Configuring the Cisco Unified MeetingPlace Web Server for Optimal Data Storage

Release 7.1
Revised: April 6, 2011 12:17 pm

Cisco Unified MeetingPlace Web Conferencing is designed to manage itself automatically with minimal administrative activities. However, it is important to consider the impact that potential activities can have on network and hardware resources.

Web Conferencing Data Storage

Storage space is required on the Cisco Unified MeetingPlace Web Server for storing converted meeting recordings and data attachments. It is important to plan for the system demand (disk space) that this kind of storage will require through proper configuration and management.

By default, the Web Server stores all recordings and attachments for meetings held on the server on a local disk. You can change the storage configuration to copy these items to an external backup location (such as a shared network drive on a dedicated storage server, a network-attached storage device, or a storage area network).

Cisco Unified MeetingPlace Web Conferencing checks for available disk space at regular five minute intervals. When the free disk space hits the 20% mark, a minor alarm is sent to the Application Server. When the free disk space hits 5%, a major alarm is sent to the Application Server but the system will not automatically shut down the Web Server. If you attempt to restart the Web Server for any reason when the disk space is less then 5% the Web Server will refuse to start up.

Caution If you see a minor alarm for a disk space issue on the Web Server in the alarm table, the disk space identified in the alarm table only reflects the first event. The disk space could be better or worse if the alarm table has received more than one of these alarms. Therefore you should take measures to deal with the disk space issue to prevent any potential failure of the Web Server.

Related Topics

- Viewing an Event with the Windows Event Viewer

Recording Size

Even if no documents are shared during a recorded meeting, Web Conferencing periodically records the meeting console and converts the recording into a synchronized voice and web Flash format.

- If no audio participants join the meeting, the meeting console is recorded in Flash format without the voice component.
- If a meeting is scheduled with video enabled, but no video participants attend, Cisco Unified MeetingPlace will still attempt to record audio and video in case a video endpoint eventually joins or an audio endpoint escalates to video.
- If a video participant attends, all audio and video recordings are recorded on the Application Server in a preliminary MP4 format, which is then replicated to the Web Server for proper file conversions. The replicated MP4 file is used to create the WAV file, which is then used to create the MP3 and WMA files. The original MP4 file is converted to H.264(avc1)/AAC/mp4a) MP4 for playback.

The following table lists the approximate disk space required for various recording types. You can select which types of recording will be available from the Audio Conversion page of the Cisco Unified MeetingPlace Web Administration.

Audio or Video Format	Approximate Disk Space Required Per Hour of Recording
WMA format	9 MB
WAV format (8-bit, 8Khz sampling rate)	27-30 MB
WAV format (16-bit, 8Khz sampling rate)	54-60 MB
MP3 format (32 kbits/s, 11Khz sampling rate)	14-15 MB
MP4 audio only AAC (mp4a)	512 KB
MP4 video H.264 (avc1)/AAC (mp4a)	150-175 MB

The following table lists the additional disk space required for each web collaboration mode. A web conference can consist of application sharing, a presentation, whiteboard, and annotations. With screen sharing, the actual size of the recording depends on the screen sharing resolution, how often the screen changes, and how well the data compresses.

Synchronized Voice and Web Flash Format	Additional Disk Space Required Per Hour of Recording
Sharing an 11-slide, 6.6 MB PowerPoint file with several photo-quality image slides	2 MB

Synchronized Voice and Web Flash Format	Additional Disk Space Required Per Hour of Recording
Sharing a desktop or application	40 MB
Additional MP3 audio file (32 kbits/s, 11Khz sampling rate) **Note** This is the additional audio file that is produced for use with the web recording playback.	14-15 MB

Caution The Web Server will become inoperable if recordings consume all the disk space. Specifically, the end-user web interface will become inaccessible.

Note Every day at 2 a.m. (local server time), the system purges all recordings on the Cisco Unified MeetingPlace Application Server that are older than 24 hours.

Related Topics

- Converting Cisco Unified MeetingPlace Voice Files to WAV Format in the Configuring Audio Conversion module
- Converting Cisco Unified MeetingPlace Voice Files to MP3 Format in the Configuring Audio Conversion module
- Converting Cisco Unified MeetingPlace Voice Files to MP4 Format in the Configuring Audio Conversion module
- How to Convert Cisco Unified MeetingPlace Voice Files to Windows Media Format in the Configuring Audio Conversion module

Best Practices for Storage Maintenance

For optimal space usage, we recommend the following best practices:

- Use a shared or network drive to store attachments.
- If you plan to record video, use an external storage device to prevent the Web Server from running out of disk space.
- Regularly check the drive you use to store attachments. Ensure that there is enough disk space for additional recordings.

Note You cannot manually purge meeting statistics from the Web Server. This ability is controlled by the “Days until meeting statistics purged” parameter on the Cisco Unified MeetingPlace Application Server and cannot be changed for a particular meeting once it is set. Since you cannot change when past meetings are purged from the system, use the Shared Storage feature to move attachments and recordings to a new larger drive when you are running low on disk space.

Related Topics

- Replication Service, page 6
- Configuring Shared Storage, page 4
- How to Update Meetings and User Profiles, page 5
- For information about the "Days until meeting statistics purged" parameter, search for the parameter name in the Administration Center Page References for Cisco Unified MeetingPlace.

Configuring Shared Storage

By default, the Cisco Unified MeetingPlace Web Server stores all recordings and attachments for meetings held on the server in a content folder on the local disk. We recommend that you change the storage configuration to copy content to a shared external backup location (such as a shared network drive on a dedicated storage server, a network-attached storage device, or a storage area network).

When you configure shared storage for a Web Server or for a cluster of servers, content is copied to the primary external storage device and pulled to the local content folder on each Web Server in the cluster as needed. You can specify a Content Cache Size that determines the percentage of disk space that is taken up by the local content folder before old content is automatically purged to make room for new content. This configuration frees resources on the local server, which is especially helpful in a large cluster of Web Servers.

Complete the following procedure to configure shared storage.

Restrictions

- Due to a Windows security restriction, you cannot move or copy files from the shared storage to the local storage when the Cisco Unified MeetingPlace Web Conferencing service is running under the LocalSystem account.
- When moving from one shared location to another, the Windows account that is configured to access the shared storage MUST have write access to both the old and new locations. If it does not, the old content will not be copied from the old location to the new location.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Select **Admin**.

Step 3 Select **Shared Storage**.

Step 4 Select **On** for Enabled.

Step 5 Locate the Shared Storage Path field.

Step 6 Enter the network-accessible path to the storage directory, for example, \\storesrvr\C$\Web_data\MPWeb.

- If you have a security concern with using the far end shared storage admin credentials due to the C$, set up a unique user account that has administrator privileges on the Web Server so that it can access the shared folder with the proper credentials and run the MeetingPlace services. For example, \\storesrvr\MeetingPlace\Web_data\MPWeb where the credentials allow access to the MeetingPlace folder.

Note If you ever need to change the location of the shared remote storage, update the credentials for both the remote storage and the local storage since both will require simultaneous access. If both storage locations do not share the same credentials, the destination storage location will not contain the updated attachments and recordings and users will not be able to access them from the Cisco Unified MeetingPlace web site.

Step 7 Locate the Content Cache Size field.

Step 8 Enter a value between 0 and 100 for the percentage of total disk space to use to cache content on the local server.

Step 9 In the applicable fields, enter a domain, username, and password for a Windows account that will be used to access the directory that you configured in Step 6. If the account is a local account, enter the computer name in the Domain field.

- All Cisco Unified MeetingPlace Web Conferencing services will be reconfigured to "Log On As" the account that you select in this step.
- If improper credentials are used, users may see an "Error: Access is denied" message when they attempt to access a recording or attachment from the Cisco Unified MeetingPlace Web Server.

Step 10 Re-enter the password in the Confirm Password field.

Step 11 Select **Save Changes**.

Step 12 Select **Reboot Server** to put the changes into effect.

Note It may take several hours for the Cisco Unified MeetingPlace Web Conferencing services to come back up. They cannot start again until all the files in the C:\Program Files\Cisco Systems\MPWeb\Meetings and C:\Program Files\Cisco Systems\MPWeb\WebConf\content\7 folders are transferred to the shared storage device. These folders can possibly contain more than 20 GB of data each, so the downtime can be significant.

Step 13 Select **OK** to confirm the reboot.

The server shuts down and restarts.

What to Do Next

If this server is part of a load-balancing cluster, make sure that you restart the Cisco Unified MeetingPlace Web Conferencing service on the other Web Servers in the cluster. Make sure that there are no meetings going on in the system when you perform the reboot.

Related Topics

For information about load-balancing, see the "Installing Cisco Unified MeetingPlace Web Conferencing in a Load-Balancing Configuration" section in the *Installation, Upgrade, and Migration Guide for Cisco Unified MeetingPlace* at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html.

How to Update Meetings and User Profiles

Replication Service

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 night.
- The Group Update Interval updates every night.
- Meeting information updates every 60 seconds.

The Replication Service copies audio and video 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 original MP4 file 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 night.

In the event of a system failure, you can manually invoke the Replication Service operations. Allow up to 20 minutes for any changes made to the Replication Service to take effect.

Updating All Meetings

The Update All Meetings feature is automatically run at midnight every Saturday to synchronize meetings and meeting information between the Cisco Unified MeetingPlace Application Server and the Web Server. You can also manually invoke this feature whenever you want to force the following behavior:

- Meetings and meeting information are downloaded from the Application Server to the Web Server.
- If there are extra meetings on the Web Server, they are purged.
- Meetings are synchronized between the Application Server and Web Server going forward.

Note Every day at 2 a.m. (local server time), the system purges all recordings on the Cisco Unified MeetingPlace Application Server that are older than 24 hours. Any attachments or recordings that have already been purged from an Application Server are no longer available and hence, not downloaded.

Before You Begin

- The Update All Meetings feature will not retrieve attachments if they have been deleted from local folders on the Web Server. Retrieve these attachments by updating the relevant meeting instead.
- Allow 20 minutes for changes to take effect.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Select **Admin**.

Step 3 Select **Replication Service**.

Step 4 Select **Update All Meetings** for Replication Service Command.

Any MP4 files that have not yet been converted are downloaded and converted into the desired formats from the Application Server to the Web Server. In addition to attachments, new meetings are also updated.

Step 5 Select **Submit**.

Updating All User Profiles

Complete this procedure to update the user profile database on the local Web Server. Allow 20 minutes for changes to take effect.

Tip Synchronize your updates on the Web Server when you update the profile database on the Cisco Unified MeetingPlace Application Server.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Select **Admin**.

Step 3 Select **Replication Service**.

Step 4 Select **Update All User Profiles** for Replication Service Command.

Step 5 Select **Submit**.

Updating All Video Terminals

Complete this procedure to update the video terminal profile database on the local Web Server. The amount of time the replication takes depends on the number of video terminals; for example, allow 20 minutes to replicate up to 1000 video terminals.

Tip Synchronize your updates on the Web Server when you update terminals in the Cisco Unified MeetingPlace Media Server Administration.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Select **Admin**.

Step 3 Select **Replication Service**.

Step 4 Select **Update All Terminals** for Replication Service Command.

Step 5 Select **Submit**.

Updating All Groups

Complete this procedure to update the user group database on the local Web Server. Allow 20 minutes for changes to take effect.

Tip Synchronize your updates on the Web Server with when you update the user group database on the Cisco Unified MeetingPlace Application Server.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Select **Admin**.

Step 3 Select **Replication Service**.

Step 4 Select **Update All Groups** for Replication Service Command.

Step 5 Select **Submit**.

Updating a Single Meeting

Complete this procedure to force the Web Server to download meeting information for a single meeting from any Cisco Unified MeetingPlace Application Server. This feature is only effective when the Web Server has lost meeting attachments or recordings.

Restriction

Every day at 2 a.m. (local server time), the system purges all recordings on the Cisco Unified MeetingPlace Application Server that are older than 24 hours. The update will not take place if attachments and recordings have already been purged from the Application Server.

Procedure

Step 1 Sign in to the end-user web interface.

Step 2 Enter the meeting ID of the meeting that you want to update.

Step 3 Select **Find Meeting**.

Step 4 Select the meeting ID to access the meeting information page.

Step 5 Select **Attachments/Recordings**.

Step 6 Select **Update Meeting**.

Step 7 Select **OK**.

A new set of files are created including encoded audio files in the desired formats.