



MidaRec

1. Overview

MidaRec is a complete Voice Call Recorder, supporting multiple recording methods on a single, easy to configure and administrate virtual appliance. The offered solution provides centralized call archiving, complete recording functionalities based on mirror port sniffing, active call recording with standalone SIP VoIP resources and a set of collector modules supporting E1 legacy TDM communications, native vendor interfaces, analog lines etc.

The product is designed to be flexible, modular, reliable and easily deployed also with redundant configurations. The solution is available as virtual appliance, supporting the most popular hypervisor (i.e. VMware) and distributed as OVA/OVF (Open Virtualization Format): system deployment is fast and easy.

MidaRec is currently used in many situations serving multi-site structures such as emergency call-centres, railway phone networks, highway internal communication networks, finance institutions, public administrations, multi-utilities and many more.

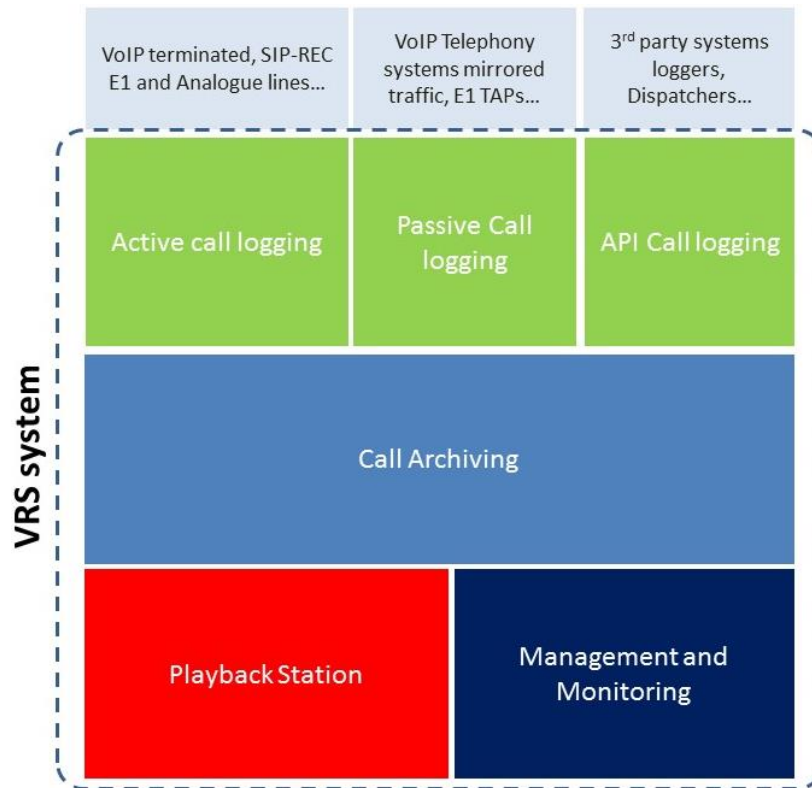
2. How It Can Solve Customers' Problems

Specific Company policies or communications like transportation and emergency ones require the phone call to be recorded for compliance, archiving and post-incident analysis. MidaRec is an all-in-one solution for all these situations as it can easily record phone calls, archive them and provide an easy to use playback station.

Obviously, there are different needs, depending on the required **call logging** (i.e. active or sniffing recorder), the **recording strategy** (i.e. on demand, total or malicious), the **sector** in which the recorder will be installed (i.e. financial, transportation, security, etc.) and, finally, on the **protocols and technologies** involved (i.e. Cisco CUCM, Alcatel OXE, Huawei GSM-R or eLTE, etc.). Once again, our recorder can be seen as a top solution as it is structured to be able to satisfy any installation need, as you will see in the next pages.

3. Solution Architecture

As explained with the next figure and in the following paragraphs, MidaRec system is composed by different parts, which represent the modularity of our solution.



Call Logging

MidaRec supports different types of call logging.

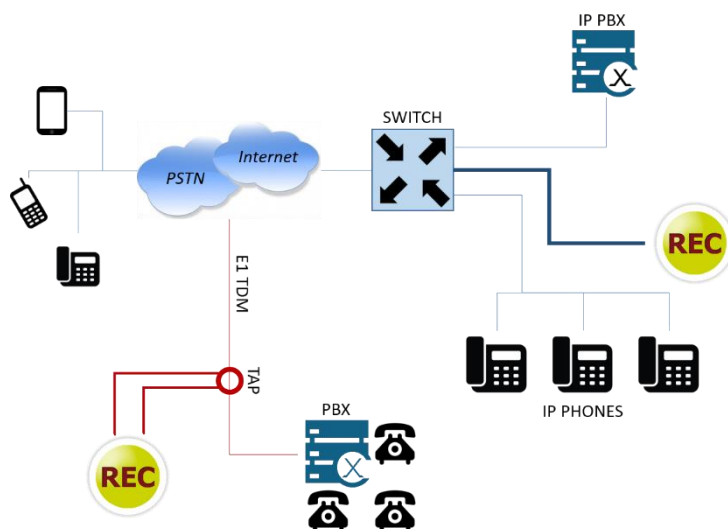
Active Call Logging

MidaRec supports standard signalling, such as SIP, SIP-REC, E1 DSS1, and a number of different proprietary active call logging methods. Active Call Logging requires the recorder to be able to answer and terminate calls and, in case, to play messages. MidaRec includes VoIP channel resources, supporting SIP and G.711/G.729 voice codecs and providing a telephone front end. PCI express boards are also available to support legacy technologies like E1 TDM, E&M and FXS/FXO. Call recordings based on 3rd party call conferences can be implemented and, in this case, the same module allows playing pre-recorded messages during call recording (i.e. warning to call participants).

Passive Call Logging (Sniffing)

IP Passive Call Logging is a widely used recording method for IP recording deployments to capture voice transmission (RTP) via a network spanning configuration (SPAN port), also known as “Port Mirroring”.

Phone networks using SIP, SCCP or NOE signalling protocols and G.711 or G.729 voice codecs can be monitored using MidaRec sniffer module. Each server virtual unit is equipped with two LAN interfaces. The first LAN interface is used to connect the unit to the local network, the second LAN port is used to connect the SPAN port configured in the distribution switch.



Through this second connection, the unit monitors and records the RTP traffic related to the telephone sets connected to the local PBX and related SIP, SCCP or NOE signalling.

The first Network Interface Card (NIC) is used to connect the unit to the data networks, in order to be accessed remotely.

Also E1 DSS1 links can be recorded passively using dedicated E1 taps. In this case, the system detects signalling and speech on the links and collects all the relevant data. For this purpose, dedicated PCI express boards are required.

MidaRec Sniffer unit is a self-contained solution that does not require additional components to perform recording and audio conversion tasks. It can be deployed as a standalone unit or in can be used also in large distributed solutions where multiple units are used in different sites acting as local recording buffers.

API Call Logging

In this case, MidaRec collects audio data from third-party recording systems using standard collection interface or methods.

Available options are:

- Cisco MediaSense;
- IP Trade Turrets and TPO servers;
- TETRA voice loggers;
- WebDAV. In this case, the external phones or PBX shall push the audio data to the recorder server using standard WebDAV protocol (i.e. Innovaphone PBX);

- File transfer from an external system. The system collects call logs that are transferred by any third party system that support standard file transfer protocols or can implement basic web service requests.

Call Archiving

MidaRec provides advanced file archiving features including:

- **File tamper-proof marking:** all files are marked with a CRC providing a tamper proof security system which detects potential file alterations performed by external intrusions; if a file is found to be altered the playback station alerts the end user of a possible system breach;
- **Audio and video file encryption:** all files can be encrypted using an AES-128bit algorithm thus ensures secure storage of audio and video files;
- **Audio file compression:** audio files can be compressed in GSM Full Rate telephony format, improving storage capacity up to 6 times the standard PCM files.

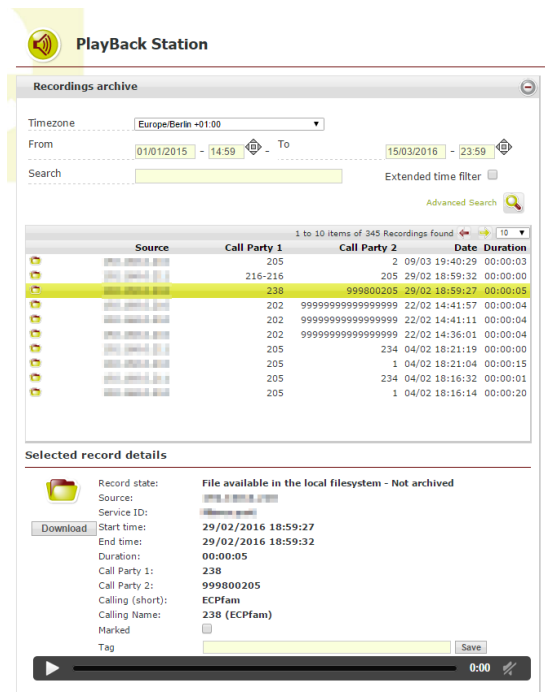
All these features are applicable to all files collected by the system, regardless the type of source and the input file format (as long as it is a supported format).

An automatic and incremental scheduled backup of audio files can also be configured in order to copy recordings to a given network path, using CIFS or FTP protocol.

Files can be backed up in the original format or, in case of audio files, in standard wav format. In case of encryption files, they can also be backed up in encrypted format. In this case, the de-cryption requires users to upload the file to the playback station user interface.

Playback Station

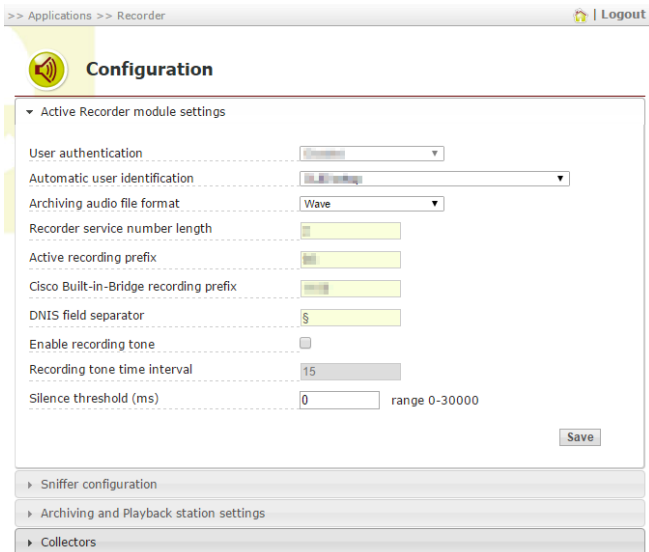
As we said, MidaRec provides a simple but useful playback station, which allows the user to search and retrieve archived calls using all call tags/data fields associated to them. If the data is provided by the network or by the external logging system, then it can be used to search and retrieve the archived call. As a minimum, time intervals are always available as filtering criteria. The system allows the user to add notes and tags to the required calls. In a second moment it is possible to rapidly call back this tagged calls, listen to them again and eventually download them on a local storage, both on their original file format or in WAV. Playback recordings can be done through a web interface which allows the the



operator to access the unit. The list of available recordings is reported with the following call details (if provided by the network):

- Calling party number
- Called party number
- Date and time of call

If possible, additional searching parameters might be available based on advanced call metadata. A flexible and extensible set of custom tag data fields is provided and can be easily adapted to the specific scope.



Management and Monitoring

There are different levels of hierarchy in the app operating roles.

Only administrators can configure the virtual unit through a simple and intuitive web based interface. Authorized users can access the archives using the same web interface from any standard web browser. Proper username and password shall be used to grant user or administration access. Obviously, there are some monitoring features, which allows to check whether or not the system is working properly.

4. Account privileges

MidaRec has three different levels of account privileges:

Administrator privileges

As written before, administrator's account is the only one that can manage the configuration of the recorder system. Moreover, having administrator privileges allows to add tags and notes to the recordings and do multiple simultaneous downloads, saving them locally or in external repositories. All recordings are stored on files containing captured speech traffic. These files are stored and organized in a set of system directories. All call details and metadata are stored in a database unit keeping track also of the related file path and file name linked to each recording. In case of solutions based on multiple units, it is possible either to define distributed architecture where archiving is performed separately by each remote buffer unit; alternatively, total or partial centralized storage can also be defined when administrators want to leverage on existing centralized datacentre facilities.

The system configuration database can be independent for each unit or in case, if network reliability is not an issue, multiple units can share the same configuration to be hosted in a standalone machine, in one of the Mida appliance virtual machine or in case on an existing database cluster provided by the IT infrastructure.

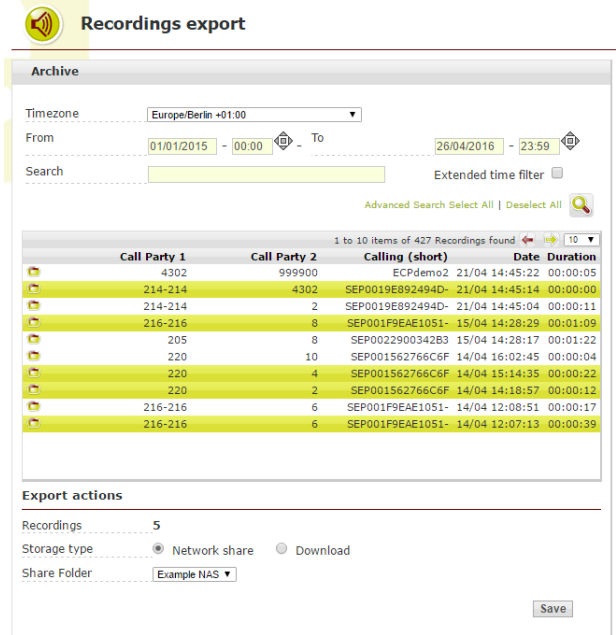
Supervisor privileges

Supervisors can search recordings with a simple filtering system and, once the recordings are found, they can be listened through the playback station or downloaded locally even with multiple downloads by means of the Recording Storage Export page. In this case, supervisors can get an archive with a set of selected audio files or tell the system to copy data to a given network folder.

User privileges

User privileges consist in searching recordings from the list by using a simple search filter applicable to call details.

Recordings be found, they can be listened through the playback station or downloaded locally one by one.



Recordings export

Archive

Timezone: Europe/Berlin +01:00

From: 01/01/2015 00:00 To: 26/04/2016 23:59

Search: [] Extended time filter: []

Advanced Search Select All | Deselect All

Call Party 1	Call Party 2	Calling (short)	Date	Duration
4302	999900	ECDemo2	21/04 14:45:22	00:00:05
214-214	4302	SEP0019E892494D-	21/04 14:45:14	00:00:00
214-214	2	SEP0019E892494D-	21/04 14:45:04	00:00:11
216-216	8	SEP001F9EAE1051-	15/04 14:28:29	00:01:09
205	8	SEP0022900342B3	15/04 14:28:17	00:01:22
220	10	SEP001562766C6F	14/04 16:02:45	00:00:04
220	4	SEP001562766C6F	14/04 15:14:35	00:00:22
220	2	SEP001562766C6F	14/04 14:18:57	00:00:12
216-216	6	SEP001F9EAE1051-	14/04 12:08:51	00:00:17
216-216	6	SEP001F9EAE1051-	14/04 12:07:13	00:00:39

Export actions

Recordings: 5

Storage type: Network share Download

Share Folder: Example NAS

Save

Mida Solutions

TECHNICAL INFORMATION

MidaRec is part of the [Mida eFramework UC App Suite \(www.midasolutions.com/products/\)](http://www.midasolutions.com/products/).

System capacity

Recording capacity, in hours of speech voice, can be easily estimated using MidaRec configurator; disk space requirements depend on the recording method used.

Storage (GB)	G.711 Audio files	Compressed Audio files
20 Gbytes	300 hours	2.800 hours
210 Gbytes	3.000 hours	28.000 hours
420 Gbytes	6.000 hours	56.000 hours
1074 Gbytes	15.000 hours	140.000 hours

And, in case of sniffing recorder:

Codec	RTP streams	Pps	Kbps
G.711/20ms	120	6.000	11.430
G.729/30ms	120	4.000	3.460

The virtual appliance requires approximately 5GB of HDD space for operating system and software.

Software distribution

The server platform is distributed as preinstalled virtual appliance. Mida Solutions distributes its Virtual Machines using standard OVA/OVF formats.

Supported platforms and hypervisors are:

- vmware ESXi 4.x, 5.x or 6.x (VMware vSphere Hypervisor)
- KVM (latest version)

A Mida License is required to activate the Software. The Virtual Appliance is completely manageable from an easy and intuitive web portal.

Please refer to the hypervisor vendor documentation for further information.

Mida virtual appliance can be downloaded also from

www.midasolutions.com/download/



Other specifications

Available call search parameters:

- Called number (if available)
- Calling number (if available)
- Day/Time

Other optional tagging parameters can be passed on to the recorder and can be used; please contact Mida Solutions for further details on protocols and methods.

The online storage capacity depends on the available HDD space and on the type of VoIP traffic recorded.

MidaRec supports backup on a network drive using FTP or CIFS/SMB protocols.

For details on MidaRec compatibility with the most used web browsers, please refer to www.midasolutions.com/browsercompatibility/.

Mida Solutions

For further details, please refer to www.midasolutions.com/generalcompatibility/.

It is not guaranteed that the service is working properly in case of overlapped numbering plans (e.g. partitions or shared lines). Please contact Mida Solutions for further information.

Tel: +39 049 760 185
Fax: +39 049 870 8721
Email: info@midasolutions.com
LinkedIn: <http://www.linkedin.com/company/mida-solutions-s.r.l.>

www.midasolutions.com

Page: 8 of 8

Mida Solutions s.r.l
Via Vigonovese, 115
35127 Padova
Italy



P/N: DMRA0200DS00EN0008