

# AP1820

# VoIP Gateway

## High Performance VoIP Gateway Solution

## Product Overview



# **AddPac**

## AddPac Technology

### Sales and Marketing

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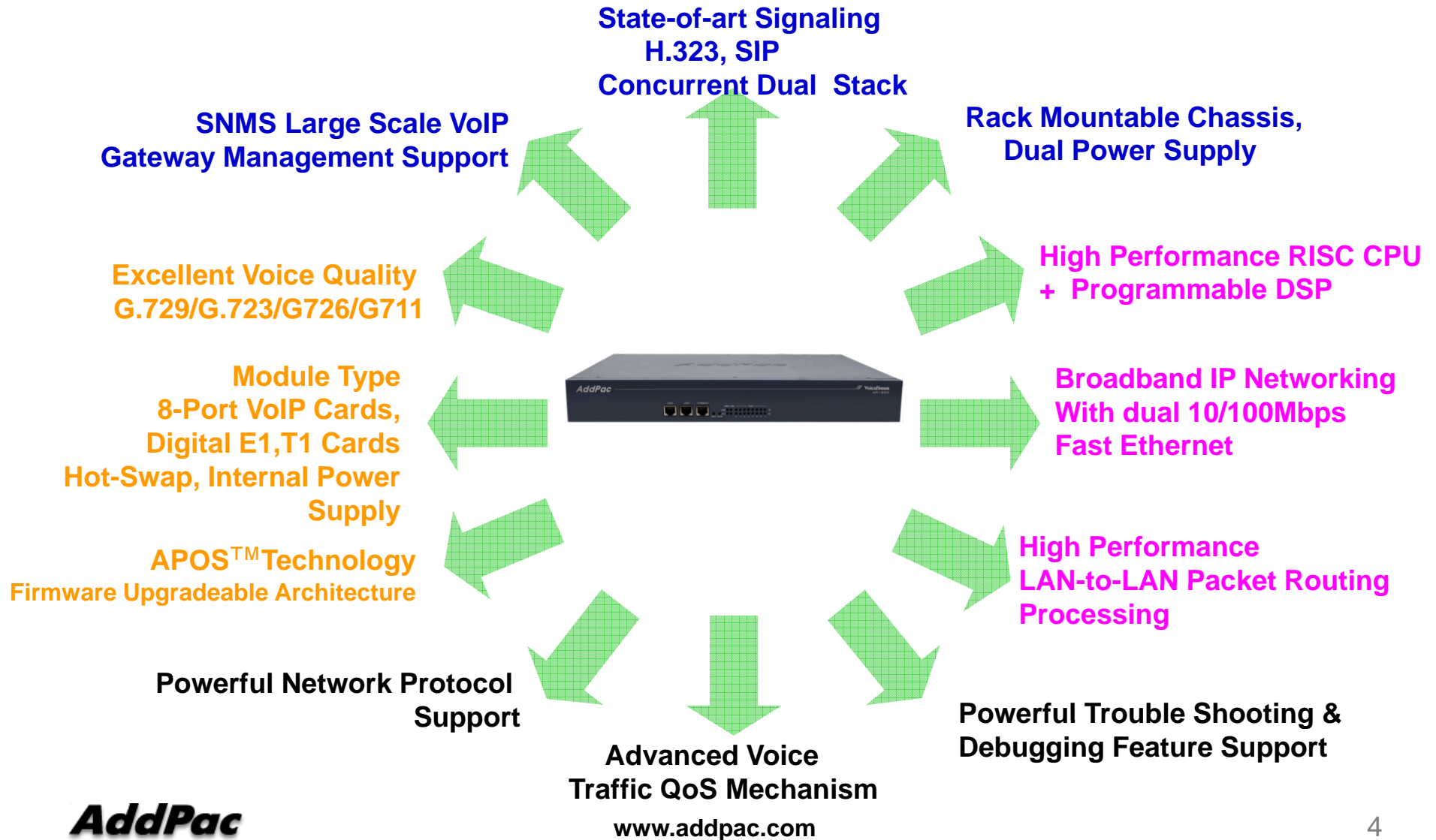
# Product Overview

## AP1820 VoIP Gateway

- High Performance VoIP Gateway Solution
- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- SNMS (Smart Network Management System) Support for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Free Voltage (110~220v) Internal Dual Power Supply for Redundancy
- Rack Mountable Chassis
- Two(2) VoIP Module Slot

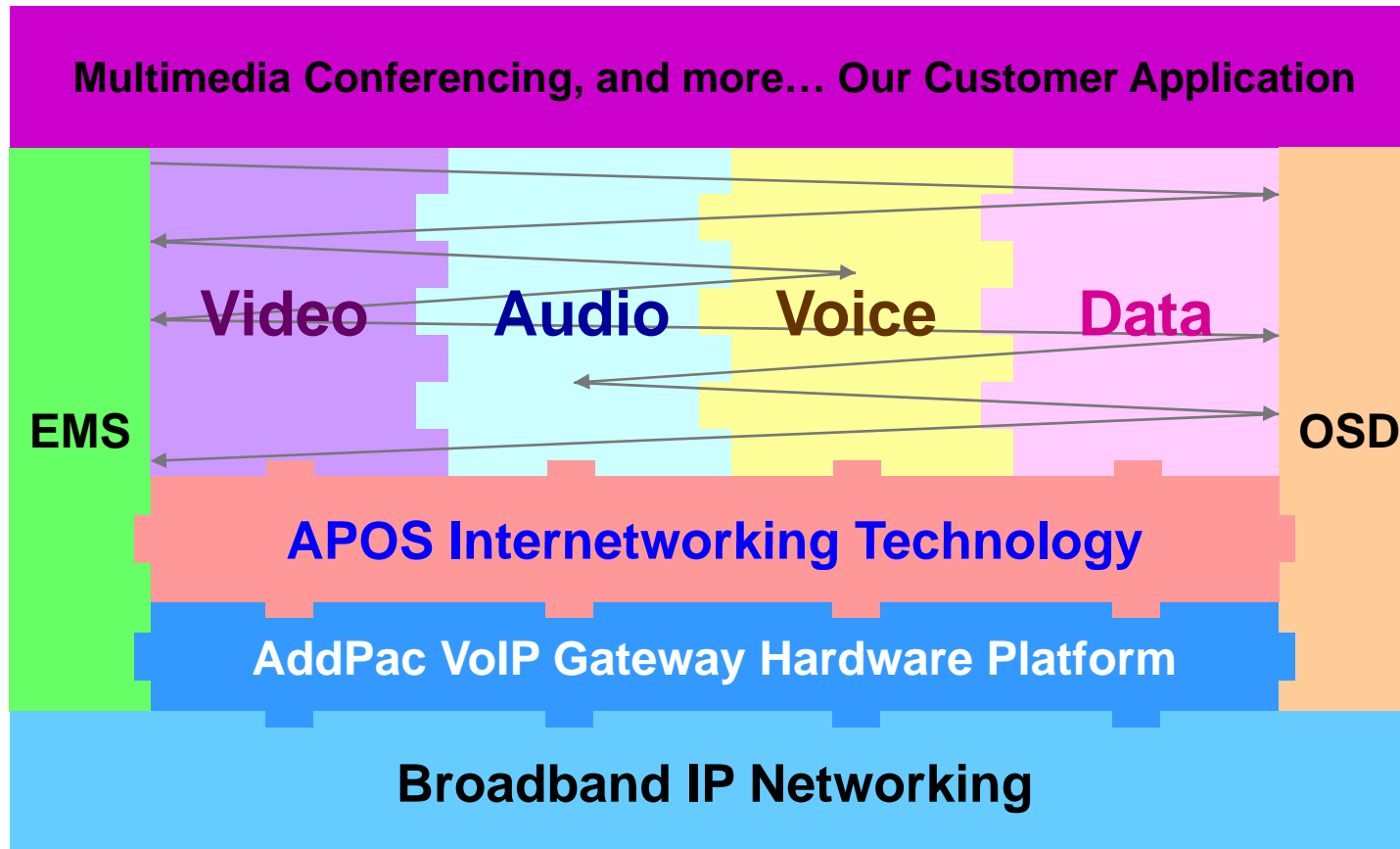
# Product Highlights

## AP180 VoIP Gateway



# APOS Technology

AP1820 VoIP Gateway



- APOS : AddPac Internetworking Operating System
- OSD : On- Screen Display
- EMS : Element Management System

# Hardware Specification

AP1820 VoIP Gateway

RISC  
CPU

High-end  
DSP

- **RISC Microprocessor Computing Power**
- **Up to 16 Port Analog VoIP Gateway**
- **Two(2) VoIP Module Slots (Hot-Swap)**
  - 8-Port FXS Card, 8-Port FXO Card, 4-Port FXS 4-Port FXO Card, 4-Port E&M Card, Digital E1/T1 Card
- **Network Interface**
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- **RS232C Console Interface**
- **Run LED, LAN LED, Port LEDs**
- **Internal Dual Power Supply**

# Hardware Specification

## AP1820 VoIP Gateway

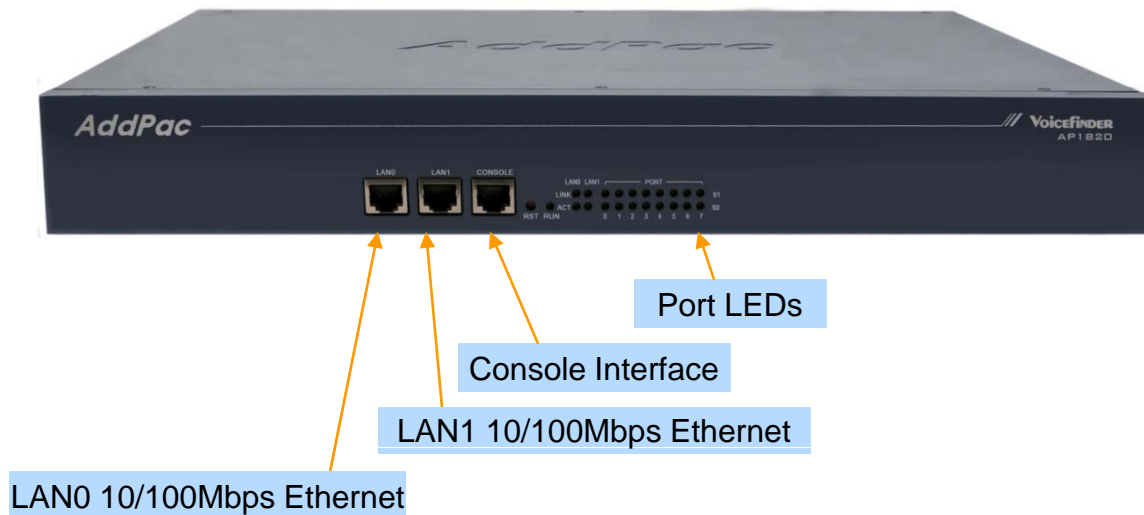
### Hardware Specifications

AP1820 VoIP Gateway	Basic Specifications
Voice Interface	Two(2) VoIP Module Slots
	AP-N1-FXS8, AP-N1-FXO8, AP-N1-FXS4O4, AP-N1-E&M4, AP-N1-E1, etc
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	4 Mbyte High-speed Flash Memory
Base Memory	64 Mbyte High-speed SDRAM
Power Requirement	Power Supply Adaptor / VAC 110~220V, 50/60Hz, 5V 8A
Operating Temperature	0°C ~ 45°C (32 °F ~ 122°F)
Storage Temperature	-40°C ~ 85°C (-40°C ~ 185°F)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions (H x W x D)	55 x 440 x 267(mm)-19" Rack Mountable Chassis
Weight(kg)	3.5Kg

# Hardware Specification

AP1820 VoIP Gateway

## Network interface Configurations (Front Side)

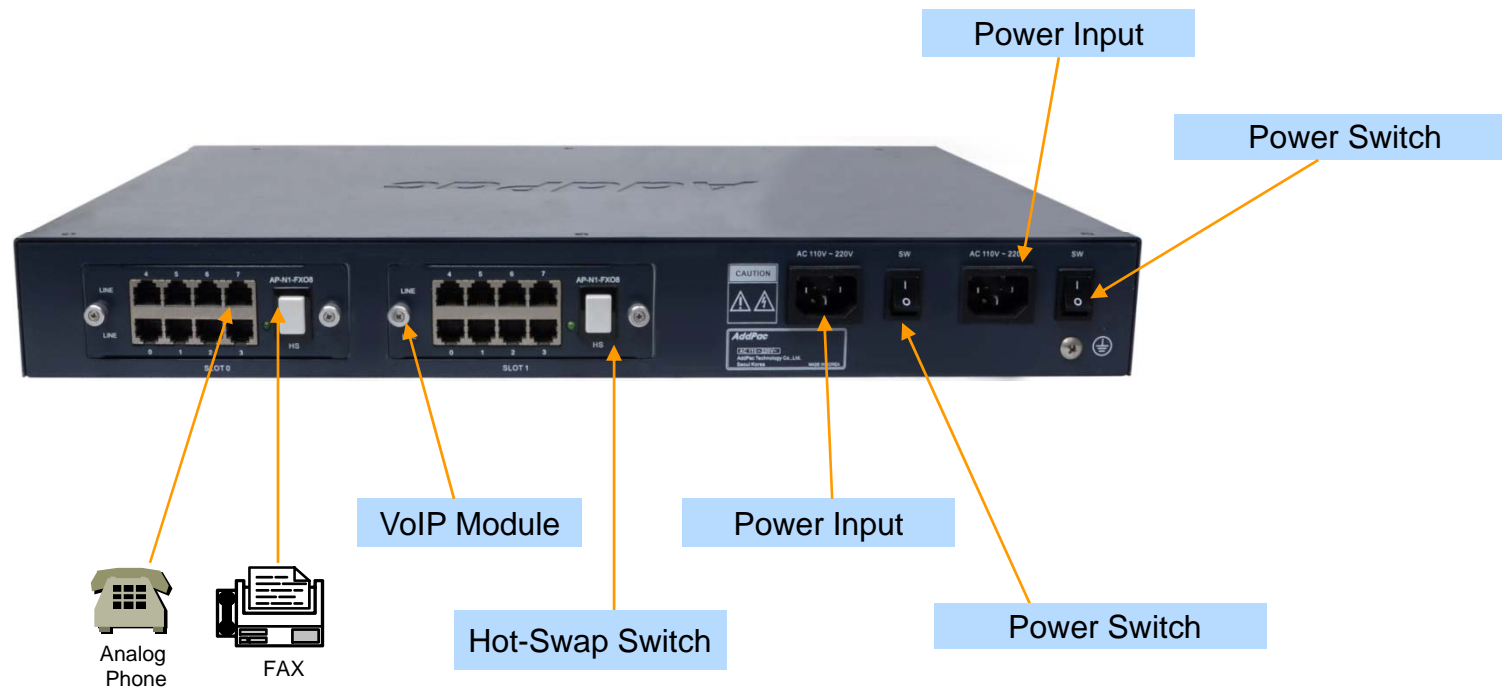




# Hardware Specification

## AP1820 VoIP Gateway






### Network interface Configurations (Back Side)



# VoIP Modules

AP1820 VoIP Gateway

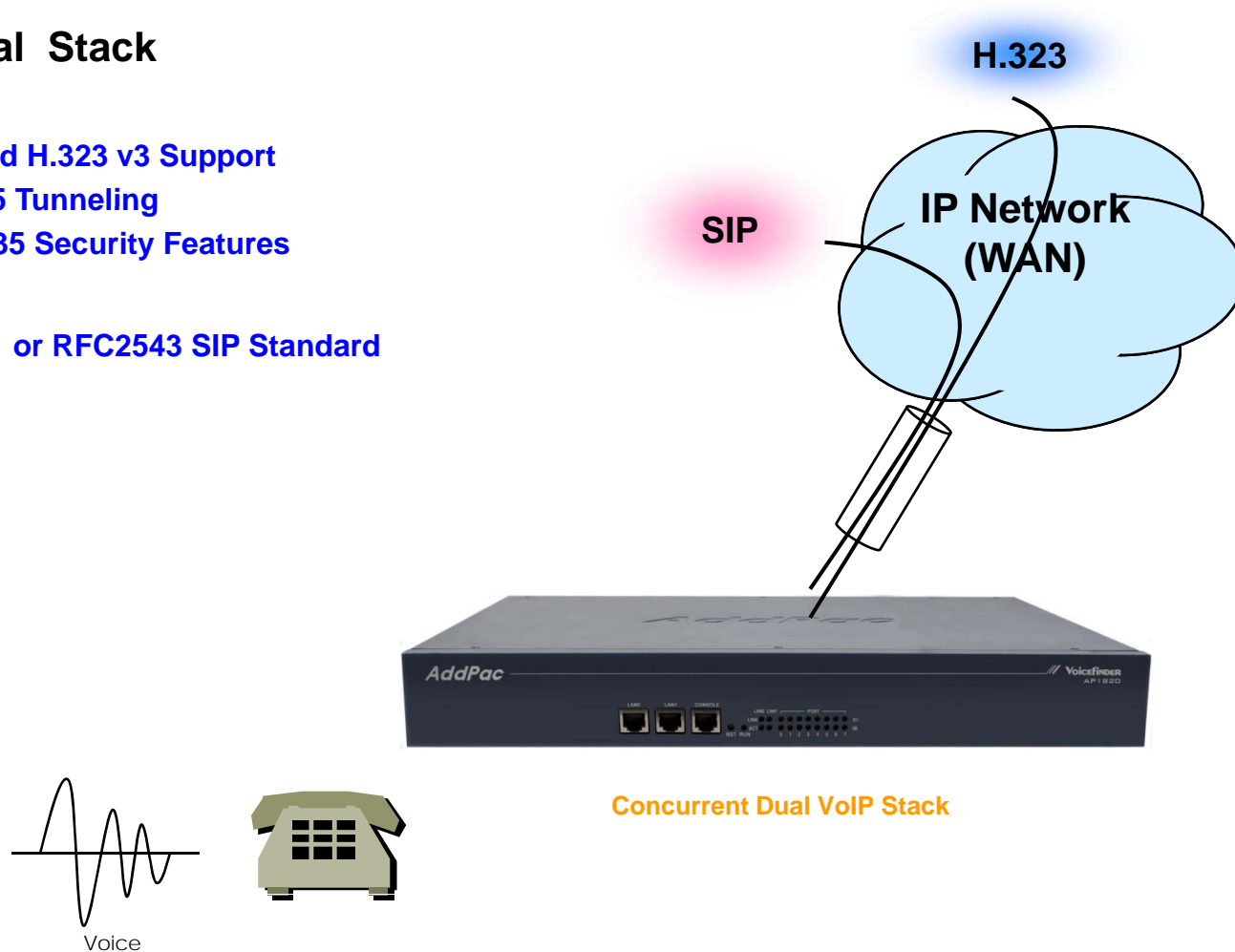
DSP

Target	VoIP Modules	Module Features	Module Picture
AP1820	<b>AP-N1-FXS8</b>	8-Port FXS Module	
AP1820	<b>AP-N1-FXO8</b>	8-Port FXO Module	
AP1820	<b>AP-N1-FXS4O4</b>	4-Port FXS&4-Port FXO Module	
AP1820	<b>AP-N1-E&amp;M4</b>	4-Port E&M Module	
AP1820	<b>AP-N1-E1</b>	1-Port Digital E1/T1 Module	

# VoIP (Voice over IP) Service

## AP1820 VoIP Gateway

- **H.323, SIP Dual Stack**
- **H.323**
  - ITU-T Standard H.323 v3 Support
  - Support H.245 Tunneling
  - Including H.235 Security Features
- **SIP**
  - IETF RFC3261 or RFC2543 SIP Standard



# VoIP (Voice over IP) Service

## AP1820 VoIP Gateway

- **H.323**

- Fast connect, normal connect support
- H.245 tunneling support
- Q.931 response message setting for inbound VoIP calls
- H.245 logical channel open timing selection function
- Start H.245 procedure support
- DTMF / Hook flash relay with H.245 alphanumeric / signal
- Secondary gatekeeper support
- Gatekeeper assignment according to the domain name
- Gatekeeper discovery with multicast
- Lightweight RRQ support
- Signaling TCP port assignment
- Resource threshold setting with RAI
- H.235 clear-token, crypto-token support
- canMapAlias support
- Technical prefix (supported prefix) support
- Public IP assignment in NAT environment

- **SIP**

- Gateway-based / Endpoint-based registration support
- Secondary proxy-server assignment function
- SIP signaling port change function
- SIP proxy server assignment according to the domain name
- T.38 real-time fax relay support
- DTMF relay support with RFC2833 / OPTION message
- Re-INVITE support

# VoIP (Voice over IP) Service

## AP1820 VoIP Gateway

- **Voice Codec**

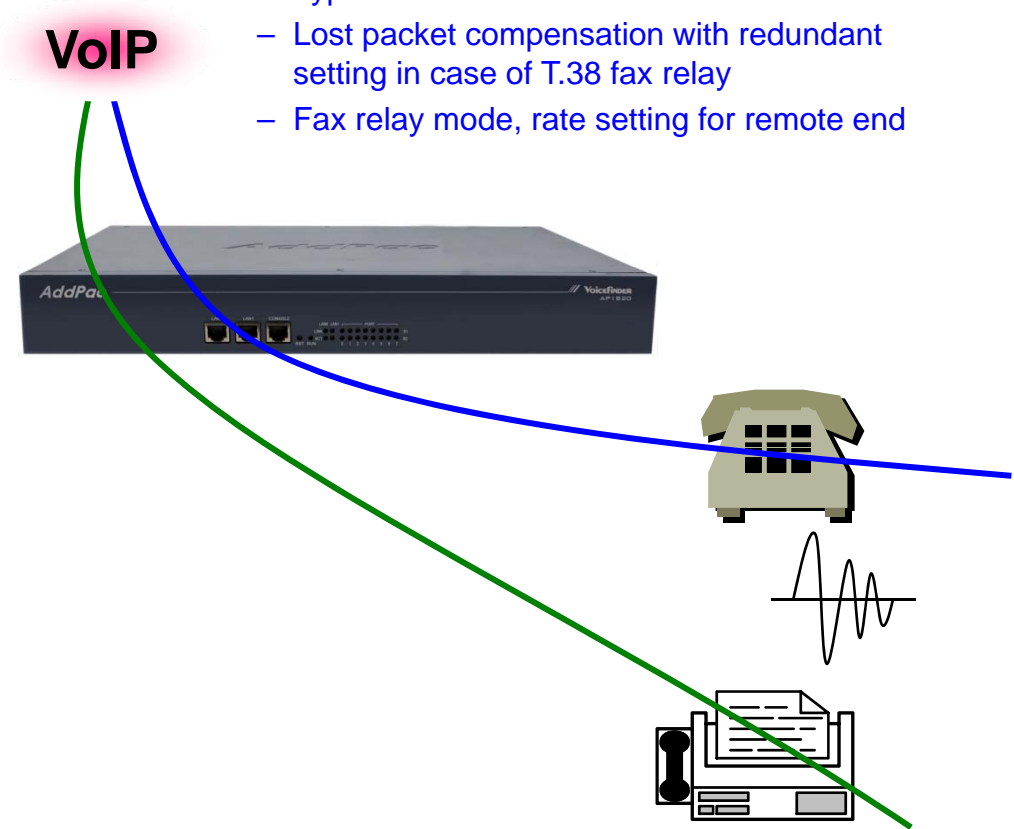
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP, MGCP common) based on RFC2833

- **RTP**

- Redundant RTP packet transmission in case of severe packet loss
- Dynamic jitter buffer management and RPT packet jitter and loss compensation with heuristic & DSP error concealment
- Static jitter buffer setting support
- Voice frame per RTP packet number control for each codec
- In-band ring-back tone support
- Virtual ring-back tone support
- Tone parameter change support

- **FAX**

- Fax relay mode supporting T.38, inband-T.38, bypass mode
- Lost packet compensation with redundant setting in case of T.38 fax relay
- Fax relay mode, rate setting for remote end



# VoIP (Voice over IP) Service

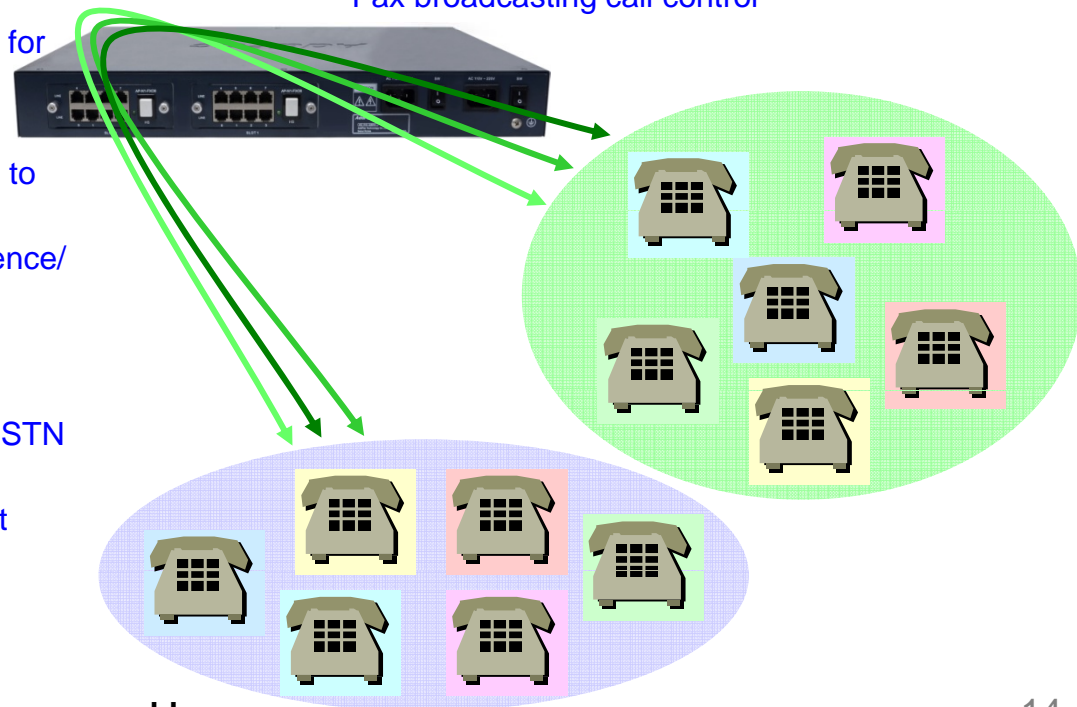
## AP1820 VoIP Gateway

### • VoIP Call Controls

- Hot line connection function with PLAR (Private Line Auto Ring Down)
- Leased line emulation function
- Connection monitoring function
- Fault tolerant with Redundancy and Call Distribution among Gateways for load balancing
- Call attempt with IP address
- H.323, SIP, MGCP inbound call connection for each voice port
- Multiple E.164 setting for one voice port
- One E.164 or digit pattern can be assigned to more than one voice port
- Hunting with Longest match/ priority/ sequence/ random
- One stage call setup by Digit forwarding
- Call barring with specific digit patterns
- Calling and called number conversion for PSTN outbound calls
- PSTN rerouting in case of VoIP call attempt failure

### • VoIP Call Controls (cont.)

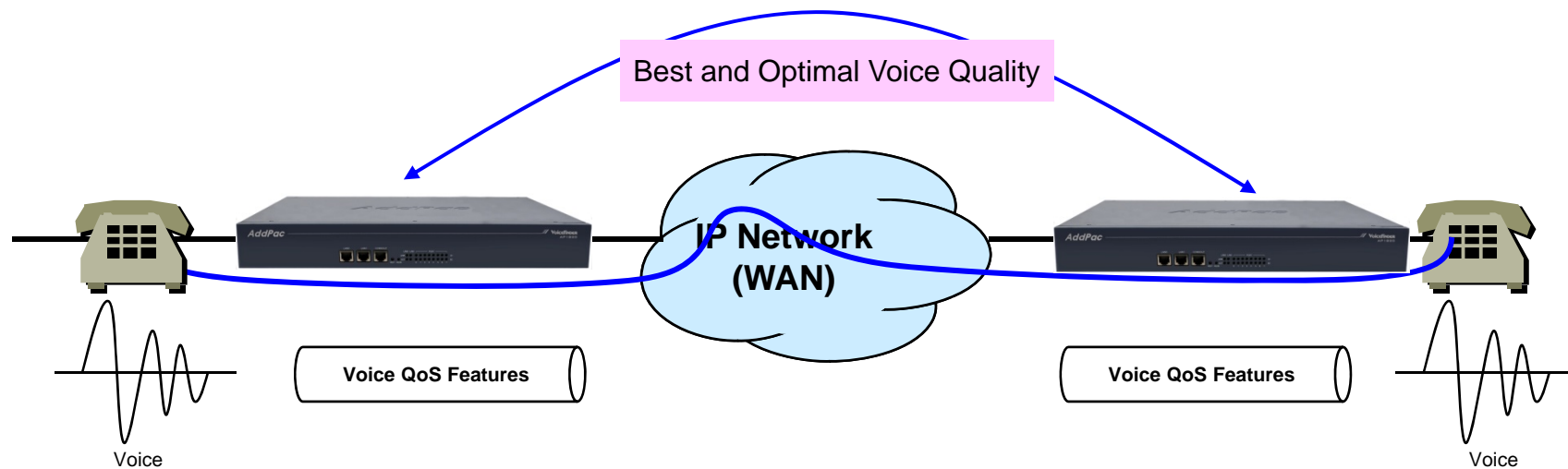
- Call transfer for internal calls
- Call pickup for internal calls
- Calling and called number conversion for VoIP outbound calls
- Calling and called number conversion for VoIP inbound calls
- Fax broadcasting call control



# Advanced QoS Features

## AP1820 VoIP Gateway

- Enhances **Transmit** Voice QoS Features
  - Voice Traffic Priority Queuing
  - QoS Service Profiling
  - Providing Virtual Network Transmit Algorithm
  - Real-time Voice Traffic QoS Support
  - RTP Packet Transmit Interval Control
  - Supporting RTP Packet Redundancy Scheme
  - IP Header Control such as ToS, Diffserv
- Enhances **Receive** Voice QoS Features
  - Dynamic Jitter Buffer Management
  - Error Concealment
  - Support T.38 FAX Data Error Recovery Scheme



# Network Protocols

## AP1820 VoIP Gateway

### Basic Network Protocols

- ARP, IPv4, TCP, UDP, ICMP, SCTP, IGMP, MLD

### Routing Protocol

- IPv4 : Static

### Service Protocol

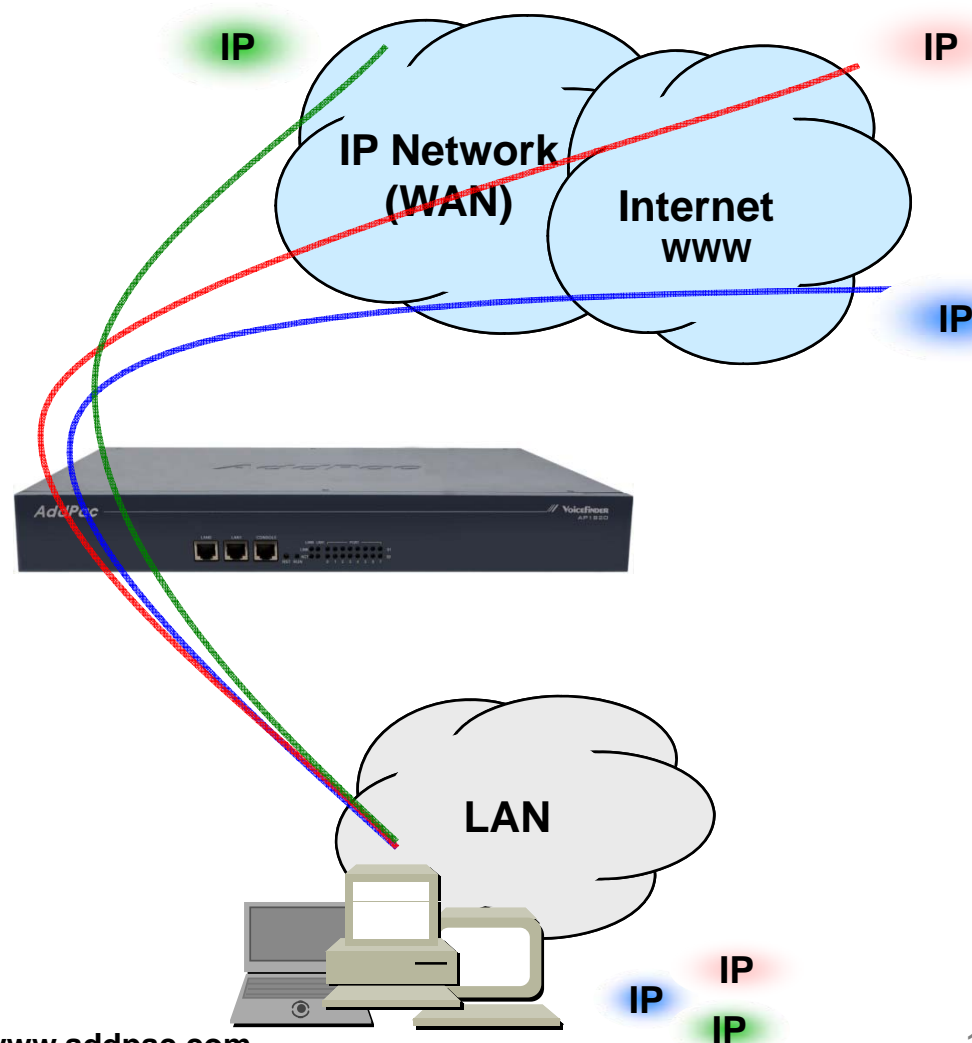
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

### IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

### Miscellaneous

- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP accounting
- STUN Client





# Network Management

## AP1820 VoIP Gateway

- **SNMP**

- Standard Simple Network Management Protocol( SNMP) Agent support
- MIB v1 and v2 Support

- **Web-based Management**

- Smart Easy Setup
- Standard Voice Interface
- Standard PSTN Back-up Interface

- **Watch-dog Function**

- Hardware, Software watch-dog services

- **Remote Management**

- Telnet
- Rlogin

- **Auto Upgrade Service**

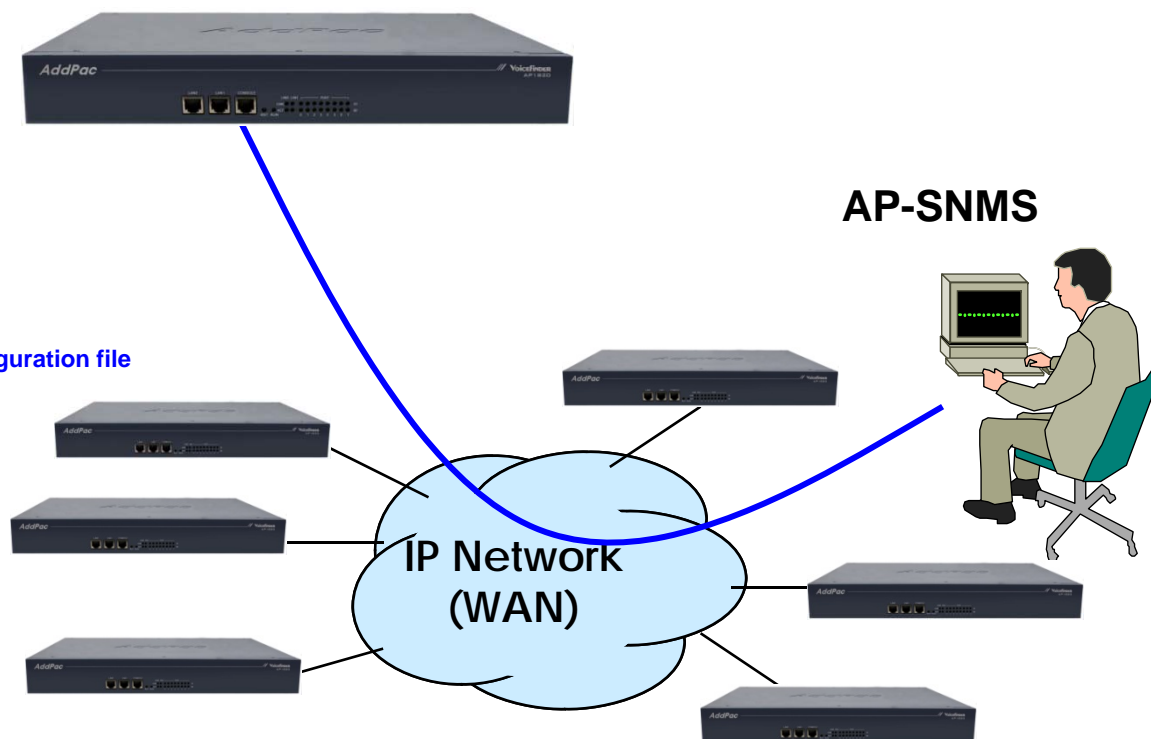
- HTTP server based APOS image and configuration file auto-upgrade support

- **Batch Job Function**

- Text based script downloading

- **Interoperable with AP-SNMS Service**

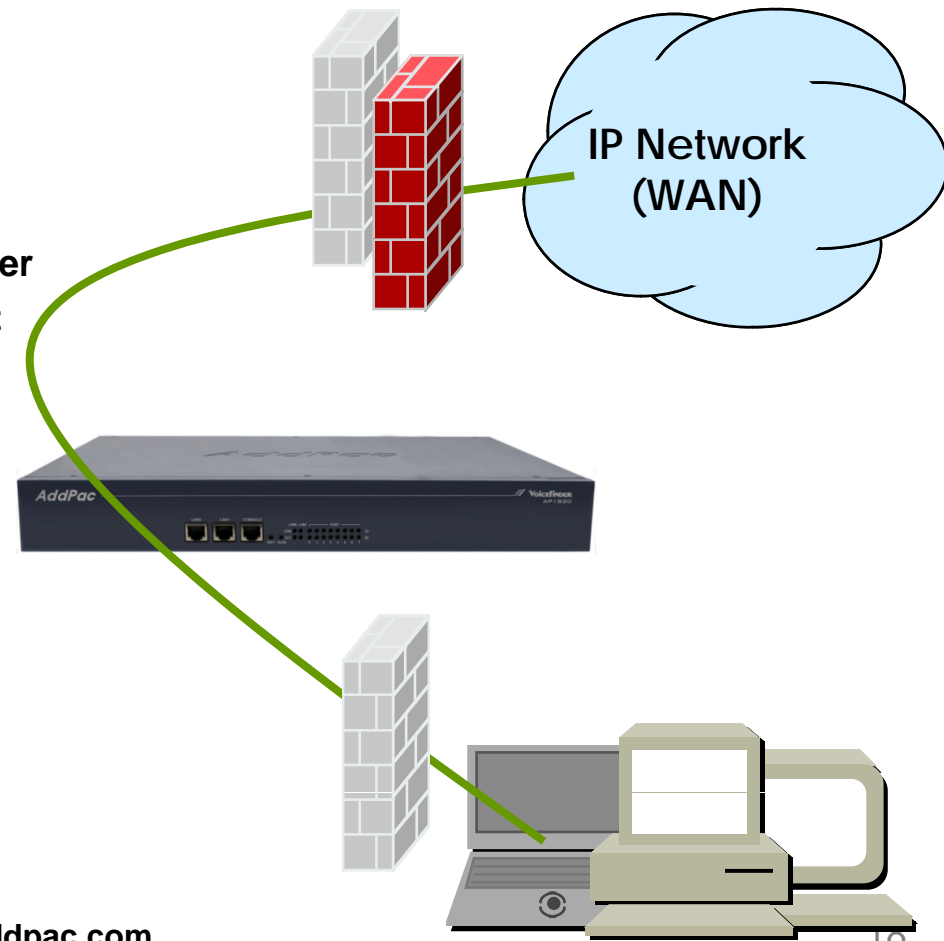
- AddPac Smart Network Management System (AP-SNMS)



# Security Management

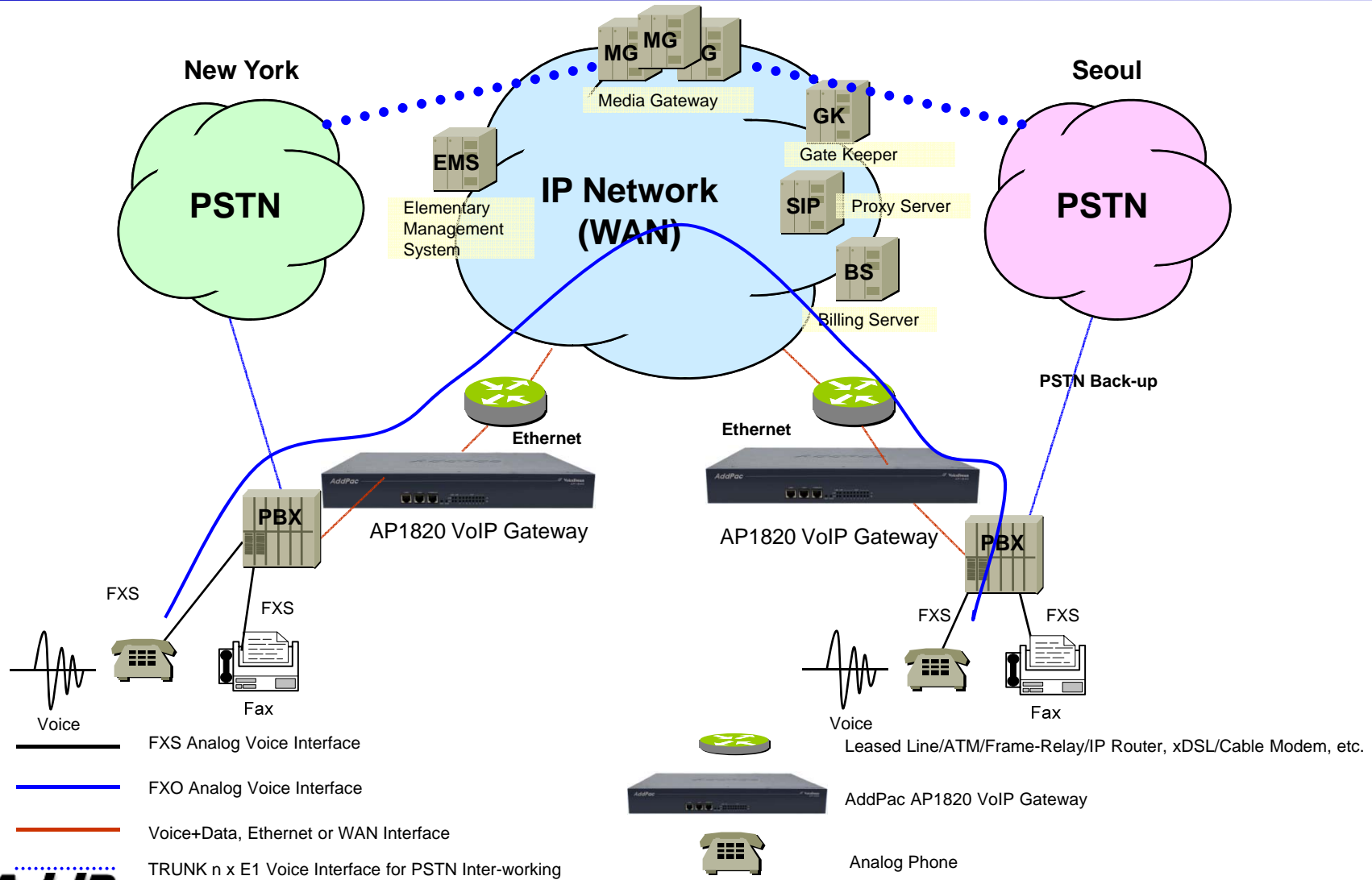
## AP1820 VoIP Gateway

- IP packet filtering
- IP access list
- User authentication function
  - Password Authentication Protocol (PAP)
  - Challenge Handshake Authentication Protocol (CHAP)
- Enable/Disable specific protocols
- Auto-square connect of Telnet session
- Account Management function for multi-level user
- SNMP/TELNET/FTP/HTTP/TFTP port assignment function
- SNMP/TELNET/FTP access list management
- Boot mode security checking function



# Standard Application

## AP1820 VoIP Gateway



# Ordering Information

- **AP1820 VoIP Gateway Hardware**
  - AP1820 VoIP Gateway Main Body
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - 2-ports 10/100Mbps Fast Ethernet(RJ45)
  - Two(2) Module Slots
  - Option Module: AP-N1-FXS8, AP-N1-FXO8, AP-N1-FXS4O4, AP-E&M4, AP-N1-E1 Cards
  - Including Network Cable & Dual Power Supply, etc.
- **Built-in APOS Internetworking Software for AP1820**
- **Including 1 Year Hardware Warranty**
- **Product Documents**
  - Install and Operation Guide (PDF)
- **Pricing**
  - AddPac Technology Regional Sales Manager
  - Authorized Sales and Marketing Representatives
  - Please Contact [www.addpac.com](http://www.addpac.com)

# VoIP Gateway Series

# Thank you!

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