Main page: Cisco Unified MeetingPlace, Release 7.0

Up one level: Planning Your Deployment

Load balancing in Cisco Unified MeetingPlace Web Conferencing makes use of a cluster of Web Servers to spread the active meeting load, allowing you to scale the number and size of meetings that your deployment can support. It also provides failover capabilities for meetings-if one Cisco Unified MeetingPlace Web Server is unavailable or unreachable, meeting participants reconnect to another Web Server, even if they are currently connected to a meeting that is in progress when the connection is interrupted.

You can view the amount of web-conferencing load per Web Server from the Web Server administrative page. This information is displayed only on internal Web Servers.

We recommend that you load balance the Web Conferencing portion of your Cisco Unified MeetingPlace system by using clusters. In a Cisco Unified MeetingPlace load-balancing Web Server cluster, all users must enter the Cisco Unified MeetingPlace system through a designated Cisco Unified MeetingPlace Web Server. In load-balancing Web Server cluster deployments, only the designated Cisco Unified MeetingPlace Web Server needs to be configured for the chosen authentication method. All other Web Servers in the cluster use the default authentication method-MeetingPlace Web Form Authentication. If, however, you want to configure other Web Servers in the cluster to use the same authentication method as a failover strategy, you can. Depending on the type of authentication method used though, this configuration can result in undesirable SSO behaviors.

For example, if you configure HTTP Basic Authentication or Windows Integrated Authentication, Cisco Unified MeetingPlace will prompt users for login credentials each time there is a Web Server redirect. This is because you are altering the hostname in the authentication configuration each time you redirect traffic to an active Web Server through a DNS change. If you configure LDAP or MeetingPlace authentication, users will not be prompted again for login credentials during a web conferencing redirect.

Use the information in this section to determine the load balancing configuration you want for the Web Conferencing portion of your Cisco Unified MeetingPlace system.

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Understanding How the Cisco Unified MeetingPlace Application Servers and Web Servers Communicate

The Cisco Unified MeetingPlace Replication Service automatically synchronizes the local Web Server database with that of the Cisco Unified MeetingPlace Application Server to update meetings, user profiles, and user group information. The following occurs by default:

- Synchronization occurs every 60 seconds.
- The User Profile Update Interval updates every 20 days.
- The Group Update Interval updates every 20 days.
- Meeting information updates every 60 seconds.

The Replication Service copies attachments and recordings from the Cisco Unified MeetingPlace Application Server and stores the replicated files on the Cisco Unified MeetingPlace Web Server. Pointers to these files are then created in the database. The Replication Service downloads voice files in their native Cisco Unified MeetingPlace voice (.mp4) format. After voice files are downloaded, the Replication Service queues jobs for conversion by the Audio Service.

The Replication Service also replicates video terminal user profile information from the Application Server. By default, this replication occurs every 7 days.

In the event of a system failure, you can manually invoke the Replication Service update and purge operations. Allow up to 20 minutes for any changes made to the Replication Service to take effect. For information on how to invoke the Replication Service, see How to Update Meetings and User Profiles.

Web Conferencing Clusters

Restriction: When your system is configured for load-balancing, ensure that all web servers in the load-balanced system have the same permissions.

With Cisco Unified MeetingPlace, you can configure to have an internal and an external Web Server cluster simultaneously. The cluster can have up to three (3) Web Servers. We recommend deploying "remote" SQL 2000 or 2005 customer provided systems. Each web cluster must use its own remote SQL, the SQL cannot be shared.

Internal cluster-Places all Web Servers behind the firewall inside the private corporate network. Typically, all Web Servers in an internal cluster display the full-access Cisco Unified MeetingPlace interface.

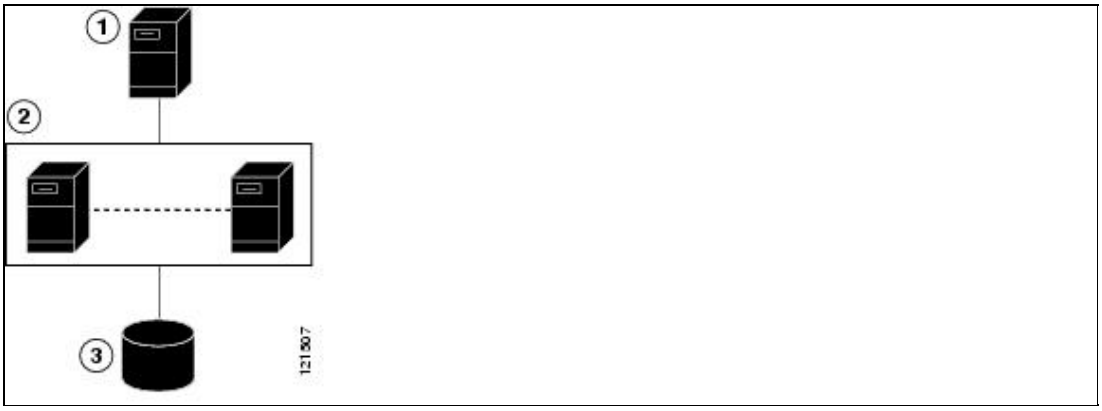
External cluster-Places all Web Servers between the private corporate network and the Internet, such as in a DMZ. For increased security, all Web Servers in an external cluster typically display the attend-only Cisco Unified MeetingPlace interface.

Cisco Unified MeetingPlace Web Servers use a SQL database to store profile and meeting information. When deploying Cisco Unified MeetingPlace Web Server clusters, the internal and external clusters must use separate SQL databases; however, the two databases must have identical Globally Unique Identifiers (GUIDS). It is recommended for high availability, the SQL database instance for a cluster is installed and configured on a separate server. For more information about configuring Cisco Unified MeetingPlace Web Servers for failover, see Application Server Failover.

Load balancing does not affect shared storage locations. All servers in a cluster use the same shared storage location.

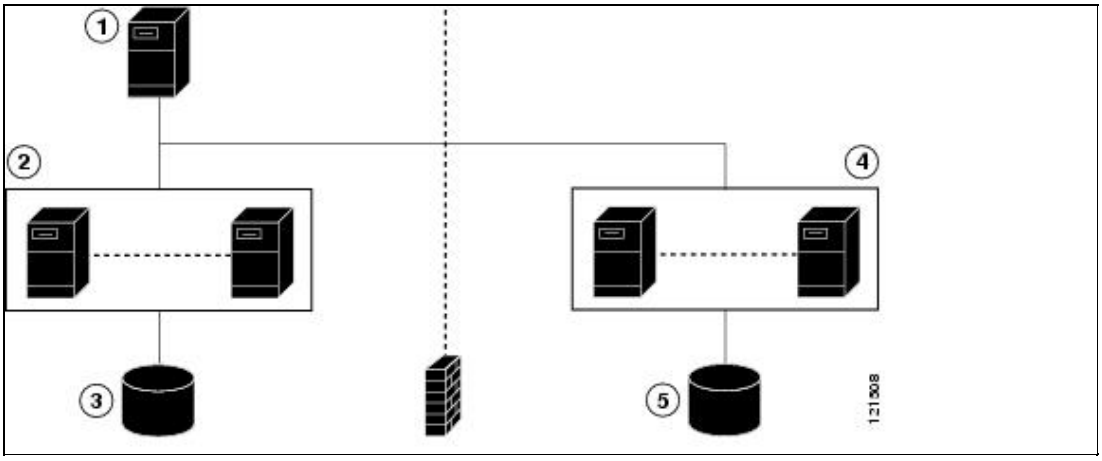
Web conferencing supports three potential load balancing configurations, as shown in Figure: One Cluster Configuration, Figure: Mixed Configuration: Internal and External Clusters of Web Servers, and Figure: Mixed Configuration: One Web Server and a Cluster of Web Servers.

Figure: One Cluster Configuration



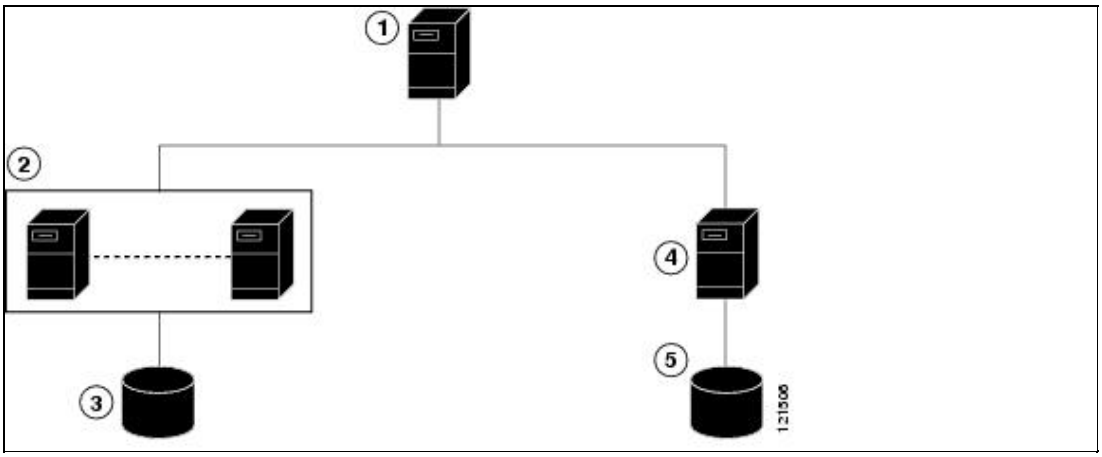
1	Cisco Unified MeetingPlace system.	2	Cisco Unified MeetingPlace Web Server cluster-This can be an internal cluster or external cluster.
3	SQL Server-All web servers in a cluster must connect to the same SQL Server.		-

Figure: Mixed Configuration: Internal and External Clusters of Web Servers



1	Cisco Unified MeetingPlace system.	2	Internal cluster of Web Servers.
3	SQL Server-All Web Servers in the internal cluster must connect to the same SQL Server.	4	External cluster of Web Servers.
5	SQL Server-All Web Servers in the external cluster must connect to the same SQL Server.		-

Figure: Mixed Configuration: One Web Server and a Cluster of Web Servers



1	Cisco Unified MeetingPlace system.	2	Cluster of Web Servers-This can be an internal cluster or an external cluster.
3	SQL Server-All Web Servers in a cluster must connect to the same SQL Server.	4	Single Web Server-This can be an internal or external web server.
5	SQL Server-The single Web Server must connect to a separate SQL Server.		-

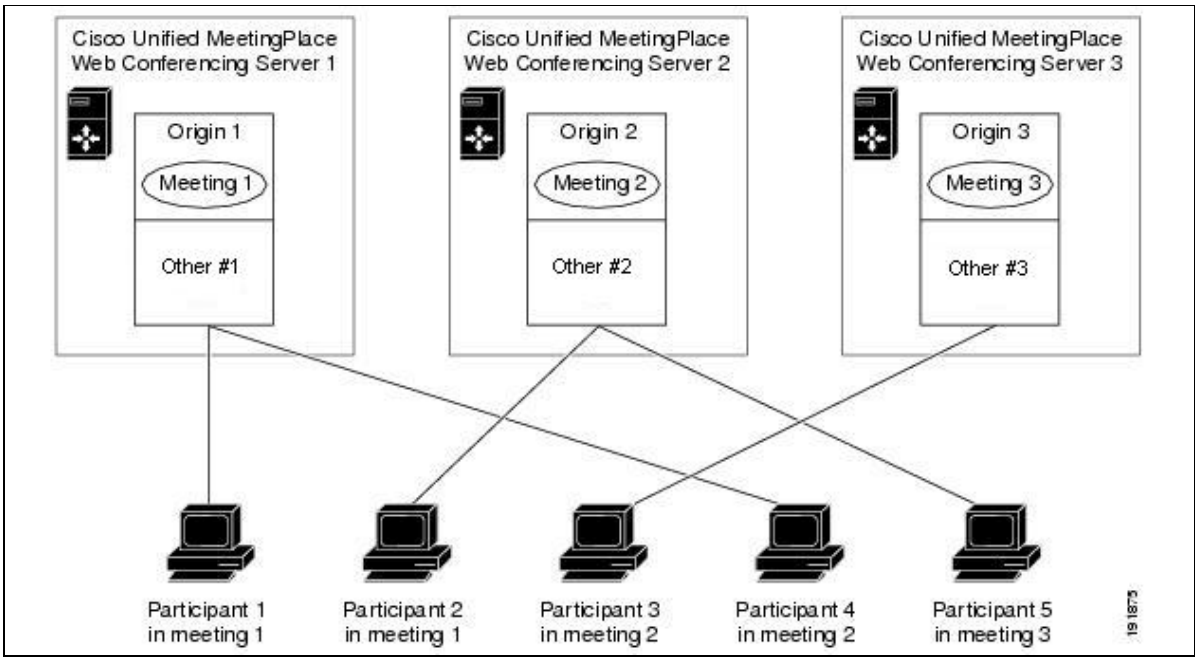
Web Conferencing Load Balancing and Failover Capability

Each Web Server comprises two separate load balancing components: the original server and the second server. Meetings are hosted on the original server. Participants connect to the second server when joining a meeting. These components interact to provide load balancing and failover capability as follows:

- When a meeting starts, the designated Web Server (the Web Server that is listed in the meeting notification) assigns a primary and backup original server to the meeting room based on the current active meeting load.
- As participants join the meeting, they are load balanced across the second servers in the cluster based on the number of participants currently connected to each second server at that time. The second server internally makes a connection to the original server that is hosting the meeting.
- Each client is given the primary and backup original server information by the server when the meeting room is launched. No configuration is needed on the clients.

Figure: Web Conferencing Load Balancing for Meetings and Participants shows an example load balancing topology with a cluster of Web Servers. Meetings are spread across the three original servers in the cluster based on the meeting load on each. Participants are spread across the three second servers based on the participant load on each. Note that participants are not necessarily connected to the second server that corresponds to the original Web Server hosting the meeting they are attending.

Figure: Web Conferencing Load Balancing for Meetings and Participants



Load Balancing Behavior with Internal and External Clusters

All users attend a Cisco Unified MeetingPlace web meeting by opening their browsers and signing in through the Cisco Unified MeetingPlace Web Conferencing home page. When the first meeting participant attempts to join the web meeting, the system determines if the meeting should be held on an internal Web Server or an external Web Server by checking the "Allow External Web Participants" parameter. This parameter is visible only if the Cisco Unified MeetingPlace system has an external site or cluster configured.

Table: Load Balancing Behavior in Cisco Unified MeetingPlace Web Conferencing describes load-balancing behavior for load-balancing configuration options.

Table: Load Balancing Behavior in Cisco Unified MeetingPlace Web Conferencing

If...	Then...
"Allow External Web Participants" is set to No	This meeting is reserved for internal attendees only. When the first attendee launches the meeting console, the designated Web Server directs the web-meeting session to the Web Server with the fewest currently active meetings in the internal cluster. This new Web Server now hosts the meeting. Subsequent attendees may be directed to any internal Web Server when they join the web meeting.
"Allow External Web Participants" is set to Yes	This meeting is accessible to external attendees; that is, participants attending from outside the firewall. If the first attendee attempts to join the web meeting from an external Web Server, the designated Web Server directs the web-meeting session to the Web Server with the fewest currently active meetings in the external cluster. This new Web Server now hosts the meeting. Subsequent attendees may be directed to any external Web Server when they join the web meeting. If the first attendee attempts to join the web meeting from an internal Web Server, Cisco Unified MeetingPlace determines if it has an associated external Web Server. Such information is found on the Web Server Properties administrative page in the DMZ Web Server field. • If there is an entry in the DMZ Web Server field, Cisco Unified MeetingPlace redirects the meeting to that external server. Web Server, the designated Cisco Unified MeetingPlace external Web Server directs the web-meeting session to the Web Server with the fewest currently active meetings in the external cluster. This Web Server (original server) now owns (hosts) the meeting. Subsequent attendees may be directed to any external Web Server (second server) when they join the web meeting • If Cisco Unified MeetingPlace does not find an entry in the DMZ Web Server field, the system redirects the meeting to the least loaded internal Web Server. The system directs all subsequent meeting participants to an internal Web Server for their web meeting.

Internal users can join both internal meetings and external meetings. If a meeting is designated as external, internal users who log in to an internal web server are redirected to an external Web Server.

External users can join only external meetings on external Web Servers.

Recommendations for a Robust Cisco Unified MeetingPlace Web Conferencing System

To ensure a robust system with redundancy and failover, we recommend that your Web Conferencing deployment contain the following:

- An internal web cluster
- An external web cluster
- A dedicated remote SQL Server system for each cluster
- Remote storage location with an appropriately sized RAID array and a comprehensive backup policy

End-User Experience During Meeting Console Failover

When failover occurs on a system that is configured for redundancy and failover, users experience the following behavior:

1. The Web Server to which the user is connected stops responding (for example, the Web Server loses power or the Web Conferencing services are shut down).
2. Users who are connected to the second server on that Web Server lose their connection to the meeting.
3. Each meeting console client automatically tries to reconnect the user to the second server. If this attempt fails, the meeting console attempts to connect to the second server designated as the backup for that meeting. (The Web Server sends the assigned primary and backup second server information to each client when the client first connects to a meeting.)
4. In the case of a MeetingPlace services restart or network disruption, the Web client will try 30 times to connect to one of the servers on that Web Server, and eventually stop trying to connect after notifying the user that proper failover is not going to occur.