CTIgroup | SmartRecord

Technical White Paper

SmartRecord®'s System Integration with Avaya Aura™

The following is an explanation of the technical integration of CTI Group's call recording application, SmartRecord® with Avaya's Aura™ platform.

AVAYA DEVCONNECT GOLD

About CTI Group

CTI Group (Holdings), Inc. is an international provider of electronic invoice processing and management, enterprise communications management software and services solutions, and carrier class voice over internet protocol (VoIP) management applications. CTI Group's SmartBill®, SmartRecord® and Proteus® product suites offer a full array of solutions for traffic analysis, post-billing call analysis, customer care and call recording. CTI Group's products are used by some of the top service providers in North America and the United Kingdom, and play a trusted role in managing telephony costs at major corporations internationally. Headquartered in Indianapolis, CTI Group maintains overseas offices in London and Blackburn, UK. For more information, please visit CTI Group's website at www.ctigroup.com

Highlights

How to Configure SmartRecord on Avaya Aura

- Add the number in SmartRecord Administration system as a part of the account hierarchy and the number is auto-provisioned for recording in the Avaya system.

How does the system integrate with Avaya Aura and how does it work?

The SmartRecord® Recording Server uses the Avaya Aura Application Enablement (AE) Services and AE Services Device, Media, and Call Control (DMCC) Service to monitor and record call traffic for incoming and outgoing calls. Additionally, SmartRecord captures internal, extension-to-extension call traffic.

Using this integration method, extensions or phones on the system are set up to record in SmartRecord. There is no other recording provisioning necessary. When a recorded phone places a call, the system uses Avaya's Single Step Conferencing method to add the SmartRecord application as a member of that call.

Compression

SmartRecord utilizes MPEG 2.5 which compresses call recordings at a variable rate of approximately 24 kb/s.

The following displays the number of recorded minutes for different storage amounts.

	4.7 Gb	160 Gb	250 Gb	500 Gb	1 Tb
Minutes	27,880	628,792	1,483,000	2,966,000	6.074,368
Hours	465	10,479	24,716	49,433	101,239

What types of recording are available to me? Can I selectively record calls? Can I record all my calls?

- Automatic – also known as blanket recording, records all incoming and outgoing calls for extensions that are set up in the system to record.

- SmartRecord Application Invoked Recording – this type of recording only records calls for extensions that are set up in the system and requires participation from a system user to select SAVE RECORDING from CALLS IN PROGRESS from the SmartRecord interface during the call.

Avaya Licenses

Each number to be provisioned in the SmartRecord Administration system requires a matching Avaya TSAPI USER license. Each concurrent call recording on the SmartRecord system requires a matching DMCC license.

For example, if there are 100 numbers provisioned in SmartRecord and there is a 20% anticipated recording concurrency, 20 DMCC licenses are needed along with an additional 100 TSAPI USER licenses.

Numbers to Record Entered in SmartRecord	Concurrency Rate	DMCC Licenses	TSAPI USER Licenses	TOTAL Avaya Licenses for Recording
100	20%	20	100	120

Note: if anticipated concurrency is exceeded and there are not enough DMCC licenses available, calls in excess will not be sent to the recorder.

Highlights

- Rapid installation and configuration
- VM ready
- No proprietary media player
- True multi-tenant
- Scalability & high availability architecture

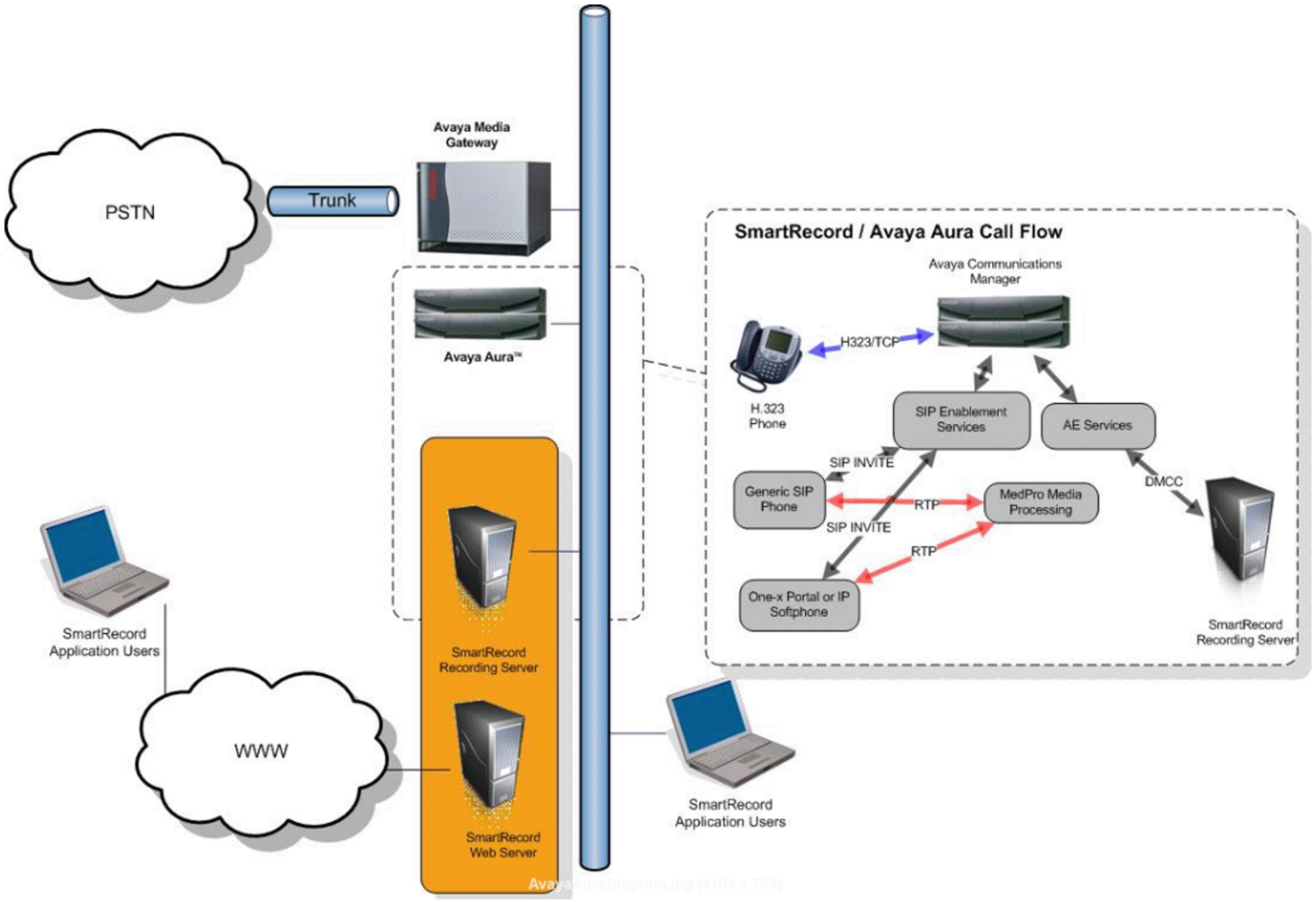
What are the benefits, or competitive differentiators, for SmartRecord?

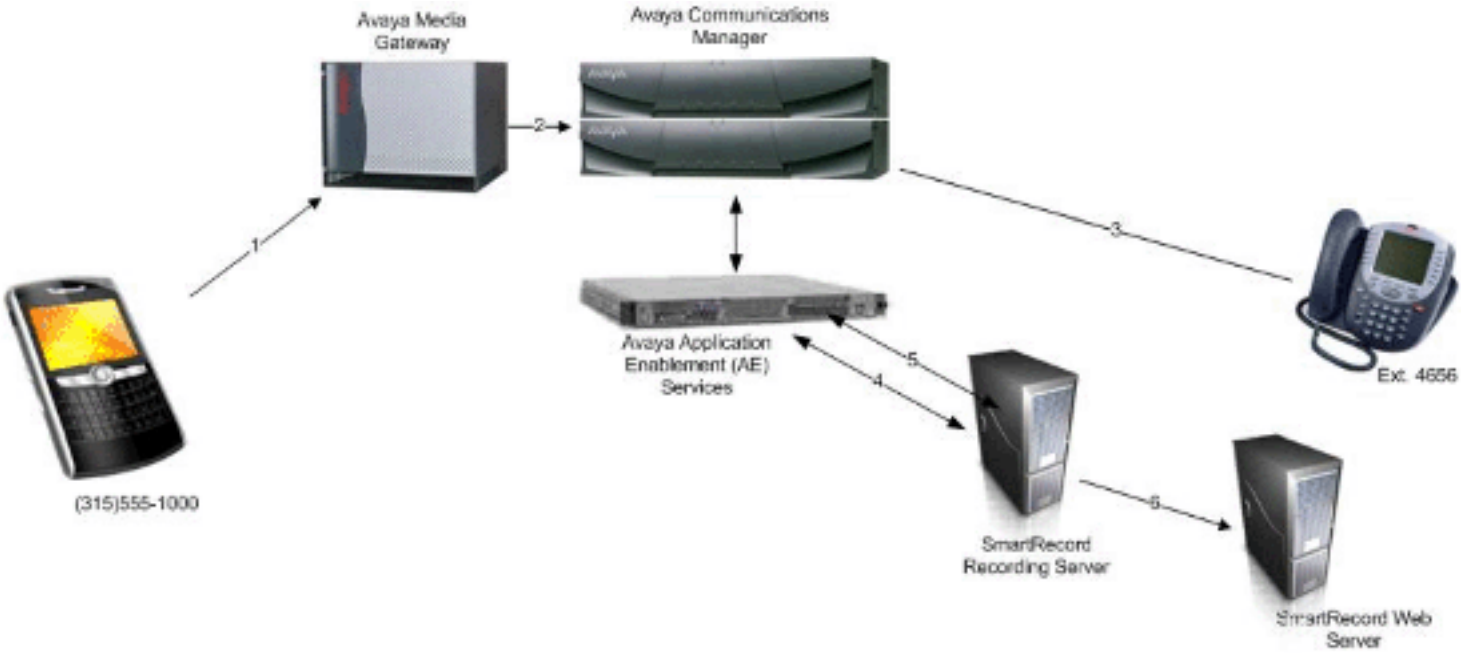
- Software Only – software only installation and can be installed on a variety of off-the-shelf hardware systems (that meet minimum requirements).
- Browser Based Interfaces – no clients to install or maintain.
- VMware Ready – VMware Ready on VMware ESXI.
- No proprietary clients – the system uses the default media player on the users system. MP3 players include Quicktime®, Windows Mediaplayer®, and others. No proprietary client media player.
- Inbound/Outbound/Internal – records all inbound and outbound traffic for extensions that are set to record. ADDITIONALLY, SmartRecord also records extension-to-extension traffic and DOES NOT REQUIRE complicated recording architectures and additional hardware found in other types of installation.
- Flexible Recording – calls can be recorded and identified by user even if the user is using a softphone or "hoteling" on different devices or handsets.
- Account Hierarchies – the administrative interface provides the enterprise with the ability to recreate their business hierarchies with relation to locations, divisions, and departments. This provides storage and reporting flexibility by account level.
- Multi-Switch – capable of obtaining recorded calls from a variety of switches and recording implementation types (active vs passive). These recorded calls can then be presented through a unified, centralized interface.
- CRM Integration – Sugar CRM and Salesforce.com integrations available.
- APIs Available – open APIs allow for flexibility in integration with individual enterprise business processes and further integration into Avaya Aura.
- Scalable – has been tested on carrier class installations and meets carrier level requirements for ability to scale to high volumes as well as high availability and redundancy.
- High Availability and Redundancy – implementations are available.
- Storage – storage is flexible and can be configured at different levels in the account hierarchy. Number of days to store calls, amount of storage space, and storage locations are configurable.
- Supported Codecs - G711, G729

Call Flow

SmartRecord listens for calls to occur for numbers that have been provisioned in recording system by monitoring DMCC events from AE Services. Using the Single Step Conferencing method, when one of these calls occurs, Avaya Aura uses DMCC services to fork the call information and the call audio (RTP) over from Avaya Communications Manager to SmartRecord.

1. Call arrives in from the PSTN to the media gateway.
2. Gateway forwards the call to the Communications Manager. Communications Manager realizes that the call should be terminated on a registered extension.
3. Communications Manager invokes normal call processing.
4. Traversing AE Services using DMCC, SmartRecord Recording Server listens for call events that involve a set of extensions that have been provisioned in SmartRecord Web Server.
5. When a call established event is detected for a provisioned extension, SmartRecord Recording Server establishes a Single Step Conference, starts recording the audio and creates a call detail record on the SmartRecord Web Server. Recording continues until a call connection cleared event is detected.
6. When a recording terminates, the SmartRecord Recording Server updates the call detail record on the SmartRecord Web Server. SmartRecord Web Server encrypts (optional) and moves the recording to the specified storage device for the provisioned extension.


PSTN
Trunk
Avaya Media Gateway
Avaya Aura™
SmartRecord Application Users
WWW
SmartRecord Recording Server
SmartRecord Web Server
SmartRecord Application Users
SmartRecord / Avaya Aura Call Flow
Avaya Communications Manager
H323/TCP
H.323 Phone
SIP Enablement Services
AE Services
SIP INVITE
Generic SIP Phone
RTP
MedPro Media Processing
DMCC
SIP INVITE
RTP
One-x Portal or IP Softphone
SmartRecord Recording Server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