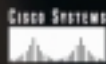


The slide features a background illustration of a person in a white shirt and dark pants, holding a large red cable that loops around a stylized globe. The globe is divided into yellow and blue sections. The text "Cisco VPN Solution" is centered in white.

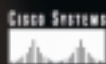
Cisco VPN Solution

Cisco Systems Korea
S.E 최 우 형(whchoi@cisco..com)

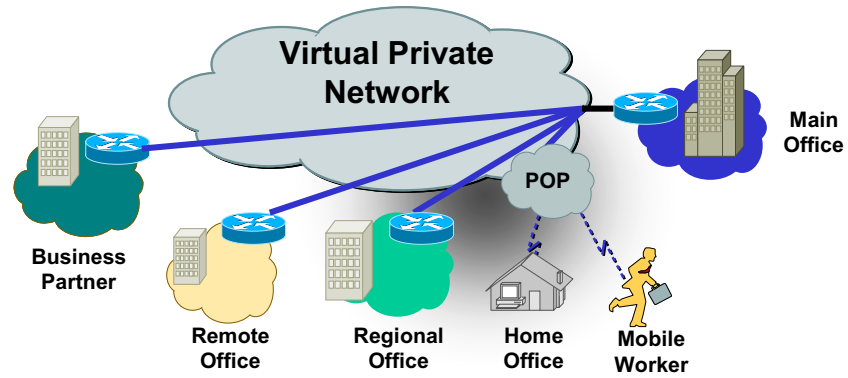
The slide features a background illustration of a person in a white shirt and dark pants, holding a large red cable that loops around a stylized globe. The globe is divided into yellow and blue sections. The text "Agenda" is centered in white.

Agenda

- Introduction to VPNs
- Cisco Remote Access VPN Solutions
- Cisco Site-to-Site VPN Solutions
- Cisco Firewall-based VPNs



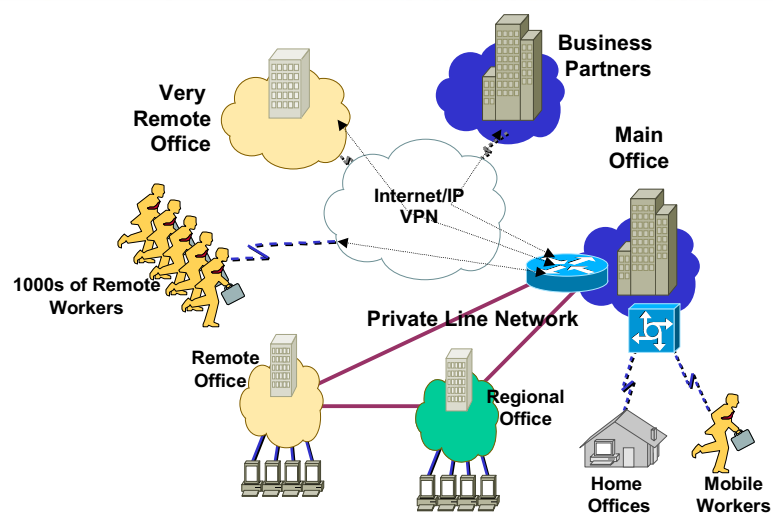
What is a VPN?



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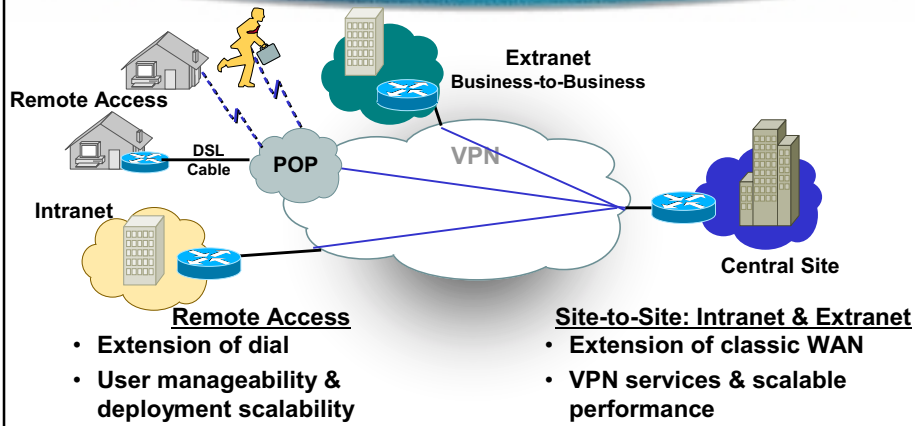
전통적인 VPN 구성 형태



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4

VPN Applications & 요구사항



Cost Savings For Wide Area Networks

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Drivers for VPN Applications

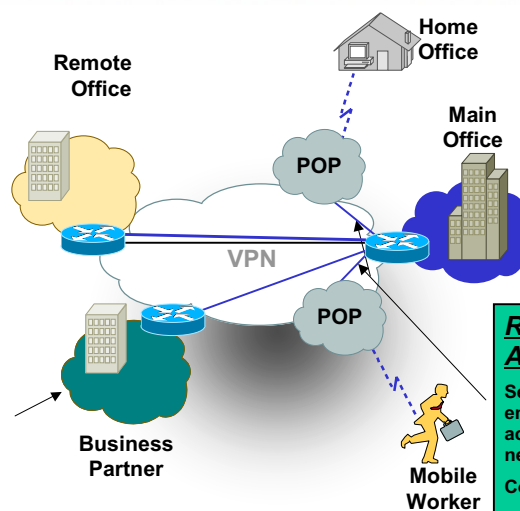
Intranet VPN

Low cost, tunneled connections with rich VPN services, (IPSec and QoS) to ensure reliable throughput

Cost Saving & New Applications

Extranet VPN

Extends WANs to business partners
New Applications and Business Models



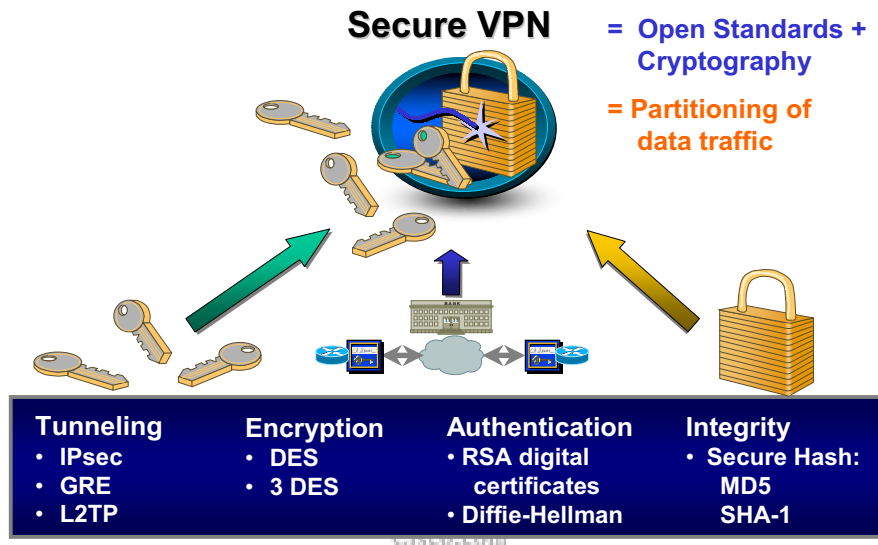
Remote Access VPN

Secure, scalable, encrypted tunnels across a public network
Cost Saving

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End-to-end Secured VPN

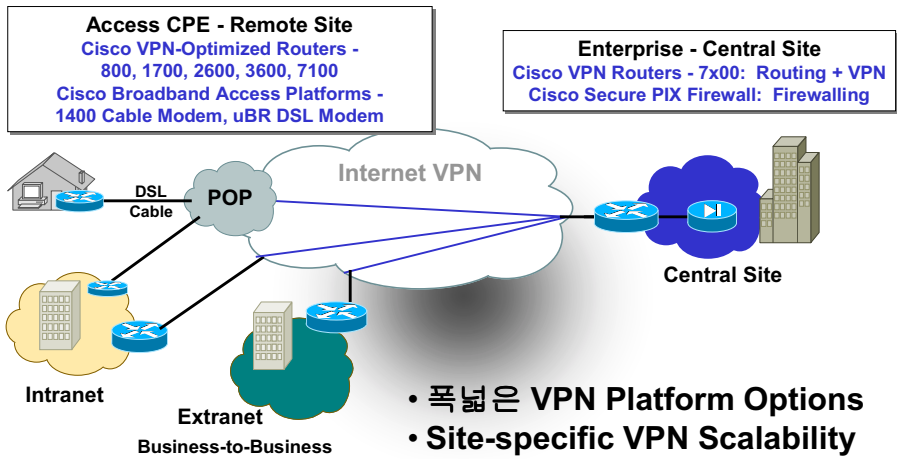


Cisco IP VPN Positioning

- Dedicated VPN
 - 3000 for remote access, 7100 for site-to-site
- VPN-Enabled Routers
 - 8xx, 9x5, 14xx, 17x0, 26x0, 36x0, 720x
- Firewall VPN
 - PIX 5xx
- Service Provider Network-based VPN
 - 500x

(doesn't include MPLS, Frame Relay, ATM, or any other "so called" VPN)

Site-to-Site VPNs

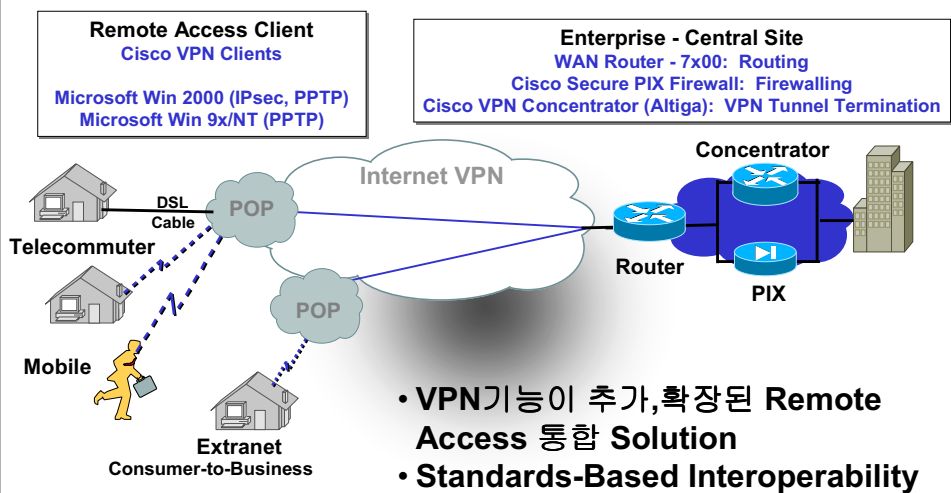


- 폭넓은 VPN Platform Options
- Site-specific VPN Scalability
- Cisco IOS Software 를 통한 확장성 높은 VPN Service

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Remote Access VPNs: Cisco + Altiga

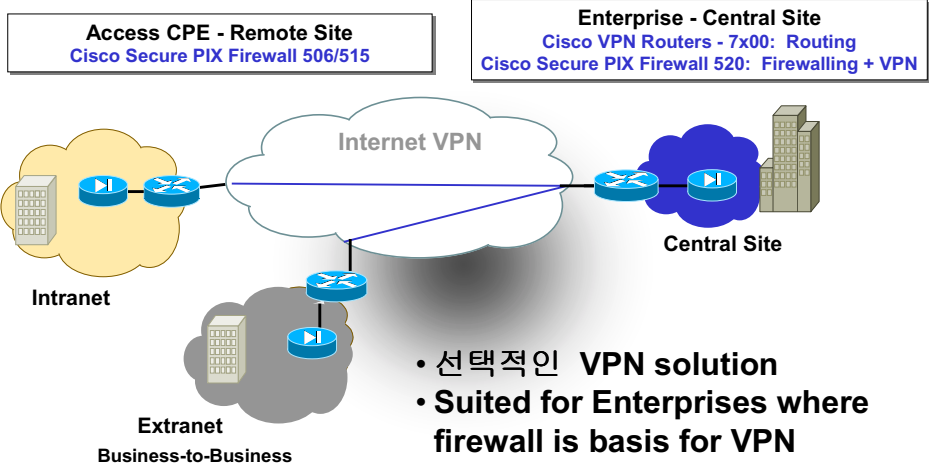


- VPN기능이 추가, 확장된 Remote Access 통합 Solution
- Standards-Based Interoperability

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Cisco Firewall-Based VPN Solutions



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11

VPNs - Cisco's Enterprise VPN Solution

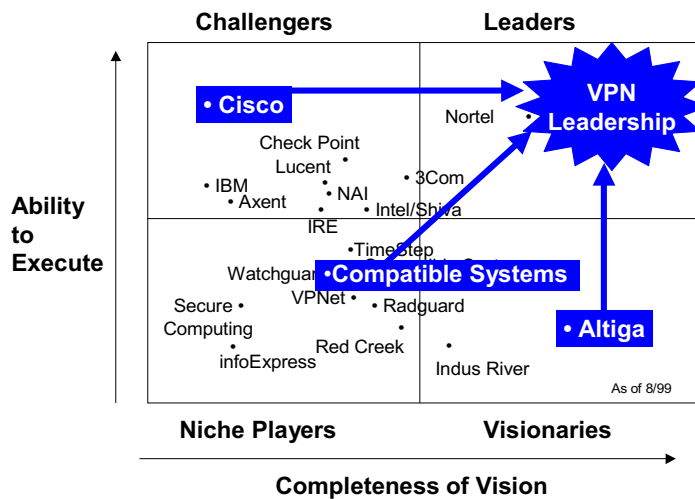
End to End의 다양한 VPN Product Line !!

Customer Type	Remote Access	Site-to-Site	Firewall-based
Large Enterprise	New 3080, 3060 Concentrators	71x0 VPN Routers	New PIX 520, 525, 535
Medium Enterprise	3030 Concentrator	7x00, 3600 Routers	PIX 520, 515, 525
Small Business/ Branch Office	3015, 3005 Concentrators	3600, 2600, 1700 Router	PIX 515 PIX 506
SOHO Market	VPN 3000 Client	800 Routers 1400 Cable Modem uBR 925 DSL Modem	New PIX 506

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Positioned for Market Leadership



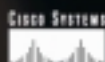
Source: Gartner Group

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13

Agenda

- Introduction to VPNs
- Cisco Remote Access VPN Solutions
- Cisco Site-to-Site VPN Solutions
- Cisco Firewall-based VPNs



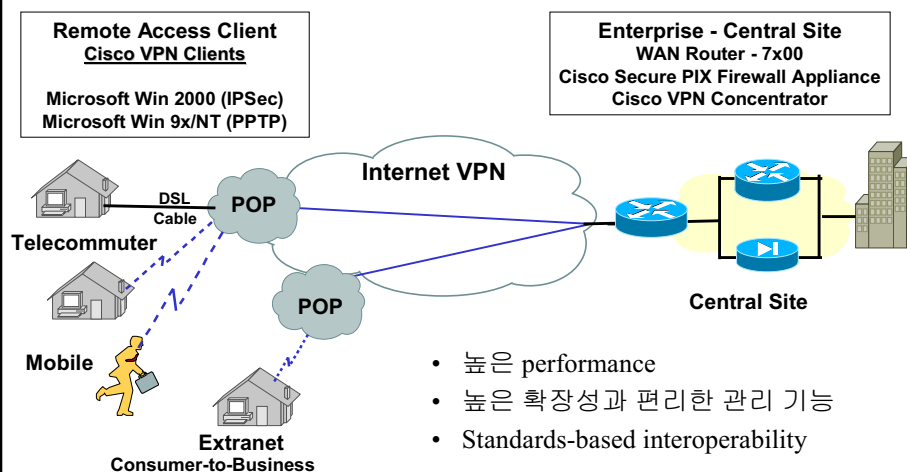
Remote Access VPN Requirements

- 강력한 보안
- 간단하고, 손쉽게 접근가능한 VPN Client
- 확장성 높은 Solutions
- 높은 가용성
- 통합된 관리 기능
- 표준화/독특화된 기능

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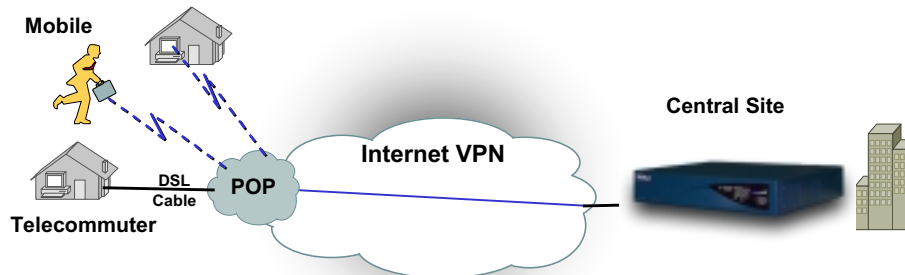
Remote Access VPN Solutions



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16

일반적인 Remote Access Client



Microsoft Clients

- Win/NT 95 & 98 - PPTP
- Win2000 - IPSec/L2TP
- No special desktop software
- No policy-download from central site

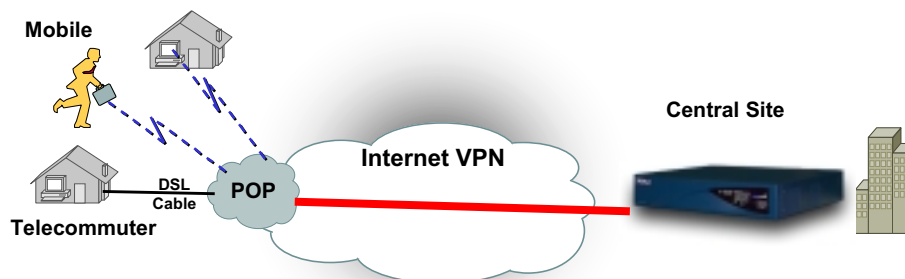
VPN 3000 Concentrator

- Full tunneling compatibility
- PPTP
- IPSec/L2TP
- Digital certificate authentication
- Third party authentication

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17

확장된 Remote Access Client



Cisco VPN 3000 Client

- for Win/NT 95 & 98 environments
- IPSec compliant
- Policy-based, auto-configuration

VPN 3000 Concentrator

- L3 & L4 packet filtering
- NAT transparency with IPSec
- Design flexibility via routing protocol support

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18

Cisco VPN 3000 Concentrator Series

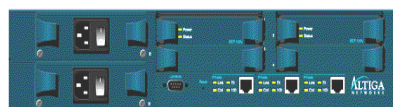
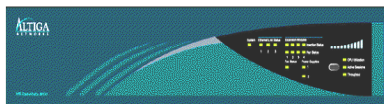


	3005	3015	3030	3060	3080
Number of Users	100	100	1500	5000	10,000
WAN Capability	Yes	Yes	Yes	Yes	Yes
Performance	4 Mb/s	4 Mb/s	50 Mb/s	100 Mb/s	100 Mb/s
Encryption	SW	SW	HW	HW	HW
Encryption Cards	0	0	1	2	4
Upgradable	No	Yes	Yes	Yes	N/A
Supports Dual PS	No	Yes	Yes	Yes	Yes
Redundancy	No	Yes	Yes	Yes	Yes
Redundancy	No	Yes	Yes	Yes	Yes

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Cisco VPN 3000 Concentrator Series (Models 3015, 3030, 3060, 3080)



**Scalable
Encryption
Processor
(SEP)**

- 강력한 performance
- 다양한 encryption
- Redundant, hot swap SEPs with stateful SEP failover
- Stateless chassis failover (VRRP기능)
- Redundant power supplies
- Full instrumentation

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Cisco VPN 3000 Concentrator Series

(Models 3005)



- Fixed Configuration
- Software Encryption
- 1U Form Factor
- Limited Instrumentation
- Best Choice for:
 - Managed Service
 - Branch Office
 - Medium Business

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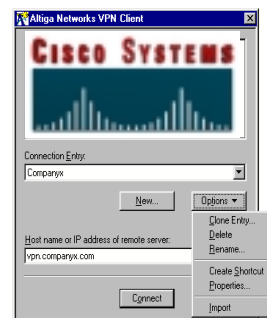
21

Cisco Remote Access VPN 관리

Cisco VPN 3000 Concentrator Series



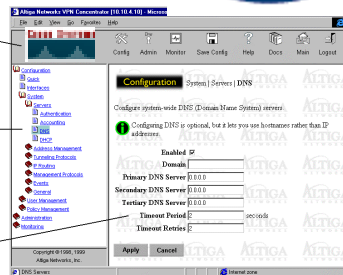
Cisco 3000 VPN Client



Network Computing
EDITOR'S CHOICE

Top frame
(Altiga toolbar)

Main frame
(Manager screen)

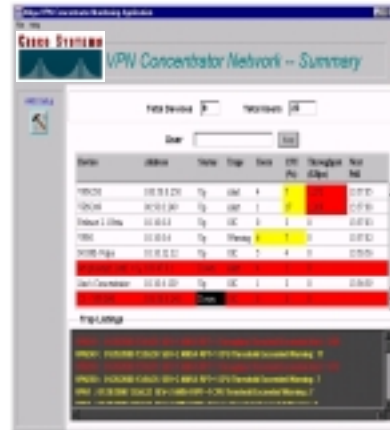


Web-Based Management

22

Web-Based Management

- Embedded Web Management
 - per VPN Concentrator
 - Secure browser interface (SSL)
 - Quick-start installation
 - Extensive usage statistics
 - Multi-level administration
- CVPN 3000 Monitor application
 - Centralized **multi-chassis** monitoring via SNMP & Java application
 - Extensive monitoring and alert instrumentation
 - Email option for traps and alerts

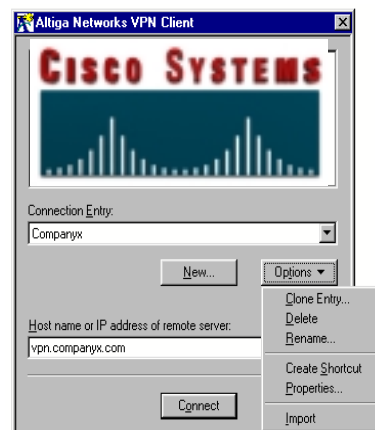


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23

Cisco VPN 3000 Client

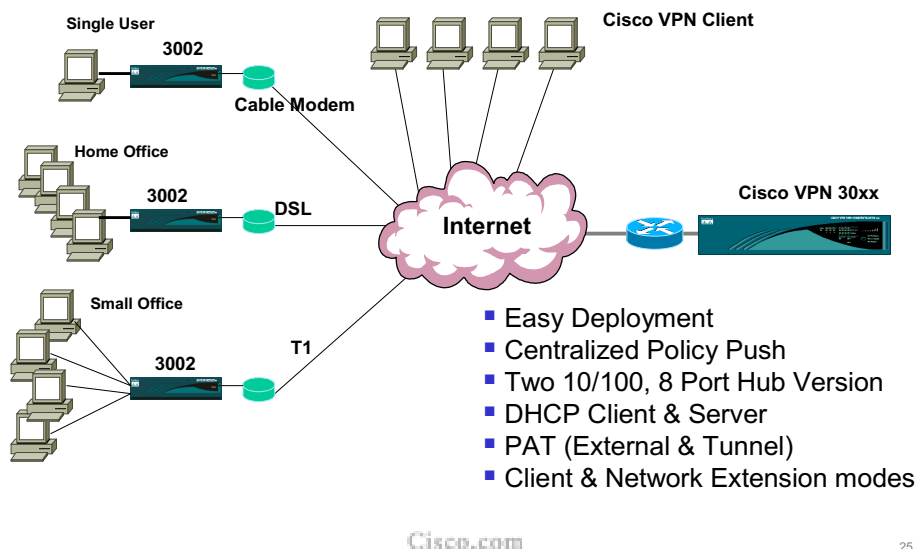
- Thin Client Design
- Single Click Installation
- Centralized Configuration & Policy Management
- Fully IPSec Compliant
- For Win/NT environments



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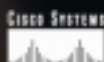
24

VPN 3002 Remote Access Client Emulation



Agenda

- Introduction to VPNs
- Cisco Remote Access VPN Solutions
- Cisco Site-to-Site VPN Solutions
- Cisco Firewall-based VPNs



Cisco's Site-to-Site VPN

- VPNs /WAN infrastructure 통합 Service 운영
 - 좀 더 확장된 비용 절감 효과
 - Enables new infrastructure applications (Extranets, etc.)
 - 확장성 있는 Connectivity 효과
- 지속적인 End to End Solution
 - Scalability, reliability, multi-protocol, multi-service, management, security, QoS, etc.
- 기타 추가적인 요구 사항
 - 강력한 security
 - 다양한 QoS Service
 - 정책적인 관리 요구

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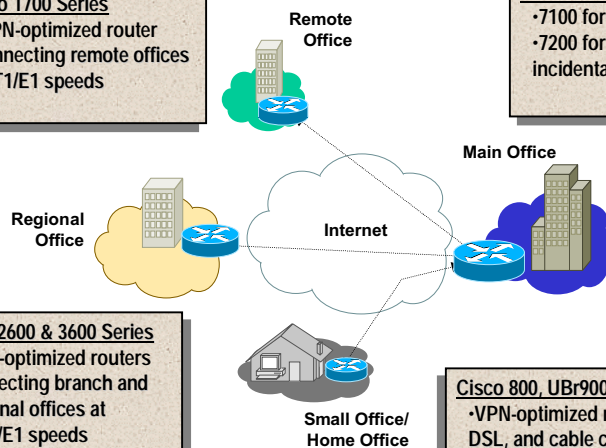
Cisco Site-to-Site VPN Solutions Scalability for Every Site

Cisco 1700 Series
•VPN-optimized router
connecting remote offices
at T1/E1 speeds

Cisco 7100 Series
•7100 for dedicated VPN head-end
•7200 for hybrid private WAN +
incidental VPN connectivity

Cisco 2600 & 3600 Series
•VPN-optimized routers
connecting branch and
regional offices at
nxT1/E1 speeds

Cisco 800, UBR900, & 1400 Series
•VPN-optimized routers for ISDN,
DSL, and cable connectivity



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VPN-Enabled Broadband Routers



	827	925	1400
Max Tunnels	-	-	-
H/W Encryption	none	(built-in)	none
Performance	384 Kbps	7 Mbps	700 Kbps
WAN Interfaces	ADSL	cable	xDSL
LAN Interfaces	1xE	4xE	1xE

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VPN-Enabled Routers



	1700	2600	3640	3660	7200
Max Tunnels	50	100	250	500	2,000
H/W Encryption	VPN Module	AIM	NM	AIM	ISA
Performance	3 Mbps	4 Mbps	8 Mbps	15 Mbps	90 Mbps
WAN Interfaces	yes	yes	yes	yes	yes
LAN Interfaces	none	optional	optional	optional	2xFE

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Cisco 7100 Dedicated VPN Routers



	7120	7140
Max Tunnels	2000	2000
H/W Encryption	ISM	ISM
Performance	50 Mbps	90 Mbps
WAN Interfaces	Single	Dual
LAN Interfaces	2xFE	2xFE
Power Supply	Single AC	Dual AC

<< Data Comm 09/00 results:
2261 tunnels

<< Multi-ISA/ISM will double
concurrent tunnels to **4000**
and increase throughput to
150 Mbps

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Cisco 827 Benefits

Power of Cisco IOS Technology for Small Businesses and Telecommuters



- Benefits of business-class functionality
 - Business-class security
 - Differentiated classes of service
 - Integrated toll quality voice/data
 - Mission-critical reliability
- Reduced cost of operations
 - Ease of Deployment: No Truck Roll
 - Cisco IOS® manageability:
Proactive diagnostics, debug
 - Familiarity of Cisco IOS CLI



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Cisco 827 ADSL Router

- Two models:
 - Cisco 827: 1E, 1ADSL
 - Cisco IAD 827: 1E, 1ADSL, 4Voice
- G.DMT and G.Lite;
 - Alcatel chipset
- Cisco IOS software
- Plug-and-play installation
- Voice-enabled (IAD 827)
 - Four FXS interfaces
 - VoIP today with H.323 signaling
 - VoATM ready (AAL2)
 - G.711, G.729, G.723.1 voice codecs
 - Fax pass-through or relay



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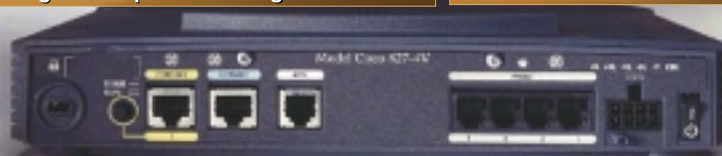
Cisco 827 Architecture

Chassis

- One ADSL G.DMT port based on Alcatel DynaMiTe chipset
- One Ethernet port
- Console port
- RISC processor MPC855T @ 50MHz
- Locking connector on power socket
- Kensington compatible locking slot

Memory

- Runs from DRAM
- DRAM onboard/default: 16 MB for 827, 24 MB for 827-4V
- DRAM max: 32 MB
- Flash onboard/default: 8 MB
- Flash max : 16 MB



Optional Voice Ports

- 4 FXS Voice Ports
- VoIP now, SW-upgrade to VoATM in 2HCY01 (for V5.2)
- G.711, G.729, G.723.1 voice codecs
- H.323 today, future support for MGCP and VoAAL2 BLES (SIP on Radar map)

Interoperability

- Cisco DSLAMS
- Alcatel and Lucent DSLAMs based on Alcatel chipsets

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Cisco 827-4V Key Features

Category	Features
Routing Features	<ul style="list-style-type: none"> • IP routing—RIP, RIPv2, enhanced IGRP, GRE, IP-policy routing, IRB, L2TP • IPX (RIP and EIGRP)
Multimedia/QoS	<ul style="list-style-type: none"> • IP multicast proxy • IP QoS (LLQ, WRED, RSVP) , PPP fragmentation and interleaving
Security Features	<ul style="list-style-type: none"> • Firewall—Context-Based Access Control (CBAC), Java blocking, audit trail, attack detection and prevention, and real-time alerts • IPsec with 56-bit and 3DES encryption • PAP/CHAP authentication • Extended access lists • Network address translation

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Cisco SOHO 77 Compared to Cisco 827

Small Office/Home Office



Cisco SOHO 77

Small Business/ Telecommuter

Cisco 827



Red = differentiation (some features optional)

<ul style="list-style-type: none"> • 1 Ethernet (4-port Hub in Q2CY'01) • 1 ADSL • No Upgradeable Memory 	HW Configuration	<ul style="list-style-type: none"> • 1 Ethernet • 1 ADSL • Field Upgradeable Memory
<ul style="list-style-type: none"> • Packet Filtering Firewall with Access Control Lists • NAT (many-to-one translation) 	Security	<ul style="list-style-type: none"> • Packet Filtering, Optional Stateful Firewall, Denial of Service Detection & Prevention • VPNs: Optional IPsec 3DES SW Encryption • NAT (many-to-one & many-to-many)
<ul style="list-style-type: none"> • No voice model or capabilities 	Voice Features	<ul style="list-style-type: none"> • 4 FXS Ports (Cisco 827-4V model) • VoIP, VoATM (Cisco 827-4V model)
<ul style="list-style-type: none"> • ATM QoS: CBR, UBR, VBR-nrt, Per VC shaping 	QoS Features	<ul style="list-style-type: none"> • ATM QoS: CBR, UBR, VBR-nrt & rt, Per VC Queuing & Shaping • IP QoS: IP Prec, Low Latency Queuing (PQ CBWFQ), Policy Routing, WRED, RSVP, IP-to-ATM QoS Interworking, LFI
<ul style="list-style-type: none"> • Cisco IOS Remote Management, Debug, Troubleshooting 	Manageability	<ul style="list-style-type: none"> • Cisco IOS Remote Management, Debug, Troubleshooting
<ul style="list-style-type: none"> • IP, RIP, RIPv2 • 8 PVCs; Dying Gasp Support 	Routing / Other	<ul style="list-style-type: none"> • IP, RIP, RIPv2, IPX, EIGRP, GRE, IRB, L2TP, IP Multicast Proxy; 10 PVCs; Dying Gasp

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36

Introducing the uBR905 / 925

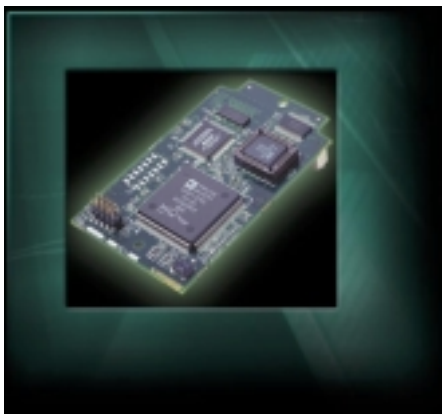
- Replaces UBR904
- Targeted at data-only telecommuters, SoHo, and small branch offices
- Integrated Cisco IOS router, cable modem, 4-port hub
- DOCSIS 1.1-based hardware design
- Hardware-accelerated IPSEC (>7 Mbps @ 3DES)



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37

Cisco 1700 Series: VPN Module

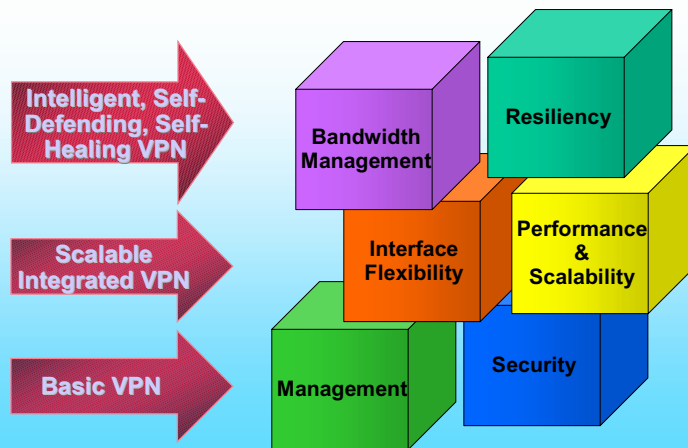


- Accelerates IPSec 3DES up to full duplex T1/E1 serial
- Delivers up to 100 concurrent sessions
- Utilizes internal expansion slot
- RSA and Diffie-Hellman Authentication
- SHA-1 or MD5 hashing algorithms

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38

Site-to-Site VPN 기능성




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VPN Router Hardware Performance

- Hardware accelerators deliver enhanced encryption performance

Platform	Product	Performance
7140	ISM	90 Mbps
7120	ISM	50 Mbps
7200	ISA	90 Mbps
3660	AIM-H	15 Mbps
3620/3640	NM 	8 Mbps
2600	AIM-B	4 Mbps
1700	VPN Module	3 Mbps
7500	7140-2FE/ISM	90 Mbps

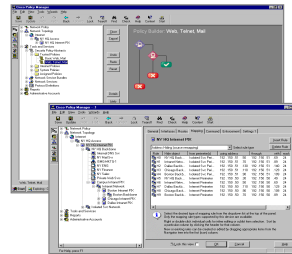


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VPN Management

- Cisco Secure Policy Manager
 - Centralized, intelligent security policy management for firewall and VPN
 - Supports up to 500 devices
- VPN Device Manager
 - Embedded Web Single-Device Policy Manager
- VPN Solutions Center
 - Service provider large-scale IPsec provisioning
- VPN Connection Manager
 - Enterprise VPN monitoring & Policy Manager
- Telnet/SSH CLI



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VPN Resiliency

- Dynamic Route Recovery
 - Using routing protocols through IPsec secured GRE tunnel
- Dynamic Tunnel Recovery
 - Using IPsec Keep-Alives
- Automatic IPsec Tunnel Provisioning
 - Using IPsec Tunnel Endpoint Discovery for large mesh network deployments

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VPN Security

- Context-Based Access Control (CBAC) Firewall
 - Stateful per-application filtering
- Active Audit Intrusion Detection
 - Control downloading of Java applets
 - Denial of Service detection and prevention
 - Configurable real-time alerts & audit trail
 - TCP/UDP transaction log
- Enhanced Digital Certificate Support

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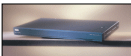


43

VPN Bandwidth Management

- Congestion Prevention
 - Traffic Shaping & Committed Access Rate (CAR)
- Packet Queuing
 - Provides end-to-end bandwidth and priority to mission-critical applications by using Class-based or Flow-based Weighted-Fair-Queuing (WFQ) & Weighted Random Early Detection (WRED)
- Content-Aware Classification
 - Network-Based Application Recognition (NBAR) enhances bandwidth management

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Cisco VPN Client Timeline				
Platform	Today	October	Q1	Q2-3
 3000 VPN Concentrators	VPN 3000 Client v2.5	VPN 3000 Client v2.5 Win2K	VPN Client v3.0 Win2K Win95/98 WinNT4	MacOS Linux Solaris
 7100 VPN Routers	Secure VPN Client v1.1		VPN Client v3.0 (E Train)	
 PIX Firewalls	VPN 3000 Client v2.5		VPN Client v3.0	
 5000 VPN Concentrators	VPN 5000 Client v4.2			VPN Client v3.x
 IOS Routers	Secure VPN Client v1.1			VPN Client v3.x (T Train)

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45

Agenda

- Introduction to VPNs
- Cisco Remote Access VPN Solutions
- Cisco Site-to-Site VPN Solutions
- Cisco Firewall-based VPNs

Cisco Systems

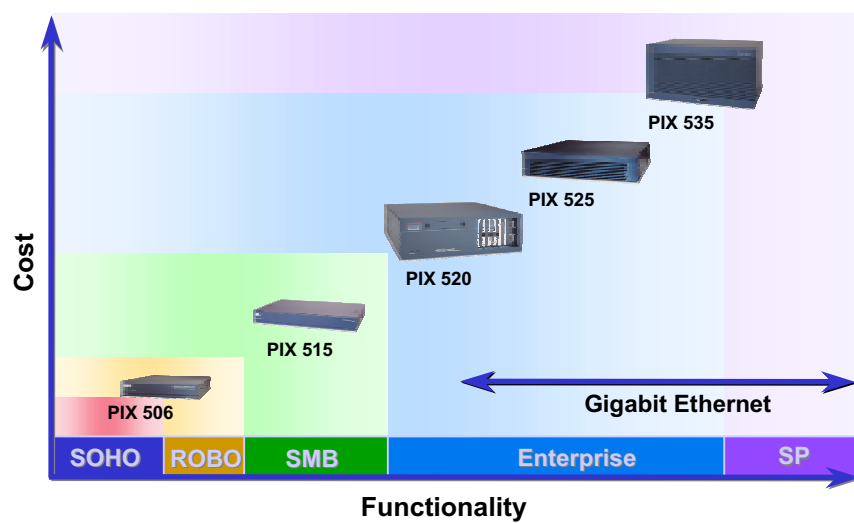
Firewall-Based VPN Scenarios

- *Security organization owns the VPN implementation*
- *Customers wish to enhance their existing Firewall systems to support VPN services*

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PIX Firewall Family



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48

PIX Product Line Overview



Model	506	515-UR	520-UR	525-UR	535-UR
Market	ROBO	SMB	Enterprise	Ent.+	Ent.+, SP
MSRP	\$1,950	\$12,000	\$19,000	\$22,000	\$75,000
Size (RU)	1	1	4	2	3
Processor (MHz)	200	200	350	600	1 GHz
RAM (MB)	32	64	128	256	1GB
Max. Interfaces	2 (10BaseT)	6	6	8	10 (v6.0)
Failover	No	Yes	Yes	Yes	Yes
Connections	400	125,000	250,000	280,000	500,000
Cleartext (Mbps)	9	170	370	370	1.0 Gbps
3DES (Mbps)	9	11	20	35	100*

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PIX VPN Accelerator Card

- PIX-VPN-ACCEL \$7,500
- Large enterprise and complex, high-traffic environments
- PIX 535 100 Mbps 3DES SHA (PIX 520 65 Mbps 3DES SHA)
- Simultaneous VPN tunnels: 2,000
- Requirements: V5.3(1) or later; platforms: 515, 520, 525, 535; 1 per chassis; DES/3DES license needed



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50

CISCO SYSTEMS



**EMPOWERING THE
VPN GENERATION**

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51