



# AP6500 (128 Port)

## Large Scale VoIP Gateway

High Performance VoIP Gateway Solution

### Preliminary Product Overview



# **AddPac**

**AddPac Technology**

Sales and Marketing

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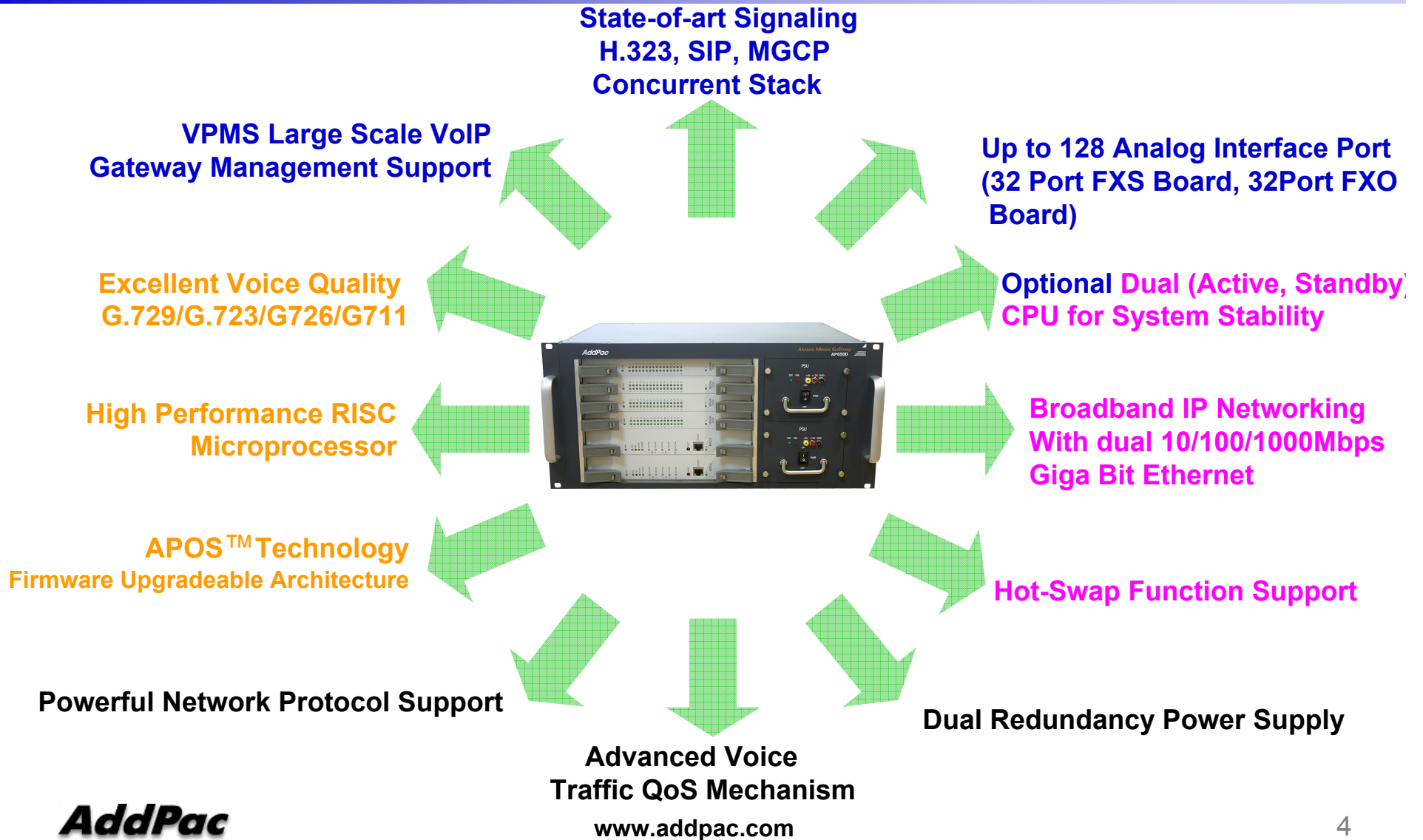
# Product Overview

## AP6500 Large Scale VoIP Gateway

- H.323/SIP/MGCP Concurrent Triple Stack Support
- High Performance RISC Processor
- Optional Dual CPU Redundancy (Active, Standby) for System Stability
  - SIP/MGCP Concurrent **Redundancy** Stack Support
- Dual Power Redundancy (AC, DC ) selectable at ordering
- Hot-Swap Function Support
- Up to 128 Analog Interface Port (32Port Board x 4 Ea) Support
- Two(2) 10/100/1000Mbps Giga-Bit Ethernet Interface
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism

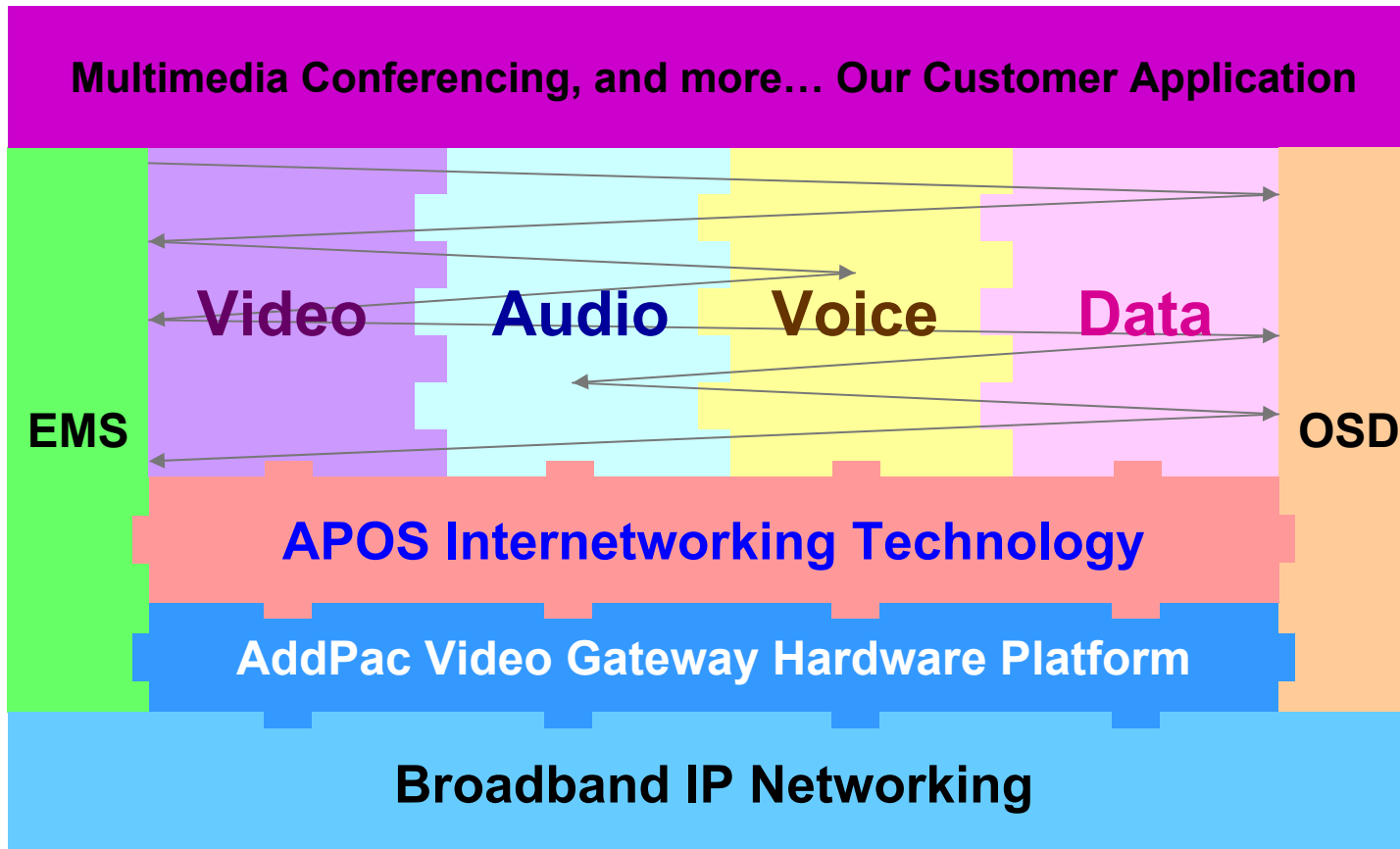
# Product Highlights

## AP6500 Large Scale VoIP Gateway



# APOS Technology

AP6500 Large Scale VoIP Gateway



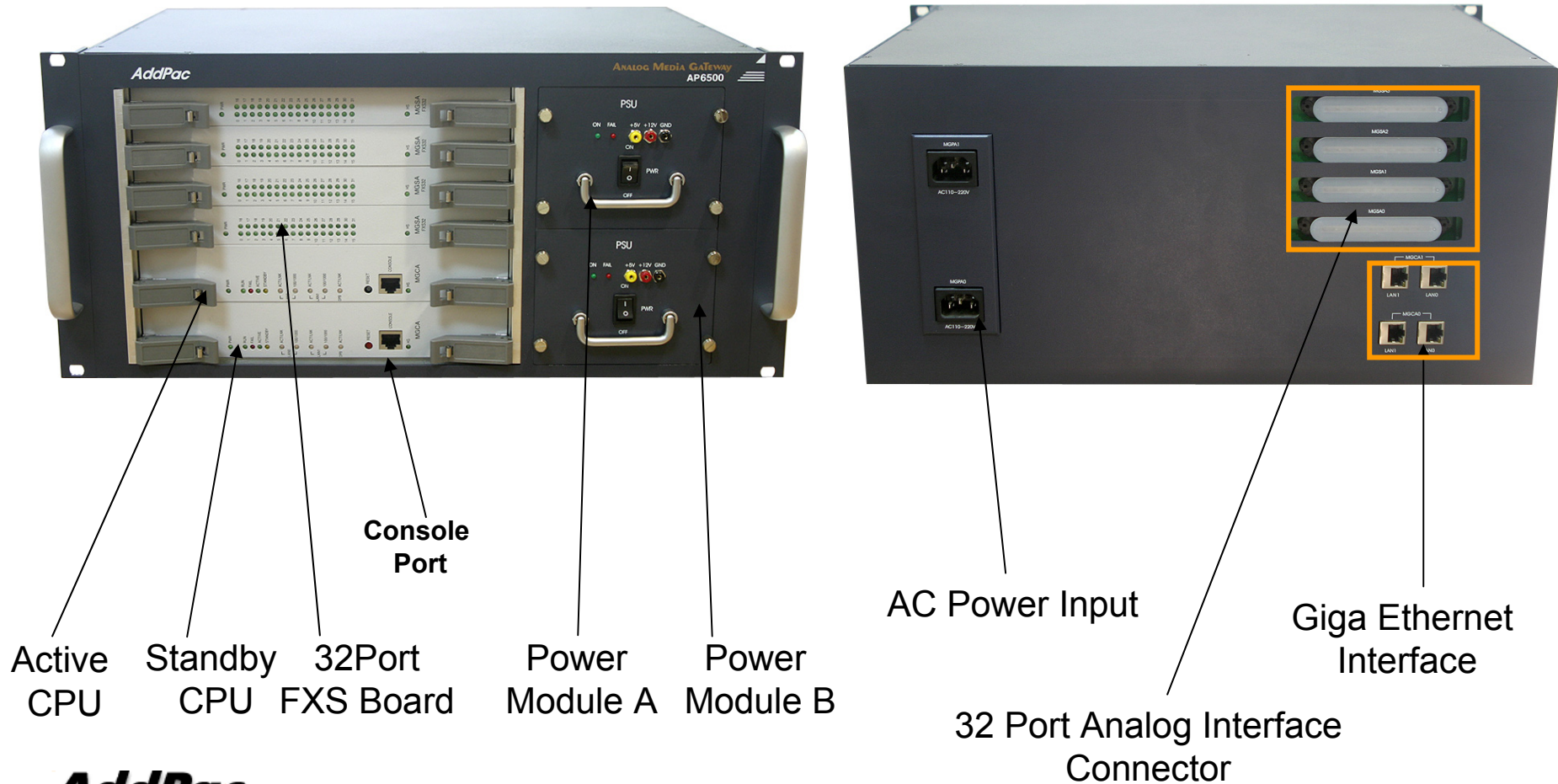
- APOS : AddPac Internetworking Operating System
- OSD : On- Screen Display
- EMS : Element Management System

# Hardware Specification

## AP6500 Large Scale VoIP Gateway

RISC  
CPU

High-end  
DSP



**AddPac**

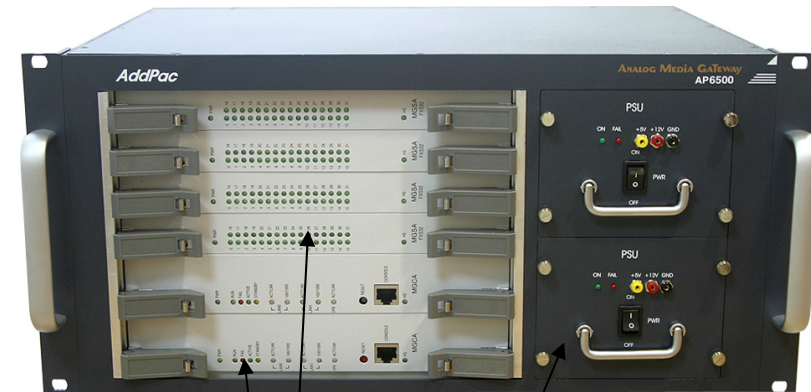
[www.addpac.com](http://www.addpac.com)

# Hardware Specification

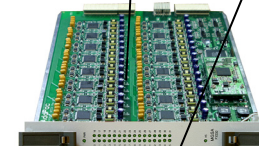
## AP6500 Large Scale VoIP Gateway

### Hardware Specifications

AP6500 VoIP Gateway	Basic Specifications
Dual Redundancy CPU	High-End RISC Microprocessor, Optional Dual Redundancy CPU (Active, Standby)
Voice Interface	Up to 128-Port FXS Voice Interface Up to 128-Port FXO Voice Interface
	32-Port Analog FXS Board, FXO Board
Ethernet Interface	2-Ports 10/100/1000Mbps Giga Ethernet Interface(RJ-45)
Flash Memory/CPU	8Mbyte High-speed Flash Memory
Base Memory/CPU	64/128Mbyte High-speed SDRAM
Power Requirement	Dual Power Supply / VAC 110~220V, 50/60Hz, 220V 2.5A
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	222mm x 440mm x 333mm (H x W x D)
Weight (kg)	20Kg



CPU Board



32Port  
FXS Board

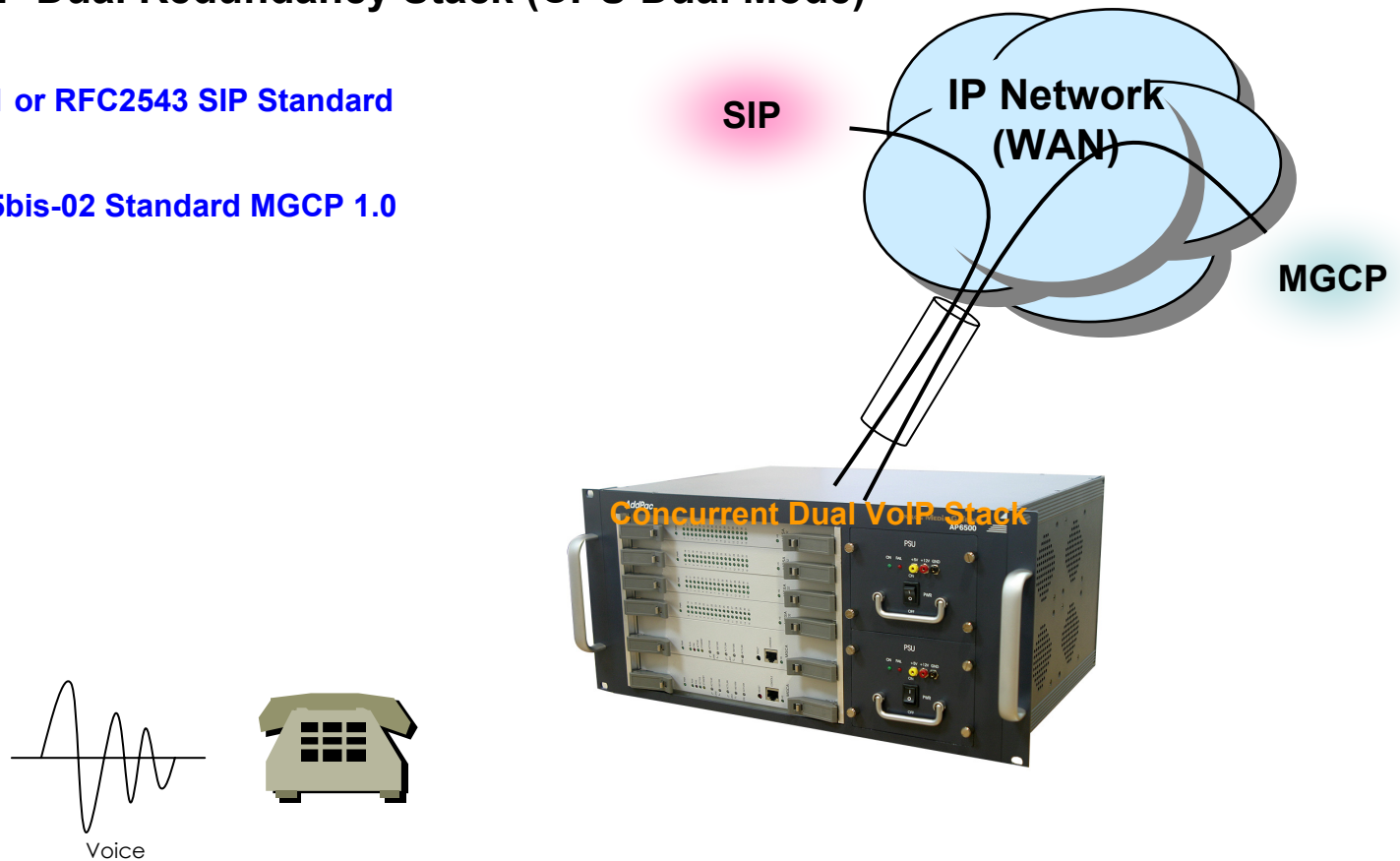


Power Supply  
Board

# VoIP (Voice over IP) Service

## AP6500 Large Scale VoIP Gateway

- H.323/SIP/MGCP Concurrent Triple Stack (CPU Single Mode)
- SIP, and MGCP Dual Redundancy Stack (CPU Dual Mode)
- SIP
  - IETF RFC3261 or RFC2543 SIP Standard
- MGCP
  - IETF RFC2705bis-02 Standard MGCP 1.0





# VoIP (Voice over IP) Service

## AP6500 Large Scale VoIP Gateway

- **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

- **MGCP**

- Secondary call agent assignment function
- Default package assignment
- Announcement Server Package, Generic Media Package, Handset Package, Line Package, Trunk Package support
- MGCP call agent assignment according to the domain name
- T.38 real-time fax relay support
- DTMF relay support based on RFC2833



# VoIP (Voice over IP) Service

## AP6500 Large Scale VoIP Gateway

- **Voice Codec**

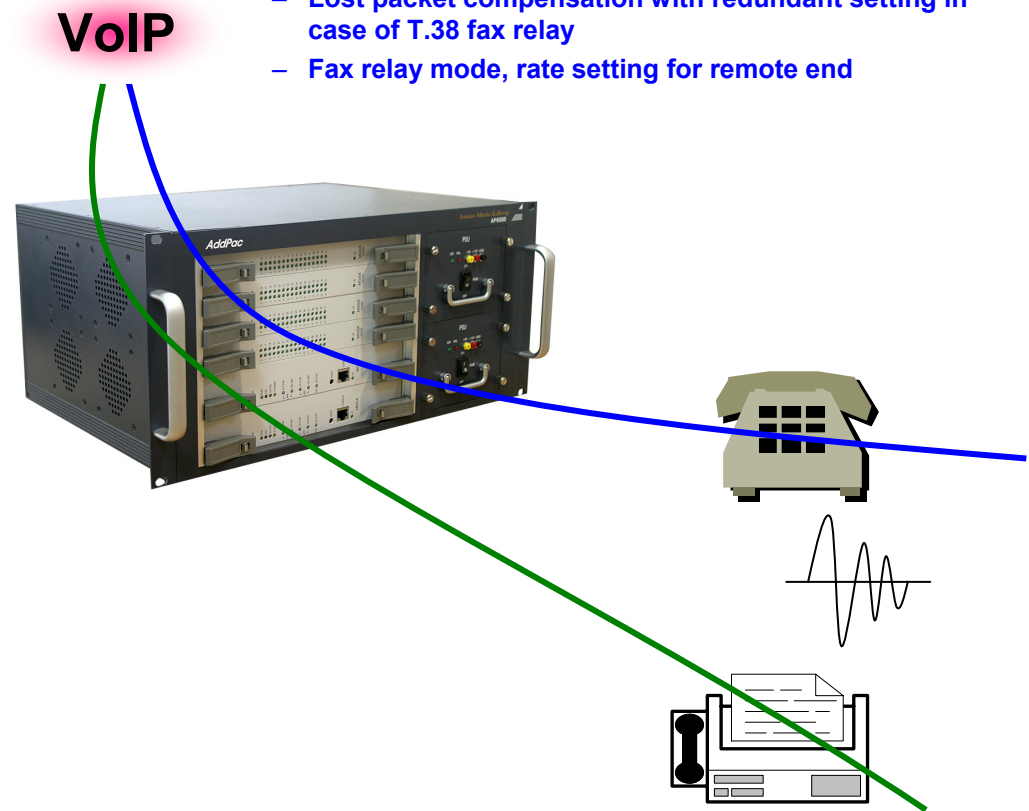
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP, MGCP common) based on RFC2833

- **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

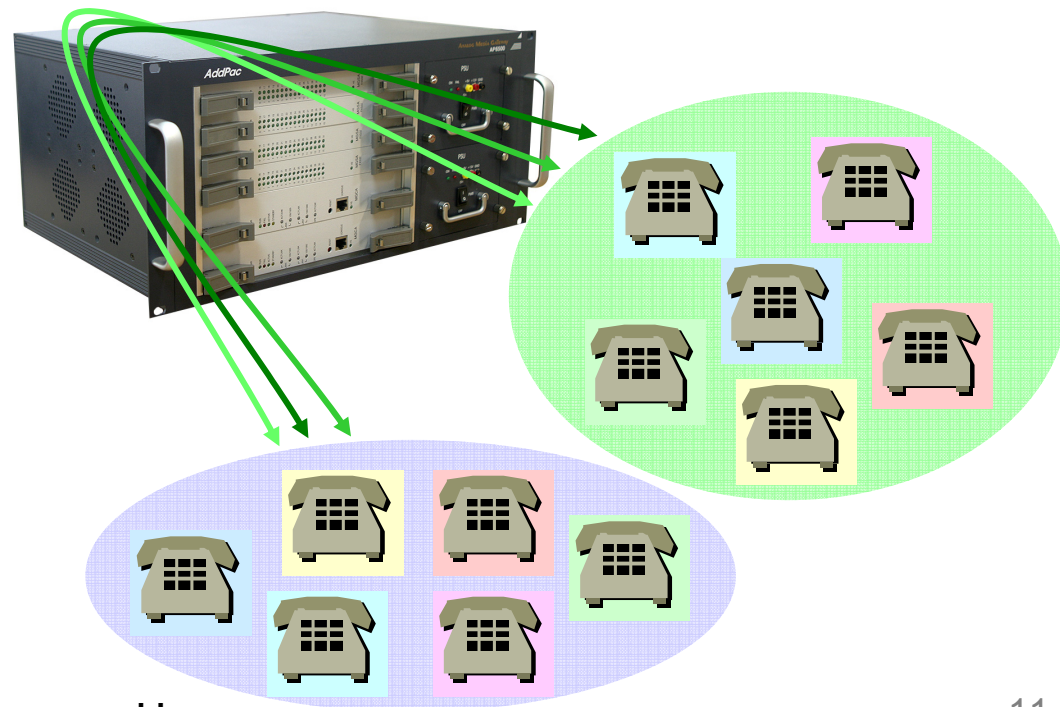
## AP6500 Large Scale VoIP Gateway

### • 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
- 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.)

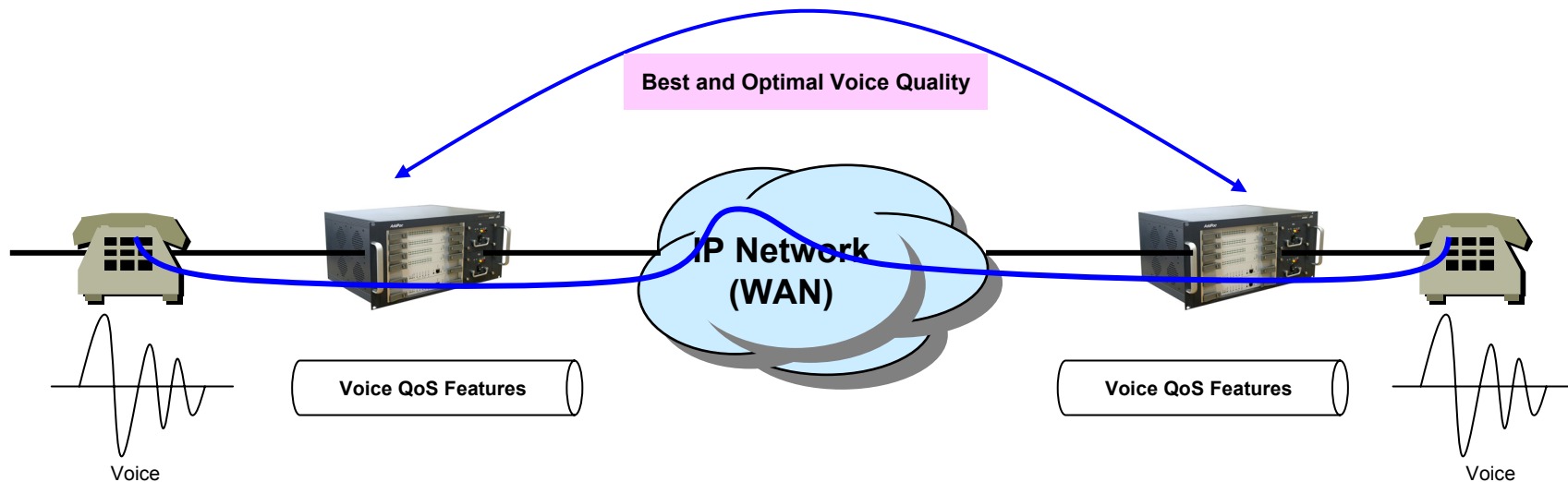
- Call transfer for internal calls
- Call pickup for internal calls
- Calling and called number conversion for VoIP outbound calls
- Calling and called number conversion for VoIP inbound calls
- Fax broadcasting call control



# Advanced QoS Features

## AP6500 Large Scale 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

## AP6800 Large Scale VoIP Gateway

### Basic Network Protocols

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

### Routing Protocol

- IPv4 : Static

### Service Protocol

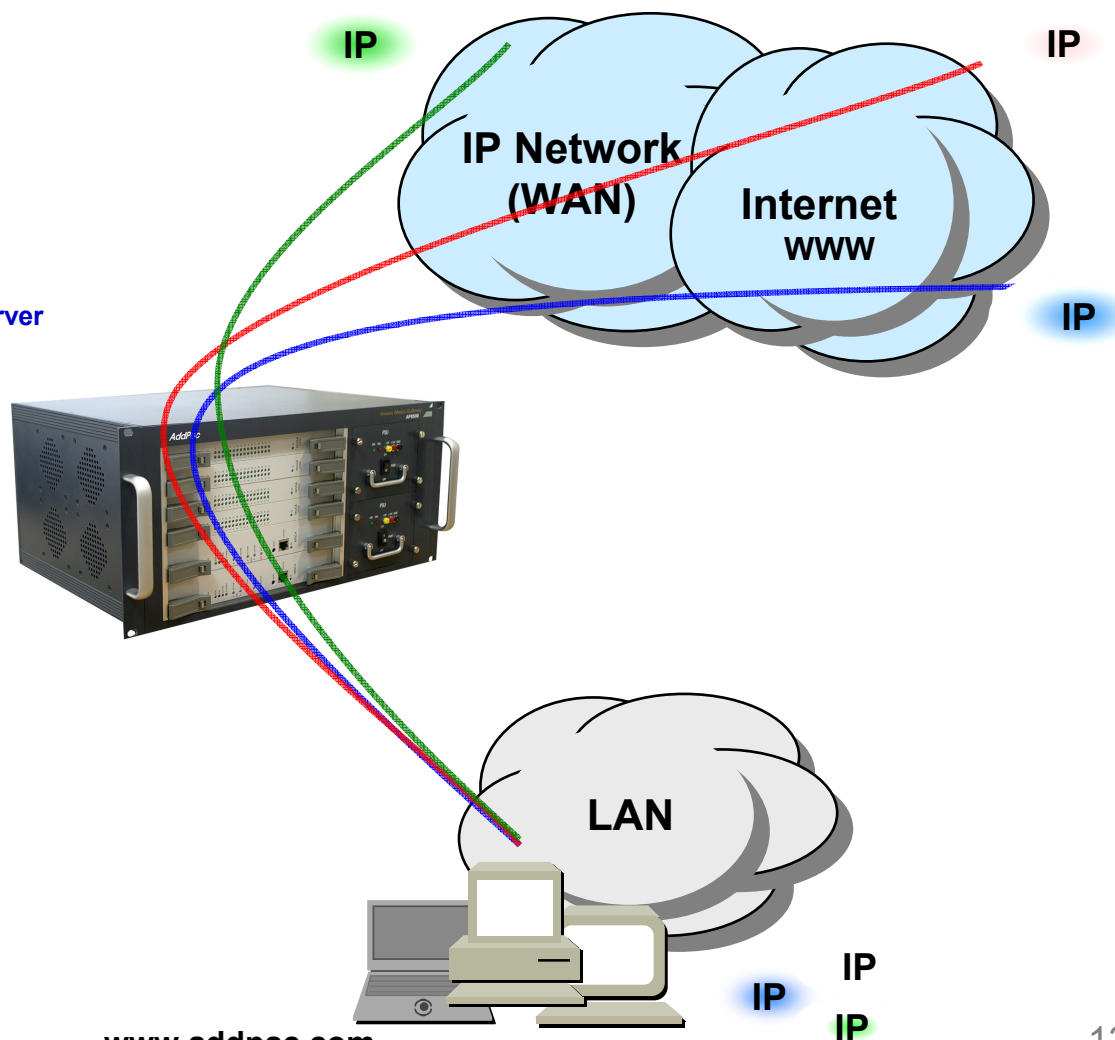
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

### IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

### Miscellaneous

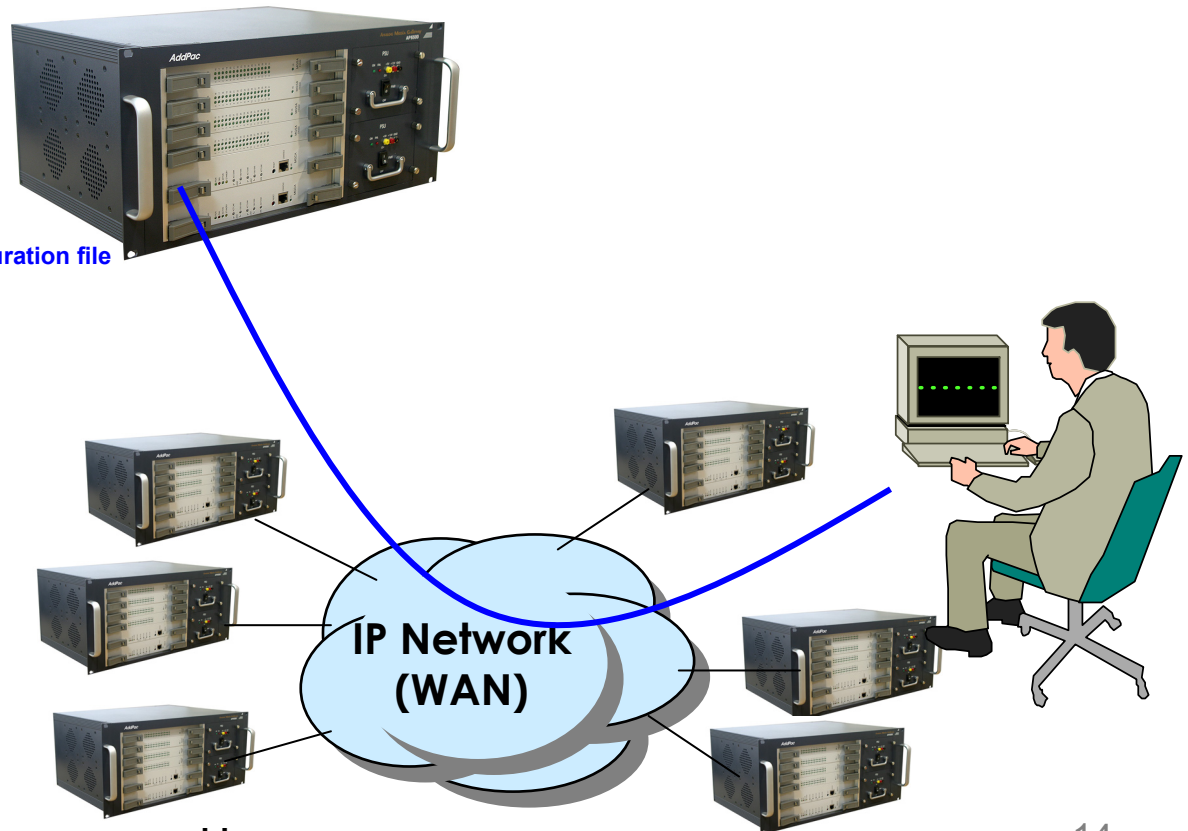
- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP accounting
- STUN Client



# Network Management

## AP6500 Large Scale VoIP Gateway

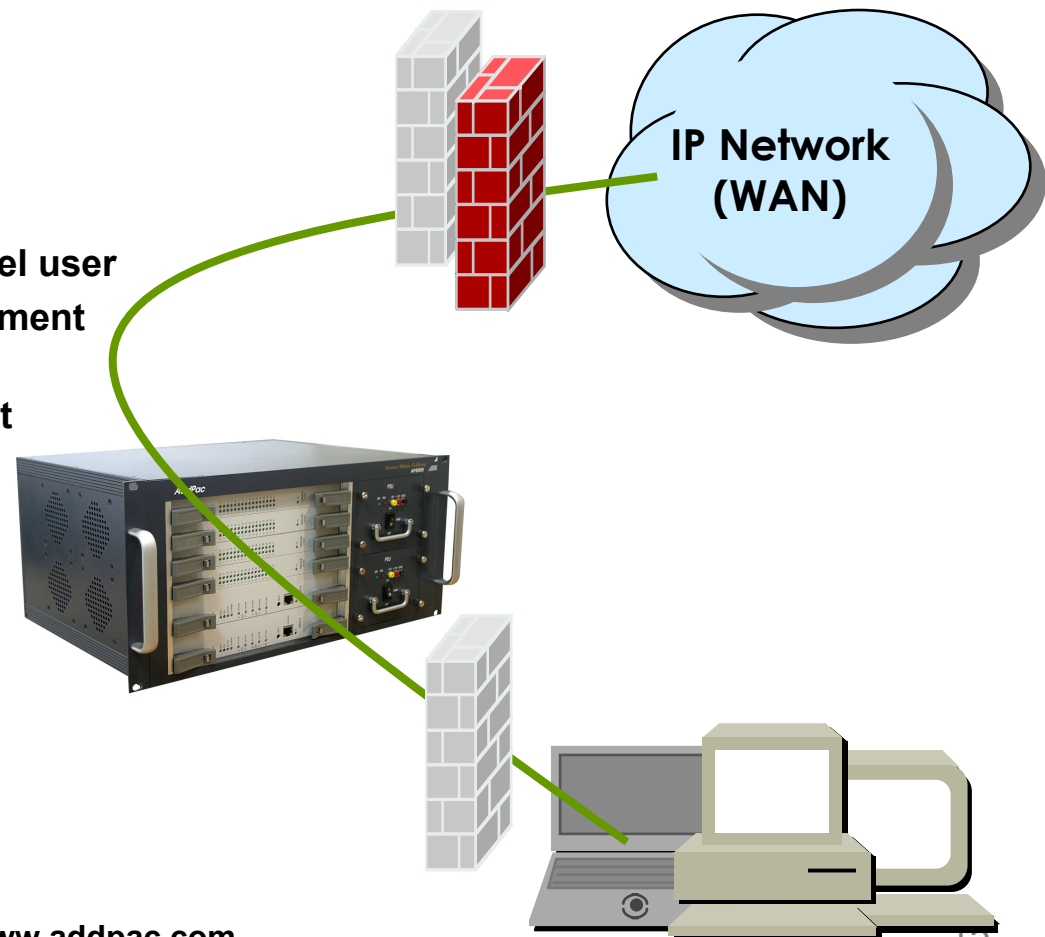
- **SNMP**
  - Standard Simple Network Management Protocol( SNMP) Agent support
  - MIB v1 and v2 Support
- **Watch-dog Function**
  - Hardware, Software watch-dog services
- **Remote Management**
  - Telnet
  - Rlogin
- **Auto Upgrade Service**
  - HTTP server based APOS image and configuration file auto-upgrade support
- **Batch Job Function**
  - Text based script downloading
- **Interoperable with AP-VPMS Service**
  - AddPac VoIP Plug & Play Management System (AP-VPMS)



# Security Management

## AP6500 Large Scale 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



# VPMS (VoIP Plug&Play Management System)

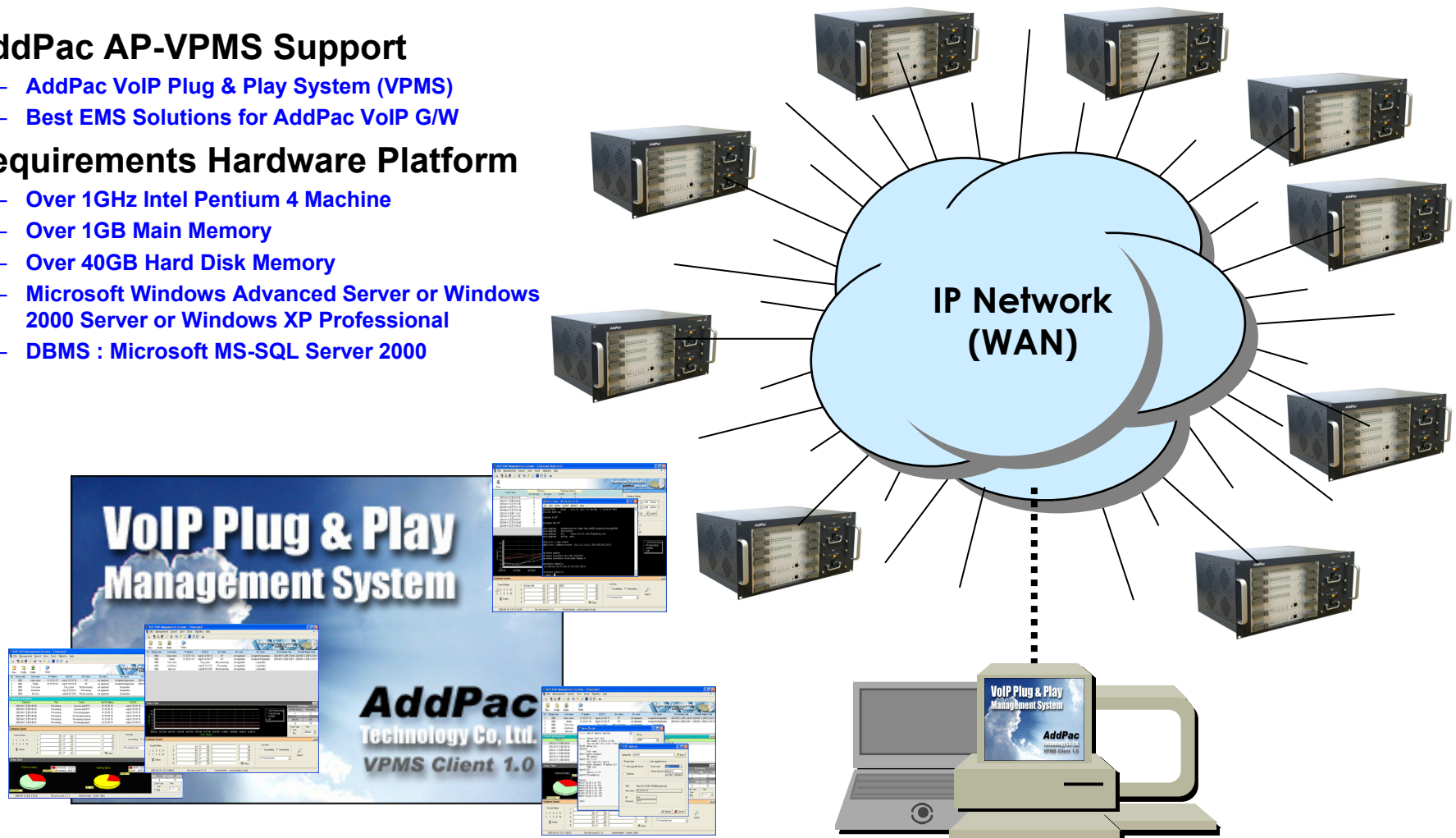
## AP6500 Large Scale VoIP Gateway

- **AddPac AP-VPMS Support**

- AddPac VoIP Plug & Play System (VPMS)
- Best EMS Solutions for AddPac VoIP G/W

- **Requirements Hardware Platform**

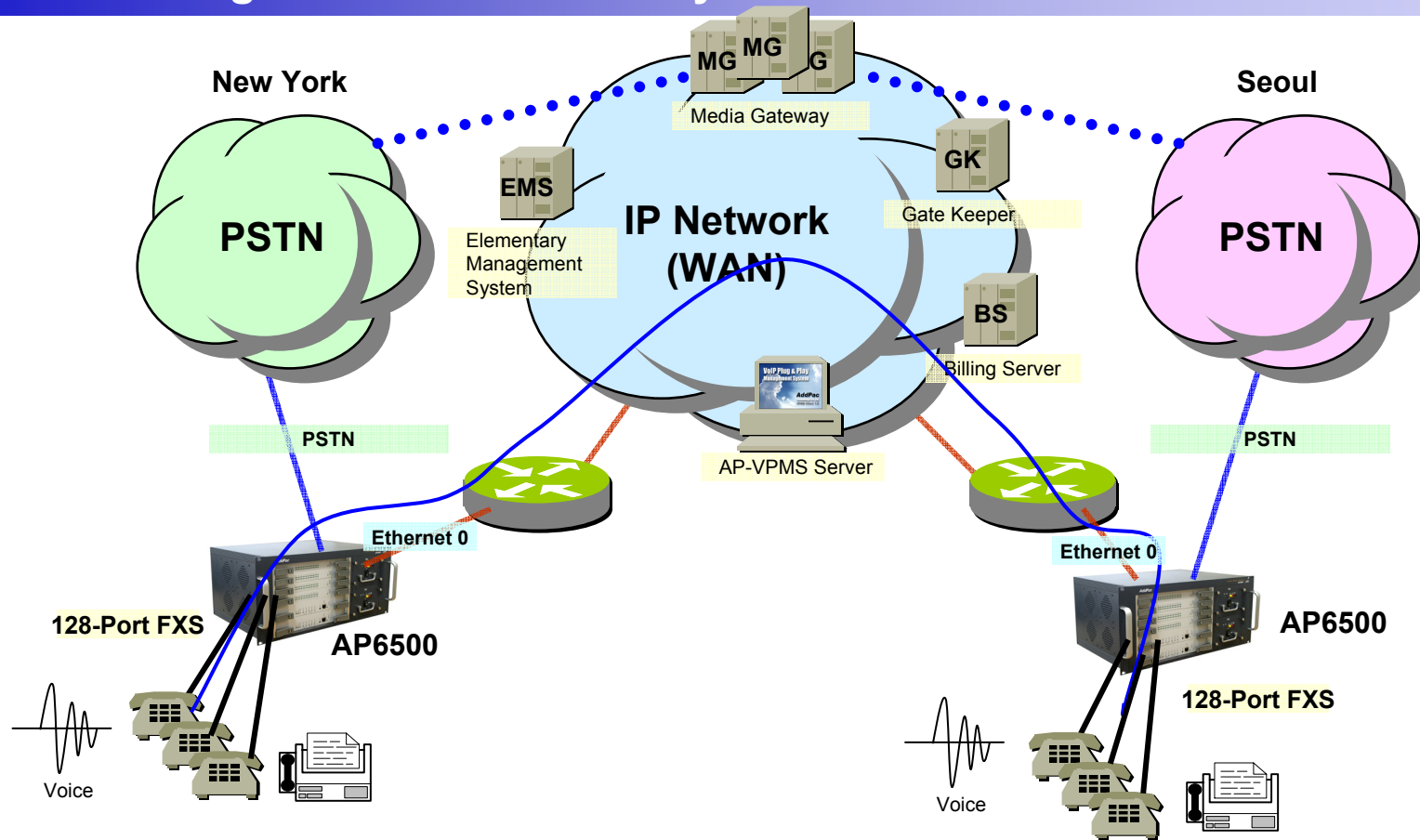
- Over 1GHz Intel Pentium 4 Machine
- Over 1GB Main Memory
- Over 40GB Hard Disk Memory
- Microsoft Windows Advanced Server or Windows 2000 Server or Windows XP Professional
- DBMS : Microsoft MS-SQL Server 2000









# Standard Application

## AP6500 Large Scale VoIP Gateway



-  FXS Analog Voice Interface
-  FXO Analog Voice Interface
-  Voice+Data. Ethernet or WAN Interface
-  TRUNK n x E1 Voice Interface for PSTN Interworking



Leased Line/ATM/Frame-Relay/IP Router, xDSL/Cable Modem, etc.



AddPac AP6500 Voice over IP Gateway



Analog Phone

# Ordering Information

- **AP6500 VoIP Gateway Hardware**
  - AP6500 VoIP Gateway Main Body
  - Single CPU, Optional CPU Redundancy
  - Dual Power Supply
  - 128 Port FXS, FXO Interface Configuration
  - Including Network Cable & Power Supply, etc.
- **Built-in APOS Internetworking Software for AP6500**
- **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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