Load balancing in Cisco Unified MeetingPlace Web Conferencing makes use of a cluster of Web Conferencing 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 Conferencing server is unavailable or unreachable, meeting clients will reconnect to another 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 server from the Web Server administrative page. This information is displayed only on internal web servers.

To configure load balancing, you should understand the following concepts in this section:

- Restrictions for Installing Web Conferencing in a Load Balancing Configuration
- Web Conferencing Clusters
- Web Conferencing Load Balancing and Failover Capability
- Load Balancing Behavior with Internal and External Clusters
- Recommendations for a Robust Cisco Unified MeetingPlace System
- End-User Experience During Meeting Console Failover

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Restrictions for Installing Web Conferencing in a Load Balancing Configuration

- Microsoft Network Load Balancing is not supported.
- Third-party web server load balancing is not supported.
- When your system is configured for load-balancing, ensure that all web servers in the load-balanced system have the same permissions.

Web Conferencing Clusters

With Cisco Unified MeetingPlace Web Conferencing, you can configure up to three web servers into a cluster, and you can configure clusters as either internal or external.

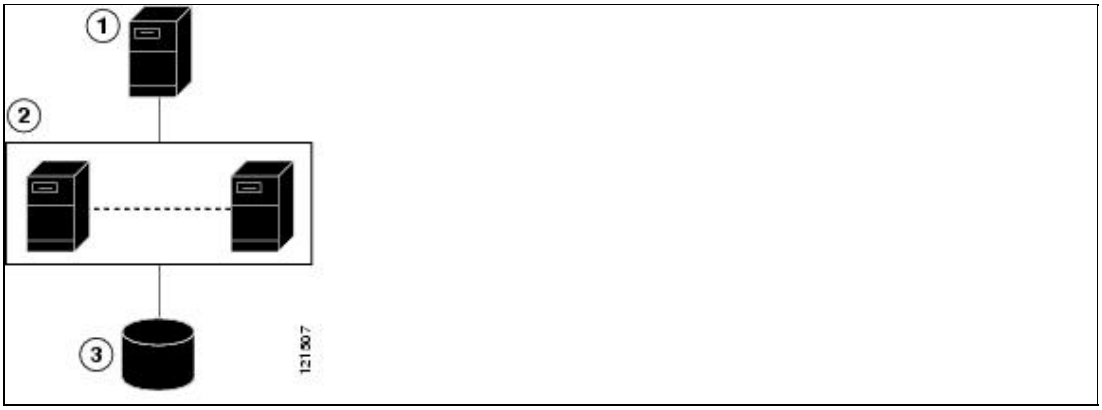
Internal cluster -Places all web servers behind the firewall inside the private corporate network. Typically, all web servers in an internal cluster display the full-access Cisco Unified MeetingPlace Web Conferencing interface

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 Web Conferencing interface.

You can attach a maximum of three web servers (including both internal and external servers) to a single Cisco Unified MeetingPlace Audio Server system. The two databases (one for the internal server or cluster, one for the external server or cluster) must have identical GUIDS.

Web Conferencing supports five potential load balancing configurations, as shown in the following three figures:

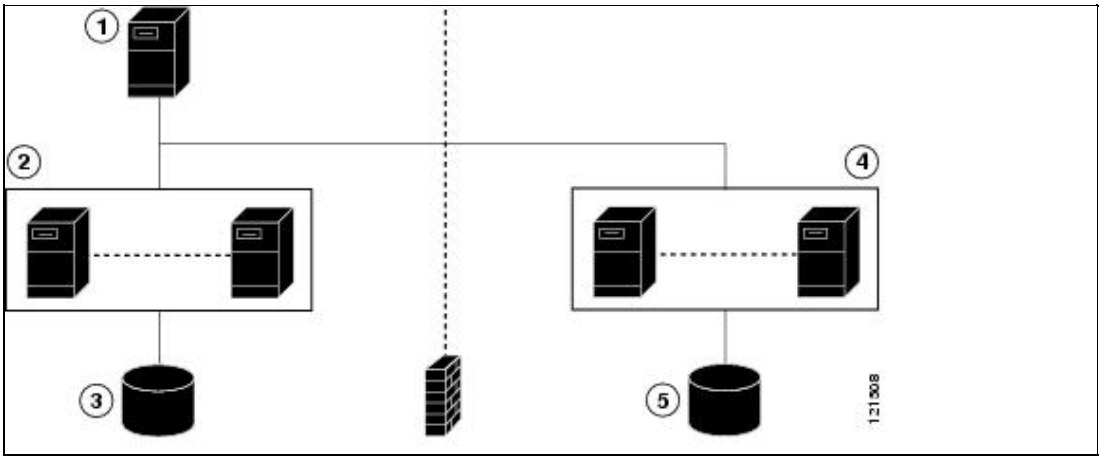
Figure: One Cluster Configuration



1		2	

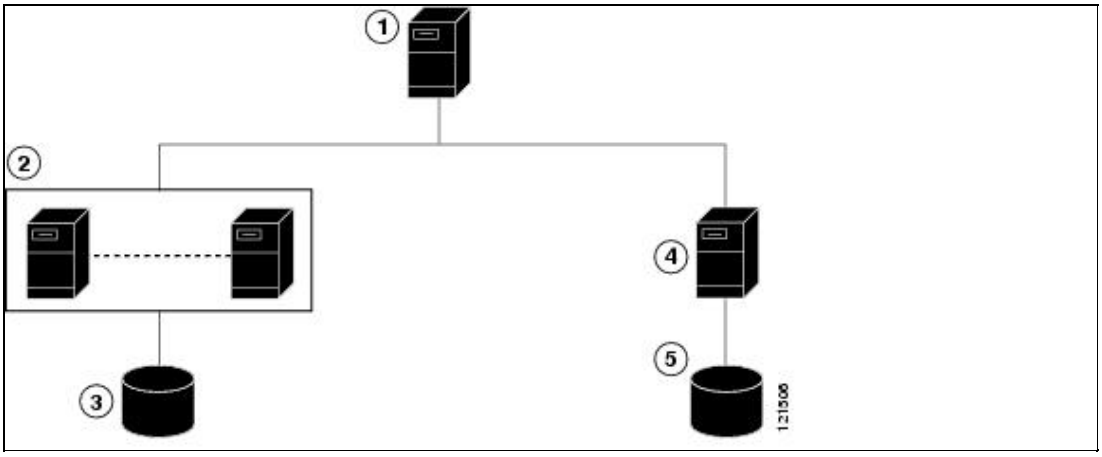
	Cisco Unified MeetingPlace Audio Server system.		Cisco Unified MeetingPlace web server cluster-This can be an internal cluster or external cluster.
3	SQL Server-All web servers in a cluster must connect to the same SQL Server.		-

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



1	Cisco Unified MeetingPlace Audio Server 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 Audio Server 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.

Figure: One Cluster Configuration

5	SQL Server-The single web server must connect to a separate SQL Server.		-

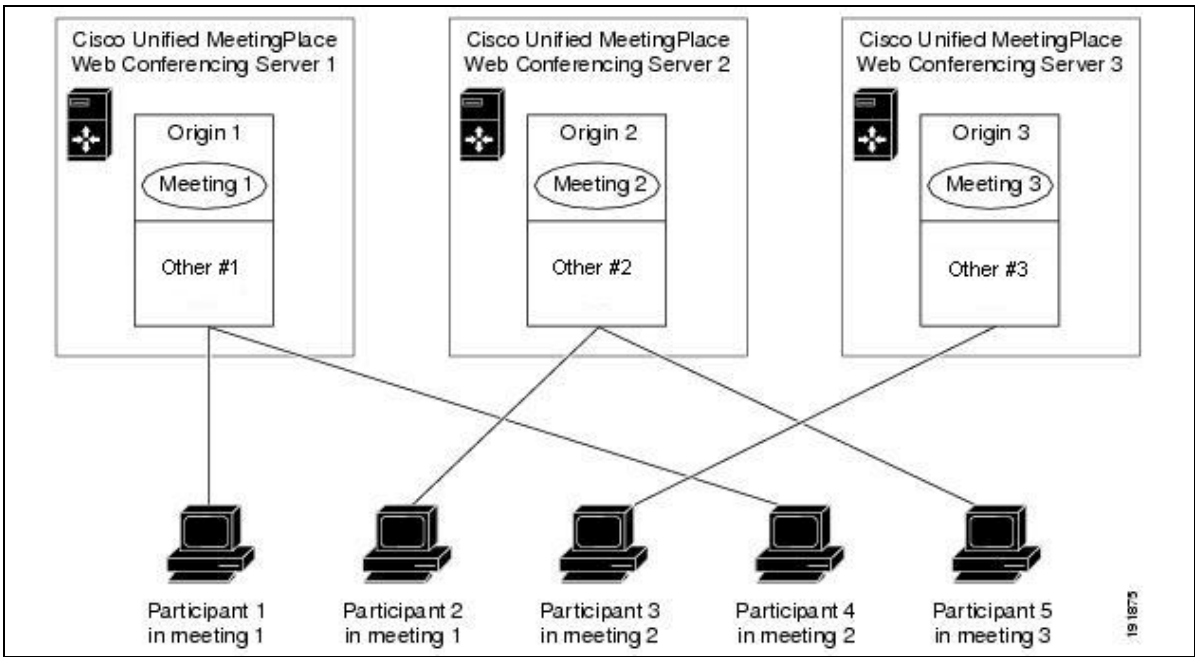
Web Conferencing Load Balancing and Failover Capability

Each Cisco Unified MeetingPlace Web Conferencing server comprises two separate load balancing components: 1) the origin server and 2) the other server or servers in the cluster. Meetings are hosted on the origin server. Participants connect to the other server or servers in the cluster when joining a meeting. These components interact to provide load balancing and failover capability as follows:

- When a meeting starts, the Cisco Unified MeetingPlace Web Conferencing server assigns a primary and backup origin server to the meeting room based on current active meeting load.
- As participants join the meeting, they are load balanced across the other server or servers in the cluster based on the number of participants currently connected to each other server or servers in the cluster at that time. The other server or servers in the cluster internally make a connection to the origin server that is hosting the meeting.
- Each client is given the primary origin/other and backup origin/other 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 Cisco Unified MeetingPlace Web Conferencing servers. Meetings are spread across the three origin servers in the cluster based on the current meeting load on each. Participants are spread across the three other servers in the cluster based on the participant load on each. Note that participants are not necessarily connected to the other server or servers in the cluster on the machine hosting the meeting they are attending.

Figure: Web Conferencing Load Balancing for Meetings and Participants



If a failure occurs on a server in the cluster, users will experience the following behavior:

- The web server to which the participant is connected stops responding (for example, the computer loses power or the Cisco Unified MeetingPlace Web Conferencing services are shut down).
- Users who are connected to that web server lose their connection to the meeting.
- Each meeting console client that lost its connection automatically tries to reconnect to the failover server. If this attempt fails, the meeting console attempts to connect to the backup failover server by using the backup information that it received when initially connecting to the meeting.

Load Balancing Behavior with Internal and External Clusters

All users attend a Cisco Unified MeetingPlace web conference by opening their browsers and signing in through the Cisco Unified MeetingPlace Web Conference home page. When the first meeting participant attempts to join the web conference, the Cisco MeetingPlace Agent Service determines if the meeting should be held on an internal web server or 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, Cisco Unified MeetingPlace Web Conferencing directs the web-conferencing session to the web server with the fewest currently active meetings in the internal cluster. This web server now owns the meeting. Subsequent attendees may be directed to any internal web server when they join the web conference.
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 conference from an external web server, Cisco Unified MeetingPlace Web Conferencing directs the web-conferencing session to the web server with the fewest currently active meetings in the external cluster. This web server now owns the meeting. If the first attendee attempts to join the web conference from an internal web server, Cisco Unified MeetingPlace Web Conferencing 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 Web Conferencing performs a redirection to that external server. • If Cisco Unified MeetingPlace Web Conferencing does not find an entry in the DMZ Web Server field, the web-conferencing session is directed to the least loaded internal server as described for internal meetings. All subsequent

	attendees are directed to an internal web server for their web conference.

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 System

To ensure a robust system with redundancy and failover, we recommend that you have 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 will experience the following behavior:

1. The web server to which the participant is connected stops responding (for example, the computer loses power or the Web Conferencing services are shut down).
2. Users who are connected to the other server or servers in the cluster on that web server lose their connection to the meeting.
3. Each meeting console client automatically tries to reconnect the user to the other server or servers in the cluster. If this attempt fails, the meeting console attempts to connect to the other server or servers in the cluster designated as the backup for that meeting. (The Web Conferencing server sends the assigned primary and backup other server or servers in the cluster information to each client when the client first connects to a meeting.)

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Installing Web Conferencing in a Load Balancing Configuration