

# **Genesys Meeting Center**

## **Architecture Whitepaper**

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# Genesys Meeting Center 2.0

## Overview

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Audio conferencing, Web conferencing and virtual collaboration have emerged as indispensable tools for organizations as they realize the benefits of conducting communication in real time over the Web. The exponential growth of Web conferencing can clearly be attributed to its ease of use, accessibility, and cost savings. It has dramatically changed the way organizations are conducting meetings and training.

As organizations adopt virtual collaboration into their business practices, it is imperative that they not only consider the integrity, scalability and security of this new method of business communication, but also, how they can integrate virtual group conferencing into their existing infrastructures - at many levels.

Genesys Meeting Center 2.0 integrates comprehensive audio meeting management with a complete set of Web conferencing features. Through one user interface, this audio, Web and video conferencing tool is used for conducting live interactive meetings, delivering high-impact presentations, demonstrations and training over the Web.

## White Paper Goals

Genesys Meeting Center 2.0 is designed to be a highly scalable, reliable and secure virtual collaboration solution for today's businesses.

This white paper examines how Genesys Meeting Center allows fast and flexible Web meeting access with integrated audio and video in a seamless environment.

## Functional Overview

The Genesys Meeting Center is a best-of-breed virtual collaboration platform that provides a global audio, web and video conferencing environment where users can conveniently and securely interact with each other. Incorporating innovative technologies such as high-speed networking and compression and by distributing the load over multiple servers, the Genesys Meeting Center enables users to conduct live interactive meetings, deliver high-impact presentations, demonstrations and training via the Web to large audiences.

To ensure scalability, performance and reliability, Genesys Meeting Center is based on a distributed architecture that involves multiple sub-systems for synchronous (live) or asynchronous (archive) presentations. These sub-systems consist of numerous modules that can be geographically dispersed.

A typical session uses 8 servers and any given client connects concurrently with up to 4 separate servers. This distribution allows for maximum performance through concurrency and parallel processing. Also, the load is partitioned to prevent different activities from having an impact on the others. For example, Application Sharing sessions do not have an impact on Slideshows or Chat.



### Genesys Meeting Center Integrated Audio, Web and Video Conferencing

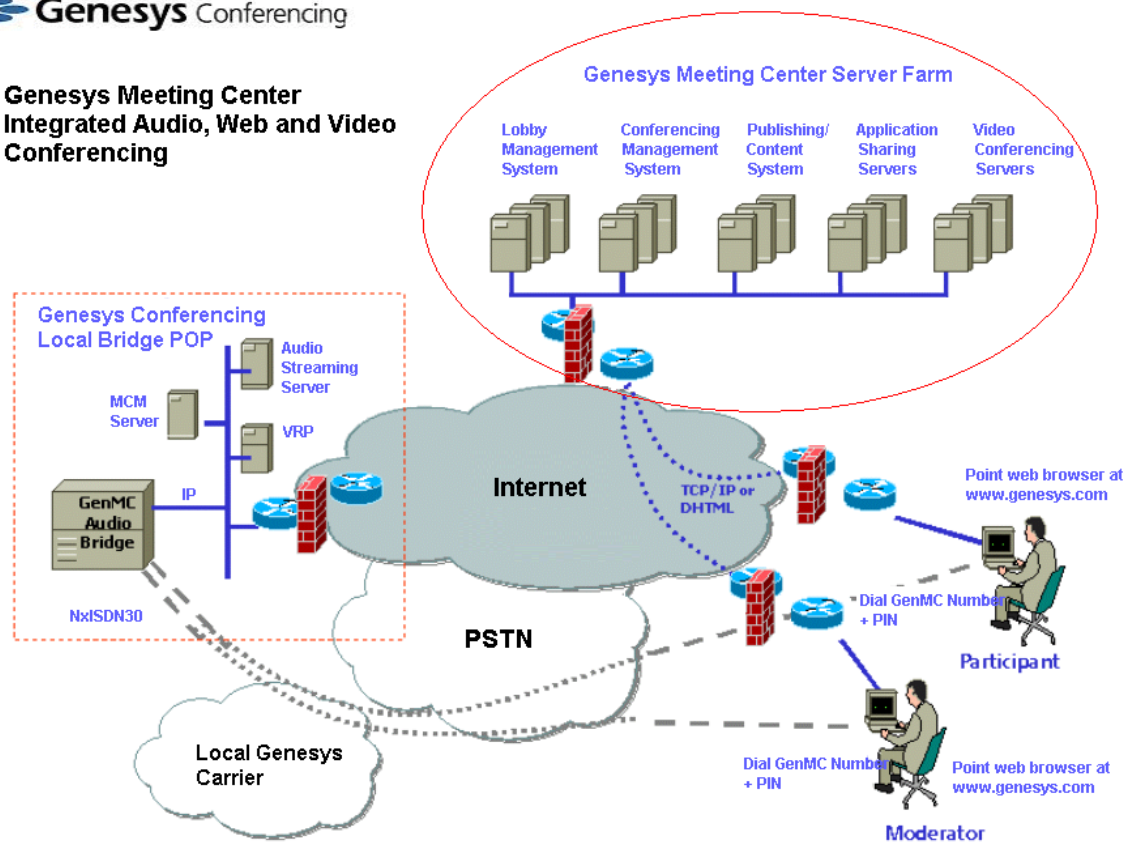


Figure 1: Genesys Meeting Center is based on a distributed architecture where servers are dedicated to specific tasks and several are leveraged during a meeting. For example, separate servers are used for scheduling meetings, publishing and serving content, application sharing and managing the audio component of a meeting. This enables Genesys Meeting Center to scale beyond single server systems.

# Main Sub-systems

Genesys Meeting Center consists of 6 key sub-systems:

## Lobby Management System

The Lobby Management System is used for setting up a meeting and for post-meeting tasks.

When moderators are ready to begin conferencing, they go to [www.genesys.com](http://www.genesys.com) and enter their meeting numbers and PINs. The Lobby Management System verifies their login and PIN and takes them to the Main Menu where they can see their existing schedule, schedule new meetings, manage their conferencing resources and preferences, and ask for assistance.

From this menu, moderators may also start a "Quick Meeting", a spontaneous meeting with all the audio and Web conferencing tools at their fingertips.

Scheduling is a step-by-step process managed by the Lobby Management System. Using a Scheduling Wizard, a moderator simply specifies:

- When the presentation will take place (date and time),
- Which presentation and/or surveys will be used,
- For security purposes, what password will be used by participants,
- Who should be invited (including integration into their Outlook Address books), and
- Craft a personalized Email invitation (or use the default message highlighting when the meeting is scheduled for and how to join), decide whether to send reminders and to request an RSVP.

Meeting Resources and Preferences are also managed by the Lobby Management System. Meeting Resources include your presentations, surveys, polls and guided web tours, registration and Email notification, and all elements of reporting.

Preference Setup includes specifying your details for Email Invitations (your Email, name, audio meeting access number) and preferences in the meeting itself (offering a waiting room for participants, choosing a name to be used in the Web meeting).

Finally, the Lobby Management System is accountable for your access to assistance; either access to technical support or online help.

## Meeting Management System

To join the Web portion of the meeting, participants click on the URL they received in their Email invitations and enter their names. On entering the meeting, they are asked to enter their Participant ID on their telephone keypads in order to synchronize their Web and audio status. Alternatively, they can go to [www.genesys.com](http://www.genesys.com) and click on "Join a Meeting". They are then asked to enter their meeting numbers and their names.

The Meeting Management System then takes over, managing and validating participant logins, monitoring and reporting their Internet status (are they ready, behind or are they having issues with their Internet connection), locking the room after all the invited participants arrive and dismissing participants (if required).

During the meeting, this pool of servers is responsible for conducting whiteboard sessions, file transfers, conducting Web tours, managing voting sessions (presenting, compiling and publishing results), and recording the Chat/Minutes/Action Items associated with the meeting.

## Publishing/Content System

The Publishing/Content Servers are responsible for content management.

They are used for uploading presentations (either Microsoft PowerPoint® or Astound™ presentations) and converting these presentations to DHTML. This sub-system is also accountable for storing and delivering presentations to participants as required during the meeting.

## Application Sharing System

The Genesys Meeting Center enables you to share any Windows-based application running on your desktop with all your meeting participants. The application being shared does not even need to be installed on participants' desktops.

Since Genesys Conferencing understands that the key to successful collaboration is reliable performance, the Application Sharing Sub-system includes a pool of high performance servers dedicated solely to providing collaboration. Their only task is the broadcasting and distributing of application content to the desktop of participants.

As a result, participants cannot only see what is taking place on the presenter's desktop, but if granted permission, they can access and make changes to the document or application being shared.

The Genesys Meeting Center Application Sharing Engine has been designed and written - - from the ground up - specifically for high-performance sharing of applications.

Genesys Conferencing designed the application sharing engine to:

- Handle large numbers of parties,
- Minimize bandwidth,
- Help prevent participants from falling behind, in case of an interrupted connection,
- Use native HTTP for greater efficiency and ability to work with a greater number of firewall/proxy server configurations, and
- Provide high-quality full-color rendering of the applications.

The application sharing engine natively communicates through Port 80 using the HTTP protocol, alleviating any security concerns about opening another port in the firewall. This results in an ability to work with a greater number of firewall/proxy server configurations.

For more information, please refer to the *Genesys Meeting Center Application Sharing information paper*.

## Audio Meeting Management System

To join the audio portion of a meeting, participants only need to dial the phone number included in the email invitation to the meeting. On the Web, they will then be prompted to enter their Participant ID to synchronize the Web and audio components of the meeting.

The Audio Meeting Management System manages the audio portion of the meeting. It executes both DTMF commands from the telephone (moderator and participants) and commands accessible via the moderator's user interface. These commands include mute/unmute (any or all participants), dial-out (either "blast dial-out to all participants or to individuals, setting up and managing sub-meeting rooms, and dismissing participants from the audio meeting.

This subsystem also includes the Voice Recording Platform (VRP) which is the basis of both audio-only playback of meetings and the archive capabilities of recording an entire meeting including the presentation, all public chat, guided web tours, whiteboarding sessions as well as any application sharing that takes place during the meeting, completely synchronized with the audio portion of the meeting.

## Video Meeting System

The Genesys Meeting Center Video Meeting System provides an integrated video conferencing environment where users can communicate with others who use Microsoft Windows-compatible cameras, including 'web cams'. The Genesys Meeting Center's video feature is Java-based, completely firewall-transparent and works in any environment supporting an Internet Explorer 5.0+ browser with Java and Javascript support enabled.

Genesys Conferencing designed the Video Meeting System to:

- Broadcast video from multiple sources,
- Require installing plugins for broadcasting, but not requiring them for viewing,
- Enable participants without video cameras to view video without broadcasting it, and
- Use native HTTP for greater efficiency and ability to work with a greater number of firewall/proxy server configurations.

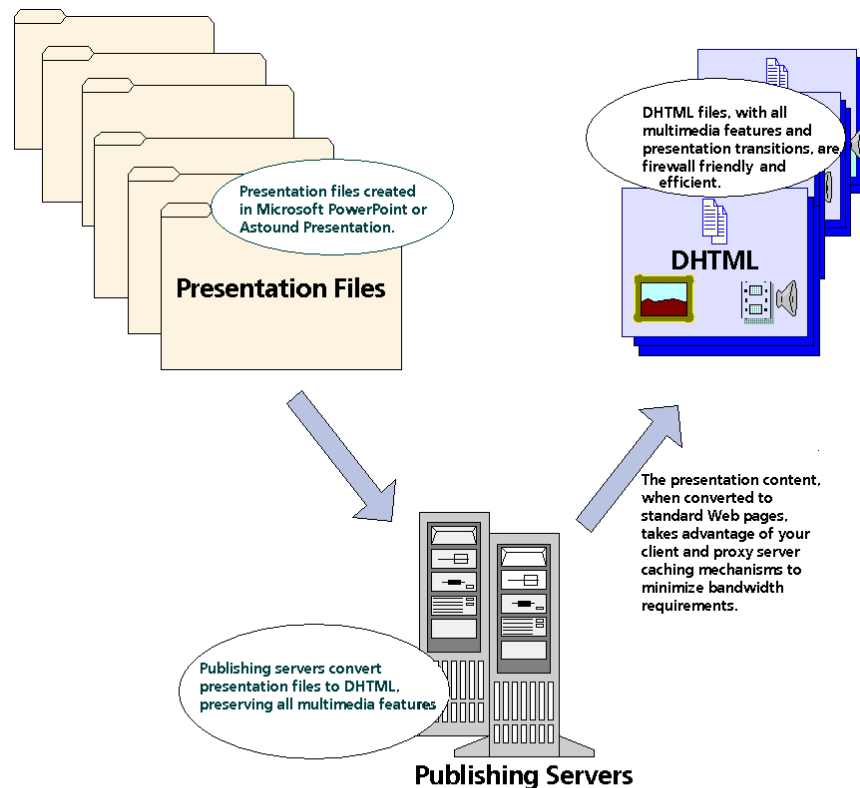
# Features and Benefits

## Optimized Performance

Genesys Meeting Center performs several optimizations to ensure that it minimizes the amount of data transmitted over the network. This reduces network congestion, maximizes performance and improves the user's experience. Some of the most significant optimizations include the following:

### DHTML Content

Genesys Meeting Center converts presentations to standard, browser-conforming, Dynamic HTML (DHTML) web pages, resulting in compact firewall friendly content.



## Converting presentation files to DHTML

The conversion to DHTML enables Genesys Meeting Center to efficiently deliver the multimedia effects, slide builds and transitions of your original Microsoft PowerPoint® presentation, unlike the static images of other vendors.

This conversion to Web pages is also more efficient, in terms of space, than converting them to large GIF images.

### Caching Server

The presentation content, when converted to standard Web pages, takes advantage of your client and proxy server caching mechanisms to minimize bandwidth requirements. For example, if multiple people from the same location attend a meeting via a proxy server, only one copy of the presentation is actually downloaded.

## Client-Server Model

Genesys Meeting Center uses a client/server model so that participants' computers do not need to communicate directly with each other. This, along with the multi-server, distributed nature of Genesys Meeting Center, enables presenters to reach many participants using little bandwidth.

## Server Pooling

Genesys Meeting Center uses load balancing and point-of-presence caching to improve performance. Participants do not need to access the same server for presentation content, and they have the option to choose the server closest to them.

## World-Class Infrastructure

Genesys Conferencing is located in 18 countries throughout the world and has invested heavily in a globally distributed, redundant, high-capacity infrastructure that ensures scalability and world class quality of service.



Genesys Conferencing's commitment to reliability and quality of service practices are further enhanced by its use of World-class Data Center service providers. Genesys has co-location agreements throughout the world with data center partners operating state of the art facilities offering:

- 24/7 top-security-controlled access (guards, cameras, motion sensors, etc.)
- 24/7 monitoring
- Raised floors

- HVAC temperature-control systems with separate cooling zones
- Seismically braced racks
- Redundant subsystems (fiber cables, power supply)
- State-of-the-art smoke detection and fire suppression systems

## Security

Genesys Conferencing developed Genesys Meeting Center to be secure by design, providing users with high-level security throughout all phases of conferencing, presentation storage, delivery and collaboration.

Genesys applies security to Genesys Meeting Center in three ways, through:

- Access security,
- Network security
- Content security.

### Main Benefits

- Participants are not required to install anything on their desktops to access Genesys Meeting Center. This is key to ensuring there is no security risk for an organization given the recent rash of virus attacks.
- All Genesys Meeting Center features are firewall transparent. This means that it adapts to the security of any firewall for which regular Web browsing is enabled.
- The application sharing feature works with the firewall without requiring any changes to the firewall security settings.

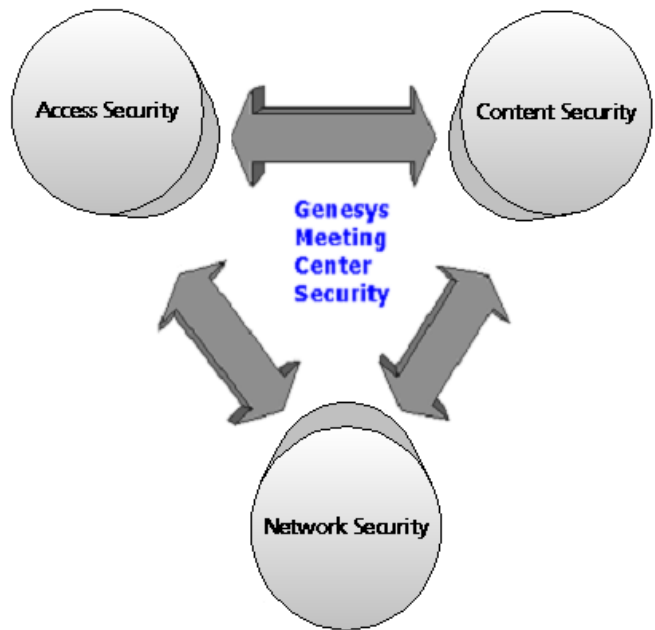


Figure 1 Genesys Meeting Center Security overview

## Standards Compliancy

Genesys Conferencing takes the adherence to standards seriously. By adhering to industry standards we maximize the accessibility of the Genesys Meeting Center to the widest range of user agents, and therefore, users. Genesys adheres to the following standards:

- HTTP,
- ODBC,
- XML,
- D/HTML, and
- Java.

## Summary

Genesys Meeting Center is designed to fulfill Web conferencing needs while ensuring a dynamic user experience with rich media types. Highly scalable and accessed entirely through a browser, Genesys Meeting Center is a best-of-breed Web conferencing tool for conducting live interactive meetings, delivering high-impact presentations, demonstrations, training and project management over the Web.

## Contact Us

Thank you for your interest in Genesys Meeting Center. We'd like to hear from you. And we're here to help.

## Genesys Worldwide

Genesys Conferencing is the world's largest organization dedicated to virtual group communications. Established in 18 countries throughout North America, Europe and Asia Pacific, Genesys Conferencing offers a one-stop conferencing shop to over 17,000 customers across the globe.

For sales and technical support information, please go to the Genesys Conferencing website at: <http://www.genesys.com/>.