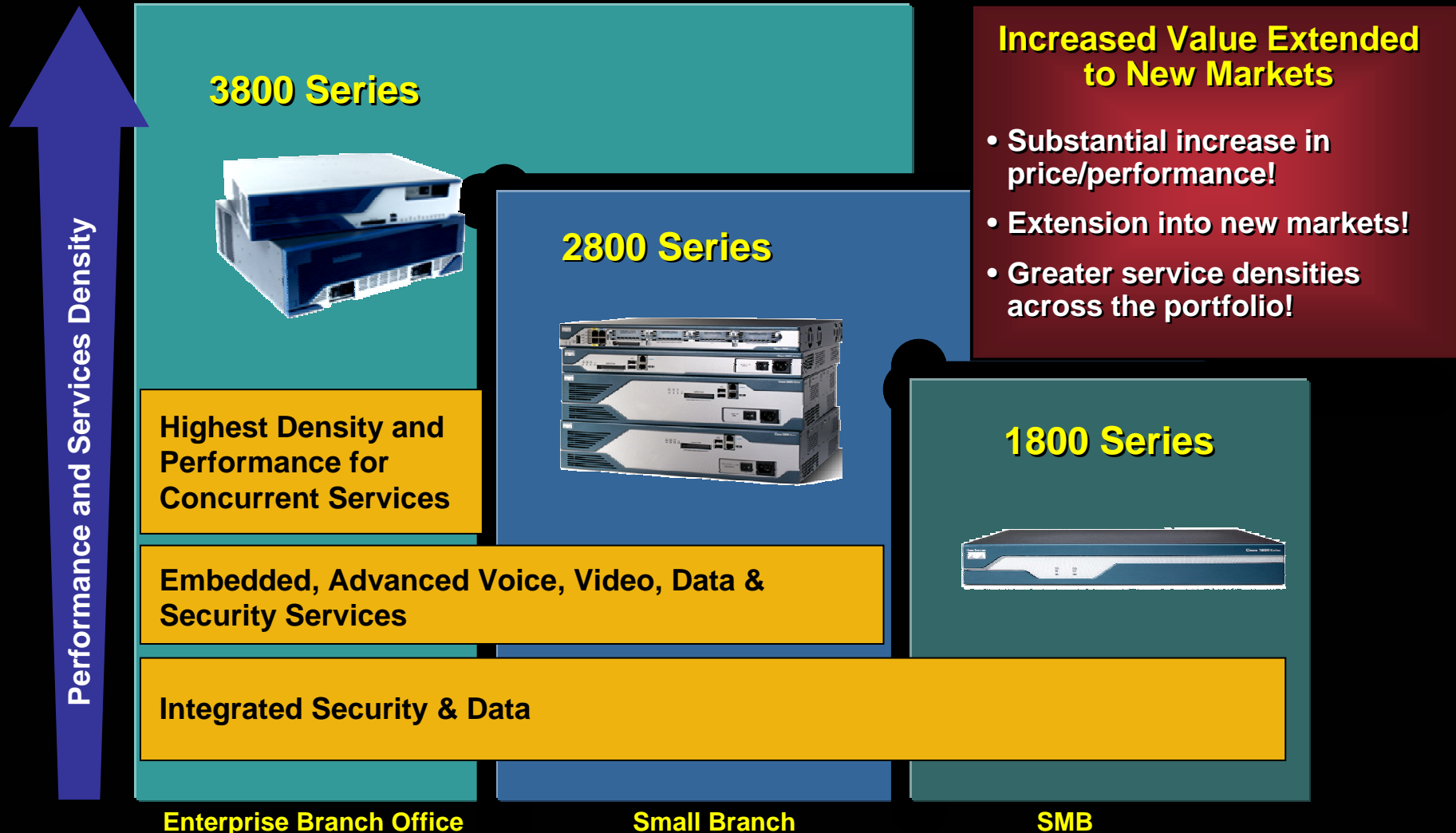
Industry-leading network **availability and resilience**

Plus **headroom** to grow!

Scalable from Small Business to Large Enterprises
Right-Sized Routers for Customer Requirements

3800 Series

2800 Series

1800 Series

Performance and Services Density

Increased Value Extended to New Markets

- **Substantial increase in price/performance!**
- **Extension into new markets!**
- **Greater service densities across the portfolio!**

Highest Density and Performance for Concurrent Services

Embedded, Advanced Voice, Video, Data & Security Services

Integrated Security & Data

Enterprise Branch Office

Small Branch

SMB

The Cisco Difference:
The Value Of A Systems Approach

Benefits Of A Systems Approach:

SINGLE, INTEGRATED PLATFORM

INTELLIGENT SERVICES INTEGRATION

Intelligence

Simplicity

Greater Productivity

Faster Profitability

Maximum Investment Protection

Dynamic Multipoint VPN (DMVPN)
Secure Meshed Tunnels – Automatically!

Hub

VPN

Spoke B

Spoke A

━━━ = DMVPN Tunnels
━━━ = Traditional Static Tunnels
● = Static Known IP Addresses
● = Dynamic Unknown IP Addresses
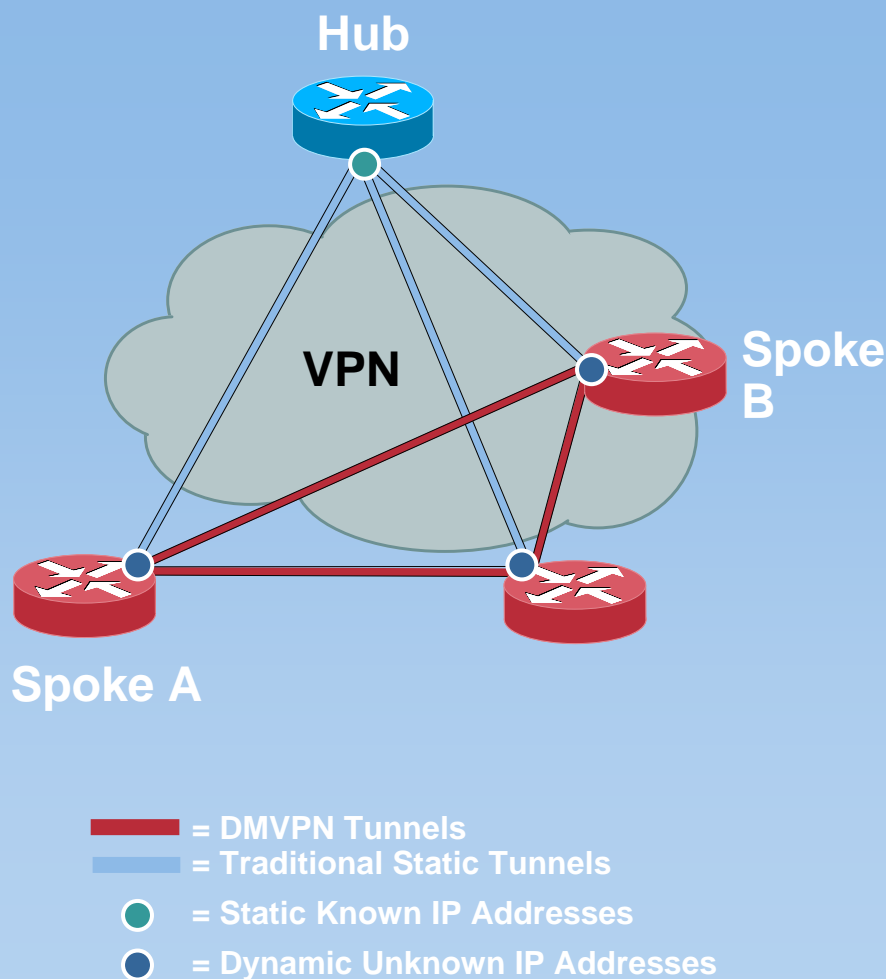
Dynamic Multipoint VPN:

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

- No administration required after initial configuration of DMVPN feature

New Cisco 3825 and 3845 Routers
Flagship Integrated Services Router
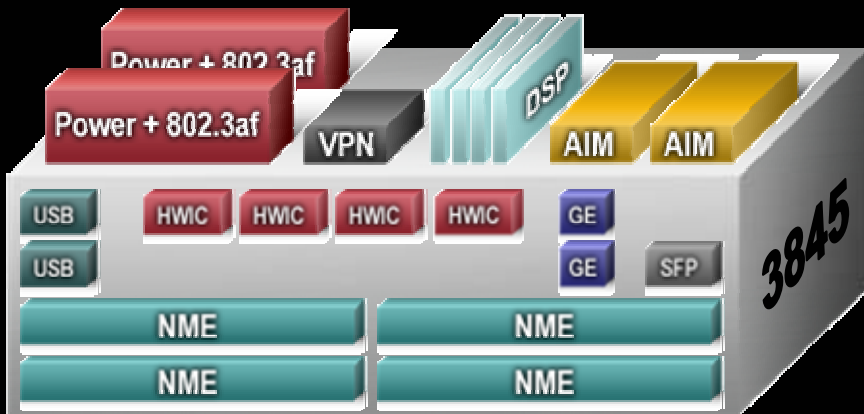
	3825	3845
NME Slots	2	4
DSP Slots	4	4
RPS	External	Internal
Form Factor	2RU	3RU

- **Integrated Services at Wirespeed**

  Up to T3/E3 rates with *services* enabled

  Security: On-board encryption, Firewall with NAT, Inline IPS, NAC, and more

  Voice: On-board DSP slots, up to 240 IP Phones

- **Services Density for Convergence**

  Maximum density for both connectivity and service modules

  Slots support new modules + existing interfaces

  Optional integrated 802.3af powered switching

- **Enhanced Availability**

  Hot-swap modules and power supplies

  Highly serviceable design (field replaceable)

  Internal redundant power

New Cisco 2801, 2811, 2821, 2851 Routers
Integrated Services Routers for the Converged Branch
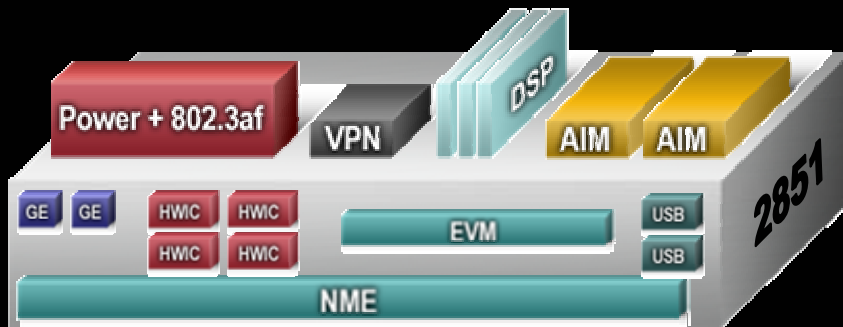
- **Integrated Services at Wirespeed**

  Up to NxT1/E1 rates with *services* enabled

  Security: On-board encryption, Firewall with NAT, Inline IPS, NAC, and more

  Voice: On Board DSP slots, up to 96 IP Phones

- **Services Density for Convergence**

  x2 slots for connectivity w/service expansion

  Slots support new modules and existing interfaces

  Optional integrated 802.3af powered switching

- **"Right-sized" IP Communication solutions**

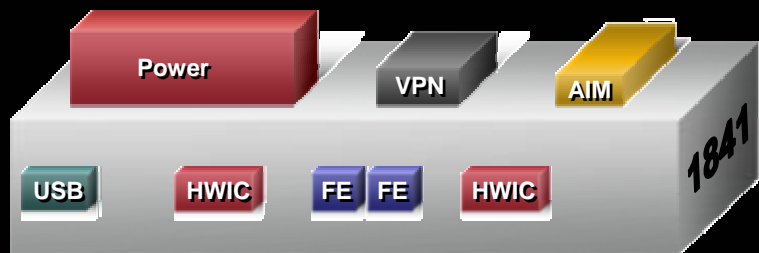 Performance and density matched for 24-96 user data + voice solution

  New expansion voice module slot for high density analog/BRI

	2801	2811	2821	2851
NME / EVM	0/0	1/0	1/1	1/1
DSP Slots	2	2	3	3
LAN	2 FE	2 FE	2 GE	2 GE
Form Factor	1RU	1RU	2RU	2RU

New Cisco 1841 Router
Integrated Services Router for the Secure Branch/SMB

	1841
HWIC Slots	2
AIM Slots	1
Form Factor	Desktop

- **Integrated Services at Wirespeed**

  T1/E1/xDSL rates with *services* enabled

  Security: On-board encryption, Firewall with NAT, Inline IPS, NAC, and more

- **Modular flexibility**

  Comprehensive data connectivity options
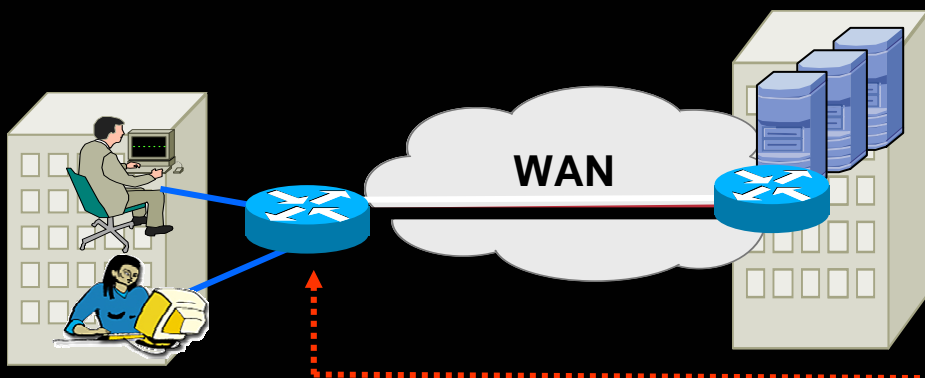
  Slots support new modules and existing interfaces

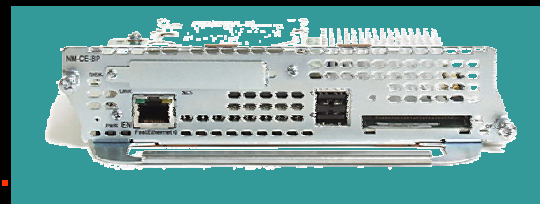 **On-board Dual FE**

  Optional integrated 10/100 switching

Innovative New Application Services Modules

Embedded Application Services, Enhanced Performance

WAN

Application Services Module

L4-L7 Service Modules:

Network analysis/diagnostics

Voice mail/Auto-attendant

HTTP caching/URL filtering

Video distribution

Intrusion detection

Key Benefits:

Hardware consolidation

Lower Total Cost of Ownership

Router integration tightens application interface

Flexibility to incorporate non-IOS software

Hardware Innovation Raises Security Leadership
Cisco Self-Defending Networks Delivered At Wire-Speed!

Cisco.com

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

Trust & Identity

Leverage the network to intelligently protect endpoints

Network Admission Control, 802.1x

Secure Connectivity

Secure and scalable network connectivity

VPN, DMVPN, V3PN, Secure Voice

Integrated Security Services Delivered at Wire Speed

Network Infrastructure Protection

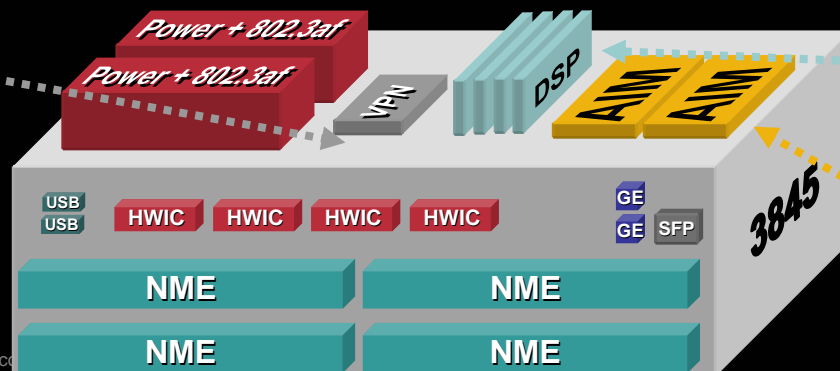Protect the network infrastructure from attacks and vulnerabilities

Control Plane Policing

Threat Defense

Prevent and respond to network attacks and threats such as worms

Intrusion Prevention, Firewall

Built in VPN HW Encryption

Power + 802.3af
Power + 802.3af
VPN
DSP
AIM
AIM

Secure Voice

USB
USB
HWIC HWIC HWIC HWIC
GE
GE SFP
3845

NME NME
NME NME

High Performance AIM Security & Voice Services

Presentation_ID   © 2004 Cisco   15

Hardware Innovation Raises Voice Leadership
Cisco Services and Applications Delivered At Wire-speed!

Affordable, Secure, Scalable Voice Solutions

Advanced Voice Applications

Leverages modularity for integration of voice applications

Cisco CallManager Express, Survivable Remote Site Telephony, Cisco Unity Express

Integrated Modularity

Scales service capabilities and voice densities

New extension voice module
New high speed interface cards

Secure Voice Services

Delivered at Wire Speed

Core Performance

The foundation for unmatched voice performance
New processor
New specialized voice silicon
New adaptable interfaces
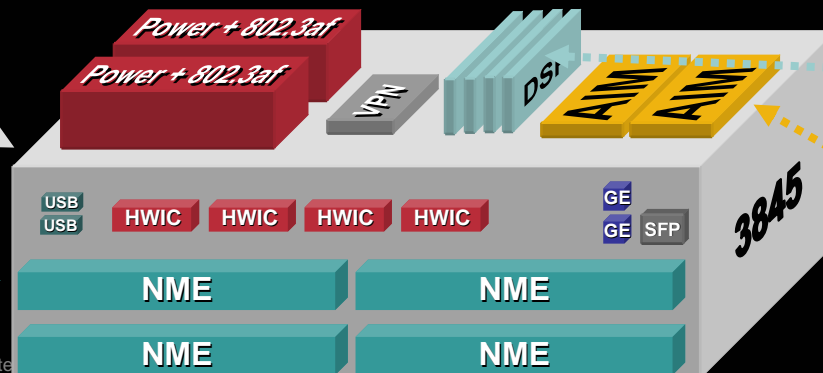
Embedded Modularity

Enables embedded conferencing, automated attendant and voice mail

New digital signal processor slots
Advanced Integration module slots

Embedded CME, SRST, Security

Power + 802.3af
Power + 802.3af
VPN
DSP
AIM
AIM

Voice/Fax and Conferencing DSPs

USB
USB
HWIC HWIC HWIC HWIC
GE
GE SFP
3845

Extension Voice Modules

NME   NME
NME   NME

Auto Attendant, Voicemail, AIM

Cisco's Integrated Services Routers: Key Features & Benefits

Embedded Security and Voice

- Fast, on-board encryption
- Highest voice services densities
- Integrated DSP slots and POE

Higher Performance

- New ASIC, Bus design and processor boost performance for services
- Double services density
- Double memory defaults

Increased Modularity

- Increased high speed slots — up to 2.2 Gbps
- High density and larger form factor network modules

Resiliency

- Redundant power option with online insertion and removal
- Increased environmental thresholds

Investment Protection

- Leverages existing modules
- Up to 4X memory capacity
- GE, USB, wireless for new media
- Slot to slot communication

Integrated Services

Security

Voice

Content

L2 Switching

Wireless

Management

* future

Extended Services, Headroom and Investment Protection

Integrated Services Routers (ISR)

17

SUMMARY

Best-of-Class Integrated Services Routers
Customer Feedback

Service Provider: "Cisco's new Integrated Services Routers enables BT to be more effective and more **efficient in provisioning and supporting managed services for its wide array of customers** - from the smallest networked business to the largest of global corporations."

Ron Maxwell, BT Product Manager for Convergent Solutions

SMB: "By converging applications into a single system engineered for speed and security, Cisco Integrated Services Routers enable us **to easily deploy voice, data and security services** to travel centers anywhere around the country. That's the level of functionality and flexibility we need **to provide very best service** to our travel center patrons, professional drivers, and employees."

Jon Duren, Chief Technology Officer for Idle Aire

Integrated Services Routers: A Foundation for Cisco's Intelligent Information Network

INTEGRATED	RESILIENT	ADAPTIVE

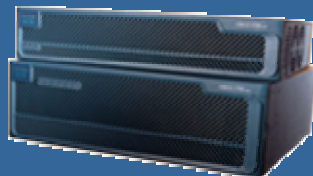| IP COMMUNICATIONS	SECURITY	MOBILITY

INTELLIGENT NETWORK SERVICES

Integrated Security, Voice	CISCO IOS® SOFTWARE	Availability/ Resiliency
ROUTING	WIRELESS, STORAGE OPTICAL	SWITCHING

Delivery Optimization	Enhanced Manageability

Cisco Services Portfolio: Unmatched Device, Network, Application Offerings

People

- Cisco Certifications (2,400+ CCIEs)
- Industry Recognized Experts
- Received Several Patents
- Numerous Technical Books

Processes

- Advanced Services Knowledge Database
- Operational Best Practices
- High-availability Methods and Procedures
- Close Alignment with Development Engineering

Tools

- Audits
- TAC Web
- Advanced Services Customer Portal

Partners

- Globally Scaleable
- Specialized
- Leverage Best Practices

Summary

- **Redefining "best in class" routing: unique systems approach**

- **Complete new family for today's and tomorrow's needs**

  Secure, data, voice, video services at wire speed

  More value, headroom for growth

- **Industry and technology leadership**

- **Maximum investment protection**

- **Comprehensive support and services, global partnerships**