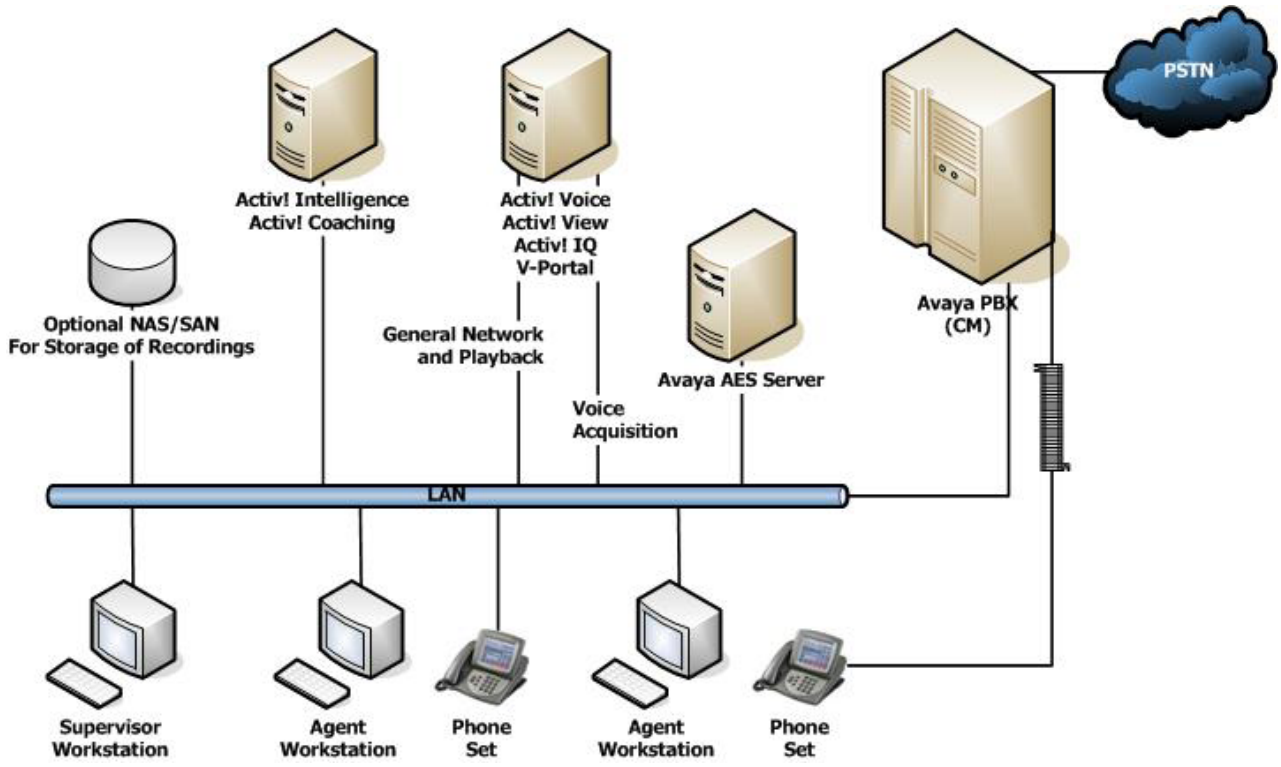
# VoIP Call Recording via TSAPI

Avaya COMPLIANT TESTED DeveloperConnection Program

## Overview

VPI, an award-winning Avaya DevConnect Gold Partner, has developed the most advanced VoIP call recording solution available today – **Activ! IP**. Through collaboration with Avaya, VPI ensures that organizations are able to effectively leverage VoIP recording solutions to capture, evaluate, analyze and improve multimedia interactions over converging networks. **Activ! IP** leverages open architecture and is platform independent to integrate seamlessly into your existing and evolving infrastructure.




## Solution Architecture

### Recording Incoming and Outgoing Interactions

Developed to suit all your recording needs, including high volume recording, **Activ! IP** has been certified in Avaya Labs to reliably record interactions at 10,000 BHCC (Busy Hour Call Completions). **Activ! IP** utilizes Avaya Application Enablement Services (AES) and Media Control Services softphones (or virtual stations) to record VoIP interactions. Avaya AES provides connectivity between and communicates with the **Activ! IP** recording solution and the Communication Manager., which resides on an Avaya Media Server. Utilizing an advanced, standards-based XML programming interface with this connector server, **Activ! IP** takes advantage of the rich feature set of Avaya Communication Manager software and leverages TSAPI to receive additional telephony data such ACD information, DNIS, ANI, etc. The **Activ! IP** server creates an AES virtual station per each recorded telephone user. The recorded telephone instrument can be either a digital telephone, analog telephone and/or IP hard or softphone using road warrior or telecommuter modes. The **Activ! IP** server monitors AES events on the telephone or extension to begin and end recordings. It records the audio from the desired extensions by using either a single step conference or service observe. **Activ! IP** captures the audio via Soft RTP (Real-Time Transport Protocol) packets from the virtual softphone and then compresses it into an industry-standard GSM compressed WAV file format. In this manner, all incoming and outgoing calls and associated telephony data are captured and recorded.

### Recording Home Agent Interactions

**Activ! IP** records off-site IP softphone calls made via the Road Warrior mode on the trunk-side, in conjunction with a CTI interface to ensure that only the Road Warrior interactions are recorded. This relatively simple measure enables you to avoid the unnecessary implementation of extensive recording resources for all other trunk-side traffic, which is already being captured by **Activ! IP**.

# Significant Benefits

## Easily Migrate from Traditional to VoIP Telephony Recording

With **Activ! IP's** extreme flexibility, you can count on seamless integration and simple migration to emerging VoIP technologies. VPI enables you to grow and adapt on your own terms by easily and reliably recording audio from most traditional circuit-switched and new VoIP PBXs/ACDs in the same system – preserving your investment. Unlike other offerings that require a complete system change-out to migrate from recording in a traditional telephony environment to recording in a VoIP environment (i.e. different software, different hardware etc.), with **Activ! IP**, simply change the voice interface boards in the server.

## Minimize Impact on Precious Network Resources

**Activ! IP** leverages Avaya's Telephony Services Application Programming Interface (TSAPI) interface to record all VoIP traffic, including SPAN and RSPAN, with very little impact on your network resources. This is the first solution to make true video quality screen recording in a VoIP environment a reality without compromising the quality of video recording or impacting network performance. Unlike other technologies that constantly stream data over the network, file transfer of screen recordings originally captured at local PC workstations can be either continuous upon conclusion of every recording session or via scheduled bursts after hours, when the network is less busy.

## Capture All Audio in Standard GSM File Format

**Activ! IP**'s unique interface has the ability to perform trans coding on the fly, normalizing and compressing all audio (including G.711, G.723.1, G.729A, etc.) into industry standard, non-proprietary GSM file format regardless of disparate audio sources. This allows for simple, centralized storage and playback using any standard media player (does not require CODECS to be installed on the PC prior to playback).

## Self Maintaining - No Servers Required for Host Processing

No need to constantly adjust network compression rates, rely on customer-provided routers and additional hardware, or increase PBX capacity to reliably capture calls. Based on state-of-the-art Digital Signal Processor technology, **Activ! IP** is self-maintaining, providing for all network interface and packet filtering functions. It ensures true quality and real-time response on every channel recorded by greatly reducing the server processing resources required by most host-based offerings.

# Software Specifications

**Configuration**
- 16 to 192 channels (ports) per server, and can be networked to up to unlimited channels

**Operating System Support**
- Server - Windows™ 2000 and 2003
- Client - Windows™ XP and ME

**Playback Client Software Specifications**
- Windows™ 95 Version B (WIN 95 Build A is not supported) /98SE/ME/2000/XP
- Minimum PC hardware requirements are Intel® Pentium III 1 GHz, 256MB SDRAM
- Hard Drive 20GB, 16-bit digital audio Sound Card (preferably Creative Labs® branded).

**Screen Client and Host Software Specifications**
- Min. Screen Admin Client – Pent. III 1GHz, 256MB SDRAM, Windows™ 2000/XP, Windows™ Media Player 9 or above.
- Minimum Screen Host – can record screen resolution up to 1600x1200 (>16Mb video card preferred for high resolution / high color depth recording) as resolution goes up so do CPU requirements. Minimum CPU is Intel® III 1 GHz (@ 1024x768, 16 bit color), 512MB SDRAM preferred, (256MB minimum).

**Client Server Protocols**
- TCP/IP • IPX-SPX • NetBeui • RAS • Windows Sockets Standard

**Voice Recording**
- Host-based record/play, WAV format (G.711, G.726, MS-GSM)
- Playback speed control with pitch correction
- Record/play via standard HTTP Web interface

**Voice Processing**
- G.711, G.723.1, G.729A, G.726/G.727, NetCoder ®
- Voice Activity Detection (VAD) and CNG
- Echo Cancellation: G.168 compliant 32, 64 msec echo tail;
- 128 msec tail available with reduced channel capacity
- Trans-coding of G.711 RTP to any Low Bit Rate Coder RTP stream
- Gain Control: Automatic (AGC) or Programmable

**Signaling**
- Ability to decode multiple VoIP protocols such as H.323, SIP, and Avaya's H.323

**Physical Interfaces**
- TDM Interfaces - MVIP, SCbus, H.100
- Telephony - 120 Ohm - RJ48C connectors
- Ethernet - RJ-45

**Playback Output**
- Speakers - Multimedia PC Speakers
- Headphone Jack - 1/8" Headphone jack
- Remote - 600 ohms nominal
- E-Mail – playback e-mailed calls as compressed WAV file, in any Windows environment.

**Security**
- Multiple Login levels available for administration and installation, play-back, compliance and monitoring. Complete audit trails of all activities, i.e., call searches, DVD changes etc.

**Alarms, Remote and On-site Diagnostics, and Reports**
- Event Center Leverages Standard Network Monitoring Services to Support Windows™ Performance/Event Monitor, HP™ Openview, Tivol™, etc.
- Alarms generated locally or via the LAN, can be dialed out to pagers, E-Mailed, or provided audibly to fixed or cellular telephones. Audit trails, call usage, login/logout, call search and much more.

# Customer Requirements

**Activ! IP Hardware** (VPI or customer provided)
- Activ! IP voice server

**Customer Provided Requirements**
- Application Enablement Services (AES)
- 1 CMAPI License (IP_API_A) per recorded channel
- 2 TSAPI-Basic Licenses per recorded channel
- 1 TSAPI-Basic License to be used as a "dummy" hunt group for recording

Additional Requirements depending on the platform running Communication Manager:

S8700/8710 Media Server plus one of the following:
- Media Processor Circuit Pack: TN2302AP
- G700/G350 Media Gateway

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- Media Processor Circuit Pack: TN2302AP
- G700/G350 Media Gateway

HP380 Media Server plus one of the following:
- Media Processor Circuit Pack: TN2302AP
- G700/G350 Media Gateway

S8300 Media Server plus G700/G350 Media Gateway

Definity® Server CSI plus Media Processor Circuit Pack: TN2302AP

Definity® Server SI in an MCC/SCC Cabinet plus Media Processor Circuit Pack: TN2302AP

**Other Resources Used**
- Media Processor ('MedPro') Resources – One resource per channel
- Softphone Stations for each recorded extension – These softphones are enabled by 'AES' when Activ! Voice is started. These softphones then 'tap' ('Single Step Conference') the extension that is to be recorded.
- Avaya Communication Manager Server

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