



AP2620IVR IVR VoIP Gateway

High Performance IVR VoIP Gateway Solution

Preliminary Product Overview



AddPac

AddPac Technology

Sales and Marketing

www.addpac.com

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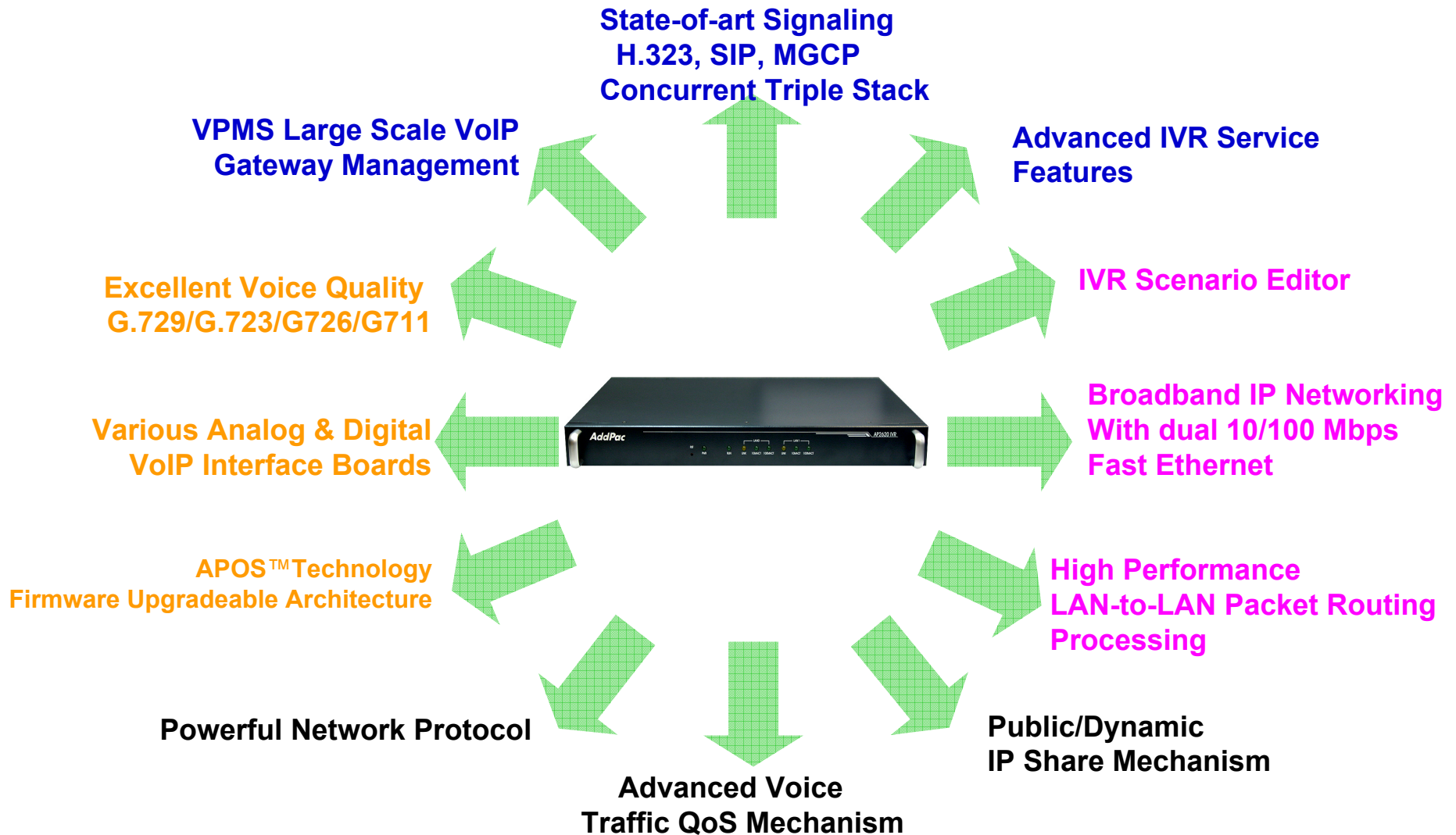
Product Overview

AP2620IVR VoIP Gateway

- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance & Flexible IVR Service
- High-End RISC Processor & Programmable DSP Architecture
- Two (2) 10/100 Mbps Fast Ethernet
- 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
- VPMS (VoIP Plug & Play Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Analog & Digital Interface Module
(FXS, FXO, E&M, Audio Module, Digital E1, T1, etc.)

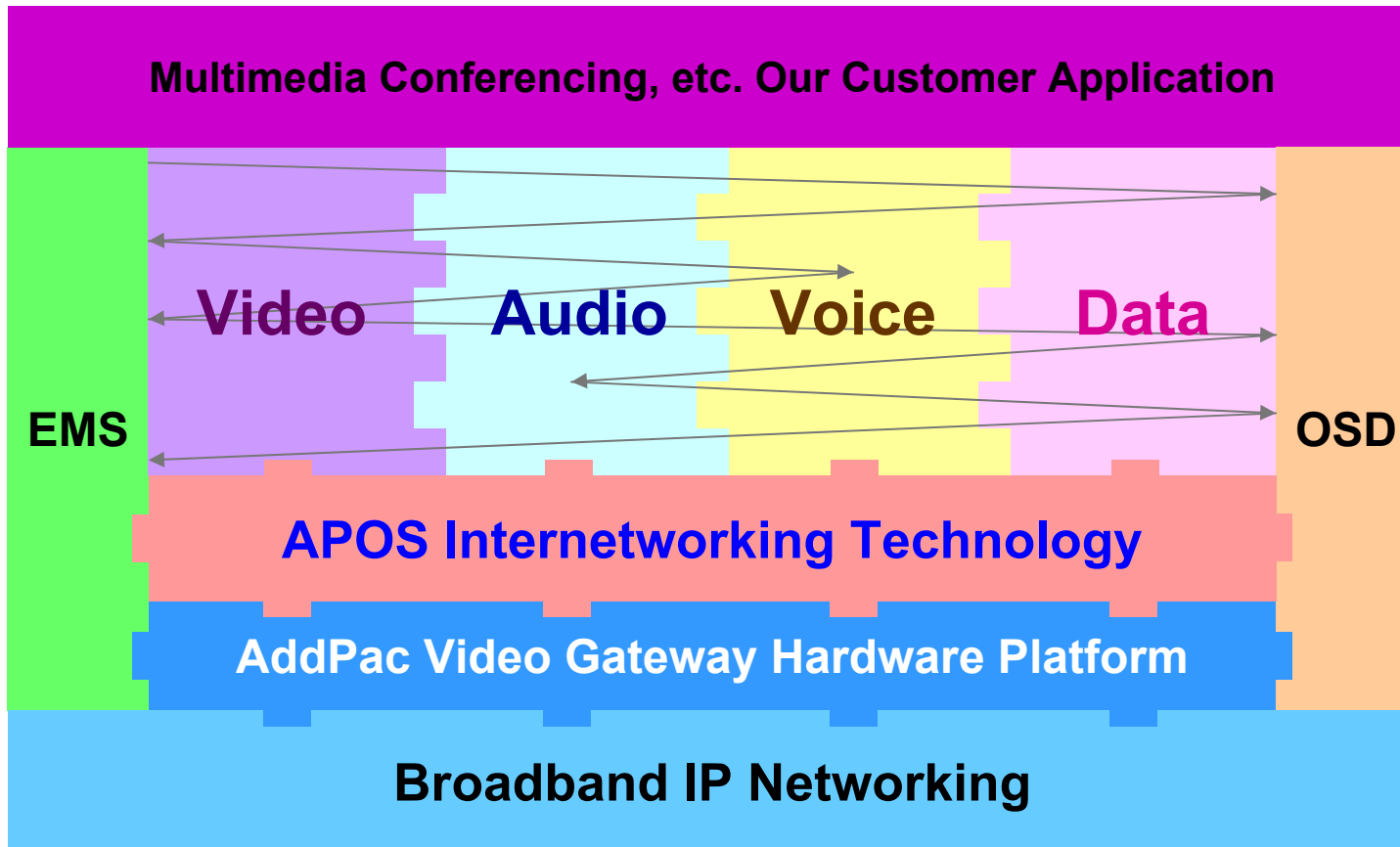
Product Highlights

AP2620IVR VoIP Gateway



APOS Technology

AP2620IVR VoIP Gateway



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

Hardware Specification

AP2620IVR VoIP Gateway

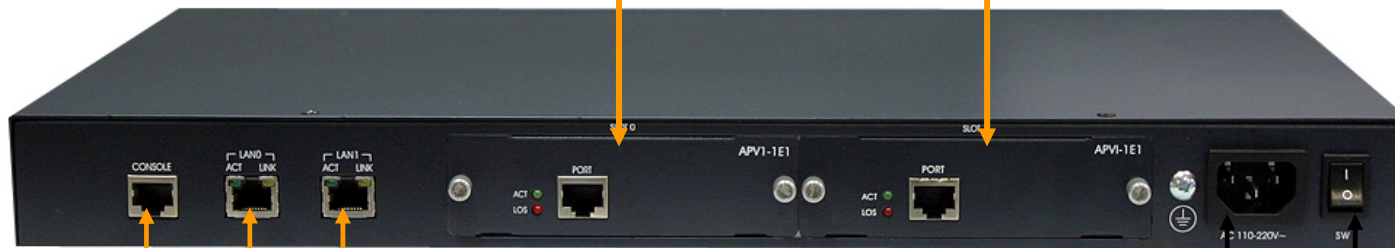
RISC
CPU

High-End
DSP



Voice Module 0 Slot

Voice Module 1 Slot



Console Port

LAN0, LAN1 10/100 Mbps Ethernet

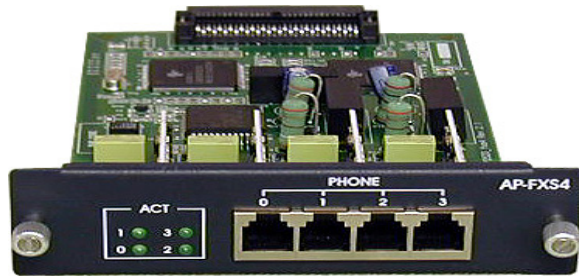
Power Interface

Switch

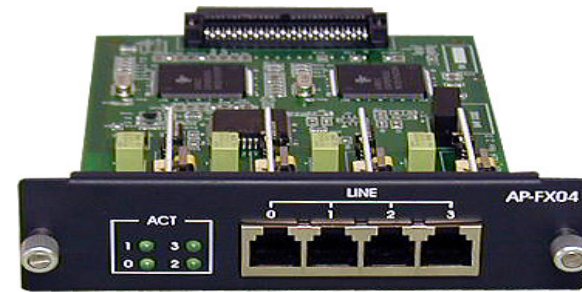
Hardware Specification

AP2620IVR VoIP Gateway

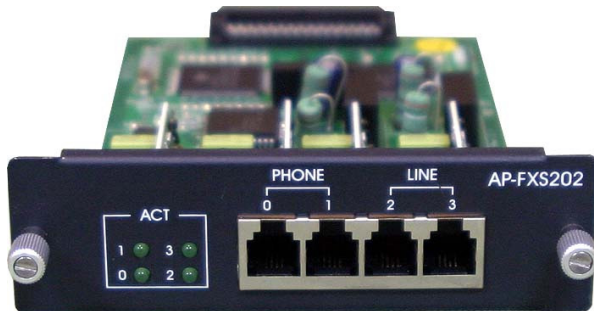
AP2620IVR Analog Voice Modules



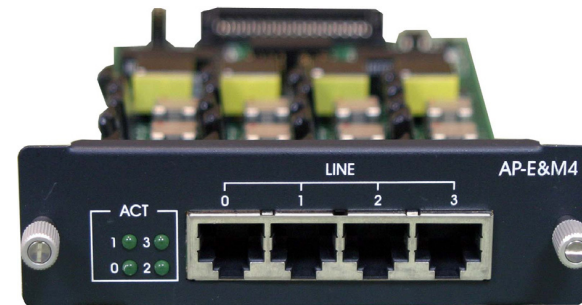
AP-FXS4 Module



AP-FXO4 Module



AP-FXS2, FXO2 Module

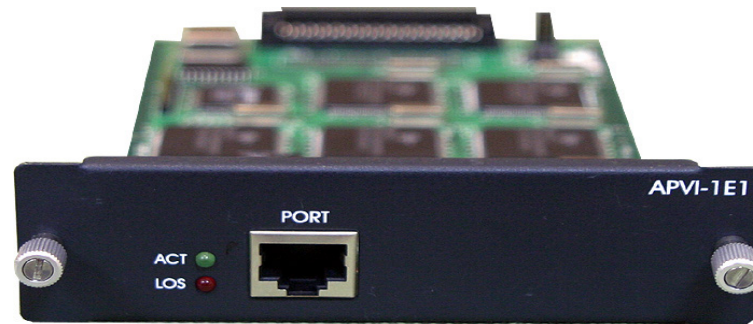


AP-E&M4 Module

Hardware Specification

AP2620IVR VoIP Gateway

AP2620IVR Digital Voice Modules



AP-E1 Module

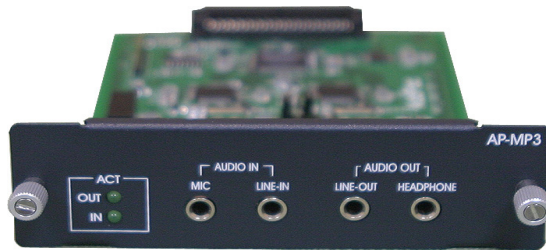


AP-T1 Module

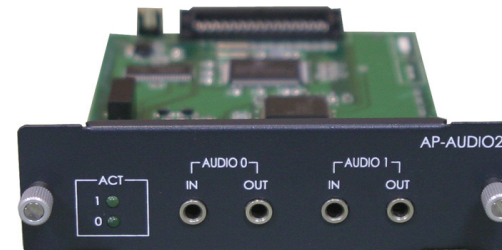
Hardware Specification

AP2620IVR VoIP Gateway

AP2620IVR IP Broadcasting Modules



AP-MP3 Module (High Quality)



AP-AUDIO2 Module



AP-AUDIO1,FXS3 Module



AP-AUDIO1,FXO3 Module



AP-AUDIO1,FXS2, FXO1 Module

Hardware Specification

AP2620IVR VoIP Gateway

AP2620 IVR VoIP G/W	Basic Specifications
CPU	Power PC 64-bit RISC Microprocessor
Voice Interface	Supports up to 2 E1/T1 voice channels. Supports analog interfaces. 8 channels (FXS, FXO, E&M) Supports Broadcasting System Module (MP3 and audio, etc.).
Ethernet Interface	2-Port 10/100 Mbps Ethernet Interface (RJ-45)
Console Port	1-Port RS-232C Console Port (RJ-45)
Flash Memory	8 Mbyte High-speed Flash Memory
Main Memory	64 Mbyte High-speed SDRAM
Boot Memory	512 Kbyte Flash Memory
Power Requirement	VAC110~220V, 50/60 Hz, 25 watts
Operating Temperature	0°C ~ 45°C (32 °F ~ 112°F)
Storage Temperature	-40°C ~ 85°C (-40°C ~ 185°F)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	44mm x 444mm x 220mm (H x W x D)
Weight (g)	2.2 Kg



Hardware Specification

AP2620IVR VoIP Gateway



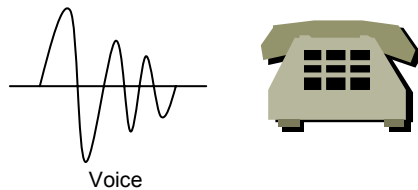
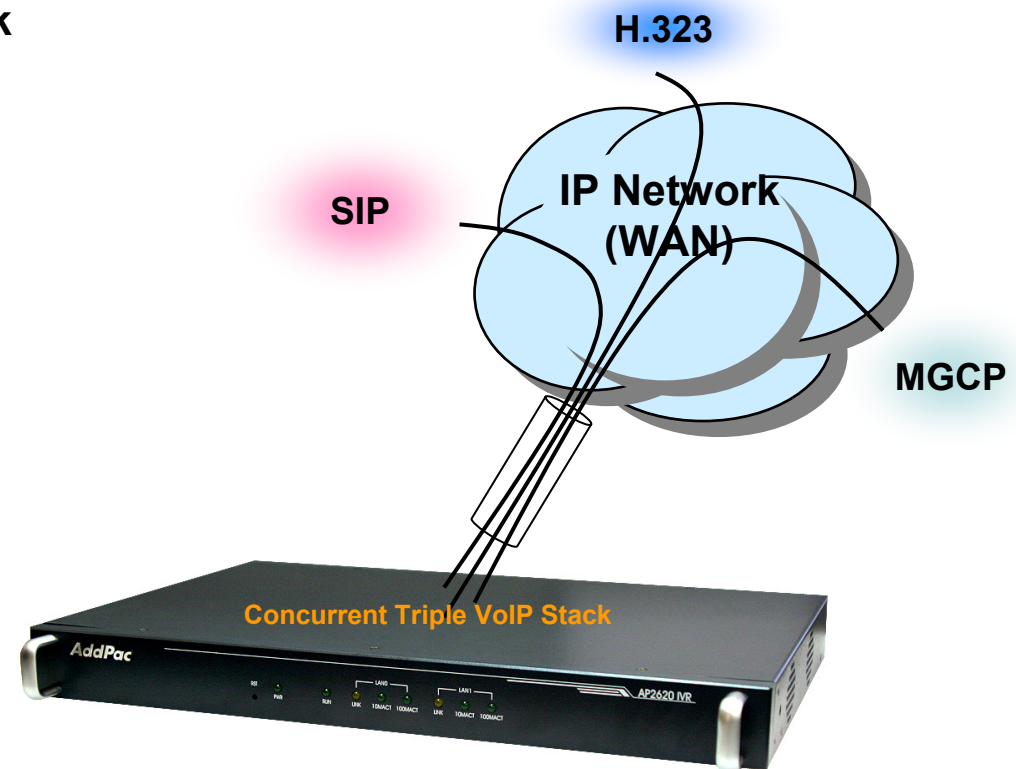
AP2620IVR VoIP Gateway

▶ FXS Voice Ports (RJ11)	Up to 8
▶ FXO Voice Port (RJ11)	Up to 8
▶ E&M Voice Port (RJ45)	Up to 8
▶ Digital E1/T1 Voice Module	Up to 2
▶ 10/100 Mbps Ethernet Ports (RJ45)	2
▶ Console Ports (RJ45)	1
▶ CPU	PowerPC 64-bit RISC Microprocessor
▶ Flash Memory	8 Mbyte
▶ Main Memory	64 Mbyte
▶ Power Requirement	VAC 110~220V, 50/60Hz, 25 watts
▶ Internetworking OS	APOS
▶ H.323, SIP, MGCP VoIP Protocol, T38 FAX	YES
▶ PPPoE, PPTP Network Protocols	YES
▶ Enhanced QoS Management Feature	YES
▶ IP Routing Protocols Including NAT	YES
▶ Network Management Protocols	YES
▶ Supported Network Environments	ADSL, VDSL, Cable Modem, Leased Line, ATM, and Frame-Relay Including Conventional Broadband Networking

VoIP (Voice over IP) Service

AP2620IVR VoIP Gateway

- H.323, SIP, and MGCP Triple Stack
- H.323
 - ITU-T Standard H.323 v3 Supported
 - H.245 Tunneling Supported
 - H.235 Security Features
- SIP
 - IETF RFC3261 or RFC2543 SIP Standard
- MGCP
 - IETF RFC2705bis-02 Standard MGCP 1.0



VoIP (Voice over IP) Service

AP2620IVR VoIP Gateway

- **H.323**

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

- **SIP**

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

- **MGCP**

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



VoIP (Voice over IP) Service

AP2620IVR VoIP Gateway

- **Voice Codec**

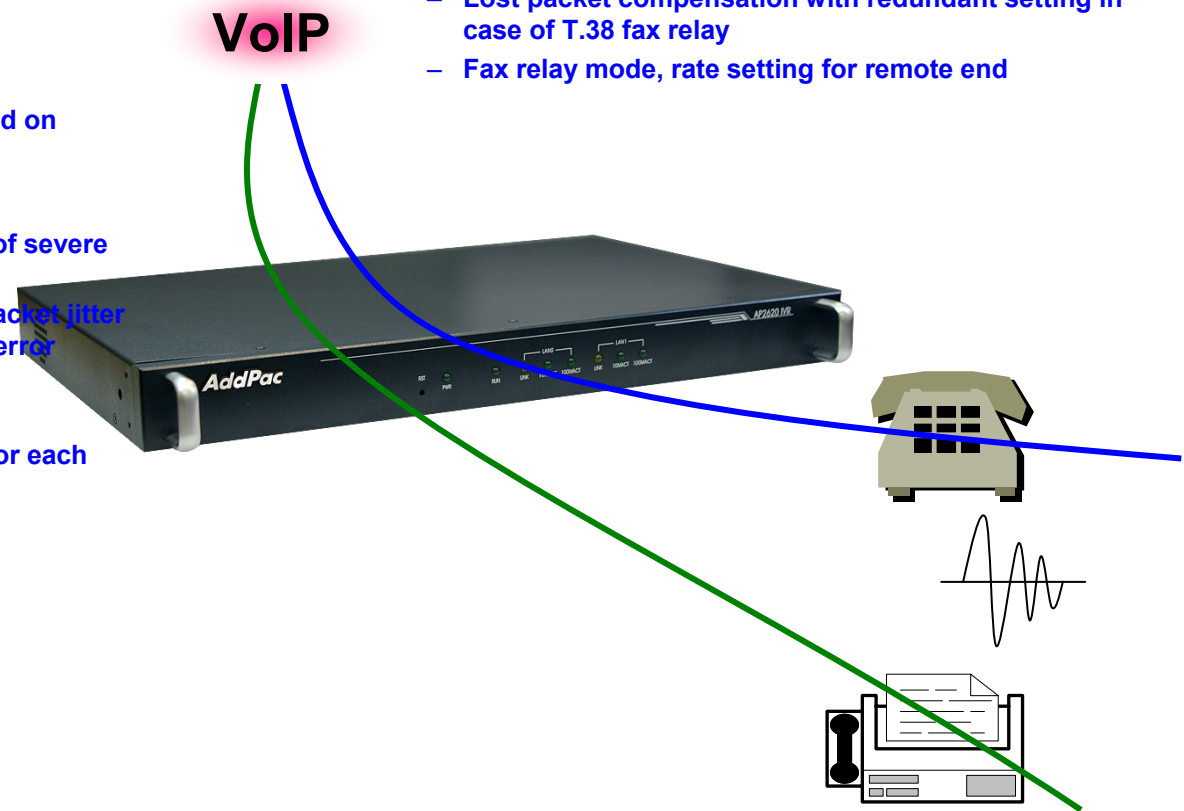
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- Voice Activity Detection (VAD)
- DTMF relay (H.323, SIP, MGCP common) based on RFC2833

- **RTP**

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

- **FAX**

- Fax relay mode supporting T.38, inband-T.38, and 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

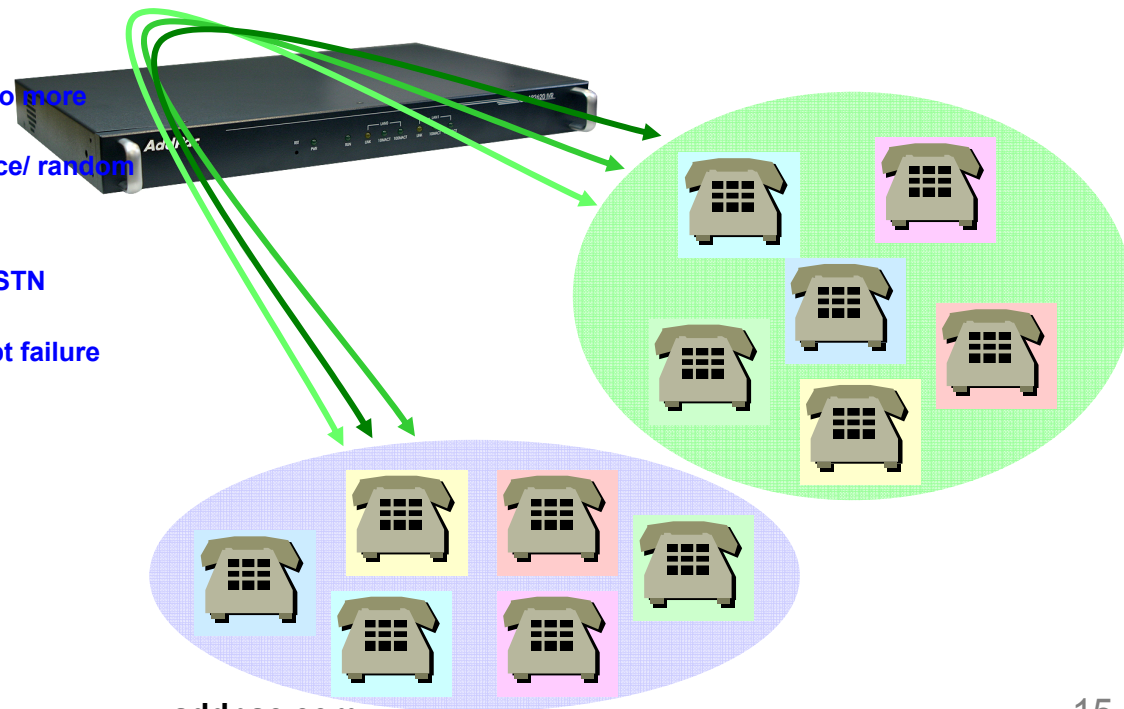
AP2620IVR VoIP Gateway

• VoIP Call Controls

- Hot line connection with Private Line Auto Ring Down (PLAR)
- Leased line emulation
- Connection monitoring
- 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 a 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



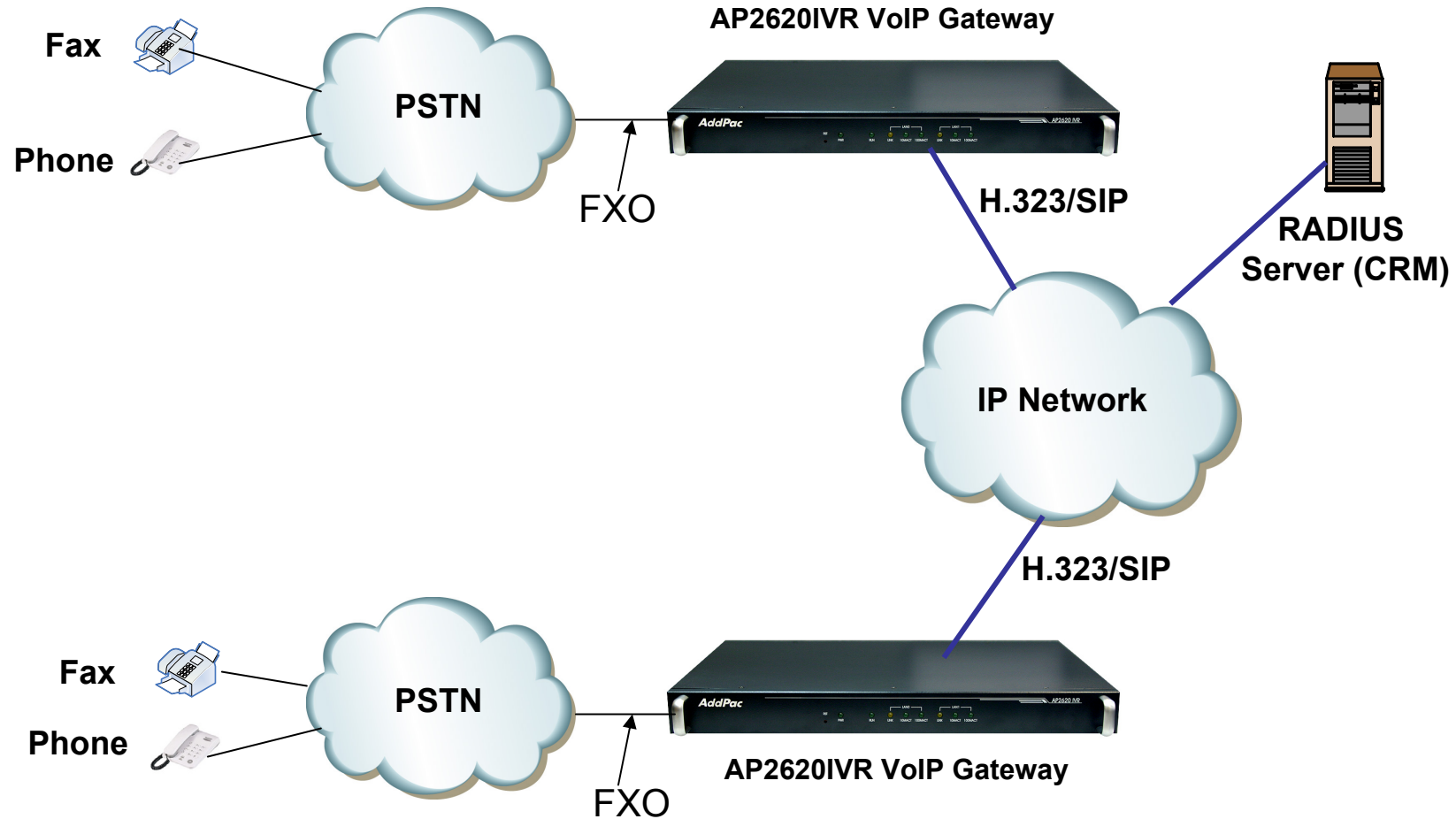
IVR Service Features

AP2620IVR VoIP Gateway

- **IVR Editor**
 - VXML-based IVR Script
 - Windows-based GUI
 - Easy to use
- **Pre-Paid and Post-Paid Services**
 - Supports basic pre-paid and post-paid IVR scenarios.
 - Supports multiple languages.
 - RADIUS interface (Quintum Compatible)
- **Cascade Mode**
 - Share one IP address.

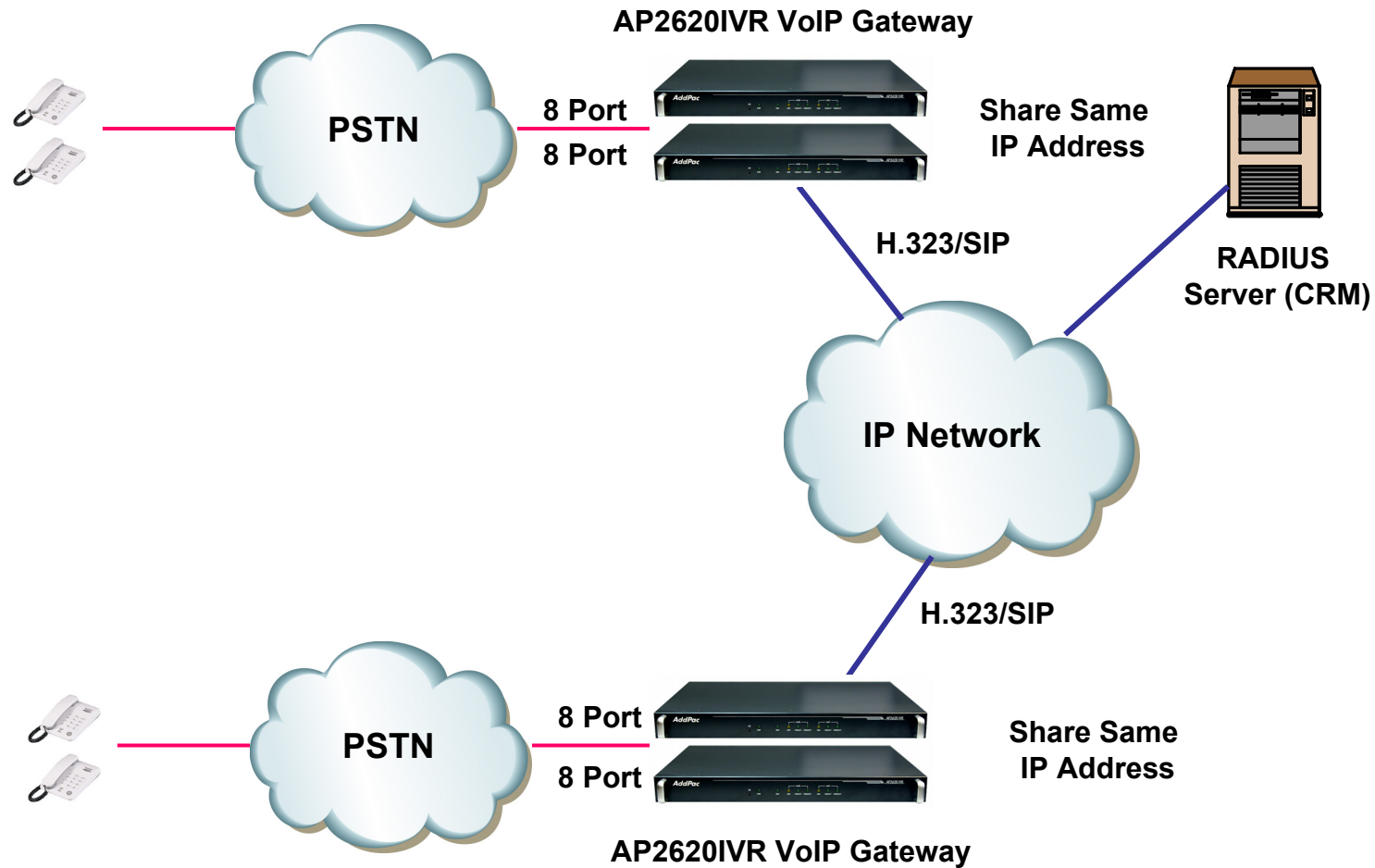
IVR Service Network Diagram

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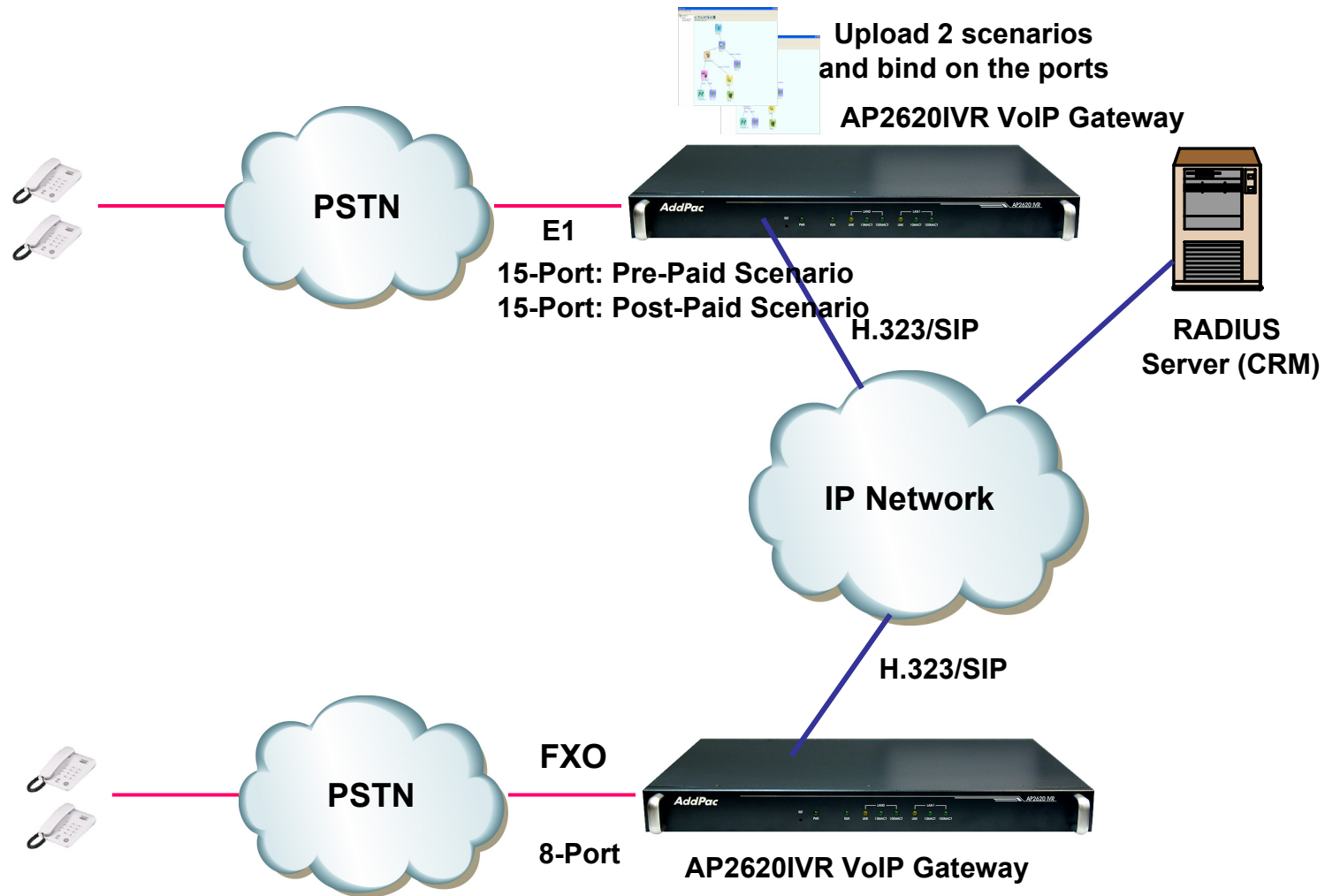
IVR Cascade Service

AP2620IVR VoIP Gateway



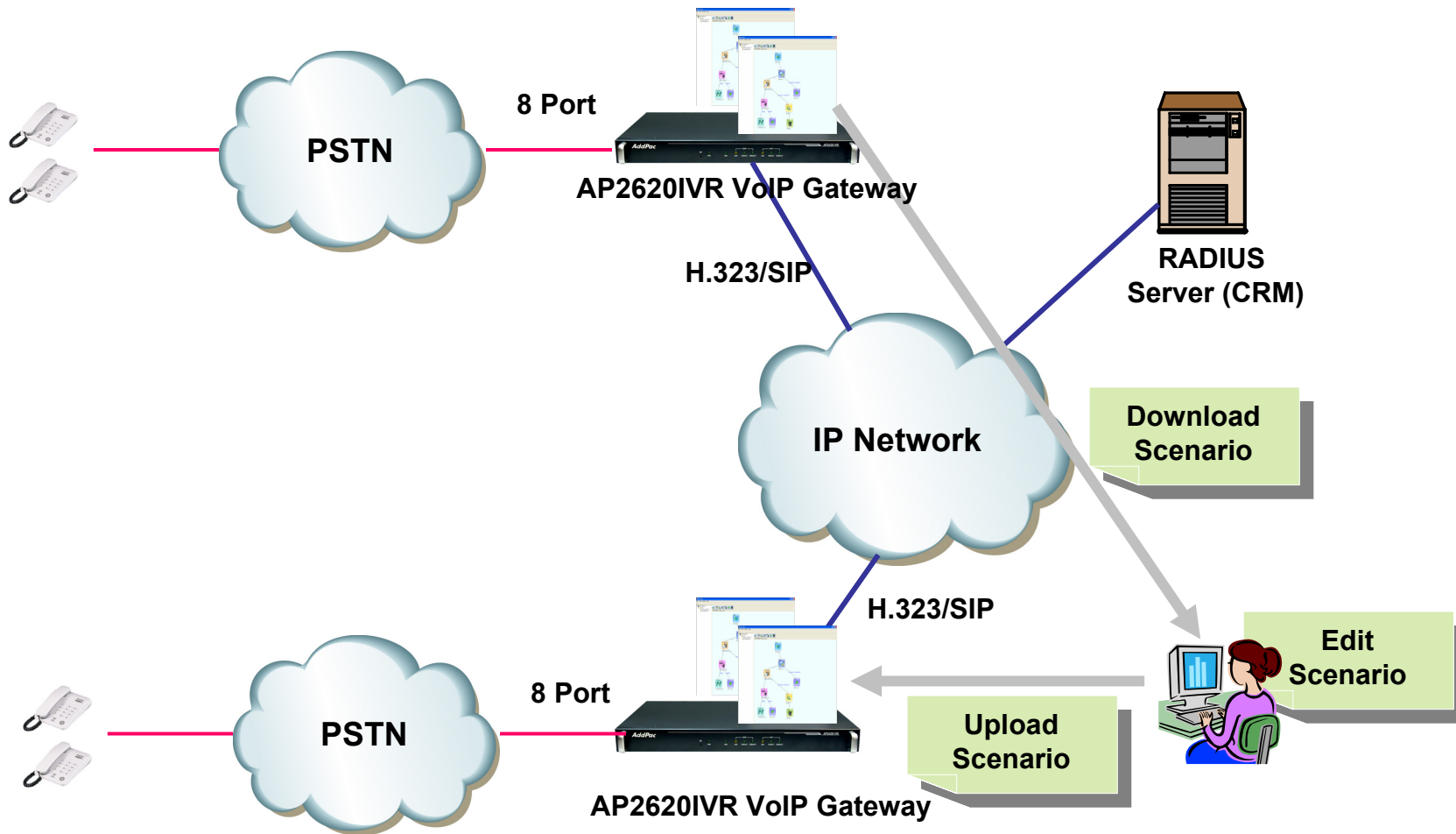
Multiple IVR Scenario Service

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IVR Scenario Editor

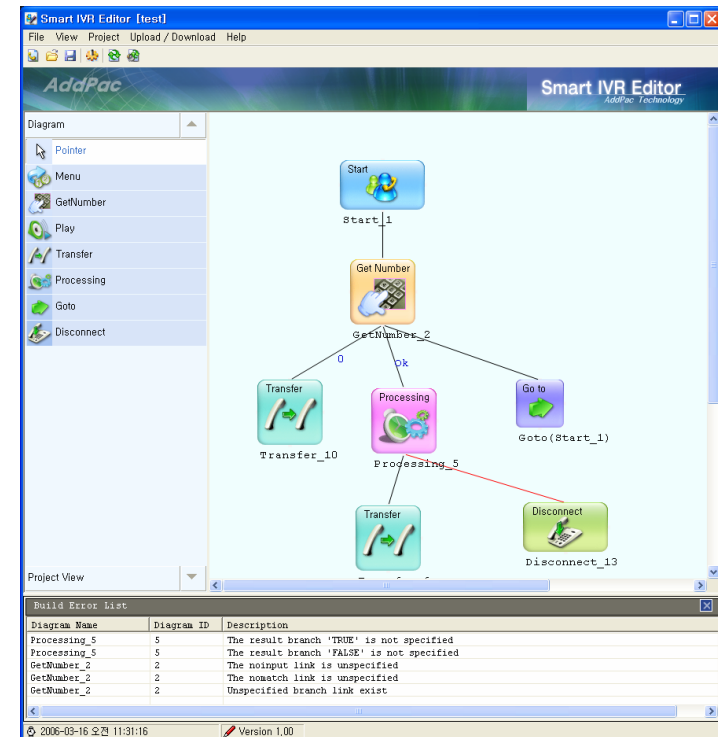
AP2620IVR VoIP Gateway



IVR Scenario Editor Creation

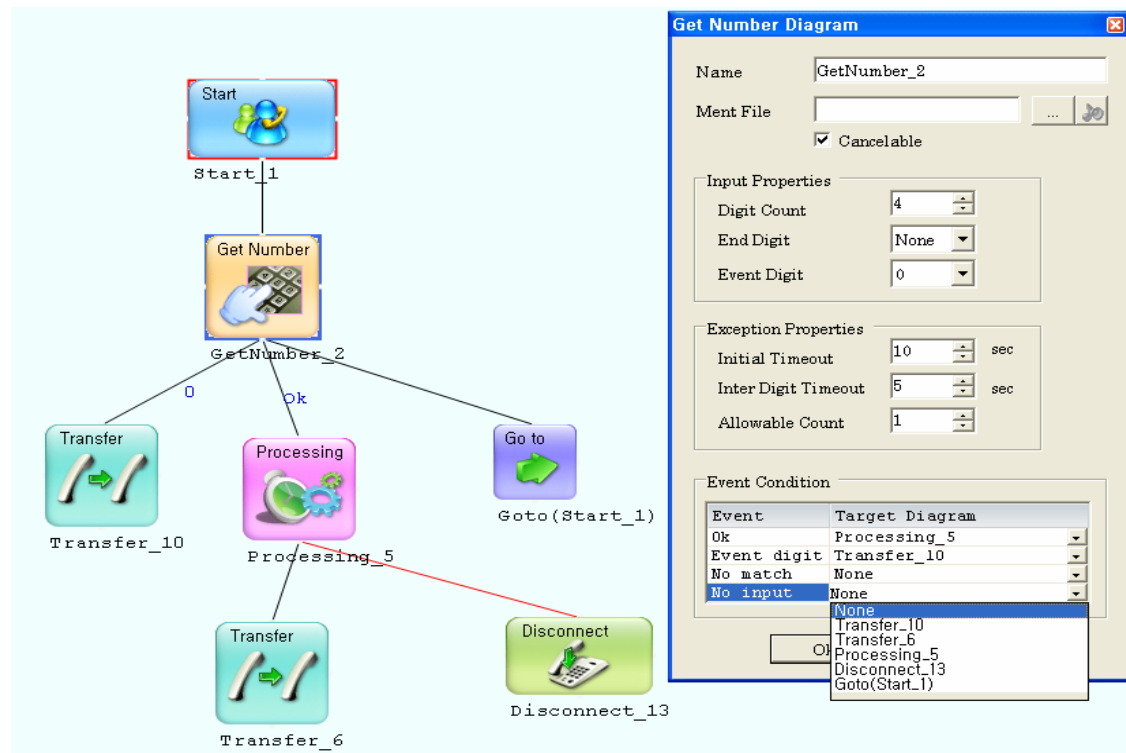
AP2620IVR VoIP Gateway

- GUI-based IVR Scenario Editor
- Supports Pre-defined Components (DTMF Input, Call Transfer, Voice File Play, etc.).
- Supports Project Template File for Easy Modification and Reference.
- Supports Pre-Defined IP-PBX System API and Additional Customization API.
- Supports IVR Scenario Creation Error Debugging Features.



IVR Scenario Editor Component Property

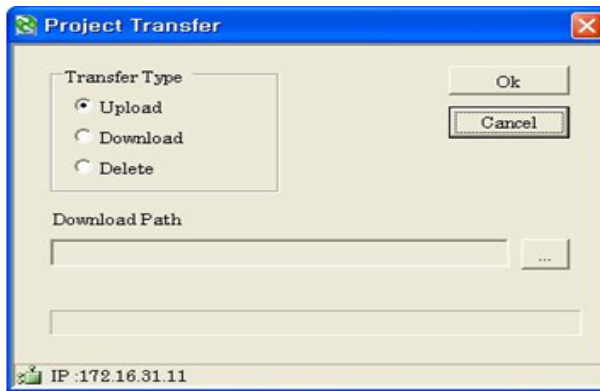
AP2620IVR VoIP Gateway



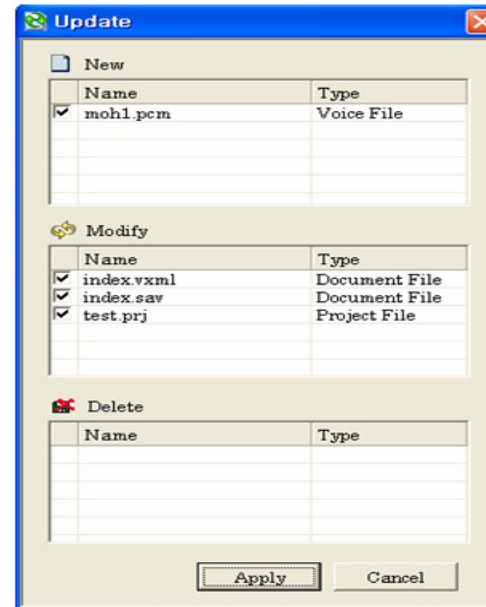
- Supports the Property Setting for Component Flow Diagram (Input Event, Exception Properties, and Event Condition).
- Provides different IVR Component Flows depending on Event Condition.

IVR Scenario Management

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Project Transfer



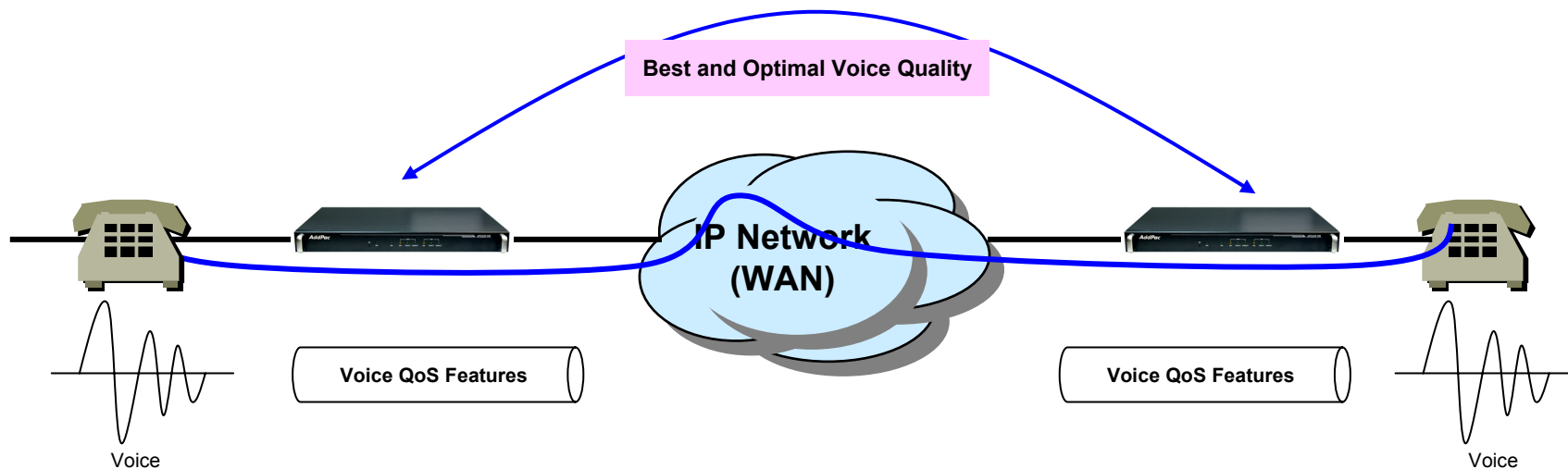
Project Update

- IVR Scenario Script File can be uploaded or downloaded to (from) VoIP Gateway.
- IVR Scenario Script File Version Control (Update, Add and Delete)
- Register Service with Smart Multimedia Manager

Advanced QoS Features

AP2620IVR VoIP Gateway

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



Network Protocols

AP2620IVR VoIP Gateway

Basic Network Protocols

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

Routing Protocol

- IPv4: Static

Service Protocol

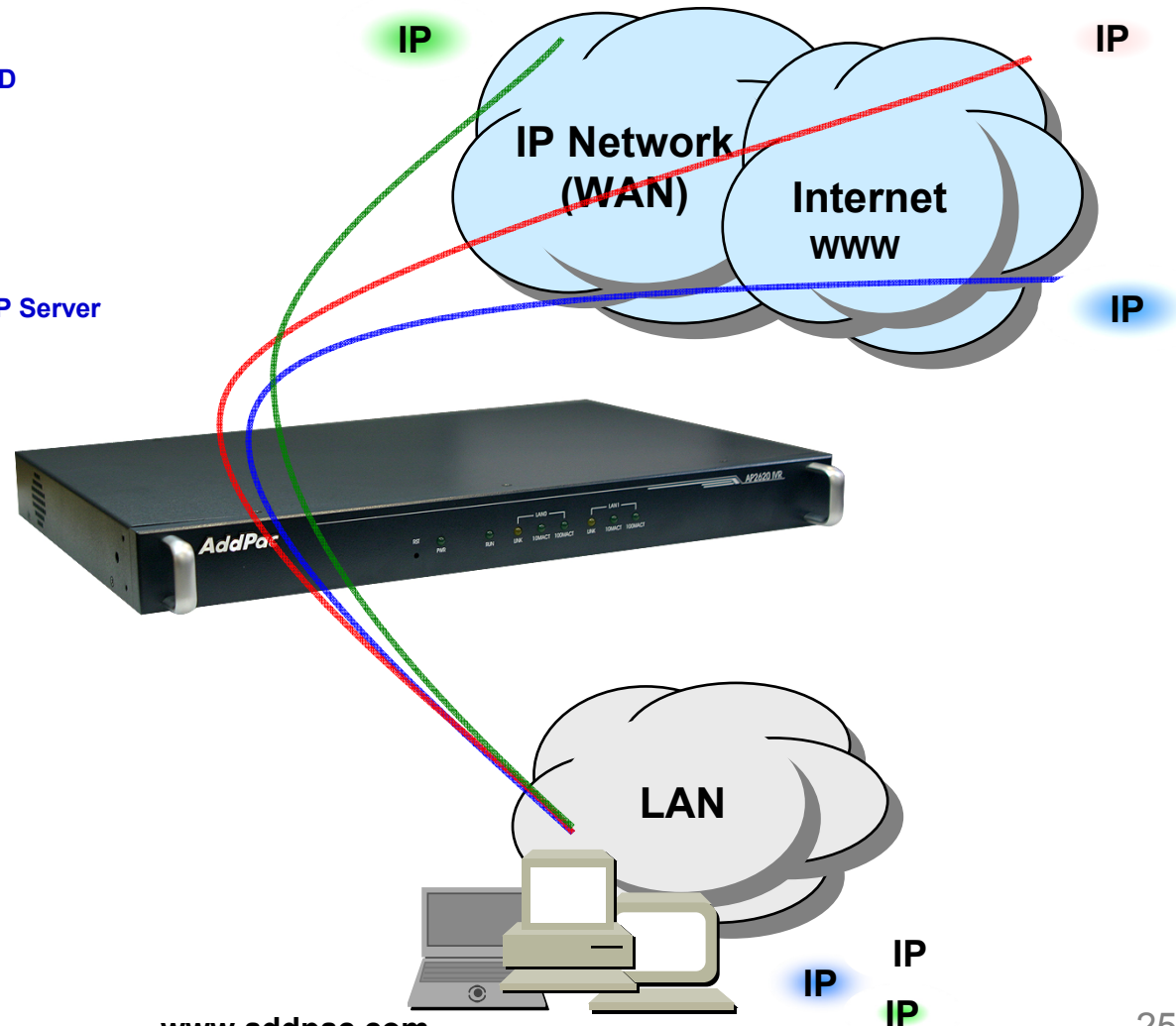
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- Cisco Discovery Protocol (CDP)
- DNS Resolver, DDNS (nsupdate)
- Bridge
- Syslog

IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

Miscellaneous

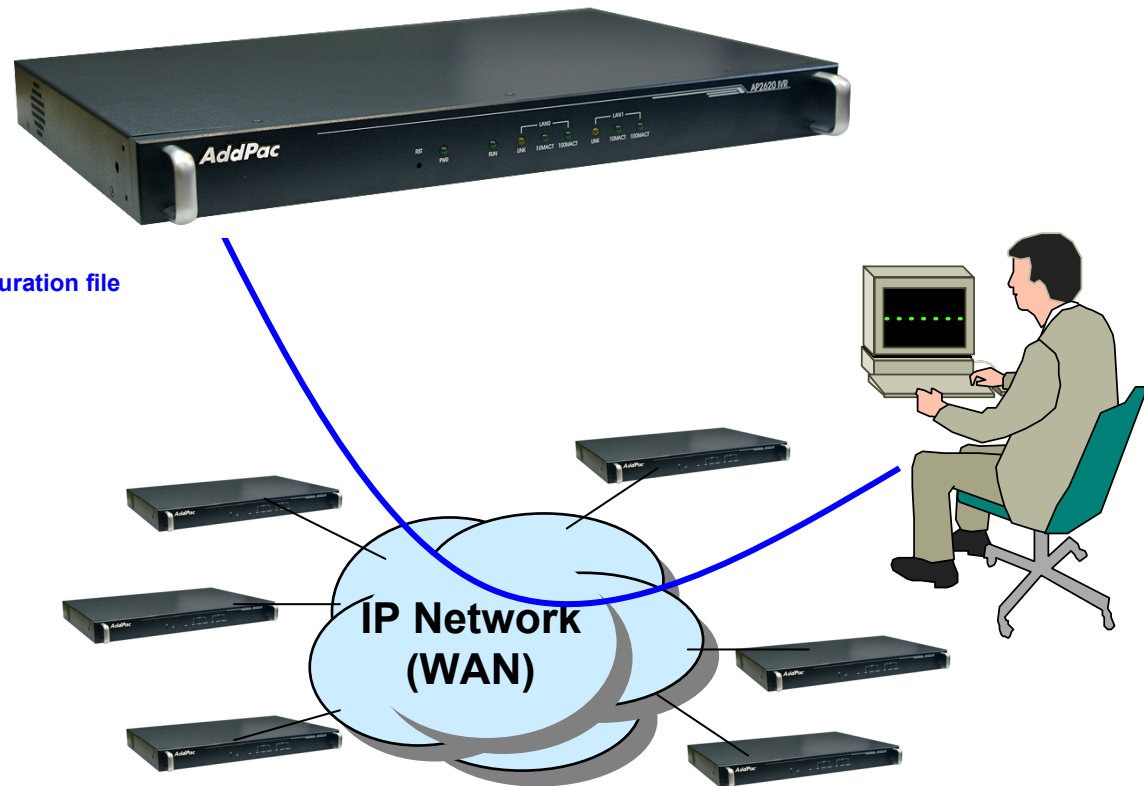
- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP Accounting
- STUN Client



Network Management

AP2620IVR VoIP Gateway

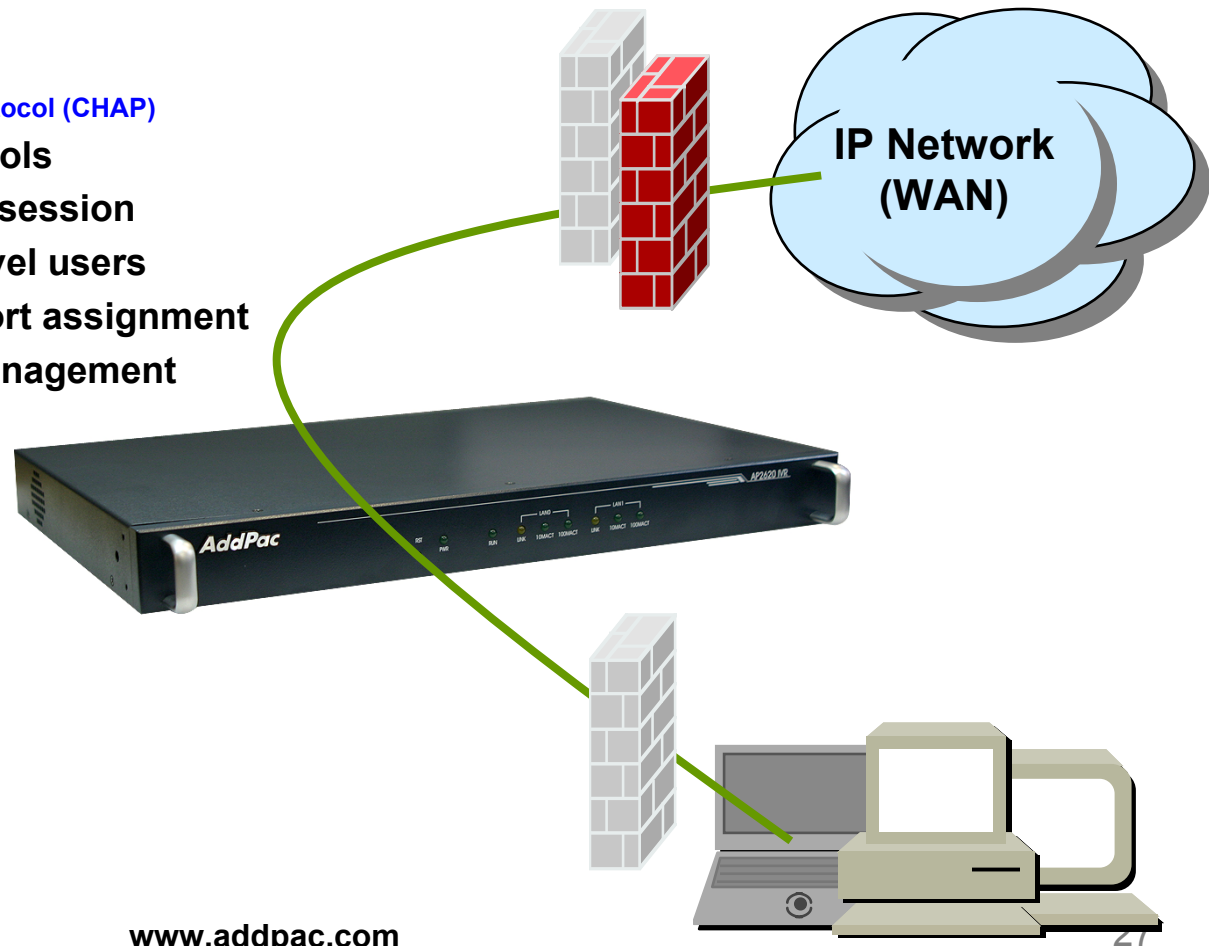
- **SNMP**
 - Standard Simple Network Management Protocol (SNMP) Agent
 - MIB v1 and v2
- **Watch-dog Function**
 - Hardware, software watch-dog services
- **Remote Management**
 - Telnet
 - Rlogin
- **Auto Upgrade Service**
 - HTTP server based APOS image and configuration file auto-upgrade
- **Batch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



Security Management

AP2620IVR VoIP Gateway

- IP packet filtering
- IP access list
- User authentication
 - Password Authentication Protocol (PAP)
 - Challenge Handshake Authentication Protocol (CHAP)
- Enabling/disabling specific protocols
- Auto-square connection of Telnet session
- Account management for multi-level users
- SNMP/TELNET/FTP/HTTP/TFTP port assignment
- SNMP/TELNET/FTP access list management
- Boot mode security check



VPMS (VoIP Plug & Play Management System)

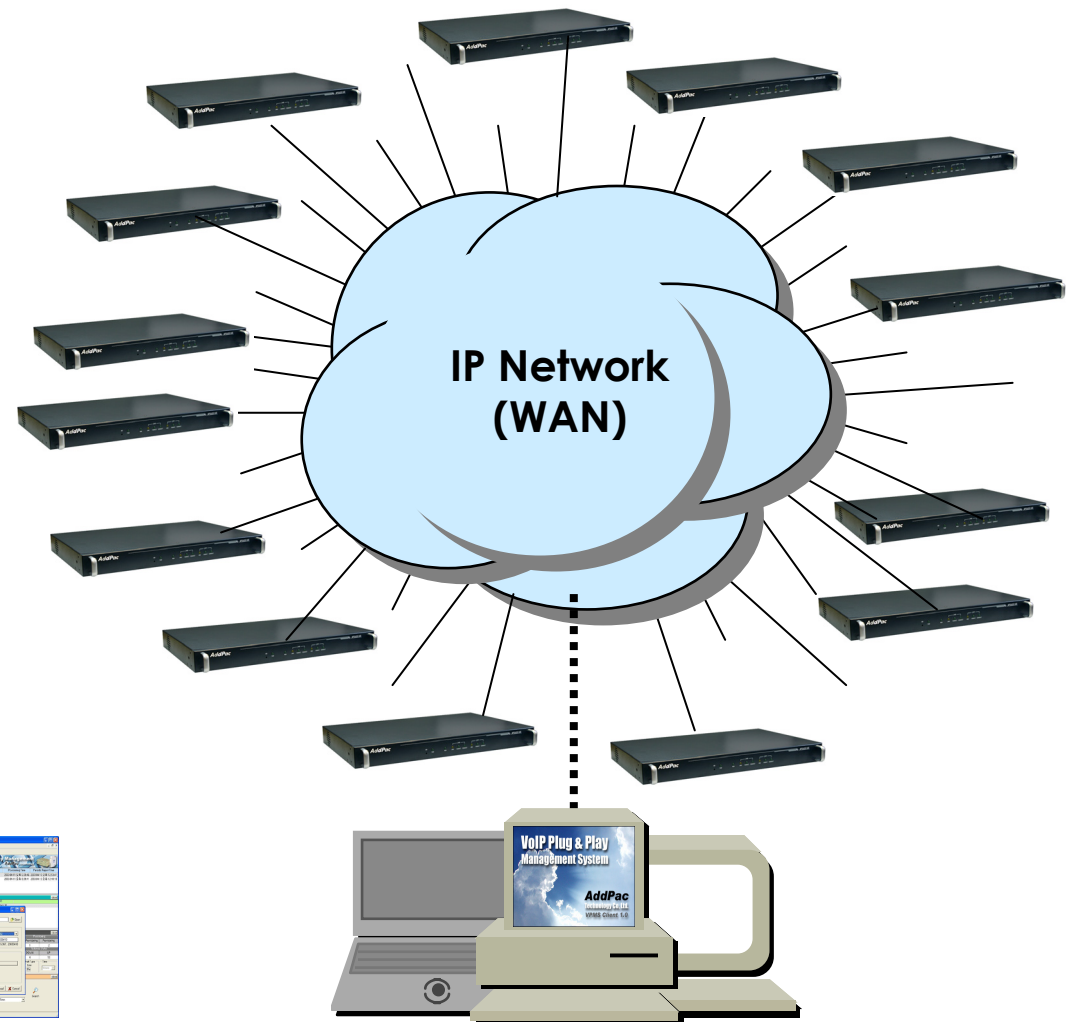
AP2620IVR VoIP Gateway

- **AddPac AP-VPMS**

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

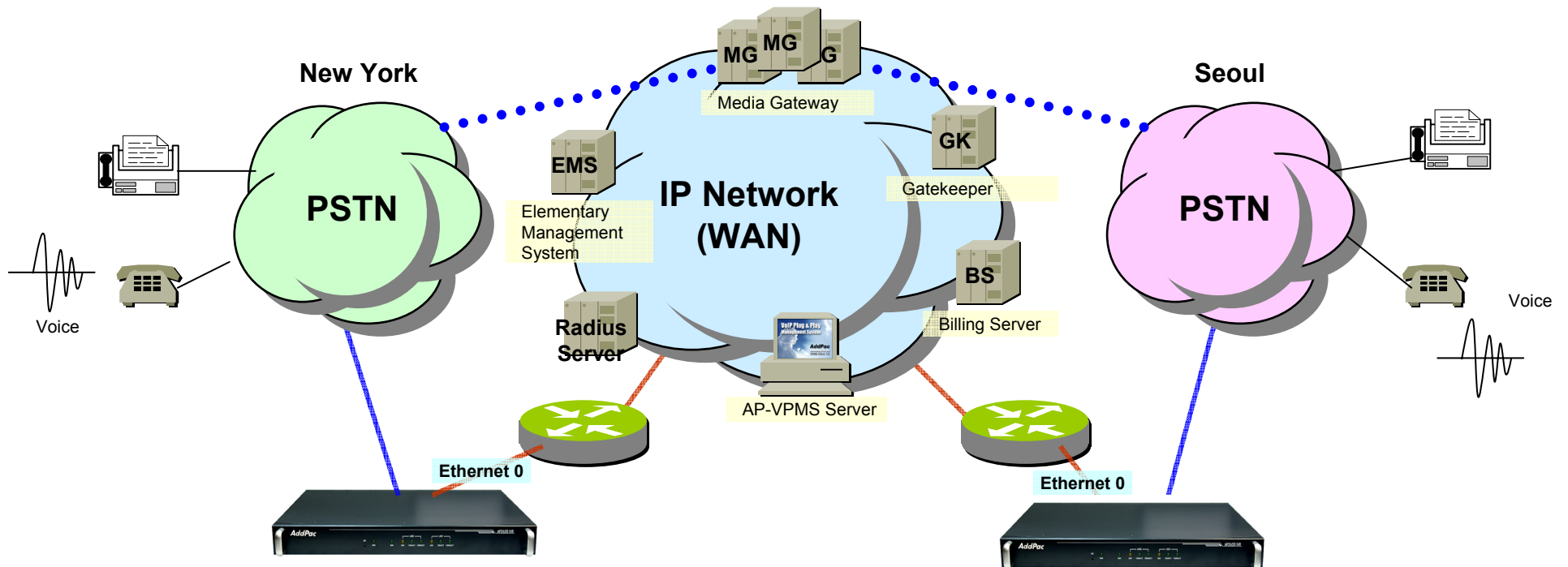
- **Requirements for Hardware Platform**

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



Standard Application

AP2620IVR VoIP Gateway



— FXS Analog Voice Interface

— FXO Analog Voice Interface

— Voice+Data, Ethernet, or WAN Interface

••••• TRUNK n x E1 Voice Interface for PSTN Inter-working



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



AddPac AP2620IVR VoIP Gateway



Analog Phone

AddPac

Fax

www.addpac.com

Ordering Information

- **AP2620IVR VoIP Gateway Hardware**
 - Two (2) 10/100 Mbps Fast Ethernet Port
 - One (1) RS-232C Console Port
 - 64-bit RISC CPU, 8 MB Flash, 64 MB SDRAM
 - Two (2) VoIP Interface Module Slots
 - Network Cable & Ext. Power Supply, etc. Included
 - Optional VoIP Analog/Digital Interface Modules
- **Built-in APOS Internetworking Software for AP2620IVR**
- **1 Year Hardware Warranty**
- **Product Document**
 - Installation and Operation Guide (PDF)
- **Pricing**
 - AddPac Technology Regional Sales Manager
 - Authorized Sales and Marketing Representatives
 - Please contact www.addpac.com.

VoIP Gateway Series

Thank you!

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Sales and Marketing

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