



## **Genesys Quality Management 8.0**

Datasheet

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Alcatel-Lucent's Genesys solutions feature leading software that manages customer interactions over phone, Web, and mobile devices. The Genesys software suite handles customer conversations across multiple channels and resources—self-service, assisted-service, and proactive outreach—fulfilling customer requests and optimizing customer care goals while efficiently using resources. Genesys software directs more than 100 million customer interactions every day for 4000 companies and government agencies in 80 countries. These companies and agencies leverage their entire organization, from the contact center to the back office, while dynamically engaging their customers. Go to [www.genesyslab.com](http://www.genesyslab.com) for more information.

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Chapter

# 1

## Introduction

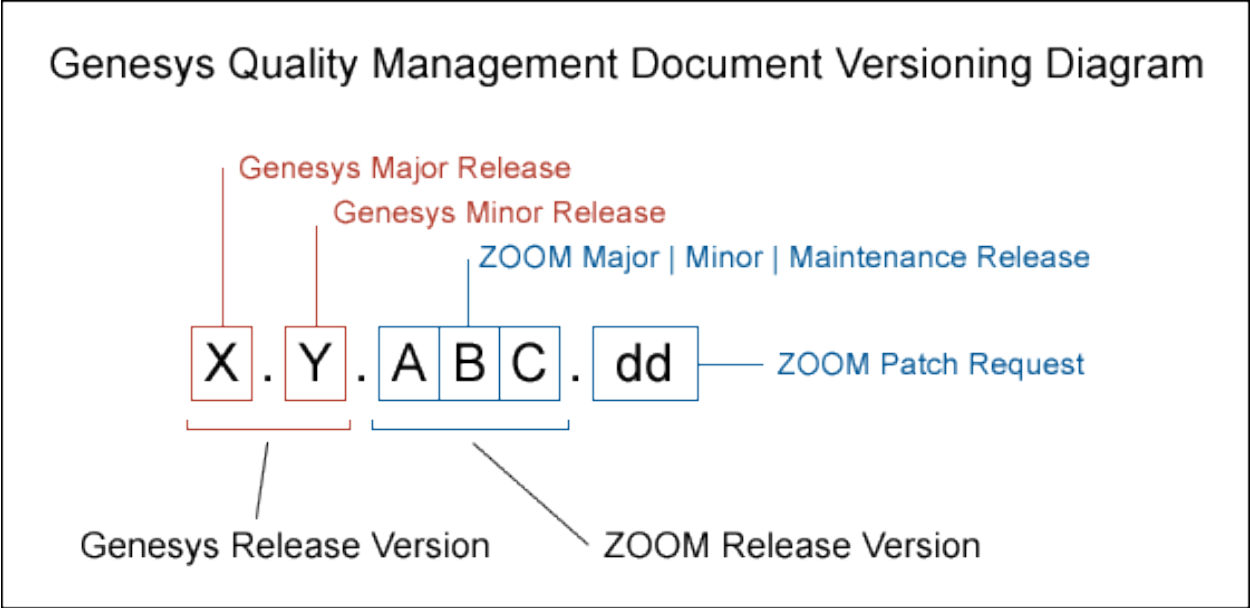
This document summarizes the technical aspects of the Genesys Quality Management.

The document provides a summary of the products contained within the Genesys Quality Management, highlighting their key technical features. This is followed by a technical overview of recording principles and exploration into how these products work together to achieve your solution.

# Document Version

The Genesys Quality Management products are provided by a partnership between Genesys and ZOOM International. The Genesys Quality Management products use a versioning format that represents a combination/joining of the versions used by these two separate entities. Although the Genesys Quality Management products and documentation use this combined versioning format, in much of the software and logs you will see the ZOOM versioning alone. You need to be aware of this, for example, when communicating with Technical Support.

The version for this document is based on the structure shown in the following diagram:







Chapter

# 2 Genesys Quality Management

## **Recording, Quality, and Performance Management for Contact Centers**

Genesys Quality Management provides you with a complete set of solutions to improve your contact center quality and performance. The suite offers interaction recording, screen capture, agent evaluation, and live monitoring.

Genesys Quality Management scales from small contact center deployments up to large distributed enterprise architectures, and fully supports hosted and multi-tenant environments.

## **Genesys Quality Management Key Solution Advantages**

- Provides a complete set of solutions to effectively manage your contact center including interaction recording, screen capture, agent evaluation, and live monitoring
- Designed for both small and large contact centers, and fully supports distributed and hosted environments
- Quality Management architecture features full redundancy for performance and high availability
- Ease of install and use – designed from the user's point of view
- Full support for compliance recording to help you meet PCI DSS, HIPAA, Sarbanes-Oxley and Securities and Exchange Commission requirements
- Privilege-based user access including optional call encryption with full audit log of every user action taken to ensure a high level of security
- Robust Media Lifecycle Management (MLM) supports your requirements for capturing, archiving, restoring, backup and deletion policies
- Localization with multiple languages including Russian and Arabic available. Each user can select their preferred language and new localizations can be added easily

The following sections cover the Genesys Quality Management modules in more detail:

- [Call Recording](#)
- [Agent Screen Capture](#)
- [Quality Management](#)
- [Live Monitoring](#)

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## Call Recording

Genesys Call Recording is a call recording solution for contact. Call Recording is easy to install and use and allows you to centrally manage your entire deployment. The robust enterprise features will help you meet all of your compliance recording needs.

- Search for calls using parameters such as customer ID or order number enabled by out-of-the-box integration with your contact center and CRM
- Play back calls using Genesys Advanced Player, which allows you to play the entire customer interaction in one recording, including IVR, transfers, holds and conferences
- Use optional call encryption to protect sensitive recordings
- Keep data secure with an audit trail for each and every user action
- Benefit from the on demand recording function for your back office
- Use the robust Media Lifecycle Management tools to synchronize calls from multiple locations into a central Replay Server and manage retention policies for data interaction based on any defined parameters
- Fully supporting compliance requirements for PCI-DSS, HIPAA, SEC 17a-3 and 4, and SOX

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## Agent Screen Capture

Genesys Screen Capture monitors and captures agent screens, providing a company with the means to evaluate the performance of individuals or groups of contact center agents throughout the organization. Screen Capture provides a full view of customer interactions when paired with Call Recording.

- Play back the synchronized call and screen to get a full view of the agent / customer interaction
- Choose the required video quality to meet your bandwidth and storage requirements
- Use the entire screen view to understand all the actions taken by your agents in order to identify ways to improve customer service and make problem solving more efficient
- Leverage the recorded screens and calls for e-learning and agent coaching purposes

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## Quality Management

Genesys Quality Manager is a comprehensive contact center quality management solution for scoring and improving an agent's performance. Quality Manager enables the creation of questionnaires with multi-level scoring, scheduling and execution of evaluations and the use of reports to spot trends.

- Use rich reporting features that identify agent strengths and weaknesses in service, interactions and communication skills
- Create evaluation criteria to score and measure an agent's skill sets based on your exact requirements
- Select and score calls recorded by Call Recording using criteria such as length of call, day of the week, time of day and any other parameter from contact center and CRM integration
- Give agents access to their evaluations with additional feedback on a 'job well done' or the need for improvement
- Use trend reports and graphs to identify agent and team progress and improvement
- Enjoy user management features that allow you to seamlessly synchronize and authenticate users between Call Recording, Cisco and Genesys contact center platforms
- Monitor high level call center performance indicators via the Call Center Dashboard view

---

## Live Monitoring

Genesys Live Monitor supplies supervisors with a real-time overview of all their agent's active calls.

Live Monitor allows supervisors or contact center managers to listen to live agent interactions and to add flags and scorings for later review.

- Click on a particular call to listen to it live without any noticeable delay using your computer speakers or headset
- Java-based application that does not require local installation – launched directly from a web browser
- Benefit from access privileges that allow a supervisor to view only the calls of their own agents while the contact center manager can have a complete overview of all the calls in the contact center at any single time
- Attach comments and flags to each monitored call for later evaluation and review
- Save pre-recorded calls and e-mail them via the Call Recording user interface





Chapter

# 3 Genesys Call Recording

Genesys Call Recording is a recording solution for contact centers. The intuitive web based interface, complex organization of storing and archiving of records, sophisticated access control, and the manipulation of records, comprehensively recording 100% of each and every call with functionality to access recordings on demand, are provided as a standard offering within Call Recording.

The information in this chapter is divided into the following topics:

- [Recording in the Genesys Environment](#)
- [Protocols and Interfaces](#)
- [Call Recording – Principles](#)
- [Call Recording – Methods](#)
- [Call Recording – Processing & Managing Data](#)
- [Call Recording Main Features](#)
- [User Interface](#)
- [Prerecording – the On-Demand Recording](#)
- [Media Lifecycle Management – Call Recording Tools](#)
- [Call Encryption](#)
- [Localization](#)
- [Configuration Tools](#)
- [Audit and Status](#)
- [Reporting Tool](#)

## Recording in the Genesys Environment

Call Recording works through capturing SIP signaling protocol and RTP streams and integrating the Genesys T-Server and Configuration Server to get additional data about the calls.

Call Recording also provides direct support of Cisco Unified Communications Manager as a 3rd Party PBX under the Genesys Customer Interaction Management Platform.

Genesys does also support recording via Stream manager to create WAV files which can then be obtained by a 3rd party, however, Call Recording does not support this method as it severely limits product functionality such as live monitoring, and provides no guarantee that the call will be recorded.

### Genesys CIM with SIP Server

The current recording method on Genesys SIP server is based on tracking the SIP signaling protocol. Call Recording server captures the SIP signaling protocol and interprets information about running calls; the terminal addresses and captures the RTP streams. Through the T-Library, Call Recording integrates with the SIP T-Server to get data about agents, their interactions and attached data.

This method is highly dependent on the network infrastructure.

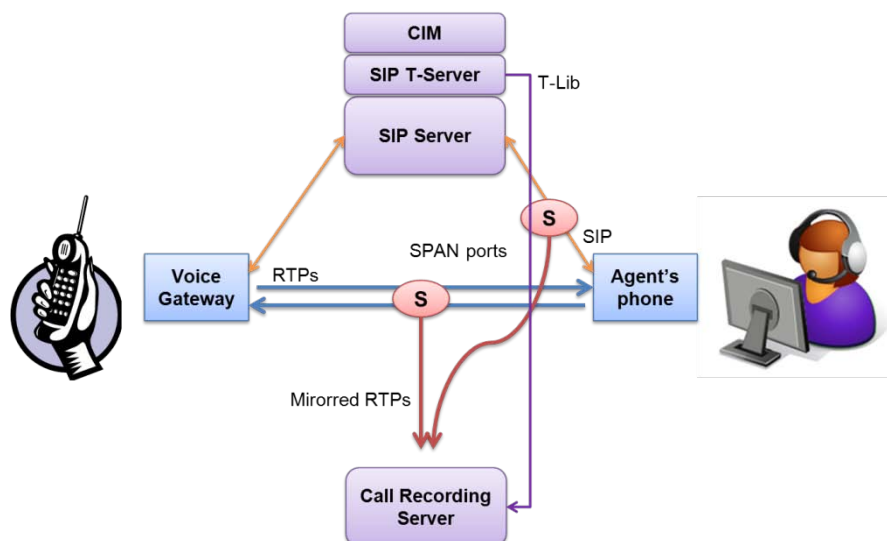
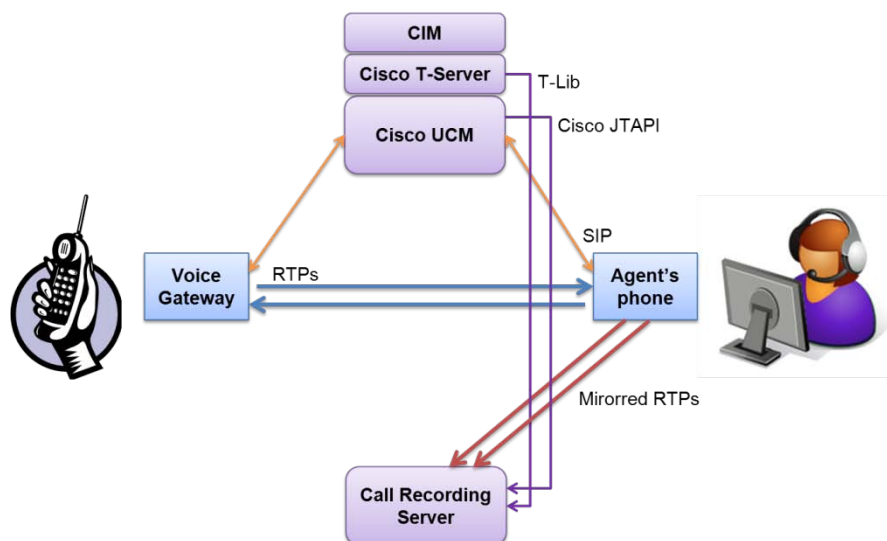


Figure 1: Genesys CIM with SIP Server

## Genesys CIM with Cisco UCM

Another approach is the recording of Genesys with Cisco UCM. In this case the Genesys Customer Interaction Management Platform (CIM) is deployed with Cisco Communications Manager as an underlying PBX. In this scenario, the Cisco T-Server is also performing integration. In addition to connecting to Cisco UCM, Call Recording directly communicates with the Cisco T-Server to get the call related data not available from the Cisco platform.



**Figure 2: Genesys CIM with Cisco UCM**

## Call Metadata

The internal Call Recording database stores call metadata as two different entities:

- Basic call data
- External data

Basic call data exists for all recordings, regardless of the underlying PBX, contact center platform or 3rd party integration. The structure of data is always the same and basically represents only extension numbers, data and time and internal flags.

External Data contains platform specific information stored as key/value pairs. Virtually any number of external data can be stored with every call; however a large amount of data may have negative impact on database performance and thus on the speed of searching, sorting or any other tools handling call metadata.

Basic call data							External data						
Date	Beginning	End	Length	From	To	CallType	ANI	DNIS	Username	ServiceType	AccountNumber		Description
09-Apr-2010	17:05:31	17:06:00	0:29	345679341	7001	Inbound	345679341	7001	ksippo	Support			
09-Apr-2010	17:04:00	17:04:46	0:46	34567973	7001	Inbound	34567973	7001	ksippo				
09-Apr-2010	17:02:40	17:03:35	0:54	345679992	7001	Inbound	345679992	7001	ksippo	Sales			
09-Apr-2010	16:58:36	16:59:02	0:26	345678934	7001	Inbound	345678934	7001	ksippo	NewAccount			
09-Apr-2010	16:57:20	16:58:12	0:52	345678934	7001	Inbound	345678934	7001	ksippo				
09-Apr-2010	16:56:05	16:56:44	0:40	222848777	7001	Inbound	222848777	7001	ksippo	Brokerage			
09-Apr-2010	16:54:29	16:54:58	0:29	222848899	7001	Inbound	222848899	7001	ksippo	Service			
09-Apr-2010	16:53:04	16:53:48	0:43	222848234	7001	Inbound	222848234	7001	ksippo	WebSupport			

Figure 3: Call Metadata

## Protocols and Interfaces

As already discussed, calls are recorded based on SIP signaling, which is obtained from the network switch by mirroring SPAN ports. The signaling information arrives at the protocol adapter, which interprets the protocol and passes the events to Recording Core. From the point of view of the SIP Server, Call Recording is entirely passive.

Call Recording subsequently interfaces with the T-Server and Configuration Server, which is accomplished by a component called the Genesys Integration Module (GIM). There are two different components on the Call Recording side which interface with the Genesys CIM platform.

The platform SDK is used as the interface for connecting to T-Server and Configuration Server, namely the Voice Platform SDK and Configuration Platform SDK.

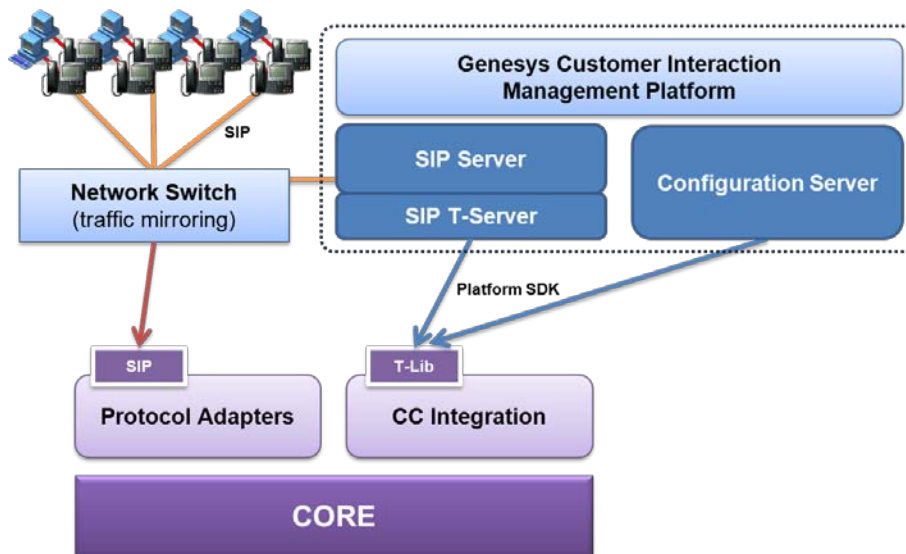


Figure 4: Protocols and Interfaces



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## Call Recording – Principles

The purpose of a quality management suite of products is to improve contact center quality management and performance. Genesys Call Recording achieves this through successfully achieving the principles of call recording. The process of call recording and processing can be divided into the following four simplified steps:



Call signalization processing is the method of notifying recording systems about current calls and providing information about these calls, such as whether it is a new call or a current call is on hold or being transferred. Based on this information Call Recording can capture the voice streams which are transmitted through the network as via the shortest available route. Once the voice streams are captured, Call Recording decodes and compresses them to recreate the original call. Using a combination of modules within its architecture, Call Recording presents the data in a usable format and stores and publishes it so that users can review it on demand.

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## Call Recording – Methods

There are now two methods of obtaining the signalization and capturing the voice streams. Genesys Call Recording can be deployed using either or a combination of both methods to provide an optimum call recording solution.

### Passive (SPAN Based) Recording

The SPAN recording method is based on listening to network traffic and creating a monitor on the switch or elsewhere within the network infrastructure. It is a passive method of recording: Call Recording listens to the traffic, processes the signalization protocol of IP phones and captures the RTP data.

A special function which exists within the network is port SPANning (SPAN – Switched Port Analyzer). This is used for the passive capturing of signalization and/or voice data. SPAN allows the duplication of any specified communication transmitted by this active component and sends this data to a specified device/port etc. (recorder).

The passive method of capturing call signalization is based on wiretapping (observing all communication between the IP Phone and the IP PBX), decoding this captured data and processing the information. Based on this captured signalization, Call Recording can detect all of the important information including initiation, switch-over, holding, termination of the call and more. The advantage of this method is the absolute independence of the telephone system – recording cannot influence the function of the IP exchange or any other component of the telephone network. Yet, this method is highly dependent on the network infrastructure and is not able to detect drop-outs in signalization. Call Recording fully supports recording via Cisco SCCP for Cisco UCM Express and SIP protocol for various platforms.

## Enhanced Passive Recording

Enhanced Passive Recording (also referred as “hybrid”) combines an active method of obtaining the telephony events with passive capturing of the voice data. The “active method” refers to Call Recording communicating directly with the IP PBX (or soft switch) through a CTI interface, by which it is getting all the required events that trigger calls. Genesys Call Recording supports Cisco JTAPI on the Cisco UCM platform and the Voice Monitoring API on the Genesys platform.

Capturing and processing of the voice traffic is done in the same way as for the passive solution.

## Active (SPANless) Recording

SPANless recording does not rely on SPAN ports in any way. Genesys Call Recording actively communicates with the IP PBX through a CTI interface. When there is a call to be recorded, this technique makes it possible to request that the IP exchange send a copy of the call’s audio data directly to Call Recording Server

SPANless recording relies on full support of the PBX platform and is currently available only for Cisco UCM version 6 and above.

---

# Call Recording

## – Processing & Managing Data

### Processing Captured Data

Recorded raw voice data needs to be processed – i.e. converted from the transported form to an audio format that is suitable for storing and playing. Call Recording extracts the captured streams, detects the codec and format used and transcodes the raw data into the selected audio format. As each call contains two or more independent audio files, the final step is to synchronize them and reconstruct the original caller-recipient order. This process generates the final stereo file (files) with the two synchronized parts of the original call (one for each side of call). Before storing this information, Call Recording converts the audio file into the selected storage format – MP3 or WAV.

### Recorded Call Management

Recorded calls can be accessed through the Call Recording web interface which provides a multitude of functions to archive, sort, search and backup recorded calls. Call Recording can support hundreds of calls simultaneously – each person will obtain his/her own copy of the call (according to his/her user permissions).

## Call Recording Main Features

Genesys Call Recording was developed specifically to record contact centers and uses the unique features and advantages of an IP environment. These features include the following:

- Modularity
- Scalability
- Distribution
- Redundancy

### Modularity

Call Recording is a modular solution and highly adaptable to requirements without frequent hardware changes and software reinstallations.

The complete recording system consists of many standalone modules with strictly defined roles in the recording process – from capturing signalization to offering recordings to users for monitoring, playback and storage. Each module can work independently. Genesys Call Recording can be deployed as a single-server solution (all modules are installed on a single server) to record up to 100 simultaneous calls. In addition, modules can be combined to create a clustered solution (any combination of modules on any number of servers with optional redundancy) to record hundreds of simultaneous calls. Clustered solutions are used to enhance performance, or deployed within a geographically wide network where recorded calls are required to be simultaneously accessed at numerous physical locations.

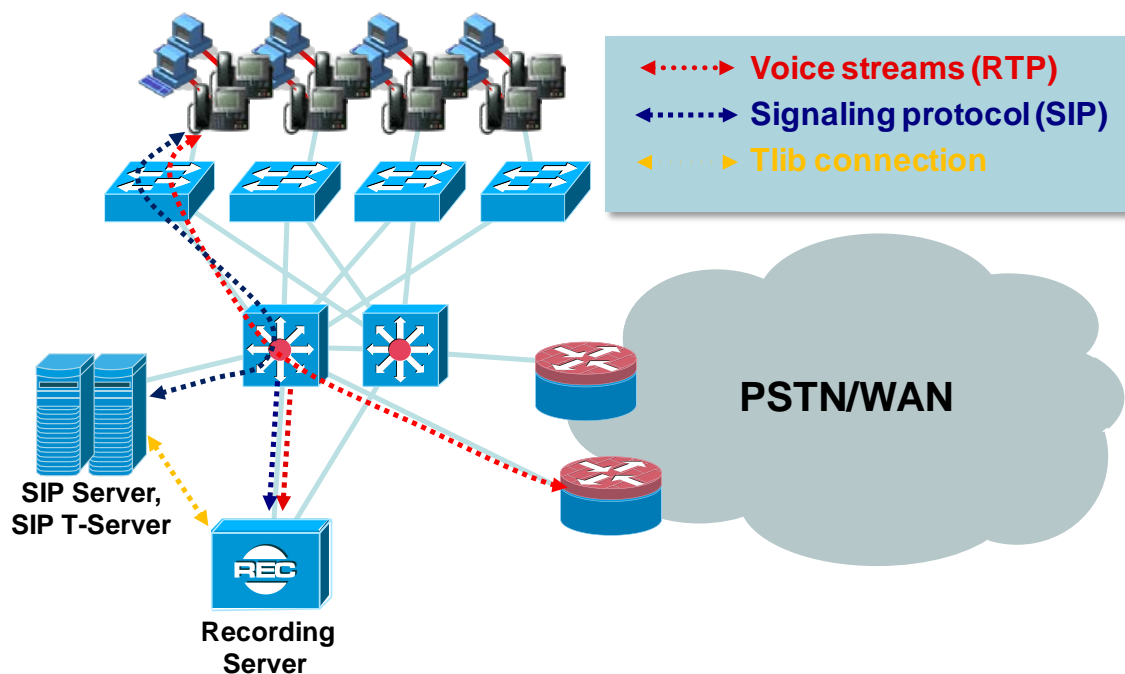


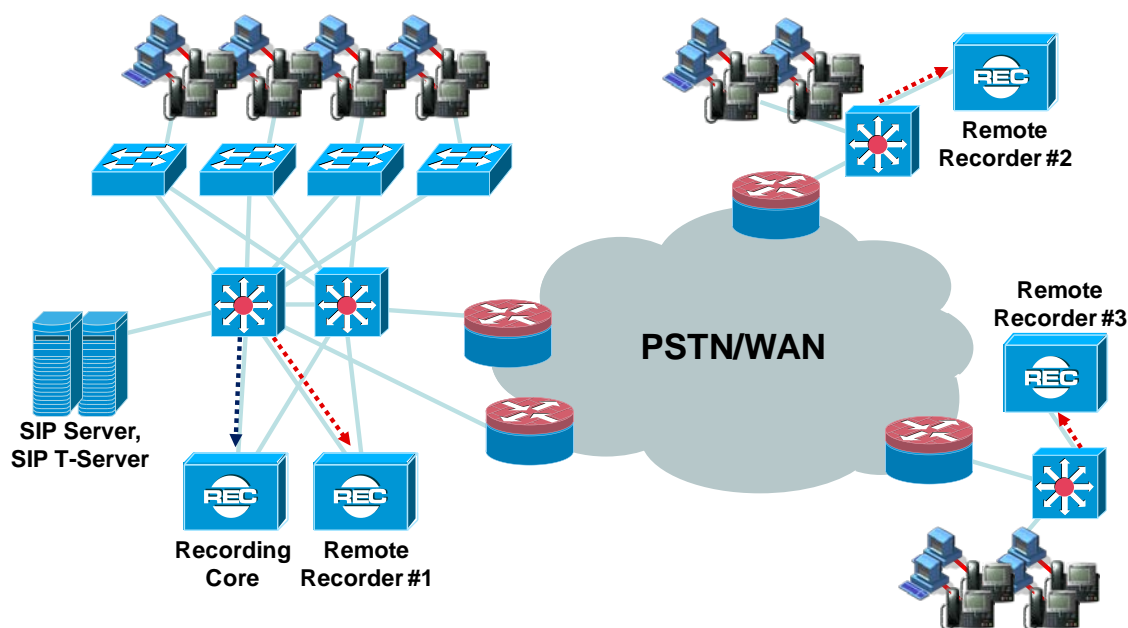
Figure 5: Basic Call Recording Deployment Model

## Scalability

Call Recording is a pure software solution that operates and is supported on a standard Intel / AMD server, requiring no special hardware. Based on the designed architecture and hardware in place, Call Recording can record several hundred simultaneous calls. The addition of multiple servers to the existing architecture means that Call Recording can be scaled to support your business growth and future requirements.

## Distributed and Centralized Solution

Genesys Call Recording can be deployed to record calls throughout multiple locations while fully utilizing the ease of a centrally managed system. The modularity and scalability allow this to be done a number of ways; a few are highlighted below:



**Figure 6: Distributed Genesys Call Recording with Centralized Processing**

Genesys Call Recording Core is the centralized control server that is used to communicate with an IP phone center: signaling of calls, user interface (users are defined in a single place), database, archiving, backup, reporting, application and recording logic, etc.

The branch servers, Genesys Call Recording Remote Recorders, capture the recorded data of calls and send the data to the central server for additional processing.

In some cases, the deployment of additional recorders may not be the optimal solution to recording a large number of calls. There may be several reasons to justify a cluster deployment such as limited bandwidth between headquarters and branch, unreliable network connection or simply more requested services in the branch.

A full Call Recording server (or cluster) is deployed in all locations with centralized call storage (Replay Server). From the user perspective, the behavior is the same: there is one user interface which provides access to all the recorded calls. One of the advantages of this approach is the ability to schedule call replication to the Replay Server at selected times – during off-peak hours, for example. This means recorded calls traveling between the locations will not influence any other crucial real-time traffic.

## High Availability

In critical environments, it is possible to deploy Call Recording as a redundant solution to ensure 100% reliability. Redundancy is maintained by two (or more) independent recording servers with identical functionality. In the case where one server fails, the second server will continue to record. When the first server becomes available again, all data is synchronized and both servers continue to record without any further interruptions.

Redundant architecture is one of the best securing architectures available with a near 100% level of prevention against recording system failure. This ensures high reliability and insurance against data loss.

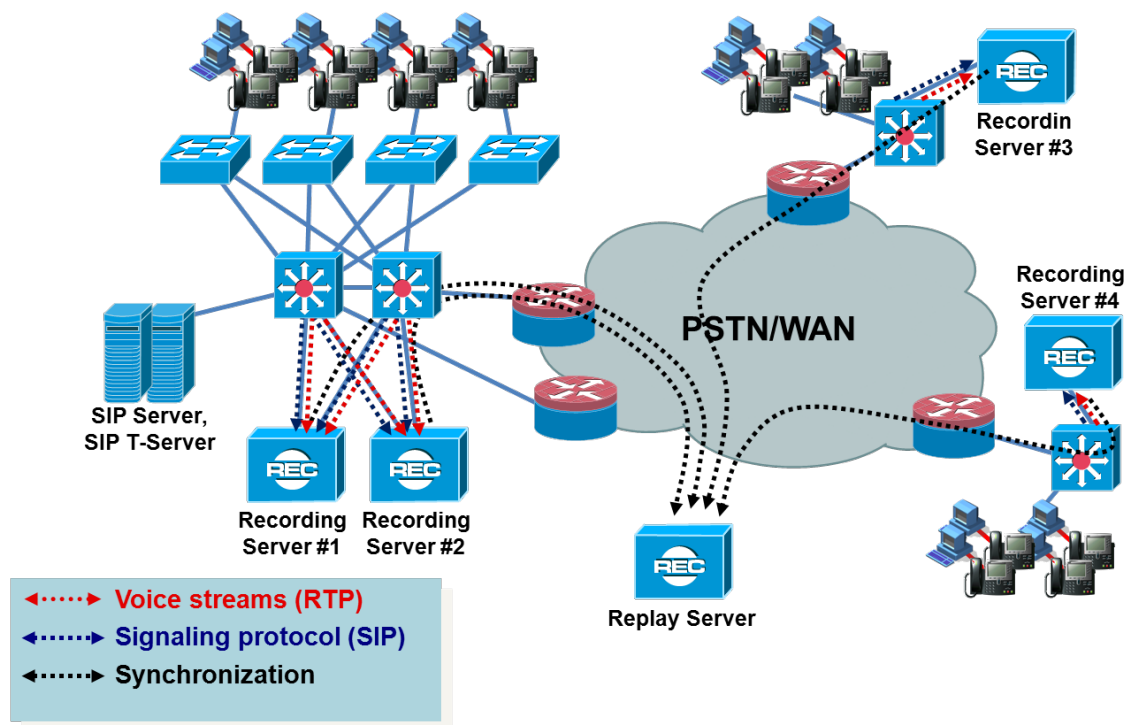


Figure 7: High available deployment with Replay Server

## Replay Server

In a redundant or geographically implemented Call Recording installation, a Replay Server can be used for centralized access to all call recordings.

The Replay Server serves as a centralized access point for all available call recordings, their archiving & backup and supports user control.

Each user's Call Recording Web GUI is connected to the Replay Server and all recorded calls are mirrored on the same server. A specific advantage of the Replay Server is that all the servers (redundant, branch etc.) are synchronized with the Replay Server (database records on all servers are intelligently synchronized) and in case of failure, users will not notice any drop-outs.

## User Interface

The user interface (the 'Web GUI') is accessed through an internet browser. Call Recording supports the following browsers, multimedia plug-ins and operating systems:

- Microsoft Internet Explorer (7+) & Microsoft Windows Media Player (Windows)
- Mozilla Firefox (1.5+) & Quick Time Player (Windows, Mac OS, Linux)
- Safari Browser (3+) & Quick Time Player (Mac OS, Windows)
- Google Chrome (4+) & Quick Time Player (Windows, Mac OS, Linux)
- Opera (9+) & Quick Time Player (Windows, Mac OS, Linux)
- 

**Note:** Genesys Quality Management does not support the Microsoft Internet Explorer 6 browser. If other supported browsers are not available, the [Google Chrome Frame](#) plug-in may be a solution.

Date	Beginning	From	To	Call Type	ANI	DNIS	Agent Extension	Agent Name	Account Number	Service Type	Customer Segment	Description
Jun 3, 2010	5:15:55 PM	232555679 (Antonin Kadlec)	8000	Inbound	232555679	8000	7001	ksippo	1234	Brokerage	Gold	
Jun 3, 2010	5:05:33 PM	232555679 (Antonin Kadlec)	8000	Inbound	232555679	8000	7001	ksippo	1234	Brokerage	Gold	
Jun 3, 2010	4:34:10 PM	232555679 (Antonin Kadlec)	8000	Inbound	232555679	8000	7001	ksippo	1234	Brokerage	Gold	
Jun 3, 2010	4:30:11 PM	232555679 (Antonin Kadlec)	8000	Inbound	232555679	8000	7001	ksippo	1234	WebSupport	Gold	
Jun 3, 2010	4:29:27 PM	232555679 (Antonin Kadlec)	8000	Inbound	232555679	8000	7001	ksippo	1234	Brokerage	Gold	

**Figure 8: Call Recording User Interface - Viewing Calls**

All call-related tasks may be restricted according to the user's access rights. Each user's actions are additionally stored in the Audit Log.

Calls in the list are tagged with graphical icons indicating the status of a particular recording and additional information stored with call. Indicators include:

- Archived calls
- Archived calls with deleted media
- Calls synchronized to Replay Server
- Restored calls
- Calls being restored
- Calls with recorded agent desktop (Screen Capture)

## Call Manipulation

Call manipulation refers to the actions of searching, playing, exporting and other call-related tasks (according to user permissions). Filtering or searching for recorded calls can be defined by the following criteria readily available within the Call Recording database:

- Caller phone number
- Called phone number
- Date and time of call initiation
- Date and time of call termination
- Length of the call
- Notes added to the call
- Call type (forward, conference, re-connected calls, parked calls, barge)
- Count of couples indicating conference or re-connected calls
- Any other call related metadata that are attached during recording – for example Genesys Attached Data, CRM information, etc...

## Call Playback

A default multimedia player enables the recorded calls to be played on specific platforms. Typical configuration for the Microsoft Windows platform is Microsoft Internet Explorer and Windows Media Player.

The built-in media player is well suited to replaying single recordings, however, when whole interactions (such as transfer or conference calls) need to be analyzed, the Advanced Player is a more effective solution.

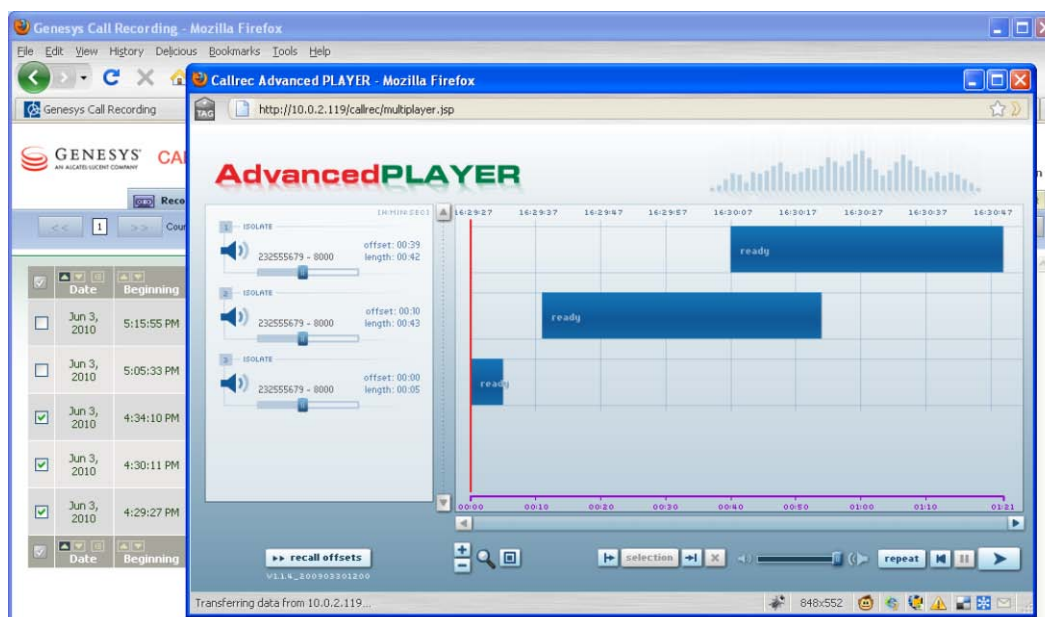
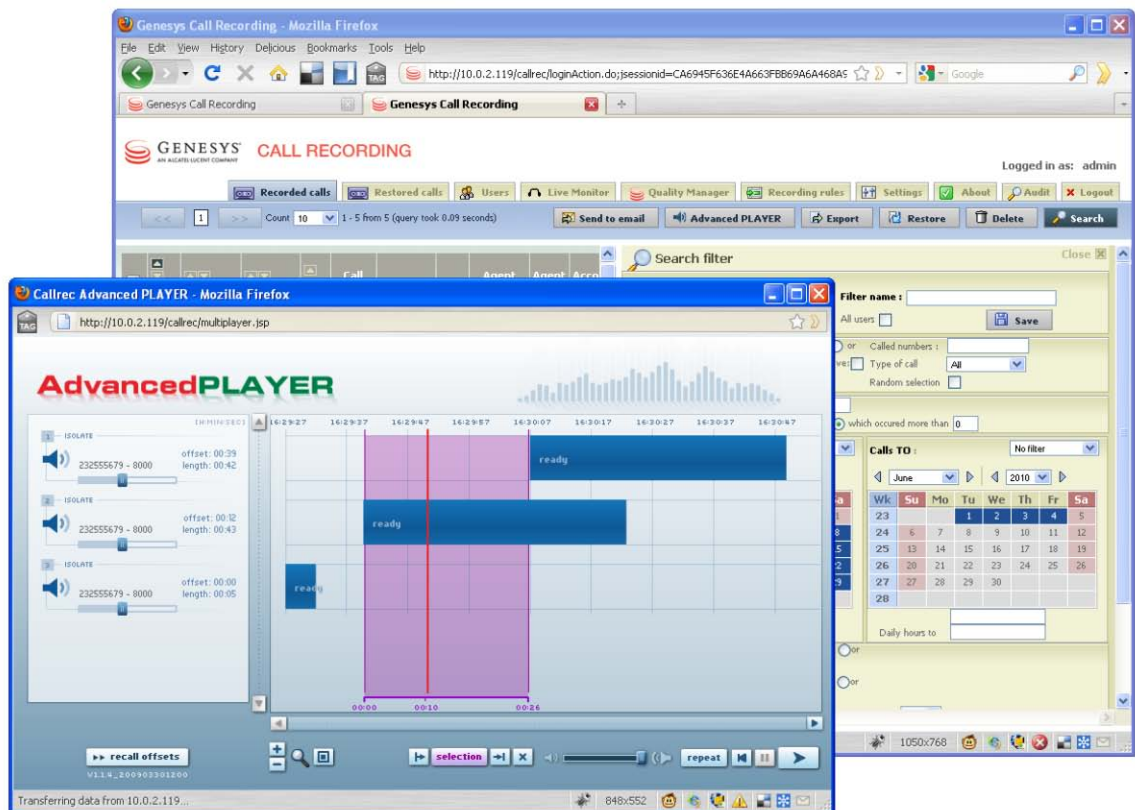


Figure 9: Call Recording User Interface – Reviewing Calls in Advanced Player



Combining call manipulation and call playback allows you to select the types of call and the parts of the call you wish to hear, for example, how well agents are transferring calls. Advanced player allows you to replay related calls such as conference calls. Searching for these calls (by call type or couples count, for example) within the user interface will display all calls satisfying the selected parameters.



**Figure 10: Call Recording User Interface – Call manipulation and playback with Advanced Player**

Advanced player displays the selected calls on a timeline, providing a clear picture of the call sequence and how the calls occurred.

## Sending Calls

Where SMTP mail relay is available, recorded calls can be sent via email directly from the user interface, to access recordings outside the product suite's native environment.

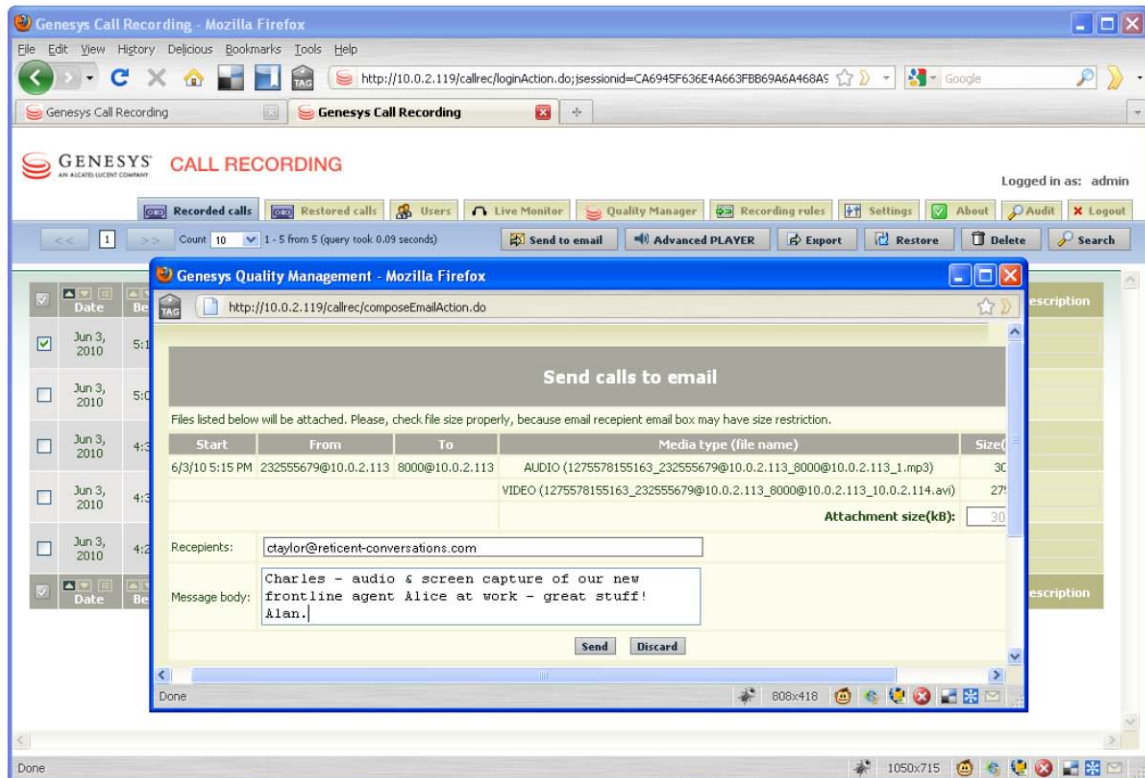


Figure 11: Call Recording User Interface – Sending Recorded Calls by Email

## Call Search

Using the available database fields, calls can be retrieved where a specific customer has called more than X times during a specified period, for example. The search can be extended with specified information from the additional metadata. The following figure displays a call search using user name and calling numbers parameters, leveraging data from the integration module.

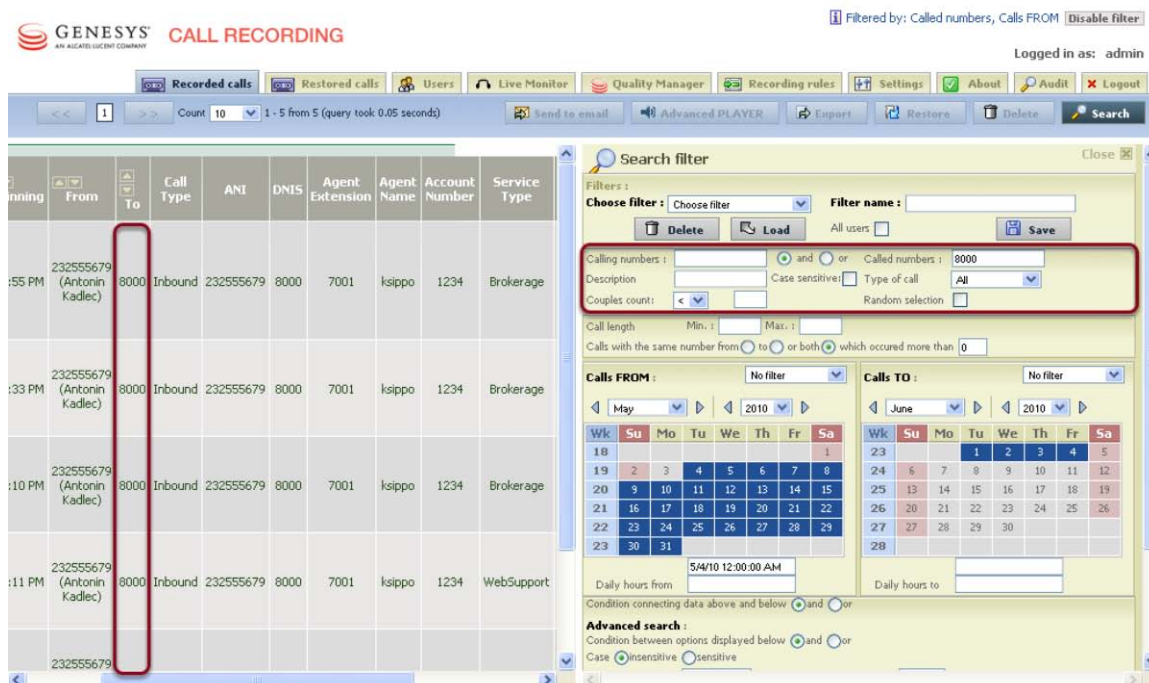


Figure 12: Call Recording User Interface – Searching for Calls 1

The screenshot displays the Genesys Call Recording interface. At the top, it shows the Genesys logo and 'CALL RECORDING' title. The user is logged in as 'admin'. The main area features a table of recorded calls with columns: From, To, Call Type, ANI, DNIS, Agent Extension, Agent Name, Account Number, Service Type, and Customer Segment. The table shows four identical rows of call data. A red box highlights the search filter panel on the right, which includes fields for Employee ID (KShippa), Call UID, Customer Segment, Product Price, Product Upsell, and Service Type (Brokerage). The interface also includes a calendar view for May and June 2010, and various navigation and search buttons.

Figure 13: Call Recording User Interface – Searching for Calls 2

## Recording Rules Management

Recording Rules determine which calls are recorded. Basic recording rules are based on the phone number(s) or on the IP address of the phone. Additionally, rules can be created using any other available metadata. For example, to support free seating in call centers, Call Recording also offers the option to set up recording rules based on Agent ID as obtained from the T-Server and stored in Call Recording external data.

There are 3 recording rules:

- **Record** – Every call to/from the selected phone number will be recorded.
  - Record only incoming calls
  - Record only outbound calls
  - Record a combination of incoming and outbound calls
- **Do not Record** – No call to/from a selected phone number will be recorded.
  - Do not record only incoming calls
  - Do not record only outbound calls
  - Do not record a combination of incoming and outbound calls
- **Prerecording** – This special feature activates recording-on-demand.
  - Every call will be recorded – calls will only be stored if they are selected
  - Calls may be selected for storage during the call
  - Calls may be selected for storage within a specified time after the call has ended

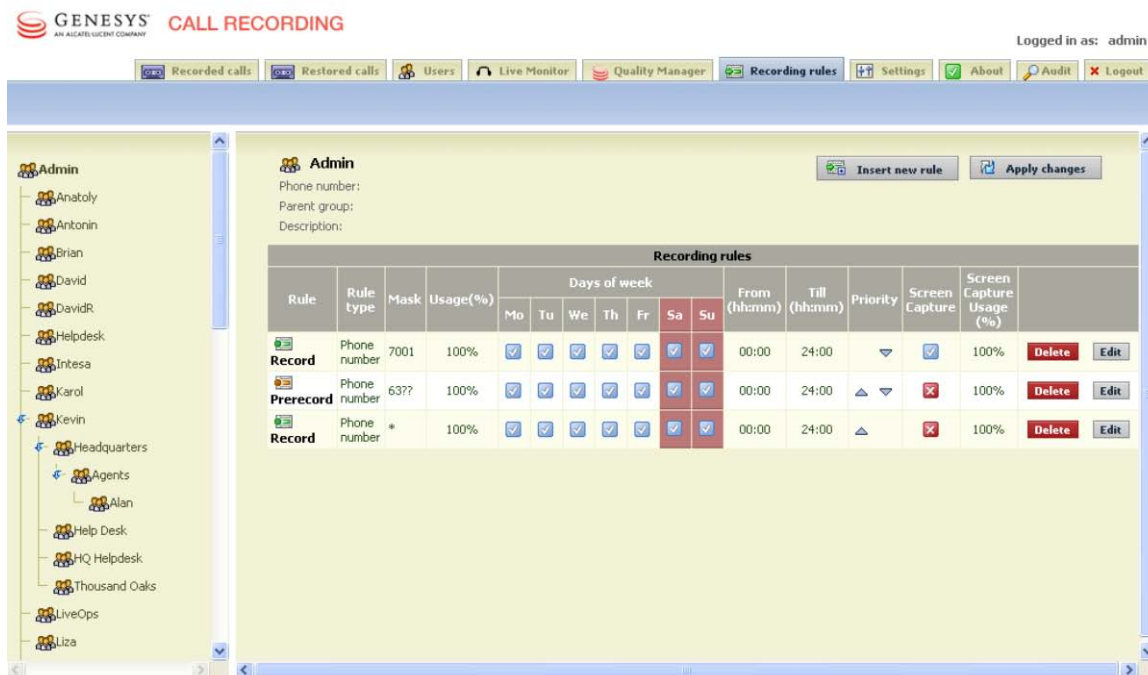


Figure 14: Call Recording User Interface – Management of Recording Rules

Recording rules can be set for a single number as well as for a number range. Different wild cards are available when creating recording rules.

## User Management

The management of users and groups of users are organized according to the hierarchical delegation of rights or ACL (Access Control List). With the ACL you can:

- **Restrict** (delegate) user or user group rights to access calls only from the selected range or locality
- Grant individual rights to manipulate calls. You may permit or prevent the playing, deleting and exporting of calls, editing of notes and rights to manage recording rules etc.
- The list of privileges includes:
  - **Recording rules:** a user is allowed to set and edit recording rules
  - **Edit note:** a user can add and edit call notifications
  - **Display video calls:** a user can view captured computer screen recordings
  - **Changing of couple protection:** protection to secure recorded calls evaluated within Quality Manager
  - **Display non-decoded calls:** a user can view unprocessed calls
  - **Display incorrect calls:** a user can view calls that were not successfully recorded
  - **Users and roles:** a user can add new users and set their privileges
  - **Export:** a user can export the recordings
  - **Live Monitor:** a user has access to Live Monitor
  - **Restored calls:** a user is allowed to restore archived recordings
  - **Audit:** access to recording logs
  - **Other settings:** access to system configuration, systems logs
  - **Call list:** a user is allowed to see the list of recorded calls
  - **Call deletion:** a user is allowed to delete recordings

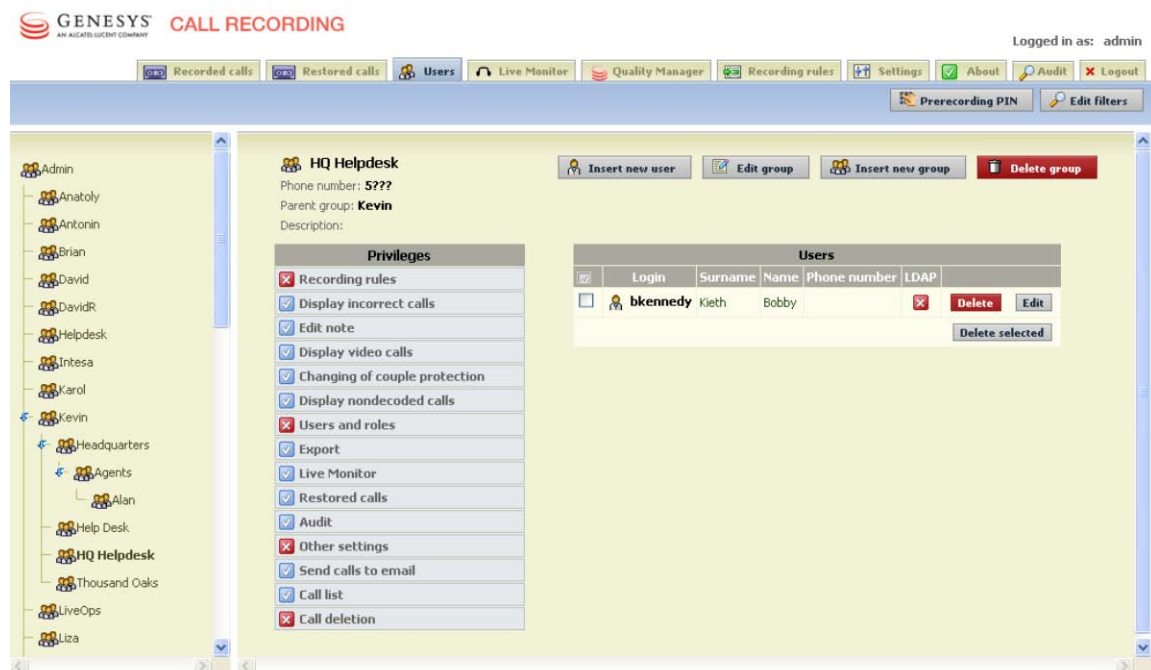


Figure 15: Call Recording User Interface – User Management

## Creating User Access Rules

External data, for example the data from the contact center integration modules, can be used to create filters and may be applied to user access rules, as shown below.



**Figure 16: Call Recording User Interface – Creating User Access Rules**

If a search is used repeatedly, Genesys Call Recording enhances efficiency by enabling the search to be saved as a filter, which can then be selected from the list and re-used. Search filters can also be shared with other Call Recording users. The creation of access rules based on integrated data is a powerful feature: permanent filters can be assigned to a group as role specific filters through the ‘users’ tab. For example, a supervisor could have a filter that displays only calls handled by his team of agents. The supervisor then sees only those agents’ calls in the Call Recording user interface.

# Prerecording

## – The On-Demand Recording

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**Note:** Support for prerecording functionality can be selected via Live Monitor functionality which is provided with the Genesys Quality Manager product, or will require custom integration to the Call Recording API to “keep” a prerecorded call. The phone interface is currently only available for Cisco IP phones.

---

Prerecording is available anytime during the call and can be selected for a period of time after the call's termination. The pre-recording feature can store the complete call since recording starts at the very beginning of the call; the system is caching voice data and waits for a request to save the call. If no request is provided the captured data are discarded. You can also send the final recording to any email address of your choice directly from the Cisco IP Phone or from the Live Monitor console.

Users can control prerecording functionality in several ways:

- Using the IP phone interface; provided by a Cisco IP Phone XML Service
  - Using Live Monitor console
  - From a 3<sup>rd</sup> party application, by providing custom integration to the Call Recording API
- The Cisco IP Phone user interface provides the ability to tag the call during the conversation directly from the XML Services-enabled IP phone. This user information can then be located and retrieved in the advanced search.



**Figure 17: The Call Recording User Interface on a Cisco IP Phone**



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# Media Lifecycle Management

## – Call Recording Tools

Backup, archiving, synchronization and other tools are part of the Call Recording installation. With these Media Lifecycle Management (MLM) tools, you can easily define the lifecycle management for recorded media.

Please note that the MLM Tools do not co-operate directly with the hardware for controlling storage media – DVD, tapes etc. The Tools only create packages, which may be placed anywhere on a directly accessible file system. Further storing and handling (if necessary) is the responsibility of an existing 3<sup>rd</sup> party backup solution deployed by the customer. MLM Tools also provide out-of-the-box integration with IBM Tivoli Storage Manager software.

Some of the common features are:

- Custom selection conditions; MLM data can be selected based on their attributes (phone numbers, description, integration data, etc.)
- Alternate source / destination paths; e.g. multiple file systems for archiving data
- High/low watermark support
- Configurable notification emails on success/failure
- Multiple tasks for archive/backup

Data for Media Lifecycle Management can be selected based on their attributes (phone numbers, description, external data, etc.)

### Tools Description

These tools comprise Call Recording media lifecycle management and are essential to facilitate the process of managing your data:

**Relocation** – Takes recorded calls from the primary storage and saves them to secondary storage. This can be anything connected to the server; for example a secondary hard drive, disk array or NFS directory, etc.

- Alternative source paths with watermark support: archiving triggered by low disk space on source file systems
- Alternative target paths with watermark support: archiving to multiple destinations, filling up to a high watermark
- Run as daemon: useful when watermarks are used

**Backup** – Creates a copy of the recorded calls without affecting the database. Backing up data can be configured as a routine daily process to protect your data.

- Alternative source paths with watermark support: archiving triggered by low disk space on source file systems
- Alternative target paths with watermark support: archiving to multiple destinations, filling up to a high watermark
- Configurable notification emails on success/failure
- Multiple backup tasks
- Backup only selected type of media (audio/video)
- Exclude non-decoded streams (PCAP)

**Archive** – Creates an archive package (.zip) with audio and video files and a database dump. Archived calls are marked in the database with an archive flag. You have the option of moving the files from live storage to secondary storage.

- Alternative source paths with watermark support: archive triggered by low disk space on source file systems
- Alternative target paths with watermark support: archive to multiple destinations, filling up to a high watermark
- Configurable notification emails on success/failure
- Multiple archive tasks
- Archive only the selected type of media (audio/video)
- Exclude non-decoded streams (PCAP)
- Run as daemon: useful when watermarks are used

**Restore** – Used to bring call data back online that has already been archived or backed up. The call(s) will appear in the restored calls tab and is marked with a time interval for which it will be available, after which it will be deleted.

- Restore to the live database (including external data): works the same way as Synchro
- Alternative target paths with watermark support: restore to multiple destinations, filling up to a high watermark
- Restore from previous Call Recording versions: If no unique identifier ('sid') is found in the calls XML file in the call archive, the called number, calling number and timestamp properties are used to match couples

The call restoration process can also be canceled. For example, if a user selects an archived call to be restored and later decides that the call is no longer required, the task of restoring the call can be canceled.

**Delete** – The delete tool can be set up to run automatically. Settings can be configured for deleting call recordings and their associated database records.

- Run as daemon: useful when watermarks are used
- Alternative source paths with watermark support: deletion triggered by low disk space on source file systems

**Synchro** – Define when data should be synchronized throughout your deployment.

- Multiple thread support: two threads are configurable from the Web GUI, more using the tools XML configuration file
- Synchronize audio and video independently: allows better quality media to be used for each audio or video recording
- Synchronize only mixed files
- Synchronization of incomplete external data
- Separate target paths for audio and video with watermark support: when video paths are not assigned (default configuration), audio paths are used for storing video files
- Alternative target paths with watermark support: Synchro to multiple destinations, filling up to a high watermark

---

## Call Encryption

Genesys Call Recording also provides encryption of stored calls for enhanced security. A recorded call is encrypted before it is saved to disk. Decryption takes place only within the web-based interface and is available only for authorized users.

To fully comply with PCI DSS and other financial industry requirements, Genesys Quality Management provides Key Manager with the possibility to manage certificates, keys and provide re-encryption etc. Please see Chapter 8 to learn more about security.

---

## Localization

Genesys Call Recording Web GUI is fully localized into the following languages:

- Arabic
- Bulgarian
- Czech
- English
- French
- German
- Polish
- Romanian
- Russian
- Slovak
- Slovenian
- Spanish
- Turkish

# Configuration Tools

Genesys Call Recording offers a comprehensive visual configuration interface as part of the Web GUI, where almost every aspect of Call Recording can be configured.

## Configuration Overview

The Call Recording Web GUI (or ‘user interface’) is divided into the functional aspects of Call Recording. Confirmed changes are applied immediately by the Call Recording Configuration Service.



Figure 18: Call Recording – Example of the Configuration Interface

## Administrators

Configuration amendments can be made to the following services by administrators:

- **Call Recording Core**
  - Main modules of Call Recording and its configuration. All server, database, driver and reader settings as well as SMTP parameters and main RMI settings are defined here
- **Protocol Adapters**
  - Protocol adapter settings and binding
- **Recorders**
  - Recorder bindings and API
- **Decoders**
  - All decoder related settings such as audio formats and preferences, storage paths, filters (file sizes, encryption), master recorder selection etc.
- **Web UI**
  - Web-based interface: GUI related settings for displaying calls and customizing the list of calls
  - Search: tool for defining basic and attached data searches, supports direct entry of searched values in addition to automatically generated value lists
  - Column setup: for defining additional columns in the call listing view; supports all attached data entries
- **Screen Capture**
  - The Screen Capture configuration, paths for storing data, filter selection etc.
- **Integration**
  - Additional configuration for the Genesys Integration Module (GIM)
- **Extras**
  - Complete settings for extra modules
  - Prerecording settings with external data configuration
- **Maintenance**
  - Comprises Backup, Archive, Restore and other media lifecycle management tools
- **Key Manager**
  - Management of encryption related settings such as certificates, keys, encryption algorithms, etc.

## Users

Users can make the following configuration changes:

- **User Setup**
  - Users may change their preferred language and select which columns to view in their list of calls

## Audit and Status

All auditing and status information is available through the Call Recording Web GUI.

**Audit** summarizes all actions taken by users. By default actions are displayed in chronological order. Information includes:

- **Action** – identification of action taken
- **Result** – result of action. OK for successful and FAILED for an unsuccessful action
- **User** – name of user
- **Date** – date and time of action
- **Message** – description of action

**Status** summarizes all SNMP information using descriptions, current and historical values. Statuses are divided into groups according to the service which generated. The status overview shows the current status of every Call Recording component.

**Status overview**

Verbosity   [Download this report](#)

+ User Interface 8.0.460, build: 100602_1837, Copyright (c) 2002-2009 ZOOM International. All rights reserved. - //192.168.110.131:30400/GUI_CallREC
+ IOR Naming Service trunk-SNAPSHOT, build: 100523_0107, ZOOM International (c) 2003 - //192.168.110.131:30400/remoteNS
+ Configuration Service, ZOOM International - //192.168.110.131:30400/ConfigManagerCommunicator
+ Decoder3 8.0.460, build: 100602_1827, Copyright (c) 2002-2009 ZOOM International. All rights reserved. - //192.168.110.131:30400/DecoderMasterCommunicator
+ UserInterface 8.0.460, build: 100602_1837, Copyright (c) 2002-2009 ZOOM International. All rights reserved. - //192.168.110.131:30400/PrerecordingServer
+ Observable Naming trunk-SNAPSHOT, build: 100523_0107, ZOOM International (c) 2003 - //192.168.110.131:30400/ObservableNamingCommunicator
- CallREC 8.0.460, build: 100602_1829, Copyright (c) 2002-2009 ZOOM International. All rights reserved - //192.168.110.131:30400/remoteCallRec

System				
101	System	Java VM info	Java HotSpot(TM) Server VM, 16.3-b01	
102	System	VM started	Thu Jun 03 15:13:13 CEST 2010	
105	System	OS info	Linux, 2.6.18-194.el5	
110	System	Memory state	free: 95.6% (from 93 MB)	OK
201	System	Zoom util version	Zoom-util trunk-SNAPSHOT, build: 100523_0107	
PoolManager				
1010	PoolManager	Registered driver	org.postgresql.Driver (8.1)	
DataSource [iBatis]				
2001	DataSource [iBatis]	JDBC driver	org.postgresql.Driver Version: 8.1	
2002	DataSource [iBatis]	JDBC url	jdbc:postgresql://192.168.110.131:5432/callrec	
2004	DataSource [iBatis]	DB pool status info	Pool name: callrec	OK
2010	DataSource [iBatis]	Active connections	0	
2011	DataSource [iBatis]	Idle connections	1	
Calls				
1001010	Calls	Count of active calls	0	
Couples				

Figure 19: Call Recording – Example of a Status Report

## Reporting Tool

Genesys Call Recording contains a highly customizable tool for generating reports. Reports can provide information including:

- Statistics about recorded calls
- Synchronizations of calls between servers
- Potential problem analysis such as calls that have not been decoded or calls with no streams

The screenshot shows the 'Reporting Tool' interface with the following sections:

- Name of report:** A dropdown menu set to 'Report' and a text field for 'Short errors length(seconds):'.
- Report: Alltime** section with checkboxes for:
 

Total Calls	<input type="checkbox"/>	<input type="checkbox"/>
CRQ	<input type="checkbox"/>	<input type="checkbox"/>
Error Calls	<input type="checkbox"/>	<input type="checkbox"/>
Averages	<input type="checkbox"/>	<input type="checkbox"/>
Transfers In	<input type="checkbox"/>	<input type="checkbox"/>
Transfers Out	<input type="checkbox"/>	<input type="checkbox"/>
Files Summary	<input type="checkbox"/>	<input type="checkbox"/>
BHCR	<input type="checkbox"/>	<input type="checkbox"/>

 A 'Limit' text field is also present.
- Report:** Radio buttons for 'Show on HTML' (selected) and 'Send by e-mail'.
- Enter email address:** A text field with the instruction: 'You can add more addresses separated by a semicolon.'
- Quick filter option:** A dropdown menu set to 'no filter'.
- Calls FROM:** A calendar grid for March 2008 with the 31st highlighted.
- Calls TO:** A calendar grid for March 2008 with the 31st highlighted.
- Buttons:** 'Clear filters', 'Save filters', and 'Process'.

**Figure 20: Call Recording Reporting – Setting Parameters**

There is an option to select whether the report is to be generated on the screen or sent to a specified e-mail address. The following types of reports are available:

- **Report:** Total report
- **Bad calls:** Calls recorded incorrectly
- **Non-decoded calls:** Calls that have not yet been decoded (calls that are waiting to be decoded and saved)
- **Transfers:** Calls which were synchronized during selected periods (e.g. synchronization between the system core server and replay servers)

In all types of reports, it is possible to define many options and customize the final report for the best usability. There are options for selecting start/stop times and reporting dates; total calls, error calls, transfers, averages, the inclusion of attached data and much more.







Chapter

# 4

## Genesys Screen Capture – Agent Screen Capture

The information in this chapter is divided into the following topics:

- [Introduction](#)
- [Key Features](#)
- [Technical Specification](#)

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# Introduction

Genesys Screen Capture monitors and captures agent screens, providing a company with the means to evaluate the performance of individual contact center agents or groups throughout the organization. Screen Capture provides a full view of customer interactions when paired with Call Recording.

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## Key Features

- **Play back the synchronized call and screen to get a full view of the agent / customer interaction**  
A visual record of completed tasks performed on a computer screen is an important aid to measure and raise the quality of services provided by contact centers. Combined with call recording, a visually recorded computer screen serves as a basis for evaluating the knowledge, ability and professionalism of a contact center agent.
- **Full integration with Genesys Call Recording**  
Genesys Screen Capture is fully integrated with Genesys Call Recording. The same user interface can set the rules for call recording and which agent's screen is to be recorded. Seamless integration provides easy search and replay functionality.
- **Easy access to recorded screens and calls within the same user interface**  
The recorded calls with captured screens are marked with a small "film" icon. Clicking on the icon simultaneously plays the audio call and video screen recording. Exported recorded files can also be viewed and played in this way.
- **Lifecycle Management**  
The Lifecycle management of Genesys Screen Capture is separate from that for Genesys Call Recording, although managed by the same tools. The computer screens that are recorded by Genesys Screen Capture consume considerably more disk space, so the amount of disk space required can be reduced through configuration of the computer screen resolution setting, the quality of the recorded video, and the amount of time that the video data is to be stored.
- **Full integration with Genesys Quality Manager**  
Integrating Genesys Screen Capture with Genesys Quality Manager creates another source of information which can be used to evaluate call center agent performance. An agent's computer screen can be tracked, measuring their speed, orientation of applications and abilities in line with CRM procedures, enhancing overall business performance.
- **Pause and Resume support**  
To fully comply with PCI DSS, other payment cards and financial industry requirements Screen Capture allows 'pause' screen capture functionality at any time, so that no sensitive data appearing on the agent's screens are recorded and stored. The recording session can be resumed afterwards and recording continues normally. Please see Chapter 8 for more details about PCI DSS security.
- **Screen Capture clustering support**  
It is possible to have more Screen Capture servers and therefore associate recorded desktops to multiple servers. This represents scalability and support for multi-site clusters, where the PCs are recorded by the nearest Screen Capture server.

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# Technical Specification

- **Technology:** Genesys developed powerful and efficient Screen Capture client which takes care about capturing the PC desktops and transmitting the content to Screen Capture Server. Genesys screen capture technology transmits only picture changes, not the complete screenshots and therefore saves bandwidth. The transmission occurs as a regular http upload of an intermediate format, optionally secured by SSL protocol. The stored intermediate format is processed by Media Encoder, converted into regular MPEG 4 video and interleaved with an audio track to deliver the full experience of recorded calls and desktops. The encoding may happen either as a batch process for every recorded screen or on demand only if any user requires recording playback.
- **Call Recording integration:** Genesys Screen Capture is fully integrated with Call Recording and so Call Recording is still required to enable screen capture. Call Recording manages the signalization of calls and screens to be recorded, recording rules, user administration and archiving procedures.
- **Method of recording**
  - By call: entire call from acceptance until termination
  - Definable period: defined duration of the recording after the call ends; enables recording of agent wrapup operation
- **Desktop PC platform support:** Genesys Screen Capture supports Windows XP SP2/SP3, Windows Vista, and Windows 7 (x86/x64), P4 family processor is required.
- **Recording format:** Computer screen recordings are saved in an MPEG 4 format with H.264 or MPEG-4 Part 2 codec for video and MP3 codec for audio.
- **Quality:** The quality of video depends on the screen capture configuration of the Screen Capture Client and compression settings on the server side. The following parameters can be set in order to optimize video quality and required bandwidth for communication:
  - **Frames per second:** Frame rate for “scanning” the agent screens and detecting the changes.
  - **Maximum uploading bandwidth:** Maximum allowed bandwidth for uploading the intermediate format by Screen Capture Client. If the threshold is crossed, client automatically lowers the quality of the captured content to save bandwidth.
  - **Maximum recorded screens:** User can choose whether to record only the primary agent screen or all the screens available in case there are multiple monitors connected to an agent desktop PC.
  - **Maximum screen width and height:** Maximum allowed resolution; Screen Capture Client downscales if crossed.
  - **Scale factor:** The original image is downscaled by given ratio.
  - **Minimum tiles difference:** Minimum difference threshold between current sample and previous sample. The screen is divided into many small “tiles” and every tile is then processed.

- **Regions count/region size:** Size of the “tiles” or regions in which the screen is divided.
- **Captured screen quality:** Compression quality of every difference in region is to be transferred.
- **Encoding on demand:** All the captured content which is stored in an intermediate format can be processed either in batch mode or on demand – this means right at the moment when someone needs to replay such a recorded interaction. Screen Capture Media Encoder then processes recorded video and interleaves it with corresponding audio (recorded call) on request.
- **Required LAN bandwidth:** Screen Capture Client uses its own special protocol called BG300. This protocol is based on the principle of transferring only the changes, not the whole screens. The server sends small rectangles to the client of the user’s desktop view. After the original full screen has been transmitted, only rectangles that change are transferred. This encoding consumes very low bandwidth where a small portion of the screen changes from one frame to the next.

Minimum bandwidth is 128 kbps, although in most cases there is no higher bandwidth consumption than 512 kbps.

Screen Capture is intended to be deployed on a 100Mb/sec LAN or higher.



Chapter

# 5 Live Monitor

The information in this chapter is divided into the following topics:

- [Introduction](#)
- [Key Features](#)

## Introduction

Genesys Live Monitor provides supervisors with a real-time overview of all their agents' active calls.

Live Monitor allows supervisors or contact center managers to listen-in to live agent interactions and to add flags and scores for later review.

## Key Features

Live Monitor displays all the currently running calls, while applying restrictions set by user privileges. Recording of the active call is not necessary, since the ability to listen to a call isn't dependent on it being actively recorded by the system.

Supervisors can view call details, add predefined tags and store them as external data and listen to the call. A Supervisor can choose which call data will be visible in the list of calls, the same way as for the list of recorded calls in the Call Recording Web GUI. Calls appear as they start and disappear shortly after they have finished. The list of the calls may be sorted by any available property column.

Live monitoring allows you to tag the call, add comments using drop-down menus or text boxes while you are listening to the conversation. This user information can then be located and retrieved in the Advanced Search.

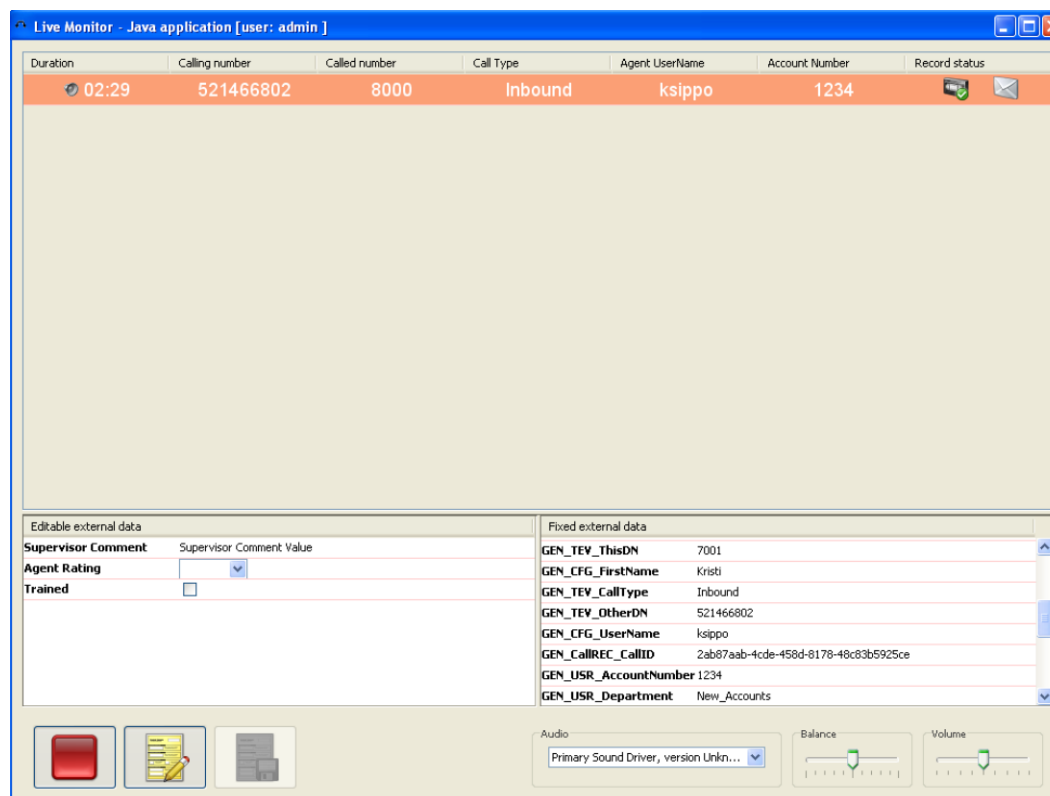


Figure 21: Live Monitor – User Interface

Live Monitor can display call status (call is being recorded, prerecorded, or call is not being recorded at all) and a supervisor can request the saving of a prerecorded call or request the sending of any recorded call by email. Call status can be hidden if Live Monitor is running on the Replay Server and the recording control is not available.

Live Monitor can traverse NAT and firewalls. A monitored PC must have one specific TCP port open and a small range of UDP ports available. This suits scenarios where the Call Recording server is hosted in a DMZ or secured area of the network and clients are limited to access only certain IP addresses and ports.







Chapter

# 6 Genesys Quality Manager

The information in this chapter is divided into the following topics:

- [Introduction](#)
- [Key Features](#)
- [Questionnaire Manager](#)
- [Evaluation Planner](#)
- [Agent Evaluation](#)
- [Quality Manager Graphs and Reports](#)
- [Localization](#)
- [Technical Specification](#)

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## Introduction

Quality Manager is a comprehensive web-based contact center quality management application for evaluating and improving agent performance. It supplies rich reporting features that identify agent strengths and weaknesses in customer service, interactions and communication skills.

- Provides the Questionnaire Manager for creating and managing questionnaires used in the evaluation process.
- Provides the Evaluation Planner for simple and powerful planning of evaluations for call center supervisors or team leaders.
- Provides Evaluation Forms for quick and easy evaluation scoring and collaboration with agents.
- Provides powerful reports and charts which can be used for performance and quality reporting and simple identification of skills which require focus on training the agents.
- Provides user management synchronization with leading call center platforms like Cisco UCC Enterprise or Genesys Customer Interaction Management Platform.

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## Key Features

The main functions of Quality Manager are as follows:

- **Questionnaire Manager:** allows the creation of numerous agent evaluation questionnaires which are completely customizable for any contact center. Each questionnaire can include individual access restrictions and interaction selection criteria. Questionnaire can use three different scoring systems (points, percents and grades) to address various needs for different customers. Frequently used questionnaires can be imported and exported for usability across large contact centers.
- **Evaluation Planner:** Quality Manager provides a tool for planning evaluations based on agent organization and offering in-depth criteria to specify random or specific interactions for evaluation.
- **Evaluation Process:** The quality manager, supervisors, and agents can easily perform evaluations according to plan using available audio, video, email or chat media. The system can also enforce participation of quality managers in the evaluation process.
- **Outputs:** Graphical reports empower you to find a weak point in the performance of a specific agent or the whole call center and offer an instant view of an agent's improvement across a range of different time increments. Reports can also provide comparisons between agents and agent groups for evaluating campaigns, trainings etc. Graphs can also be exported in MS Excel format enabling other business intelligence tools to be used to provide an expanded view of call center activities. Dashboards provide a clear visual communication on quality management activities.
- **Others:** Other features include flexible role-based user management (including synchronization and authentication with Cisco UCC Enterprise and Genesys Customer Interaction Management Platform), application-wide search, the use of external data in call criteria, evaluation history, audit logging, with full call center integration and more.

# Questionnaire Manager

The Questionnaire Manager interface enables an authorized user to quickly create quality management questionnaires. Every questionnaire can be customized to use an appropriate scoring system (points, percent or grades), with specific access permissions and interaction (e.g. audio call) selection criteria. These selection criteria include time-based, media length and external data parameters.

Questions are grouped together in the questionnaire according to relevancy and can be assigned weights at the question, answer and question group level. The overall score is influenced by the weightings assigned.

Individual answers can also be marked with a definitive 'success' or 'fail' indication for the related question group or entire questionnaire.

Once created, a questionnaire can be assigned to a particular evaluation.

Integral part of Questionnaire Manager is Export/Import functionality which allows the customer to obtain industry specific questionnaire samples, import them into Quality Manager and modify according customer specific needs. This feature is speeding up adoption process of the quality management tool.

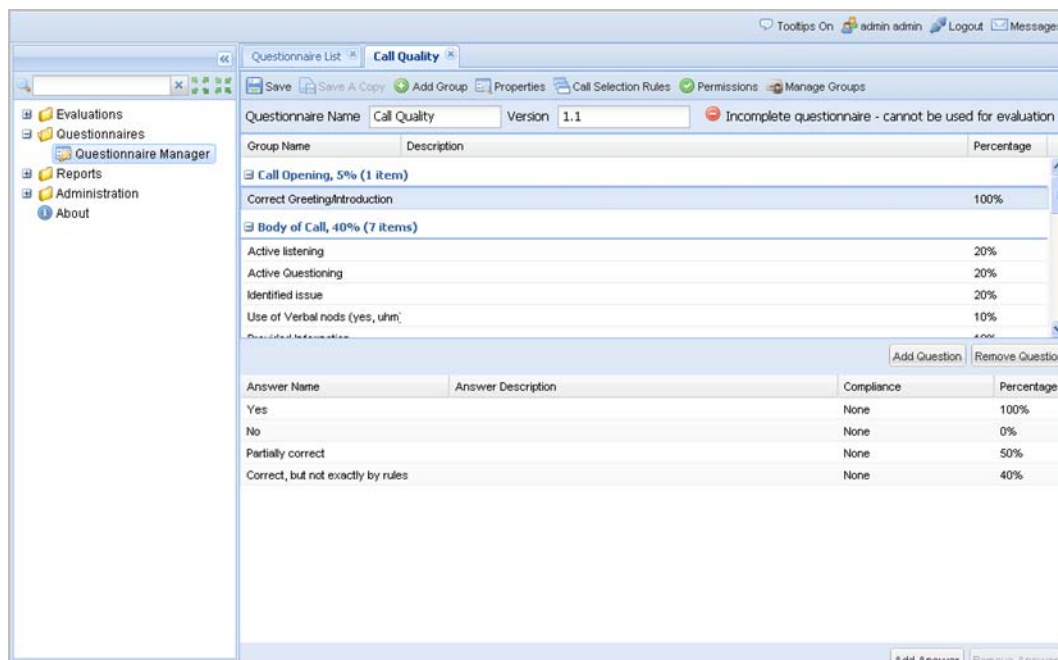


Figure 22: Quality Manager – Creating the Evaluation Questionnaire

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# Evaluation Planner

The Evaluation Planner is a tool with which contact center managers can plan and prepare interactions between agent supervisors and agents. Quality managers/supervisors can view the evaluation schedule at any time. The main features of the Planner are::

- **Uses the existing structure of agents/groups and supervisors.** The system automatically allocates interactions to an evaluation based on structure. Quality Manager can automatically use the structure from the contact center application.
- **Periodic evaluations can use more frequent agent interactions.** Evaluations that occur periodically (e.g. once per month) can be based on interactions sampled at more frequent intervals (e.g. weekly), resulting in more qualitative scoring.
- **Interaction selection parameters:** The following parameters are typically used in interaction selection:
  - Length of interaction
  - Time of day
  - Day of week
  - Any variable (external data) from the contact center application
  - Inbound / outbound / internal-only / all calls
- **Process planning:** Evaluation priority and reminders, set-up reminder for overdue interactions.
- **Read Only Access:** Users with assigned permissions will be capable of opening the non-editable grading form and listen and/or view interactions whilst reviewing how they were graded.
  - **Re-Opening of Finished Evaluations**
    - Allows users to return a finished evaluation back to an “in progress” state and modify the scoring as needed.
  - **Agent Self Evaluation:** All users assigned with this permission are able to plan and conduct self-evaluations, specifically with their own captured interactions.
    - Default permissions are assigned to roles and are manageable.
    - Further capability to toggle on or toggle off self-evaluations to apply to statistics ensuring all statistics are calculated by user choice.

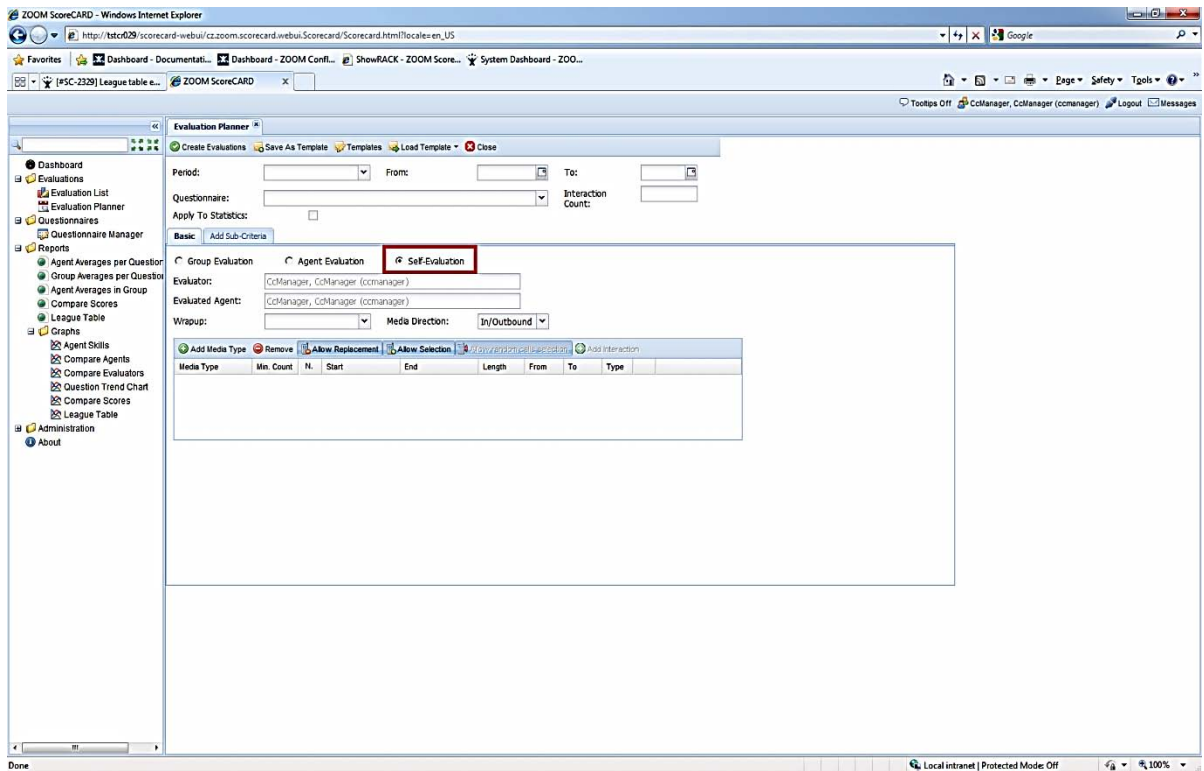


Figure 23: Quality Manager – Self-Evaluation Selection

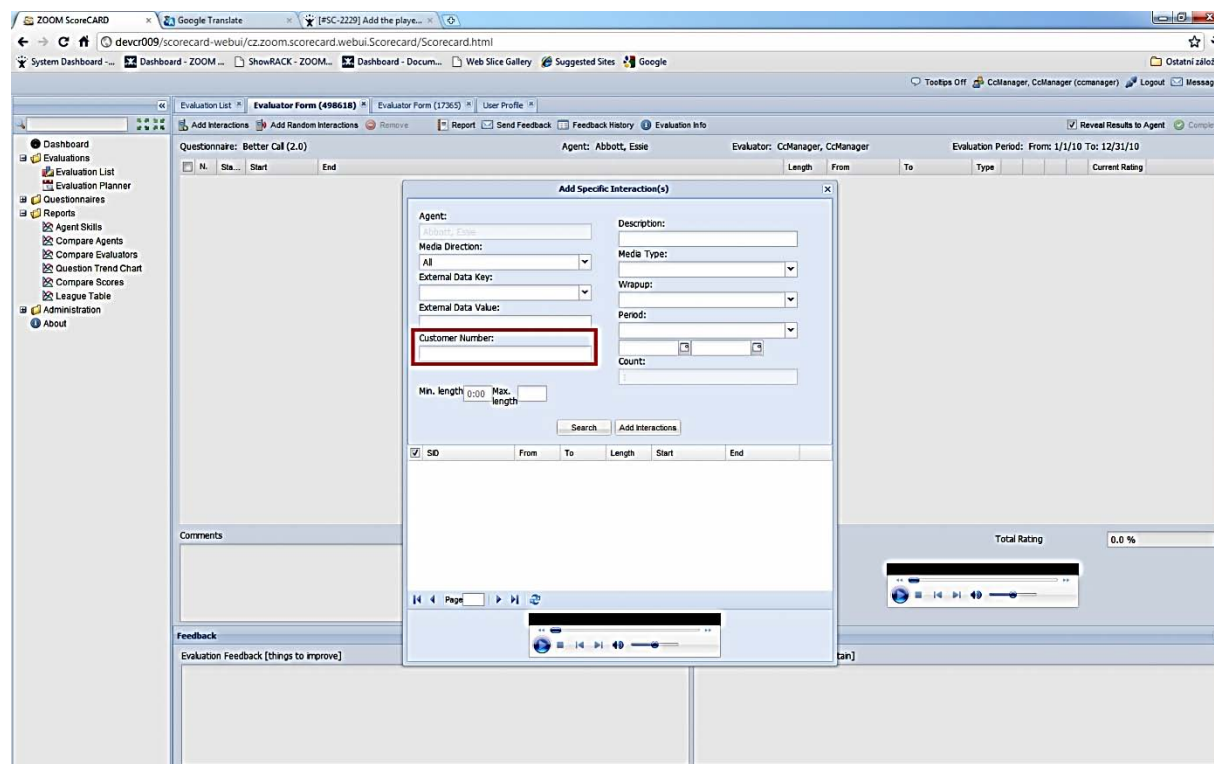


Figure 24: Quality Manager Specific interaction selection review

## Evaluation List

- The Evaluation List provides users with a holistic view of all planned evaluation and their status. By default all evaluations are arranged by most recently modified and can be filtered according to the column of specific interest. The Evaluation List is permission based allowing a complete overview of all evaluations and their states at the CC Manager level and narrowed down to an agent's own evaluation view. This provides discretion keeping agent results from peer view. View a single evaluation or several through selection and generation of the Evaluation Detail Report. The Evaluation Detail Report provides evaluation results at the granular level. Additionally, users are able to export all or specifically chosen evaluation results to MS Excel.
- Evaluation Detail Report: This is a complete evaluation report per agent. Each evaluation report is accessible from the Evaluation List and is a valuable tool for agent communication. Use this report for coaching and one to one meetings between supervisors and agents.
- Re-Evaluate: The re-evaluate option provides users the opportunity to send same evaluation criteria to other evaluators for evaluation. This can be used for evaluator calibration purposes and/or to request deeper analysis in targeted areas.
- Reveal Scores to agents: This option is located in the evaluation list and when checked all completed evaluation scores will be viewable by agents. In some cases supervisors and evaluators may want to discuss evaluation results with the agent before the agent has the opportunity to view the results.

N.	ID	Evaluator	Agent	Ques. Name	Period From	Period To	Score	Status	Reveal	Last Modified	Parent ID
1	499615	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:48:51 PM	
2	499610	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:45:47 PM	
3	499611	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:45:23 PM	
4	499614	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:30:10 PM	
5	499613	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:27:58 PM	
6	499612	CclManager, CclManager	Abbott, Essie	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 28, 2010 2:22:36 PM	
7	17360	CclManager, CclManager	Admin, Admin	Better Call (2.0)	Jan 1, 2010	Jan 31, 2010	100.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 22, 2010 2:38:00 PM	
8	17365	CclManager, CclManager	ipccimporferdaemon, ipccimporferdaen	Better Call (2.0)	Jan 1, 2010	Jan 31, 2010	34.0 %	In Progress	<input checked="" type="checkbox"/>	Dec 15, 2010 11:29:33 PM	
9	499609	CclManager, CclManager	Acosta, Janeil	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	0.0 %	Created	<input checked="" type="checkbox"/>	Dec 14, 2010 11:50:46 PM 499608	
10	499608	CclManager, CclManager	Acosta, Janeil	Better Call (2.0)	Jan 1, 2010	Dec 31, 2010	51.0 %	Finished	<input checked="" type="checkbox"/>	Dec 14, 2010 11:50:03 PM	
11	499607	Trevino, Humberto	Mendez, Lionel	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	74.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
12	499606	CclManager, CclManager	Mendez, Lionel	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	33.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
13	499605	Mendez, Lionel	Trevino, Humberto	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	54.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
14	499604	CclManager, CclManager	Trevino, Humberto	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	54.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
15	499603	Mendez, Lionel	Decker, Linda	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	30.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
16	499602	Trevino, Humberto	Decker, Linda	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	14.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
17	499601	CclManager, CclManager	Decker, Linda	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	72.0 %	Finished	<input type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
18	499600	Mendez, Lionel	Joseph, Angelica	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	79.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:50 AM	
19	499599	Trevino, Humberto	Joseph, Angelica	Better Call (2.0)	Jan 1, 2011	Jan 31, 2011	87.0 %	Finished	<input checked="" type="checkbox"/>	Dec 13, 2010 5:00:49 AM	

Figure 25: Quality Manager –Evaluation List

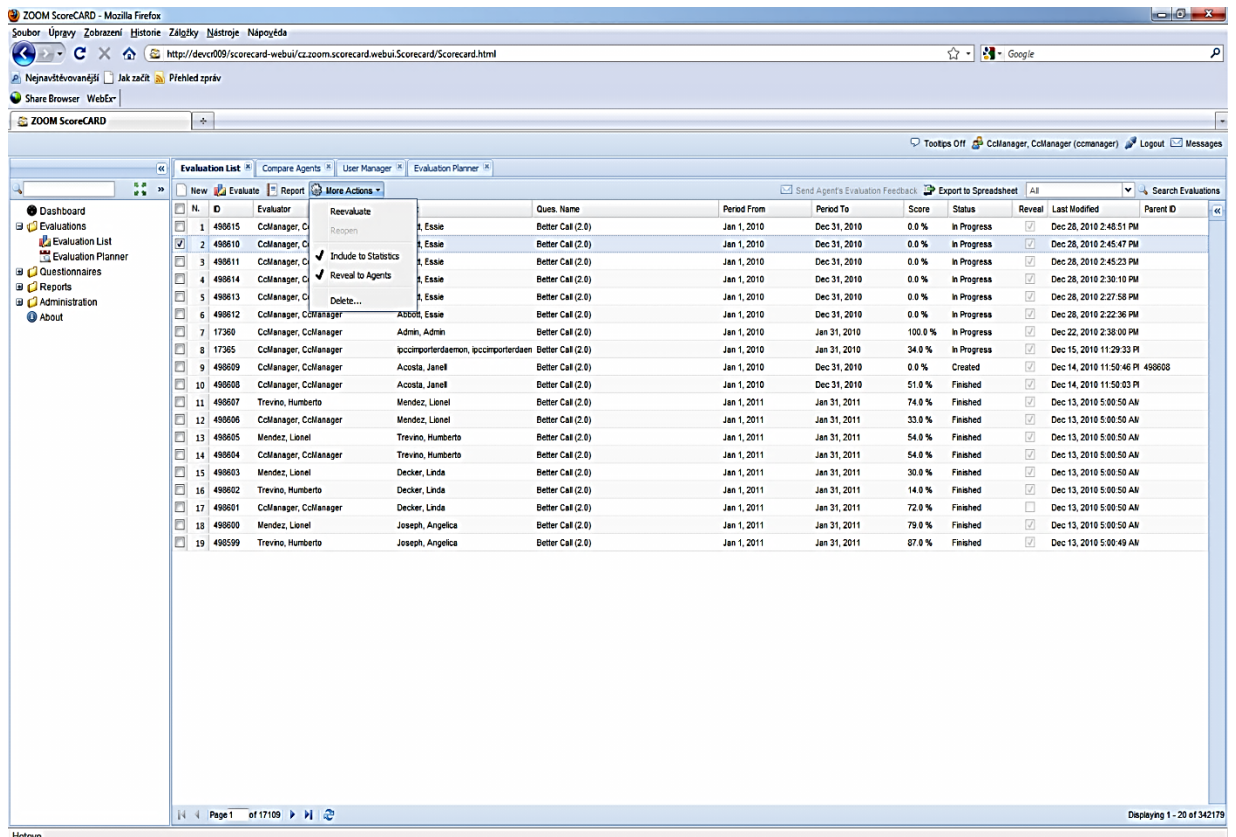


Figure 26: Quality Manager –Evaluation List



# Agent Evaluation

Genesys Quality Manager enables a reduction in the number of interactions needed for evaluations (and the number of dedicated evaluators). Interactions satisfying the evaluation selection parameters are retrieved randomly by the system, or an evaluator can search for particular interactions (e.g. calls) by specifying detailed criteria. Random selection ensures that evaluators are being presented with an accurate, fair representation of agent performance.

Evaluators review interaction media (using the web-based media player for audio and video interactions), and can simultaneously select appropriate answers to the questionnaire & add feedback notes. Existing customers confirm that the streamlined evaluation process has saved them a considerable amount of time.

Evaluations can also be sent to the agent for review and further assessment. This Provides transparent communication across the quality process.

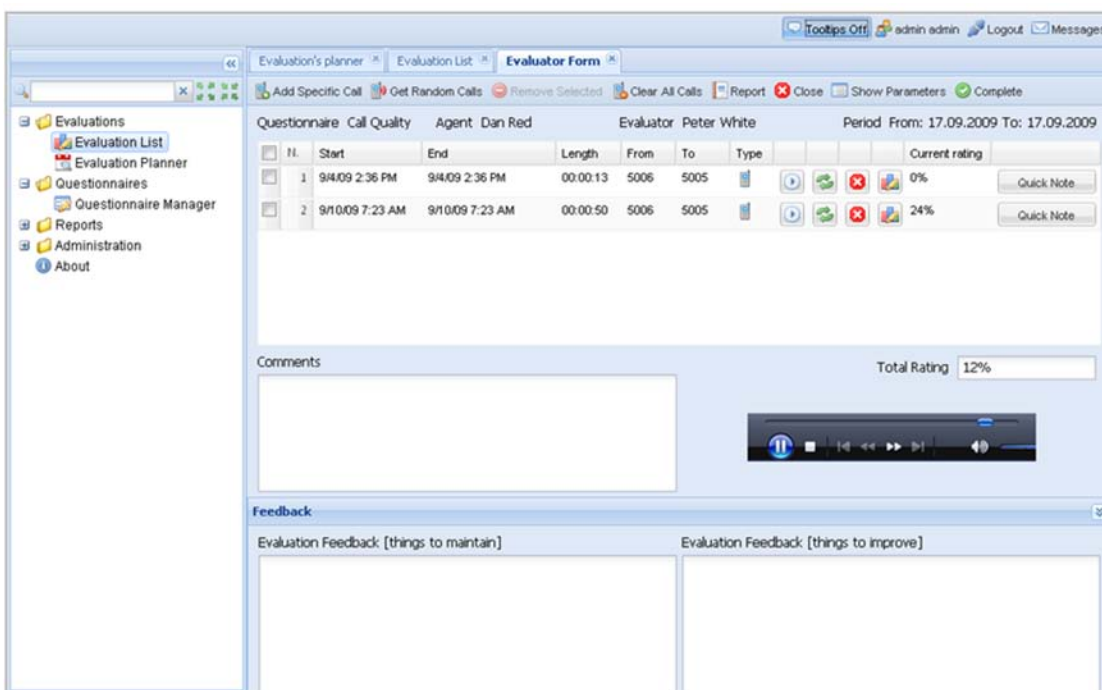


Figure 24: Quality Manager - Evaluation Media Selection

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# Quality Manager Graphs and Reports

Performance data from completed evaluations can be analyzed in several ways:

- **Graphs (skills of an agent):** These charts are used for the comparison of an agent's (or agent group's) skills over a period of time. "Skills" are groups of questions (for example Greeting, Gathering information, Closing the call, etc.) and the graph reveals tendencies in an agent's (or group's) skills profile (e.g. are there any improvements? Which skill needs to be improved?).
- **Graphs (skills of an agent):** These charts are used for the comparison of agent (or agent group) skills over a period of time. "Skills" are groups of questions – for example Greeting, Gathering information, Closing the call etc. – and the graph reveals tendencies in an agent's (or group's) skill profile (e.g. Is there an improvement? Which skill needs to be improved?, Where do we focus training?).
- **Graph (comparison of agent/group skills):** This chart compares overall or specific scores of selected agents and groups for a particular questionnaire, enabling a "top 5" type performance study to be obtained.
- **Graph (Compare Scores):** This chart compares scores from a base evaluation to all other chosen evaluations. Providing comparative views related to evaluations of either high, average, low quality scores.
- **Graph (League Table):** Delivers spreadsheet detailing performance of groups or agents by their average scores in a performance based table. A threshold is used to communicate agents above, on or below target metrics.
- **Graphs:** All displayed data in the graphs section is exportable to MS Excel. This provides additional capability in reporting and customizing data for overall business cases.
- **Reports:** The reporting feature of Genesys Quality Manager provides reports of average scores for all agents and groups, or average scores for agents in one specific group.
- **Dashboards:** Genesys Quality Manager currently provides six dashboard widgets delivering up to date data based on evaluation results. Widgets are based on groups, agents, and trends. Each of the widgets is configurable, providing specific detail the end user requires. The dashboard is customizable for each user.
- **Evaluation Detail Report:** This is a complete evaluation report per agent. Each evaluation report is accessible from the Evaluation List and is a valuable tool for agent communication. Use this report for coaching and one to one meetings between supervisors and agents.

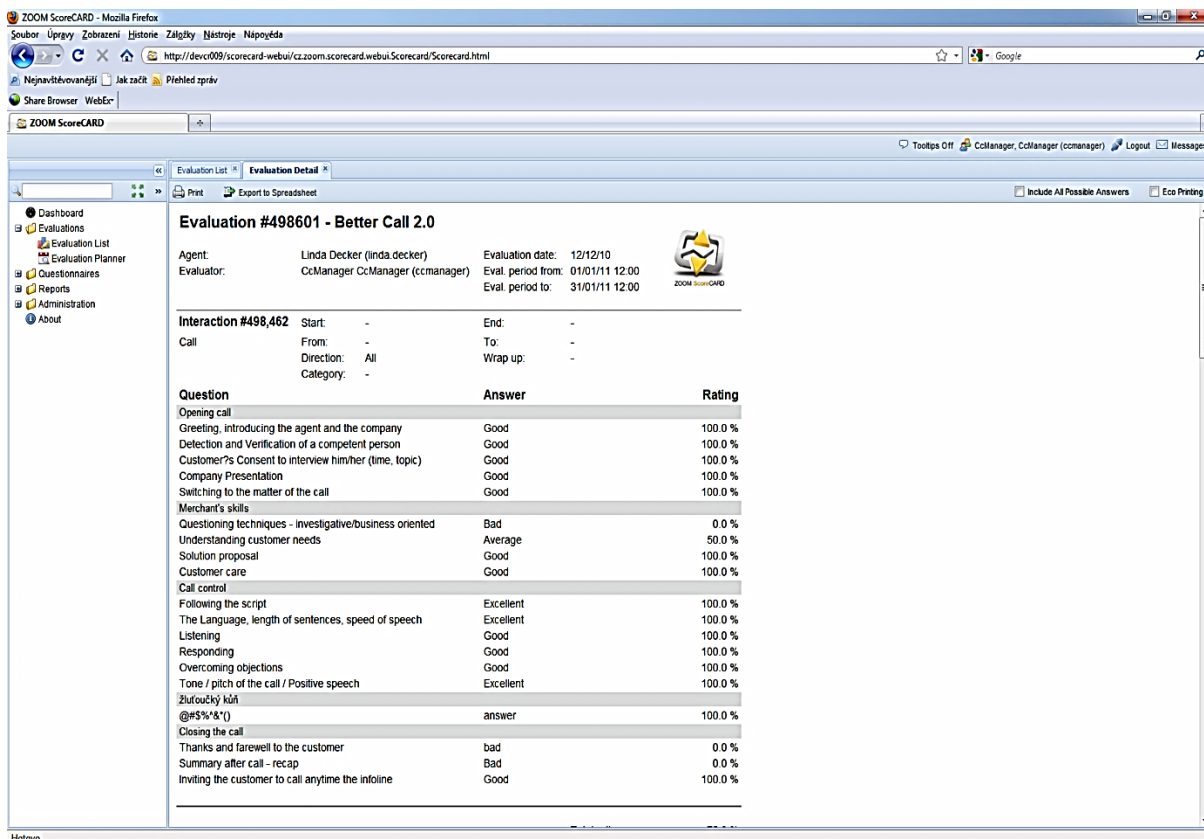


Figure 28: Quality Manager – Evaluation Media Selection

# Localization

Genesys Quality Manager is fully localized into the following languages:

- Arabic
- Bulgarian
- Czech
- English
- French
- Russian
- German
- Polish
- Romanian
- Russian
- Slovak
- Slovenian
- Spanish
- Turkish

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# Technical Specification

Basic technical information about the Quality Manager web-based application:

- Installed as an integral module of Call Recording; uses the Call Recording database for data storage. Both PostgreSQL and Oracle databases are supported (see chapter Database for details).
- Fully web-based, cross-browser solution. Supports:
  - Microsoft Internet Explorer 7+
  - Mozilla Firefox 1.5+
  - Apple Safari 3+
  - Google Chrome 4+
  - Opera 9+

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**Note:** Genesys Quality Management does not support the Microsoft Internet Explorer 6 browser. If other supported browsers are not available, the [Google Chrome Frame](#) plug-in may be a solution.

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- Web browser requires a media player plug-in (Windows Media Player 9+, QuickTime) for audio and video media review
- Web browser requires Adobe Flash Player plug-in for rendering Reports and Charts.



Chapter

# 7 PCI DSS Compliant Security

The information in this chapter is divided into the following topics:

- [Introduction](#)
- [Implementation](#)

# Introduction

PCI DSS stands for Payment Card Industry Data Security Standard, it's a set of requirements developed by PCI Security Standards Council, organization established by American Express, Discover Financial Services, JCB International, MasterCard Worldwide and Visa Inc. Inc. International. These requirements are mandatory for companies in credit card payment processing industry. The Genesys Quality Management PCI DSS Compliance Support is a set of enhancements which allows customers using Genesys Quality Management to meet PCI DSS requirements.

**ZOOM CallREC PCI Compliance Overall Status** ❌

<https://www.pcisecuritystandards.org/>

**Vendor-supplied default passwords are not used**

- Vendor-supplied default passwords must be changed immediately upon first login

**Pause/Resume functionality is enabled**

- It should be possible to pause and resume the recording to protect sensitive data from being recorded

**Key Manager is active and keys are valid for no longer than 12 months**

- Key Manager must be up and running and its keys are to be valid for no longer than 12 months

**Audio files are encrypted**

- Encryption for audio files must be enabled

**Video files are encrypted**

- Encryption for video files must be enabled

**Web access is encrypted**

- Only HTTPS access can be used

**Audit logs are collected**

- Audit logs must be collected

**Password management is enforced**

- The system must ensure the minimum password strength. Each password must be at least 8 characters long, contain numbers or symbols. Passwords must be valid for no longer than 90 days. The new password must not be equal to at least 4 recent passwords.

**Brute-force protection is enforced**

- The number of unsuccessful login attempts before the account is locked must be no more than 6. The lockout period must not be less than 30 minutes.

**Data retention policies are enforced**

- Archive and delete tools must be enabled and configured

Figure 25: PCI Compliance Status Page

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# Implementation

## Enhanced Password Management

All user accounts must be secured, which means that the passwords must be strong enough, users must change them regularly and system must be resistant to repeated attempts to log in with random passwords. This is ensured by following measures:

- Minimum required password complexity - minimum password length, possibility to require minimum number of upper/lower case characters, numbers, and non-alphanumeric characters in password.
- Password expiration - user must change password after specified number of days and new password should not be the same as several recent passwords.
- User access lockout - after predefined unsuccessful attempts to log in the account is locked for a specified number of minutes.

## Pause/Resume Support

System must not record and store cardholder data such as CVV code. This requires a possibility to pause and resume voice and screen recording when a customer is providing sensitive data.

The pause and resume feature has been implemented into both SPAN and SPANless recorders as well as into Screen Capture. To request pause and resume of the recording a third party application needs to connect to Call Recording API. The API provides a list of recorded calls and based on any unique identification (extension numbers or any external data) the connected application can request to pause and resume which automatically applies to all active voice and screen recorders.

## Call Encryption Support with Integrated Key Manager

Genesys Quality Management contains a full featured built-in key manager which supports:

- Several Public-Key Cryptography Standards for key store (PKCS12, JKS, JCEKS)
- Several industry standard encryption algorithms (AES, DES, Blowfish)
- Encryption of both calls and captured screens
- Support for more keys with random usage (If one of the keys becomes compromised, only the corresponding part of the recordings must be re-encrypted)
- Re-encryption process in case that any of the keys become compromised

Every database entry contains the UUID of the key that was used for encryption and the MD5 (or SHA-1) hash of the encrypted file so encrypted media can be easily verified or re-encrypted if any of the keys expire or become compromised.

## Enhanced Logging of User Related Actions in Audit Log

The audit log provides tracking of all the actions done by every user, including call replay, recording rules management or any other related actions. PCI DSS requires tracking of all the details about users attempting to log in. All successful and unsuccessful login attempts as well as expired sessions are logged together with IP address identification of user's workstation.

## PCI Compliance Status Page

To help users ensure that system is configured to fully comply with PCI DSS requirements Genesys Quality Management provides an informative page where they can see if all the required features have been enabled and all the required policies have been met. The information applies to Genesys Quality Management product itself only, so user must make sure that other system and process requirements are met as well.





Chapter

# 8 Technologies Used

The information in this chapter is divided into the following topics:

- [Genesys Call Recording](#)
- [Genesys Live Monitor](#)
- [Genesys Screen Capture](#)
- [Genesys Quality Manager](#)
- [Database](#)

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# Genesys Call Recording

## Supported Protocols

- SIP
- Cisco JTAPI Interface adapter
- Genesys EPR adapter

## Supported Audio Formats

- MP3 (adjustable bit rate)
- WAV

## Supported Video Formats

- MP4 (H.264 or MPEG-4 2 codec for video and MP3 for audio)

## Supported Codecs

- G.711 A-law /  $\mu$ -law
- G.729 (with Annexes A, B, AB)
- G.722 wideband codec

## Supported Conversation Types

- IP phone – IP phone, IP phone – Voice GW
- IP phone – CTI port, Voice GW – CTI port

## Local IPT Call Support

- Redirection, Conferences, Transfers
- Parked and picked-up calls, barged calls
- Shared lines, extension mobility
- Calls directed to CTI ports / applications (e.g. IVR)

## Integration Options

- Built-in support for attaching call related data from T-Server/Configuration Server
- Java and web-based API for 3rd party application integration

## Management and Monitoring

- Built-in media lifecycle management tools to record, archive, backup, restore and media erase (handle separately calls and video)
- Reporting and statistical tools
- Monitoring tools: full SNMP support

## Platforms and OS Support

- Red Hat Enterprise Linux 5.5
- User interface (Call Recording Web GUI) accessible by supported web browsers (see the [User Interface](#) section for details)
- User interface localization into many languages (see the [Localization](#) section)
- Windows Media Player or QuickTime Player for media playback

## Database Support

- PostgreSQL 8.4 (embedded)
- Oracle 11G

---

# Genesys Live Monitor

- Live Monitor runs as a part of the Call Recording user interface. It is a JAVA applet through which a supervisor can see all the active calls and listen to them in real time.
- Additional information can be added to the recorded calls; e.g. supervisor comments, rating, etc.

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# Genesys Screen Capture

- A recorded computer screens video quality can be adjusted by two separate parameters—the number of frames captured per second or by the selected video screen resolution.
- Supported video output is in an MPEG 4 format using H.264 or MPEG-4 2 codec for video and MP3 for audio.
- Captured content may be processed and interleaved with a recorded audio either in batch mode or on demand.

---

# Genesys Quality Manager

- Genesys Quality Manager is a web-based application tightly integrated with Genesys Call Recording. All questionnaires, evaluations, scores, user profiles and other settings are stored in the Call Recording database on the server.
- The user interface is built using the Google Web Toolkit (GWT), so all interface elements (other than the media player) require standard HTML and JavaScript support in the web browser.
- Quality Manager can be used simultaneously by many administrators, supervisors and agents.

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## Database

Genesys Quality Management provides two database options:

- Embedded PostgreSQL database
- Oracle database connectivity

PostgreSQL is an open source database which is provided free of charge and is shipped as a part of Genesys Quality Management. PostgreSQL is very powerful and is perfectly suited for small to mid-sized and even large deployments.

Oracle is a leading database engine designed for very large data centers. Genesys Quality Management provides a client connectivity option for an existing deployment of the Oracle 11G database engine. The database engine itself is not shipped with the Genesys Quality Management. Customers need to already have the existing database, while Genesys provides all the necessary pre-requisites such as a Genesys Quality Management database creation script and documentation of the important parameters.

Genesys Quality Management also supports the combination of both database engines. For example distributed recorders may run PostgreSQL while central recordings storage – Replay Server – runs on Oracle. This is a great opportunity to leverage the powerful Oracle database engine already in the data center, while saving costs on branch recorders where the free PostgreSQL database is perfectly suitable.



Chapter

# 9

## Requesting Technical Support

### Technical Support from VARs

If you have purchased support from a value-added reseller (VAR), contact the VAR for technical support.

### Technical Support from Genesys

If you have purchased support directly from Genesys, contact Genesys Technical Support at the following regional numbers:

Region	Telephone	E-Mail
North America and Latin America	+888-369-5555 (toll-free) +506-674-6767	<a href="mailto:support@genesyslab.com">support@genesyslab.com</a>
Europe, Middle East, and Africa	+44-(0)-1276-45-7002	<a href="mailto:support@genesyslab.co.uk">support@genesyslab.co.uk</a>
Asia Pacific	+61-7-3368-6868	<a href="mailto:support@genesyslab.com.au">support@genesyslab.com.au</a>
Malaysia	1-800-814-472 (toll-free) +61-7-3368-6868	<a href="mailto:support@genesyslab.com.au">support@genesyslab.com.au</a>
India	000-800-100-7136 (toll-free) +91-(022)-3918-0537	<a href="mailto:support@genesyslab.com.au">support@genesyslab.com.au</a>
Japan	+81-3-6361-8950	<a href="mailto:support@genesyslab.co.jp">support@genesyslab.co.jp</a>

**Before contacting Genesys technical support, refer to the *Genesys Technical Support Guide* for complete contact information and procedures.**