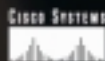




Router, Switch and wireless Product Update

SE 황호진
hhj@cisco.com



043 0699

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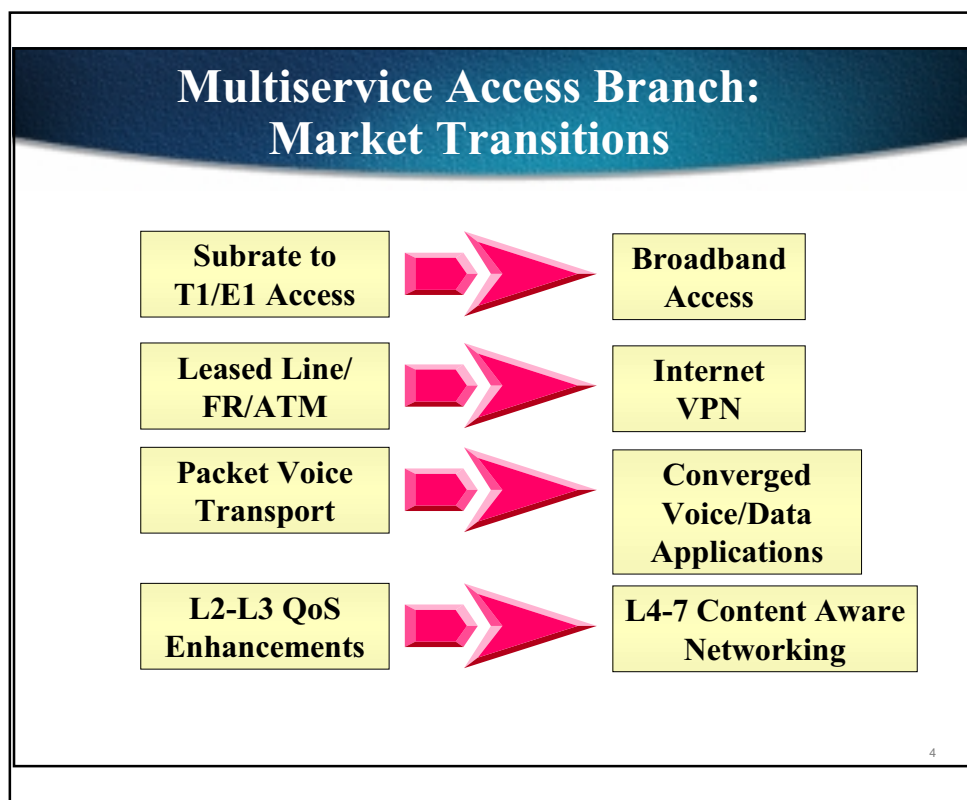
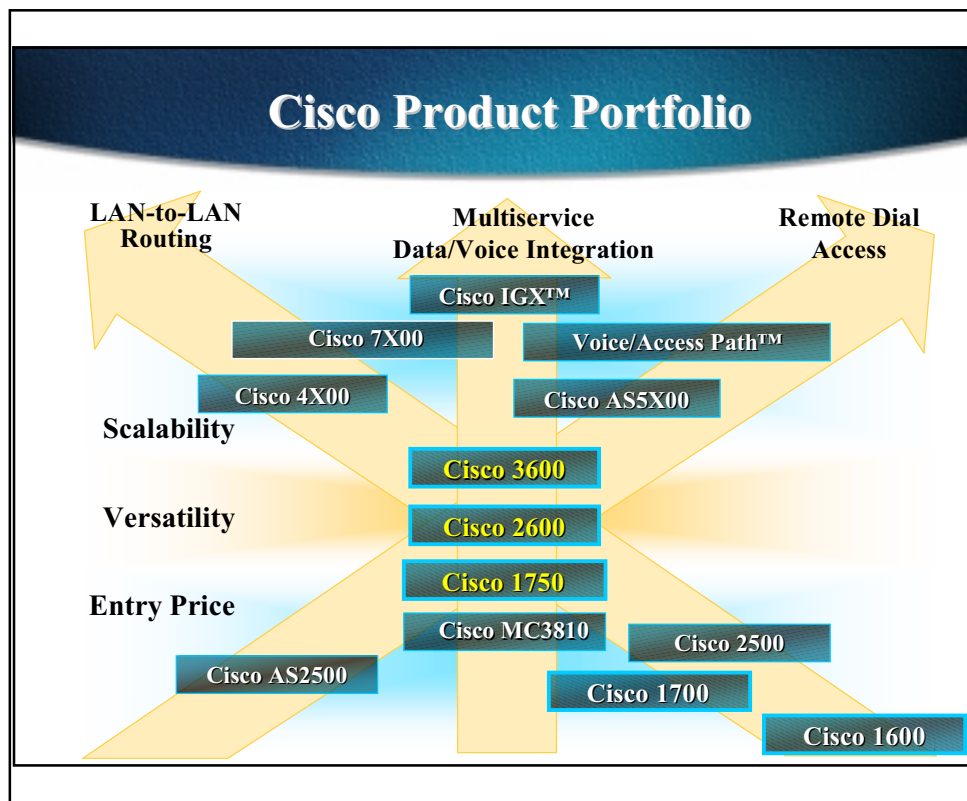
1

Agenda

- **Router solution update**
 - Cisco 1700
 - Cisco 2600
 - Cisco 3600
- **Lan switch solution update**
 - Catalyst 6000
 - Catalyst 4000
- **Wireless lan solution update**
 - Cisco Aironet 340
 - Cisco Aironet 350

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2



Cisco 1700 Product Solution

1.Voip Solution

2.VPN Solution

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5

Cisco 1750 Architecture

Chassis

- RISC processor for encryption performance
- One autosensing 10/100 Fast Ethernet
- Console and auxiliary ports up to 115 kbps
- Locking connector on power socket
- Kensington-compatible locking slot

Memory

- Runs from DRAM
- DRAM onboard/default: 16 MB
- DRAM max: 48 MB
- Flash onboard/default: 4 MB
- Flash max : 16 MB



One Voice and Two Voice/WAN Interface Card Slots

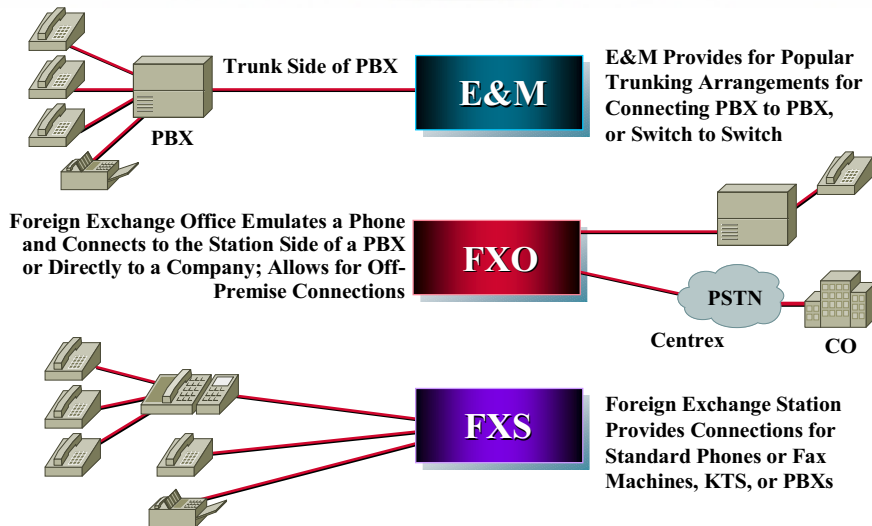
- Any combination of WAN interface cards
- Any combination of analog voice interface cards
- Over 25 WAN interface combinations
- Serial, ISDN BRI, and CSU/DSU options
- WICs/VICs leveraged across multiple Cisco access products

Internal Expansion Slot

- Future hardware-assisted data encryption up to T1/E1, data compression

6

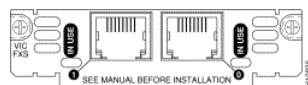
Cisco 1750 VIC Connection Examples



7

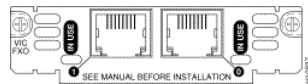
Cisco 1700/2600/ VIC Card

Voice Interface Card with FXS Interface



필요 IOS : 모든 IOS

Voice Interface Card with FXO Interface

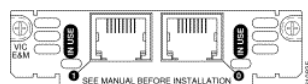


필요 메모리 :

Flash 메모리 4MB이상

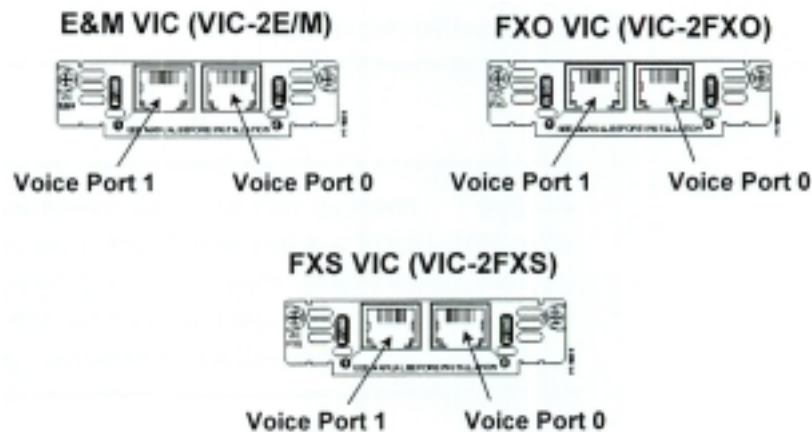
Ram 메모리 24MB이상

Voice Interface Card with E&M Interface



8

Cisco 17002600/3600 Voice Interface Cards



9

Cisco1700 VPN module

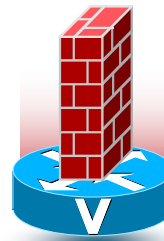
- **WIC-1ENET: 10BaseT card for 1720 & 1750**
2nd Ethernet card can be used to create DMZs
Orderable Today!
- **Default Memory Increase for 1700 Platforms**
Was: 4 MB Flash / 16 MB DRAM
Now: 8 MB Flash / 32 MB DRAM*
*Enough to run IOS FW/DES/3DES & VPN Module

10

Cisco IOS Firewall

Optional Robust Firewall Integrated with Multiservice Router

- **Context-Based Access Control (CBAC)**
 - Dynamic per-application filtering
 - Support for advanced protocols (H.323, SQLnet, RealAudio, and so on)
- **Control downloading of Java applets**
- **Denial-of-service detection and prevention**
- **Real-time alerts**
- **TCP/UDP transaction log**
- **Configuration and management**



11

Cisco 2600/ 3600 Product Solution

1. Voip Solution
2. VPN Solution

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12

Cisco 2600 Architecture

AIM Slot (Internal)

- High-speed data compression
- High-speed encryption
- Future CPU off-loading features

WAN Interface Card Slots

- Shared with Cisco 1600, 1700, and 3600
- Any combination of two WICs supported
- Serial, ISDN BRI, and CSU/DSU options

Network Module Slot

- Shared with 3600 series
- **Voice/data integration, modems, ISDN BRI and PRI, serial, LAN and ATM/ADSL options**

2600 Base Chassis

- Single or dual integrated LANs
- Ethernet, Token Ring, mixed LAN, or autosensing 10/100 Fast Ethernet
- Console and auxiliary ports
- Optional RPS and DC power



13

High Performance Cisco 2600 Models Cisco 2650 and Cisco 2651

- **Modular multiservice routers with single or dual autosensing 10/100 Fast Ethernet ports, ISL and 802.1Q for VLAN support**
- **Up to 37-kpps fast switching performance**
- **10x performance / capabilities of traditional Cisco Branch Office Routers**

Dual ports: Cisco 2651 and Cisco 2621

Single ports: Cisco 2650 and Cisco 2620



Cisco 2650 and 2651

14

Modular Cisco 3600 series

Three distinct market

Segments

- LAN-to-LAN routing
- Dial access
- Multiservice (voice, video, and Data)

Voice over IP

Voice over Frame Relay

Voice over ATM(3640, 3660)

VPN Support



15

Cisco 3620 Modular Access Router

- 80Mhz IDT R4700 RISC processor
- 20–40 kpps fast switching
- 1.5-2 Kpps process switching
- Two Network Module slots:
 - 8 Ethernets, 10 ISDN BRIs or 6 T1/E1 serial connection
 - 4 analog/60 digital voice ports
- Two PCMCIA slots for flash memory (max 32 MB flash)
- Two internal flash SIMM slots (max 32 MB flash)
- NVRAM 32 MB
- Console and AUX ports
- 60 –watt AC or DC power supply or external redundant power supply



16

Cisco 3640 Modular Access Router

- 100Mhz IDT RISC processor
- 50–70 kpps fast switching
- 3–4 Kpps process switching
- Four Network Module slots:
 - 16 Ethernets, 6 PRIs or 60 digital modems
 - 12 analog voice interfaces and 120 digital voice interfaces
- Two PCMCIA slots for flash memory
- Two internal flash SIMM slots (max 32 MB flash)
- Four internal DRAM SIMM slots (max 128 MB DRAM)
- NVRAM 32 MB
- 140 –watt AC or DC power supply or external redundant power supply



17

Cisco 3660

- 255Mhz RISC QED RM5271 processor
- 100–120 kpps fast switching
- 12 Kpps process switching
- Six Network Module slots:
 - 24 analog voice interfaces and 288 digital voice interfaces
- Supports hot swap of network modules
- One or two 10/100 autosensing Fast Ethernet ports
- Two PCMCIA Type II slots for flash memory
- Two internal flash SIMM slots (max 32 MB flash)
- Four internal DRAM SIMM slots (max 256 MB DRAM)
- Two AIM slots
- One or two 250 –watt AC or DC power supply

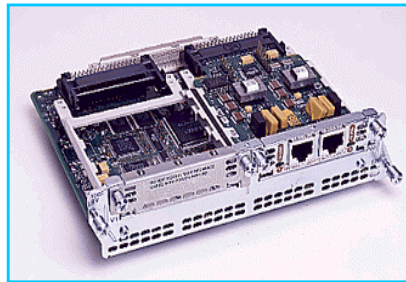


18

Voice/Fax Network Modules

- **Voice/fax over Frame Relay or IP**
- **Voice Interface (VICs)**
FSX, E&M, FXO, BRI VIC
- **Diverse signaling**
Delay, immediate, and wink start
Loop and ground start
- **DSP architecture**
G.711 PCM
G.729, G.729a
G.723.1
G.728, G.726

Editor's Choice Award
Computer
TELEPHONY
The Magazine for Computer and Telephone Integration



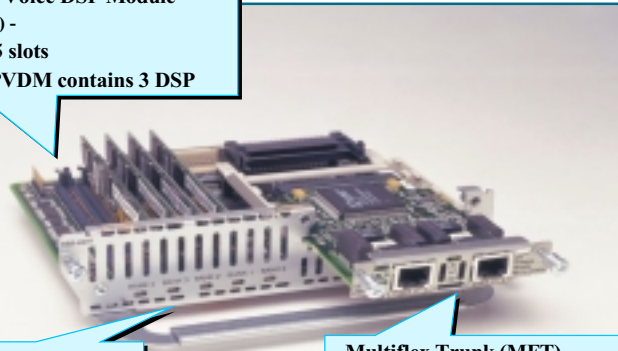
19

Digital T1/E1 Packet Voice Trunk Module

Packet Voice DSP Module (PVDM) -
Up to 5 slots
Each PVDM contains 3 DSP

High-Density Voice (HDV) Module
Provides connectivity for MFT and PVDMs

Multiflex Trunk (MFT)
T1/E1 VWIC-
provides physical T1 connectivity for VoIP or Drop & Insert



20

T1/E1 Multiflex VWICs for Cisco 2600 and 3600 Series

- **Maximum investment protection supporting:**

WAN connections as a WIC

Drop and insert for data and voice as an add/drop multiplexer

Packet voice as a VIC with the high-density packet voice NM for PBX or PSTN connections

Future NM support planned

- **Integration to simplify network management**

T1CSU/DSU or E1 DSU

E1 balanced and unbalanced

G.703

Add/drop Mux. (two-port D&I version only)

- **Full set of management and diagnostic features (BERT functionality in future)**



Use as Standalone as WIC
or D&I Multiplexer



Required for T1/E1 Packet Voice as
PBX / PSTN Connection

21

Cisco SRS Telephony- Features in **First** Release

12.1.5YD(April) / 12.2. 2(X)(May) / 12.2.3(T)(July)

- Re-homing of IP phones upon failure to branch router for call processing
- Maintain local Ext. to Ext calls upon failure
- Maintain Ext. to PSTN calls upon failure
- Maintain existing calls upon recovery
- Support for IP and POTs phones
- Upto six line per phone
- Upto 24 line appearances per system
- Primary line on phone
- DID and DOD calling
- Caller ID and ANI support
- Calling Party Name
- Speed and Last Number Dial

- Distinctive Ringing
- Transfer (without consult)
- Call Hold / Pick, Call Park / Retrieve
- Call Waiting
- Call Forwarding - Busy, N/A, ALL
- PSTN - T1 & E1 CAS trunks support
- ISDN BRI (Euro ISDN)
- Call Detail Recording / Radius Server
- Inter-working with Cisco Gatekeeper
- WAN link Support: FR, ATM, MLPPP, Serial, AAL2, DSL
- Voicemail support through local answering machine

22

Cisco SRS Telephony- Features in **Second** Release

Q4 CY 01

- Music/Tone on hold
- Three party G.711 conference
- Distinctive Ringing
- Cisco Voice Manager support
- IP phone-to-phone intercom
- IP phone audio “paging” system
- On-Hold call timeout alert
- Support for Cisco 7935 - Polycom IP speakerphone
- ISDN Primary Rate Interface support

23

New VPN Modules for Cisco 2600 and 3600 Series

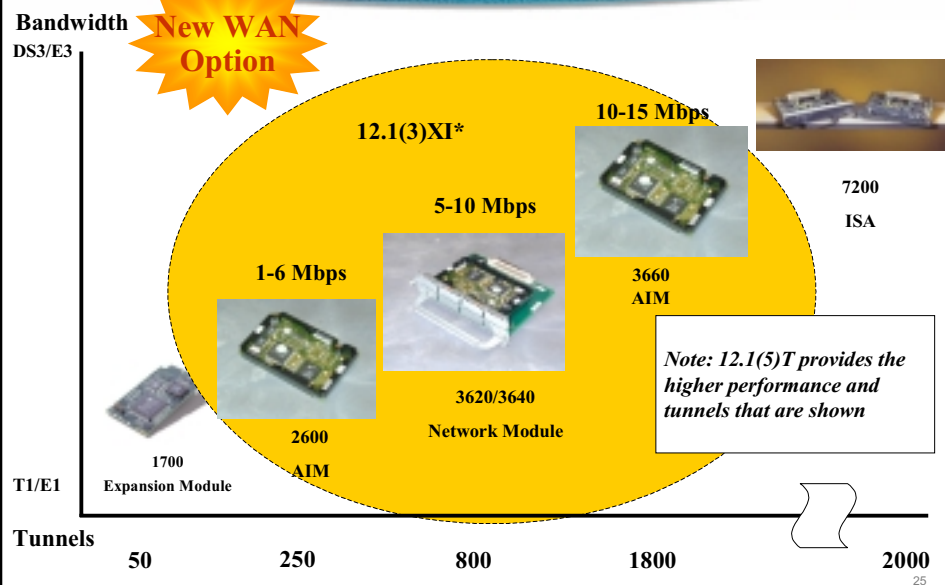
- Accelerates IPSec DES & (3DES)
up to 24Mbps
- Fits AIM or NM expansion slot
 - Cisco 2600 *AIM-VPN/BP*
 - Cisco 3620/3640 *NM-VPN/MP*
 - Cisco 3660 *AIM-VPN/HP*
- Encryption Supported
 - IPSec DES and 3DES
 - Authentication: RSA and Diffie Hellman
 - Data integrity: SHA-1 and MD5
- Standards supported
 - IPSec/IKE: RFCs 2401-2410, 2411,
2451

NEW



24

VPN Hardware Encryption for Cisco 2600 and 3600 Series Routers



Cisco VPN Concentrator 3000 to 5000 All built for IPsec VPN Services



Feature Rich Remote

- ◆ VPN Client
- ◆ Multi platform support
- ◆ PPTP/IPsec/L2TP
- ◆ Push Policy
- ◆ VPN Appliance

VPN 3000 Enterprise

- ◆ Dual Eth only
- ◆ 100 to 5000 tunnels
- ◆ Two models 3005 30XX
- ◆ 100-10,000 tunnels
- ◆ 5 - 90Mg 3DES

VPN 5000 SP

- ◆ SP WAN Device
- ◆ 2000 to 40,000 tunnels
- ◆ 3 Models
- ◆ 20 - 750 Mg 3DES
- ◆ 10/100, DS3, HSSI

26

Cisco IOS Firewall and Encryption Feature Sets

- Integrated firewall and 56-bit IPsec or 168-bit (3DES) VPN access solutions for Cisco 2600 and 3600 series
- Context-based access control
- Java blocking
- Logging and real-time alerts
- Intrusion detection in 12.05T and later



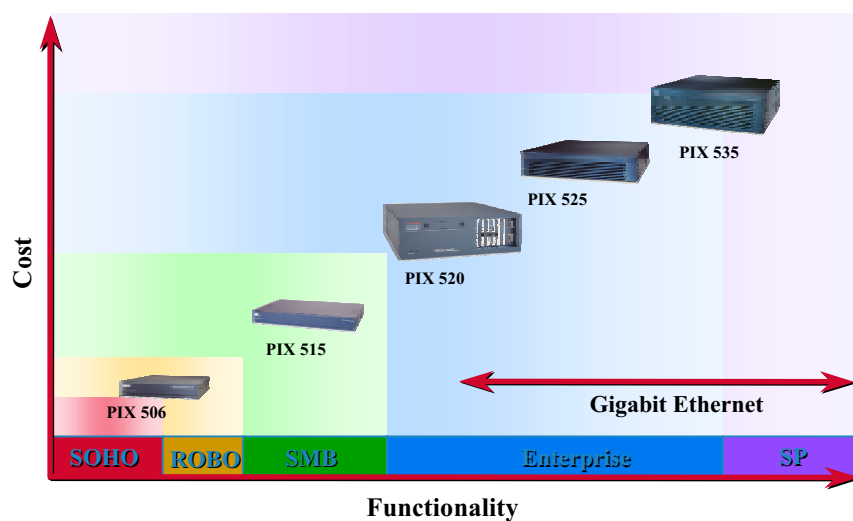
Cisco 2600 Series



Cisco 3600 Series

27

PIX Firewall Family



28

Product Line Overview— LAN-to-LAN Routing

	Cisco 1700 Series	Cisco 2500 Series	Cisco 2600 Series	Cisco 3620	Cisco 3640/3660
Fast Switched Perf. (kpps)	8	3-5	15-37	40-45	60-70/ 100-120
Proc. Switched Perf. (kpps)	1-1.5	.5-1	1-1.5 1.5-2 (265x)	1.5-2	3-4 / 10-12
LAN Media	FE	E, TR	E, TR, FE, ATM	E, TR, FE, ATM	E, TR, FE, ATM
VLAN (802.1Q and ISL)	No	No	Yes	Yes	Yes
LAN Density	1	1-2	1-6	1-8	1-26
WAN Media	Serial, BRI, DSL	Serial, BRI	PRI, BRI, Serial, ATM, DSL, Wireless	PRI, MBRI, Serial, ATM DSL Wireless	PRI, MBRI, Serial, ATM DSL Wireless
Serial Density	T1/E1: 1-4 A/S: 1-4	T1/E1: 2 A/S: 2-8	T3/E3 T1/E1: 1-8 A/S: 2-12	HSSI, OC-3, T3/E3, T1/E1: 1-6, A/S: 4-8	HSSI, OC-3 T3/E3, T1/E1: 1- 24, A/S: 4-32
ISDN BRI	1-2	1	1-10	1-10	1-26
CT1/CE1 ISDN PRI Density	0	0	1-2	1-4	1-6
Compression	256 kbps, SW only	128 kbps, SW only	256-512 kbps / 8Mbps (H/W)	512 kbps / 8Mbps (H/W)	1-1.5Mbps / 16 Mbps (H/W)
Encryption	2 Mbps (H/W)	S/W only	6 Mbps H/W	4 Mbps H/W	10 Mbps (3640) / 15 Mbps (3660)

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Product Line Overview— Data/Voice Integration

	Cisco 1750	Cisco MC3810	Cisco 2600	Cisco 3600	Cisco AS5300
Maximum Analog/Digital Voice Density	4	6/24	4/60	3660: 24/288 3640: 12/120 3620: 4/60	0/120
Drop and Insert Voice (VoTDM)	No	Yes	Yes	Yes	No
VoIP	Yes	Yes	Yes	Yes	Yes
VoFR	Yes	Yes	Yes	Yes	Future
VoATM (AAL5/2)	No	Yes, also AAL1	Yes	Yes	No
ATM WAN Access	No	T1/E1	ATM-25, T1/E1 w/ IMA, DS-3 OC-3	ATM-25, T1/E1 with IMA, DS-3 and OC-3	No
ATM AAL-5	No	Yes	Yes	Yes	No
AAL-2	No	Yes	Yes	7/01 3660 only	No
Integrated Dial	No	No	Yes	Yes	Yes
LAN Media	FE	E	E, FE, TR	E, FE, TR	E and FE
WAN Media	Serial, BRI DSO	Serial, BRI, ATM, Channelized T1/E1	PRI, MBRI, Serial, DSL ATM, Wireless, T3/E3 Channelized T1/E1	PRI, MBRI, Serial, DSL, ATM, HSSI, OC-3, T3/E3 Wireless, ChannelizedT1/E1	PRI

30

Catalyst 6000 /4000 Product Solution

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Catalyst 6000 Family Overview

- **Key features include:**

**Wire-speed, multilayer switching
scalable to 256 Gbps**

**IP, IP Multicast & IPX routing
performance scalable to 150 Mpps**

**Multiprotocol routing support for
AppleTalk, DECnet, VINES**

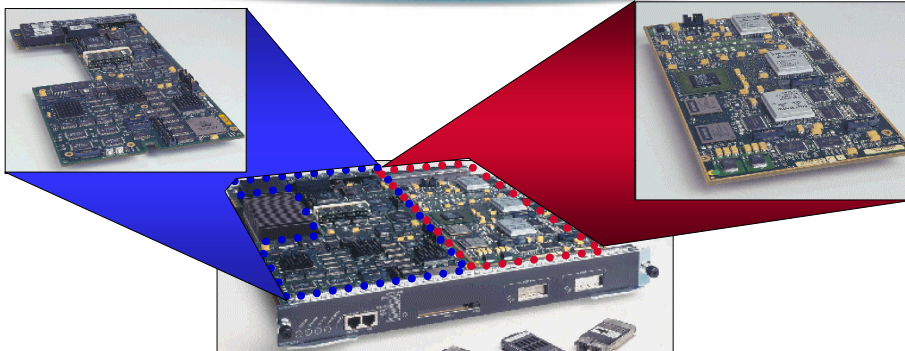
**Support for CiscoAssure,
all key network services like
QoS, security, multicast
and management**

Support for Cisco IOS software



32

Catalyst 6K Supervisor



MSFC (Multilayer Switch Feature Card)

L3 Routing Engine
200Kpps --> 500K pps
Runs IOS

PFC (Policy Feature Card)

L2/L3/L4 Hardware Accelerator Engine
15Mpps --> 30Mpps
Supports wire rate
QoS, ACL, L2/3/4 Forwarding

33

Catalyst 6000 Family Classic Line Card's

- **Ethernet**
24-port 10BaseFL
48-port 10/100 (RJ-45 or RJ-21)
24-port 100FX (MM & SM Fiber)
- **Gigabit Ethernet**
8-port Gigabit Ethernet (GBIC)
16-port Gigabit Ethernet (GBIC/MT-RJ)
16-port 1000BaseTX
- **Campus ATM**
2-port ATM OC-12 (Dual-PHY, MM or SM)
- **T1 to OC-3 via FlexWAN Module, with support for 7200/7500 WAN Port Adapters**
- **Network Analysis Module**
- **Intrusion Detection Module**



34

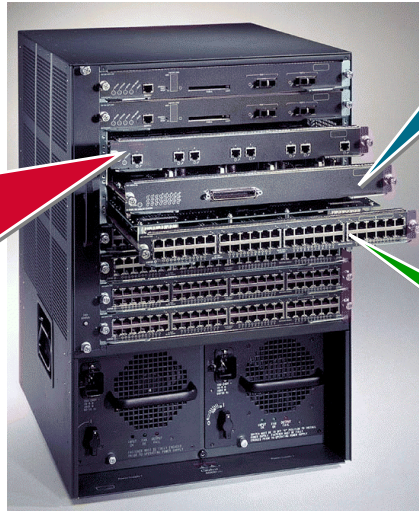
Catalyst 6000/6500 Voice

8 Port Digital Trunk

E1/T1 to PBX
E1/T1 to PSTN

Shared resource
for network users

DSP Farm



24 port FXS Module

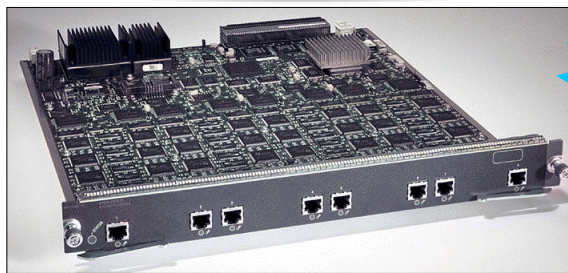
Connect analog
phones to IP World

Inline Power Card

Provide inline power
over ethernet cable
to IP Phone
(-48v)

35

Catalyst 6000 Voice T1/E1 and Services Module

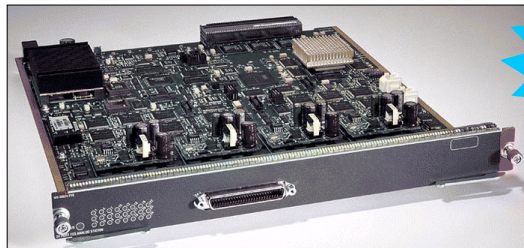


New!

- Provides 8 **physical** or **logical** ports
 - User configurable on a port by port basis
- **Configured as a physical port**
 - **T1 or E1 port for connections to the PSTN or PBX**
- **Configured as a logical port**
 - Provides voice services such as conferencing or compression
 - Shared network resource

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Catalyst 6000 FXS Module



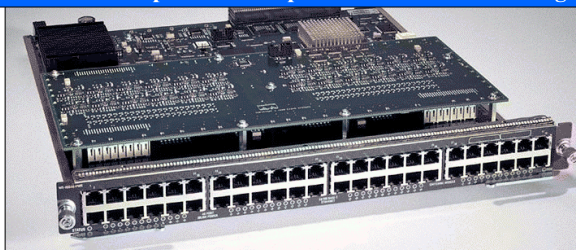
- Deployable in any Catalyst 6000/6500 chassis
- Provides analog connectivity for fax machines, speaker phones, analog telephone sets.
- 24 FXS ports (one RJ21 connector)
- Uses one IP address
- Supports Analog Supplementary Services (I.e. hook-flash blind transfer)

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Catalyst 6000 Inline Power

New Feature

Catalyst Inline Power -- provides DC power over standard Category-5 Ethernet



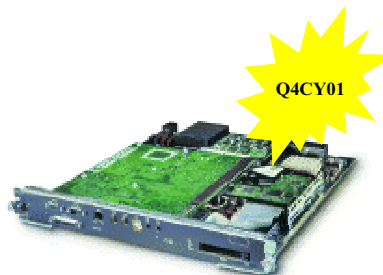
Catalyst Inline Power Ethernet Modules:

- Deployable in Catalyst 6500/6000 series
- 48 Port 10/100BaseT ports per module (RJ45)
- Provides power over the same pairs as ethernet (pins 1,2,3,6)
- Inline Power work-in-progress as IEEE 802.3af standard
- Use Catalyst Power Patch Panel for Catalyst 5000 and 2900 Families

38

Catalyst 6500 IDS Line Card

- Integrated IDS hardware
- Initial performance ~100Mbps (in promiscuous mode)
- CSPM configuration and alarm viewing
- CLI for card initialization & diagnostics
- Full signature set (300+)
 - Updated every other mo.
 - Avail. via CCO



WS-X6381-IDS

* Cisco Confidential *

39

Catalyst 6000 Firewall Module

1H 2001



- Performance 2Gbs+
- PIX Firewall Feature Set
- Integrated Solution especially useful for POP design where rack space is at premium.
- Scalability with multiple cards.

40

Catalyst 4000 Series

- Catalyst 4003 and Catalyst 4006
- Extension of the Catalyst 5000 family for L2 wiring closets
- Flexible modular configurations
- Cost-effective, high-performance 10/100/1000 Ethernet switching
- 24 Gbps (18Mpps)
- 48-240 FE ports
- 6-90 GE ports
- C5K enterprise SW
- Redundant power
- Layer 3 module (option)



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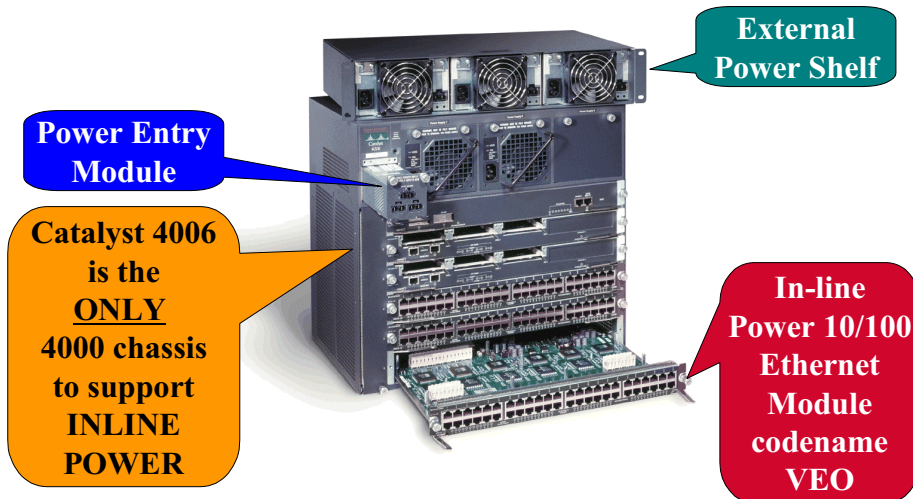
Catalyst 4000 Access Gateway Module

- Deployable in any Catalyst 4000 chassis
- Functions as IP router, voice gateway and DSP farm
- Cisco IOS-based
- Shares VIC/WIC interfaces with Cisco 2600/3600 series routers
- Flex slot for high-density analog connectivity for fax machines and speaker phones



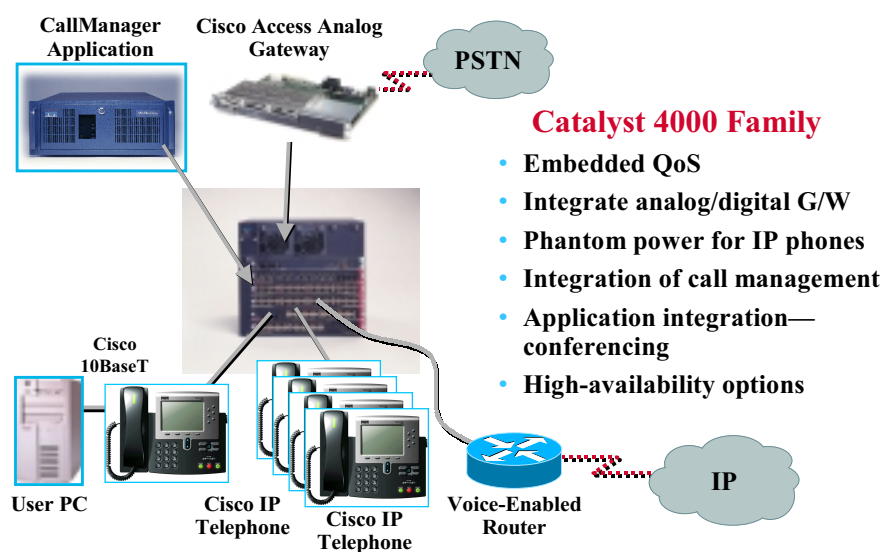
42

Catalyst 4000 In-Line Power Technologies



43

Catalyst 4000 Voice Announcements



44



Wireless Product Solution

Cisco Aironet 350/ 340 lan Solution

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Aironet 350 Product Listing

- **AIR-AP352E2C—Access Point with Captured ant.**
- **AIR-AP352E2R—Access Point with ant. connectors**
- **PCM352—PCMCIA card with attached antenna**
- **LMC352—PCMCIA card without antenna (OEM)**
- **PCI352 —PCI Card with dipole antenna**

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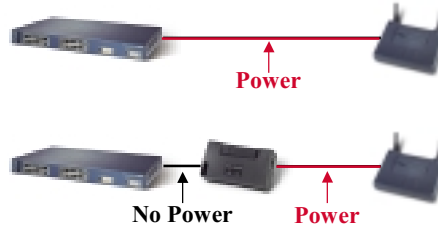
Aironet 350 Ethernet In-Line Power

Ethernet In-line Power Source:

- Catalyst 3524 Power Switch
- Catalyst 6000 Power Blade
- Catalyst 4000 Power Blade
- 48 Port Power Patch Panel

Ethernet In-line Power Source:

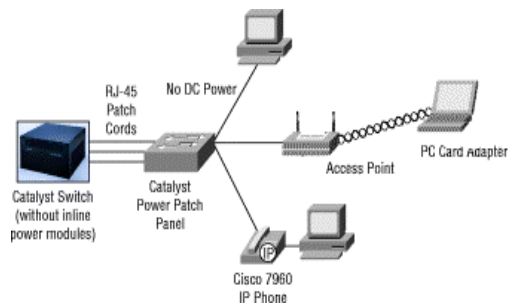
- Aironet Power Injector



- Aironet 350 uses Ethernet in-line power ONLY
- Eliminates need for local power and AC infrastructure cost
- Draws in-line power from edge devices (~48 Volts)
- Catalyst power switches support device discovery mode

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Inline power w/ WS-PWR-PANEL



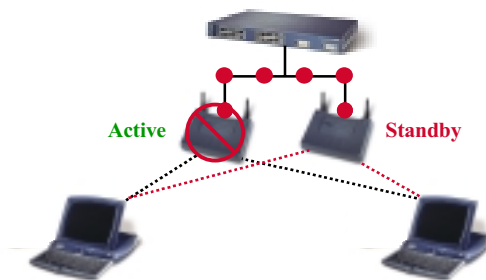
48

New Software Features

- Packet filtering options
- Hot standby and load balancing
- World mode
- CDP
- Logging

49

340/350 Software Features Hot Standby



- Best for high-availability requirements
- Requires two Aironet 350 access-points with identical configuration
- Seamless and transparent fail-over from **ACTIVE** to **STANDBY** unit

50

Cisco Aironet 350/340 Series Client Adapters

- Client access for both notebook and desktop systems
- Broad Operating Systems Support:

Windows 95, 98,

Windows NT 4.0

Windows 2000

Windows Millennium

Windows CE

Linux

MacOS



- Easy, simple installation
- Lifetime limited warranty

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Cisco Aironet 340 Series Bridges

- Building-to-Building connectivity at up to 25 miles (line of sight)
- Cost effective alternative to leased line/T1
- Rapid, simple deployment and re-deployment
- Point-to-Point and Point-to-Multipoint
- No government license required

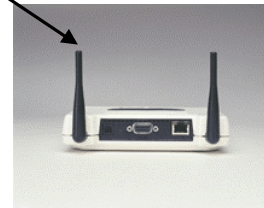
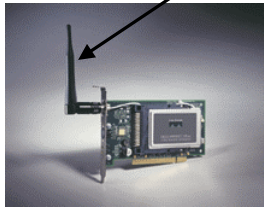


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2.4Ghz Omni-Directional Antennas

2.2dBi Dipole 'Standard Rubber Duck'

Cisco Part # AIR-ANT4941



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2.4Ghz Omni-Directional Antennas

2.2dBi Ceiling Mount

Cisco Part # AIR-ANT3194

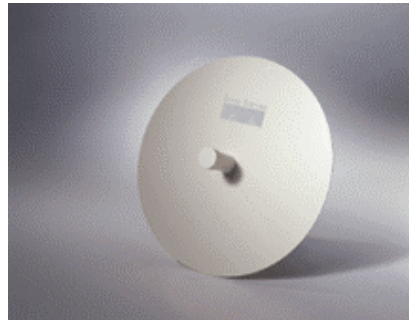


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2.4Ghz Omni-Directional Antennas

5.14dBi Ground Plane

Cisco Part # AIR-ANT2561

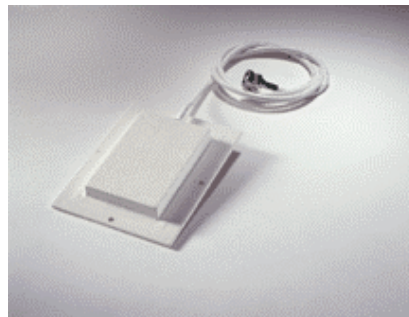


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2.4Ghz Directional Antennas

3dBi Patch Antenna – 65 degree

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