Grandstream Networks, Inc.

UCM63xx Series

GS Wave Web Admin Guide

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CHANGE LOG

Firmware 1.0.9.10

- Added support for deleting the most recent meeting of the recurring scheduled meeting and the entire recurring meeting. [SCHEDULE A MEETING]
- Added support to Increase the number of UCM6304/UCM6308 video conference parties. [Max Number of Video Feeds]
- Added support for UI customization. [UI customization]

Firmware 1.0.7.12

- Added support for email reminder when editing the time of a scheduled meeting. [Email Reminder]

Firmware 1.0.7.9

- Video/Audio meeting room cancel the host password and meeting password. [Creating Audio Meeting Room][Creating Video Meeting Room]
- Add email reminder configuration in Audio meeting room. [Figure 13: Email Reminder for the Scheduled Meeting]
- The host password for the schedule meeting is randomly generated. [Host Password]
- Record the actual member information in the historical schedule meeting details. [Meeting History]
- Clean up the history of audio and video schedule meeting regularly. [Figure 16: Scheduled cleanup for audio/video meeting history]
- Added support to use Cloud IM service. [CLOUD IM]
- Support to join the schedule meeting 10 minutes in advance and affected by meeting management. [SCHEDULE A MEETING]
- Support to initiate a random meeting in a schedule /instant meeting room. [Meeting Room]

Firmware 1.0.5.4

- Added Historical Meetings for Conference Schedule. [Meeting History]
- Added post-meeting report email reminder. [Email Reminder]
- Improve meeting room specifications. [AUDIO] [VIDEO]
- Added ability to customize LOGO. [UI customization]
- Added the ability to clean IM Data. [IM DATA CLEANING]

Firmware 1.0.3.10

- No major changes.

Firmware 1.0.2.25

- This is the initial version.

INTRODUCTION

OVERVIEW

Wave web is a client application for the UCM63xx series IP PBX users to use web browser to participate in web video/audio conferences and make calls via WebRTC. With Wave web client, users can easily create, schedule, manage, and join video conference calls, share presentation, chat during conference calls, register UCM extension and make point-to-point calls. Wave web helps enterprise users to join meetings and communicate efficiently. It is an ideal product for enterprises looking for tools for users to communicate and work productively.

Feature Highlights

- Supports Google Chrome v75+ and Mozilla Firefox v70+.
- Native integration with UCM including contacts and ability to display SIP users' online status.
- Supports LDAP to access contacts in the UCM LDAP server.
- Supports call display, voicemail, and call encryption.
- Supports call history.
- High quality point-to-point audio and video calling.
- Full integration with Grandstream UCM6300 IP PBX, including creation of QR code for automatic login, call transfer, call recording from server and etc.
- Supports Opus and G.722 for HD audio. Jitter resilience up to 50% audio packet loss and 20% video packet loss.
- Supports H.264.
- Supports joining meeting via link without logging in.
- Supports schedule meeting and meeting now at anywhere anytime.
- Built-in NAT traversal including automatic NAT discovery and TURN/ICE.
- Integrated UCM user portal entry to access personal data, follow me settings, SCA, wakeup calls etc.

Specifications

Table 1: Wave Web Specifications

Protocols/Standards	SIP RFC3261, TCP/IP/UDP, RTP/RTCP, HTTP/HTTPS, DNS (A record, SRV, NAPTR), STUN/TURN/IC, SIMPLE, LDAP, TLS, SRTP, IPv6
Voice Codecs and Capabilities	Opus, G.711 A-law/U-law, G.722, G722.1 G722.1C, G.723.1 5.3K/6.3K, G.726-32, G.729A/B, iLBC, GSM, NetEQ FEC 2.0, NACK Full-duplex speaker, AEC, AGC, Noise Reduction, PLC, Adaptive JIB
DTMF	In-audio, RFC2833, SIP INFO
Video Codecs and Capabilities	H.264, H.263, H.263+, H.265, VP8 1080P HD video, supports displaying multiple videos, screen sharing, camera on/off, GS-Fec
Telephony Features	Call hold/unhold, mute/unmute, call transfer, audio meeting room, video meeting room, call history, scheduling meeting, voicemail, call recording and etc. User portal entries allows access for personal data, wakeup call settings, SCA, follow me settings, call queue, CDR, CRM user settings and etc.
UCM Applications	Supports UCM feature codes (transfer, call park, recording, meeting control options and etc.)
QoS	Layer 3 QoS (ToS, DiffServ, MPLS)
Security	SIP over TLS, SRTP (128-bit and 256-bit), HTTPS
Multi-language Support	English, Simplified Chinese and etc.
Login	Supports login with SIP extension and password. Supports joining meeting via link without logging in.
Upgrade	Wave Web client is built in with UCM and upgrades via UCM.

Please visit our website for more Wave web information and product documentations:
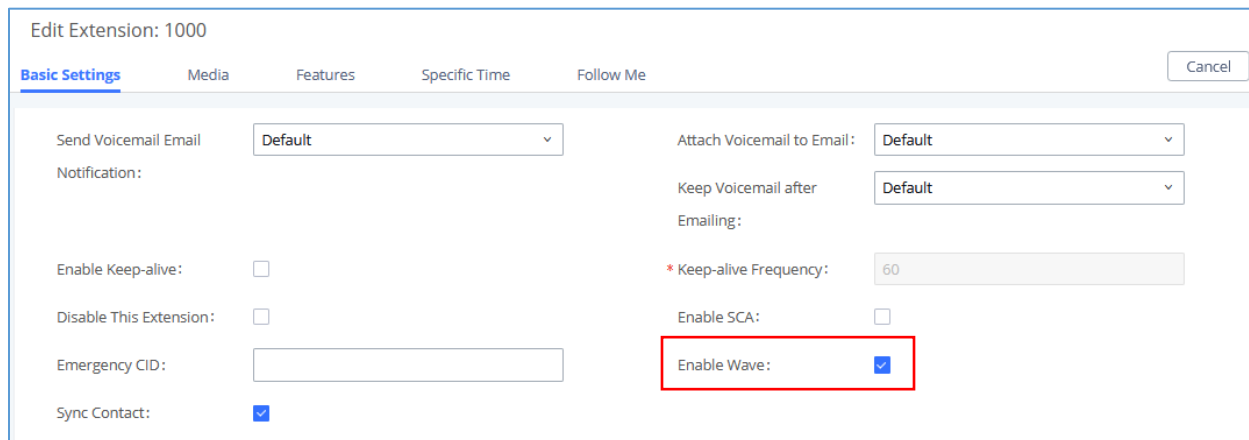
http://www.grandstream.com

WEBRTC CONFIGURATION

GS Wave feature requires UCM WebRTC function which is build-in. To check and ensure that the UCM has WebRTC turned on, please make sure of the following:

1. Select the extensions that would use WebRTC and enable Wave on them under Basic Settings section.
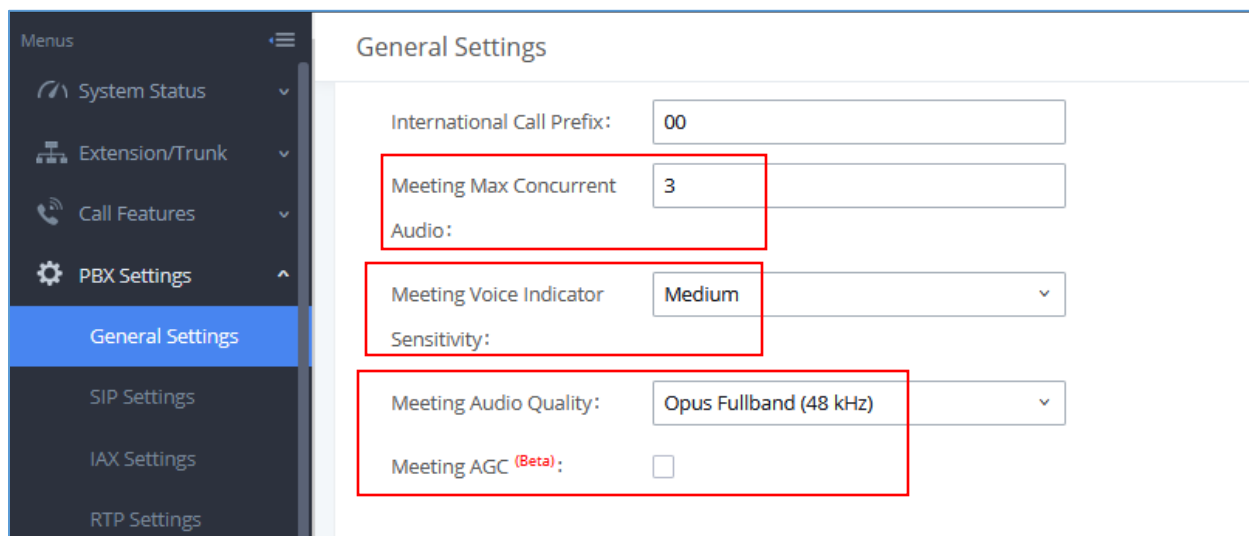
Figure 1: WebRTC Support for Extension

2. Also, the administrator can configure some global conference options like the maximum Concurrent Audio and Voice quality a conference can have by navigating to UCM web UI admin page → **PBX Settings** → **General Settings** like shown in the figure below.

Figure 2: Global Conference Options

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Table 2: Global Conference Options

Conference Max Concurrent Audio	Configures the maximum number of participants that can be heard simultaneously in audio/video conferences. If the number of participants talking at any given point exceeds this value, the audio of the excess participants will not be heard
Conference Voice Indicator Sensitivity	Configures the sensitivity of the talking indicator in conferences. Setting this higher will make the talking indicator appear more easily for lower volumes of audio. The options available are: **Very High**, **High**, **Medium**, **Low**. **Note**: This does not adjust audio input sensitivity itself. Lower volumes of sounds may still be heard even if the talking indicator does not show the source.
Conference Voice Quality	Configures the voice quality of audio and video conferences, two options are available: • **OPUS Fullband (48KHZ)** • **OPUS Narrowband (8KHZ)**
Meeting AGC	During the recording process, the system automatically adjusts the volume according to the volume of the sound, so that the volume of the sound is as consistent as possible. Make it clearer and more pleasant to hear.

AUDIO MEETING

UCM supports audio meetings. The UCM admin can create multiple audio meeting rooms for users to dial in.

Table 3: UCM Audio Meeting Specifications

UCM630x series	Number of public meeting rooms	Participant limit
UCM6301	3	75
UCM6302	8	150
UCM6304	15	200
UCM6308	25	300

Meeting room specifications affect the user participation to a certain extent. The UCM supports forecasting of meeting resources. There will be corresponding judgments and adjustments in the following scenarios:

1. When the meeting resources are full, members of the schedule meeting room cannot join the conference in advance.

2. Close other instant meetings or scheduled meetings that have timed out to ensure that all invited members of the scheduled meeting can enter the conference.

3. If the number of invited members in the ongoing meeting exceeds the resource limit of the number of participants, the members are not allowed to join the conference.

Log in UCM web UI as admin and go to Call Features→Audio Meeting. In this page, users could create, edit, view, invite, manage the participants, and delete conference rooms. The meeting room status and meeting call recordings (if recording is enabled) will be displayed in this web page as well.
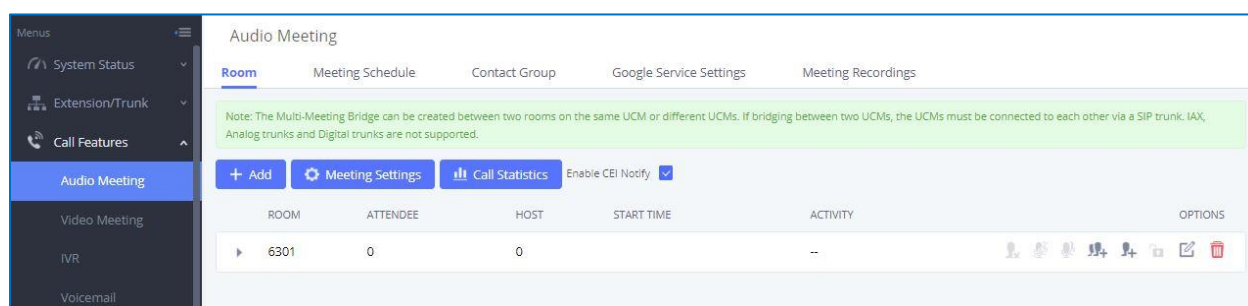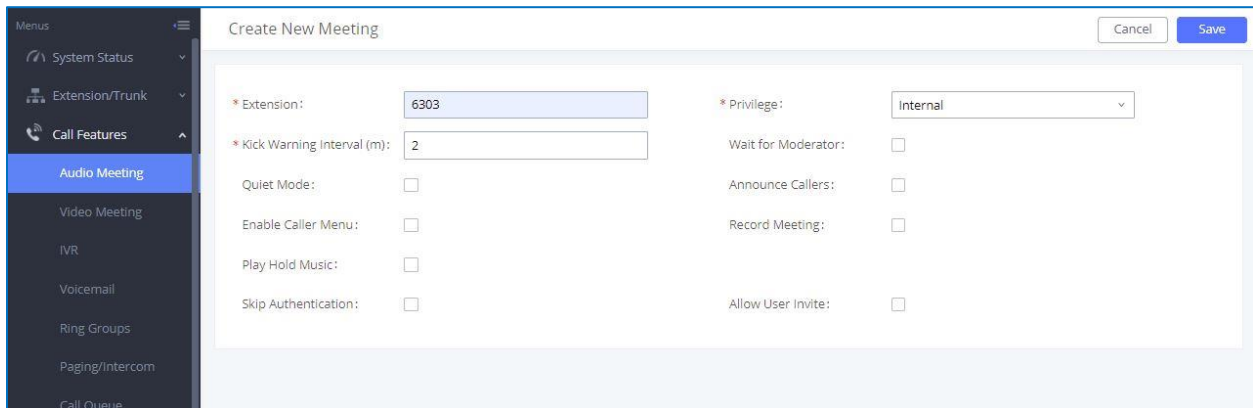

Figure 3: Audio Meeting Room

- Click on "+Add" to create a new audio conference room.

- Click on ![edit icon] to edit the audio conference room.

- Click on ![delete icon] to delete the audio conference room.

Note:

"Enable CEI Notify" option is available for UCM admin to configure. By default, it is enabled on UCM. When it is enabled, meeting participants can view participant list in the audio conference room. UCM admin should evaluate whether to enable this option as too many CEI messages sent for the conference room could affect UCM system's performance.

Creating Audio Meeting Room

Click on "+ Add" to create a new audio conference room. Users will be prompted to configure the following options for the audio conference room:

Figure 4: Audio Meeting Room Parameters

Table 4: UCM Audio Conference Room Parameters

Extension	Configure the conference number for the users to dial into the conference. **Note:** Up to 64 characters.
Privilege	Please select the permission level for outgoing calls. Default is internal.
Kick Warning Interval	If there is only one participant in a conference room, a kick warning prompt will play at the configured interval. If no input from the participant is received after the prompt, he will be automatically kicked out of the conference. The valid range is 1-60 minutes.
Wait for Moderator	If enabled, the participants will not hear each other until the host joins the conference. The default setting is "No".

|	
	Note: If "Quiet Mode" is enabled, the voice prompt for "Wait For Admin" will not be announced.
Quiet Mode	If enabled, if there are users joining or leaving the conference, voice prompt or notification tone will not be played. The default setting is "No". **Note:** "Quiet Mode" and "Announce Callers" cannot be enabled at the same time.
Announce Callers	If enabled, the caller will be announced to all conference participants when there the caller joins the conference. The default setting is "No". **Note:** "Quiet Mode" and "Announce Callers" cannot be enabled at the same time.
Enable Caller Menu	If enabled, conference participant could press the * key to access the conference room menu. The default setting is "No".
Record Conference	If enabled, 'the calls in this conference room will be recorded automatically in a .wav format file. All the recording files will be displayed and can be downloaded in the conference web page. The default setting is "No".
Play Hold Music	If enabled, the UCM630X will play Hold music when there is only one user in the conference. The default setting is "No".
Custom Music On Hold	Select the music on hold class to be played in conference call. Music On Hold class can be set up under Web GUI→**PBX Settings**→**Music On Hold**.
Skip Authentication	If enabled, the invitation from Web GUI for a conference room with password will skip the authentication for the invited users. The default setting is "No".
Allow User Invite	If enabled, users could press 0 to invite other users (with the users' permission) or press 1 to invite other users (without the user's permission) to join the conference. The default setting is "No". **Note:** Conference administrator can always invite other users without enabling this option.

Audio meeting Settings

Click on **Meeting Settings** on the audio meeting room page to access and configure global settings for all audio meeting rooms. Configuration settings page contains the following options:

Table 5: Meeting Settings

Enable Talk detection	If enabled, the AMI will send the corresponding event when a user starts or ends talking.
DSP Talking Threshold	The time in milliseconds of sound above what the DSP has established as base line silence for a user before a user is considered to be talking. This value affects several operations and should not be changed unless the impact on call quality is fully understood, the default value is 200.
DSP Silence Threshold	The time in milliseconds of sound falling within the what the DSP has established as base line silence before a user is considered to be silent. This value affects several operations and should not be changed unless the impact on call quality is fully understood, the default value is 2500.
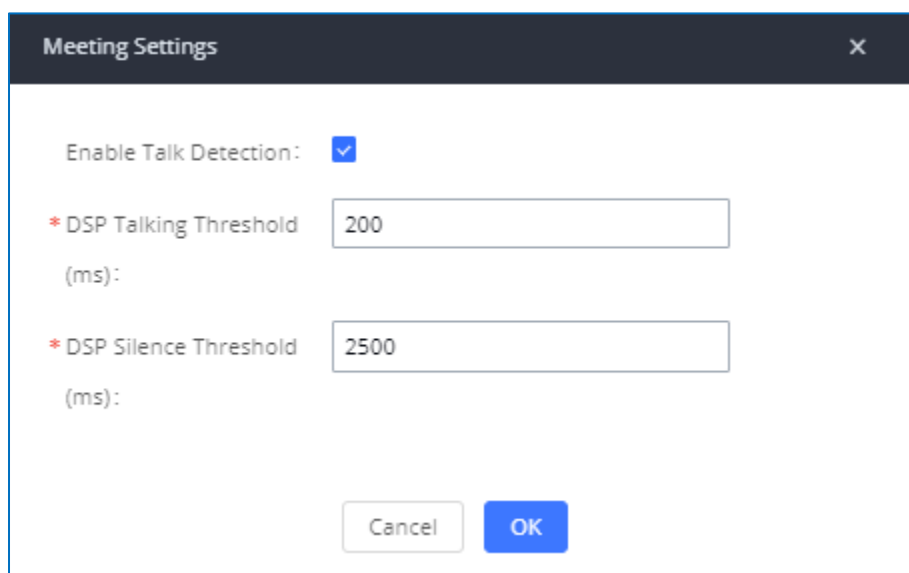
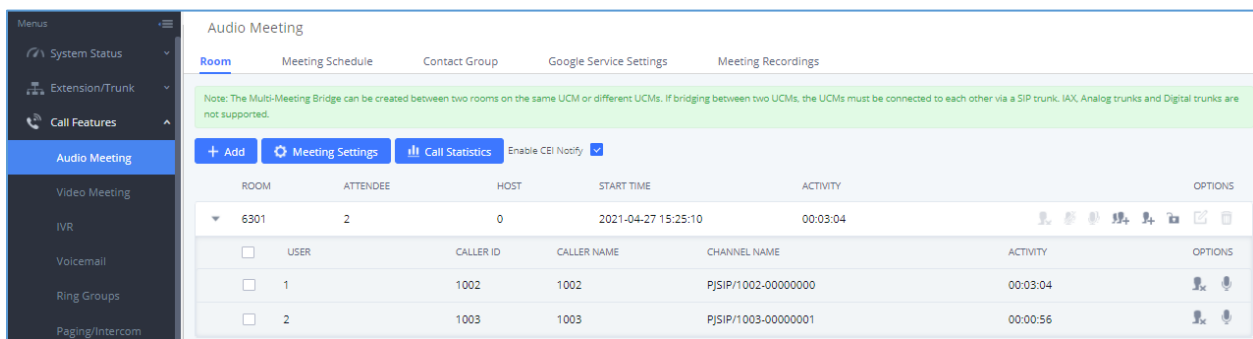**Figure 5: Meeting Settings**

Managing Audio meeting

During the conference call, users can manage the conference from Web GUI after logging in as admin.

- Click on ▶ on the left of each conference room to expand real-time participant list for the admin to view.

- Click on 👤✕ to remove selected participants from the conference.

- Click on 🎤 to mute selected participants.

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- Click on 🎤 to unmute selected participants.

- Click on 👥+ to invite contact group or remote conference room so multiple conference rooms that can be bridged.

- Click on 👤+ to invite other users into the conference room.

- 🔓: This indicates the conference room is unlocked. Click on 🔓 to lock conference. If the conference is locked, no new party can be invited or can join the conference.

- 🔒: This indicates the conference room is locked. Click on 🔒 to unlock this conference room.

Figure 6: Ongoing Meeting with Participants

VIDEO MEETING

The video meeting configurations can be accessed under Web GUI→**Call Features**→**Video Meeting**. In this page, users could enable, set the Basic setting, create, edit, view, manage, delete conference rooms, and edit the Conference Schedule.
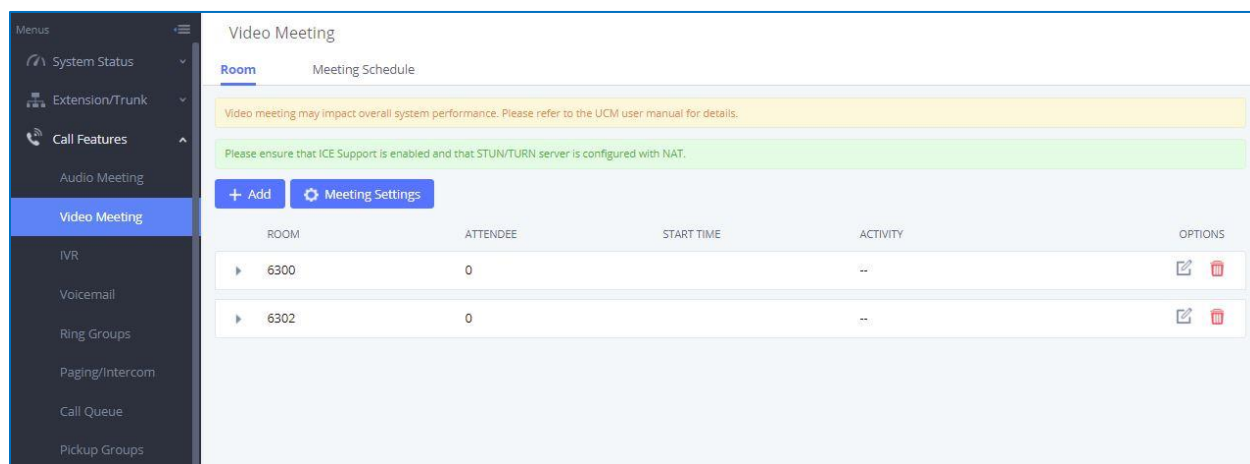
Figure 7: Video meeting Configuration Page

- Click "+ Add" to create new video conference room.

- Click on [icon] to edit the video conference room.

- Click on [icon] to delete the video conference room.

Table 6: UCM Video Conference Specifications

UCM630x series	Number of video conference room	Participant limit
UCM6301	4	75
UCM6302	6	150
UCM6304	8	200
UCM6308	10	300

The Meeting room specifications affect the user participation to a certain extent. The UCM supports forecasting of meeting resources. There will be corresponding judgments and adjustments in the following scenarios:

1. When the conference resources are full, members of the schedule conference room cannot join the conference in advance.

2. When conference resources are full, joining a conference is prohibited when a point-to-point call is transferred to a conference.

3. When the conference resources are full, when the IM group chat initiates a conference, it is forbidden to join the conference.

4. When the conference resources are full, when an instant conference is initiated, joining the conference is prohibited.

5. Close other instant conferences or scheduled conferences that have timed out to ensure that all invited members of the scheduled conference can enter the conference.

6. If the number of invited members in the ongoing conference exceeds the maximum number of resources in the conference, the invitation of members is not allowed to join the conference.

7. Turn on the flow control of video and presentation in the meeting room.

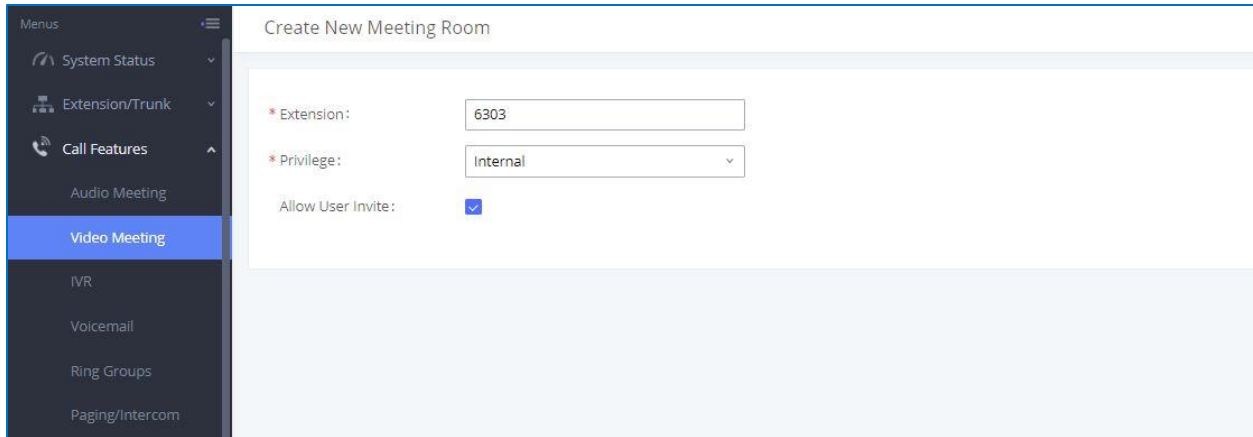⚠ **Notes:**

- By default, for each video meeting room, up to 4 video feeds and 1 screen sharing can be supported.

- UCM admin could configure the video conference room to support 9 video feeds. However, more video feeds will require more system resources which affects system performance. Please consider and configure as needed.

- During meeting, if the UCM detects other scheduled meeting to be started soon, it will remind the meeting participants that the current meeting will end soon.

- UCM video conference room can be resource intensive. When video conference room is used and UCM is busy at the moment, UCM's performance may be affected.

- Specification of the number of members in the shared meeting room between the audio conference room and the video conference room. As an example, for the UCM6308, the limit of the audio/video meeting room members is 300.

Creating Video Meeting Room

Click on "+ Add" to create a new video conference room. Users will be prompted to configure the following options for the conference room.

Figure 8: Creating New Video Meeting Room

Table 7: Video Conference Room Configuration Parameters

Extension	Configure the conference number for the users to dial into the conference. **Note:** Up to 64 characters.
Privilege	Please select the permission level for outgoing calls.
Allow User Invite	If enabled, not only the moderator but also participants can invite other users to the video conference. Please note meeting moderator is able to invite other parties whether this option is enabled or not.

Video Meeting Settings

Click on [⚙ Meeting Settings] on the video meeting room page to access and configure global settings for all video meeting rooms. Configuration settings page contains the following options:

Table 8: Video Conference Settings

Enable Talk detection	If enabled, the AMI will send the corresponding event when a user starts or ends talking. It is enabled by Default.
DSP Talking Threshold (ms)	The time in milliseconds of sound above what the DSP has established as base line silence for a user before a user is considered to be talking. This value affects several operations and should not be changed unless the impact on call quality is fully understood, the default value is 200.
DSP Silence Threshold (ms)	The time in milliseconds of sound falling within the DSP has established as base line silence before a user is considered to be silent.

	This value affects several operations and should not be changed unless the impact on call quality is fully understood, the default value is 2500.
Max Number of Video Feeds	Set the maximum number of video feeds supported per conference room. By default, it is set to 6. Please note if set to 9, the UCM system performance could be potentially affected. Note: The increase in the number of videos will affect the overall performance of the UCM system, please set according to your needs. Note: This option supports the selection of 4/6/9 video feeds.
Audio Codec Preference	Configures the preferred codecs for temporary accounts such as conference participants who joined via link without UCM extension. If Opus is selected, audio quality will be improved but could also affect UCM performance if UCM system is heavily loaded.
Packet Loss Retransmission	Configures packet loss transmission for temporary accounts such as conference participants who joined via link with UCM SIP extension. By default, it is set to OFF.
Jitter Buffer	Select jitter buffer method for temporary accounts such as conference participants who joined via link with UCM SIP extension. • **Disable:** Jitter buffer will not be used. This is the default setting. • **Fixed:** Jitter buffer with a fixed size (equal to the value of "Jitter Buffer Size") • **Adaptive:** Jitter buffer with an adaptive size that will not exceed the value of "Max Jitter Buffer"). • **NetEQ:** Dynamic jitter buffer via NetEQ. NetEQ is an error concealment algorithm used for hiding the negative effects of network jitter and packet loss.

Figure 9: Video Meeting Settings

Managing Video Meeting

During video conference, users can manage the conference from Web GUI after logging in as admin.

- Click on ▸ on the left of each conference room to expand real-time participant list for the admin to view.

- Click on 🎤✗ to remove the participant.

- Click on 🎤 to mute the participant.

- Click on 🎤 to unmute the participant.

Figure 10: Ongoing Video Meeting

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SCHEDULE A MEETING

UCM admin can log in UCM web UI to schedule audio meeting and video meeting. The following section describes how to schedule a conference using video conference as an example.

Log in **Web GUI → Call Features→Video Meeting → Meeting Schedule** as UCM admin. Users can create, edit, view, and delete a meeting Schedule.

- Click on "Schedule Meeting" to add a new Meeting Schedule.

- Click on ☑ to edit a scheduled meeting.

- Click on ⓘ to view meeting schedule details.

- Click on 🗑 to delete the meeting schedule. Click the button, you can choose to delete the most recent meeting of the meeting room or delete the entire recurring meeting to delete the meeting room reservation.

Figure 11: Video Meeting Schedule

Figure 12: Video Meeting Schedule Parameters

Table 9 : Video Meeting Schedule Parameters

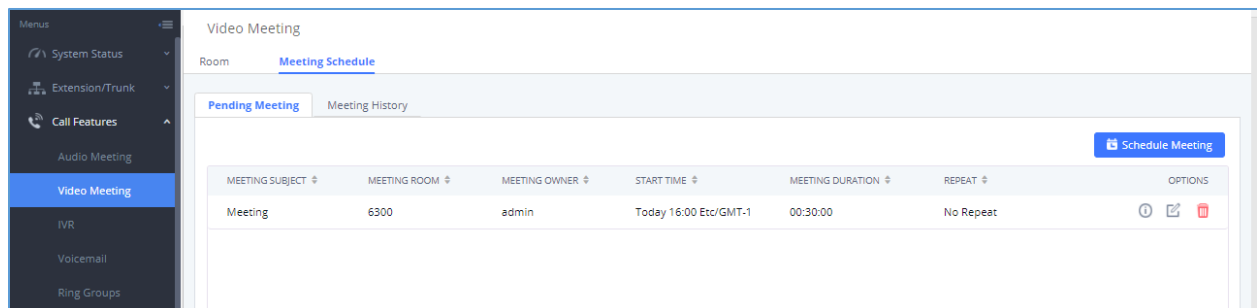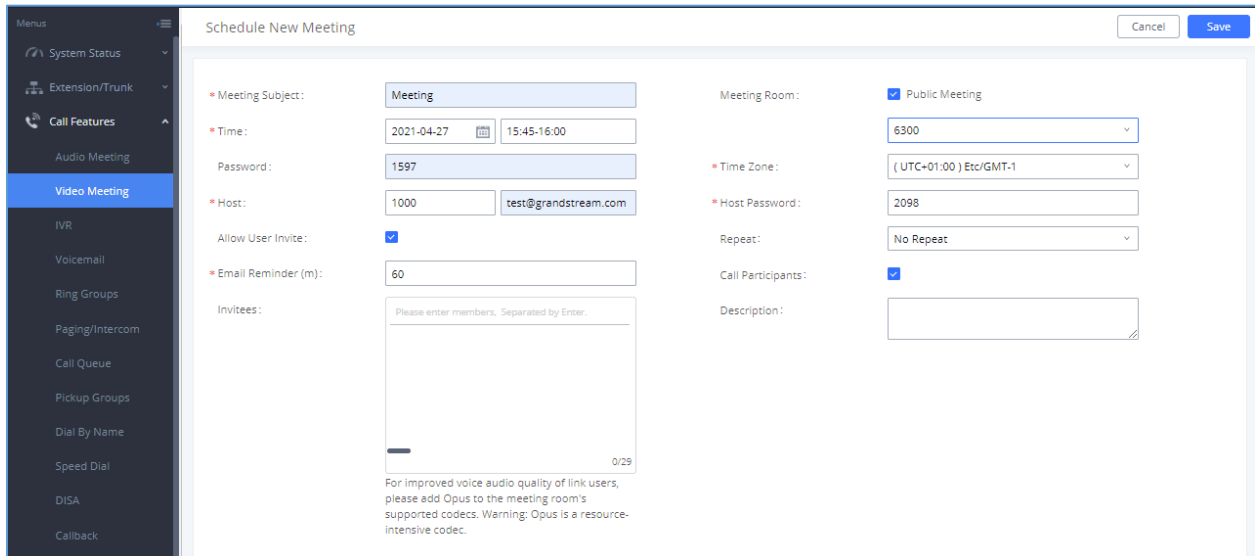| Schedule Options	
Meeting Subject	Configure the name/topic of the scheduled conference. Letters, digits, _ and - are allowed.
Meeting Room	Choose which room to have this scheduled meeting, Users can enable 'Public Meeting' to select a meeting room otherwise a random meeting number will be used.
Time	Configure the beginning start/end date of scheduled conference. Note: Please pay attention to avoid time conflict on schedules in the same conference room.
Time Zone	Defines the time zone of the scheduled conference
Password	Configure conference room password. The password can be randomly generated. It must be at least 4 digits.
Host Password	Set the password for the admin of scheduled meeting. The password can be randomly generated. It must be at least 4 digits.
Host	Set the admin of this scheduled conference from the extensions list followed by the email address.
Repeat	Choose when to repeat a scheduled conference: • No repeat • Every Day • Weekly • Monthly
Allow User Invite	If enabled, participants can invite other users to the video conference.
Call Participants	If enabled, invited participants will be called when the meeting starts.
Email Reminder	If configured, email reminders will be sent out x minutes prior to the start of the conference. Valid range is 5-1440. 0 indicates not to send out email reminders for the meeting. Note: After editing the time of a single recurrence of a scheduled meeting, a cancelation email will now be sent out followed by a meeting update email.
Description	Set a description of scheduled conference.

|	
Invitees	Defines the extensions or emails of the participants to attend scheduled conference. - Enter the invitee's number or email address. - After adding one invitee, click on ENTER to confirm. - If the invitee's extension does not have email configured on UCM extension setting, the user can click on "(Add Email)"to add email for this invitee. - To remove an invitee, click on "x" for the invitee.

Once created, the **Web GUI** will display scheduled meeting under Unstarted Meeting,

After scheduling the meeting, an email reminder will be sent to the participants at the configured email reminder time. The email reminder will include the meeting details and a link to the meeting. Upon clicking the link, participants will be prompted to enter their GS Wave portal passwords to log in and join the meeting.
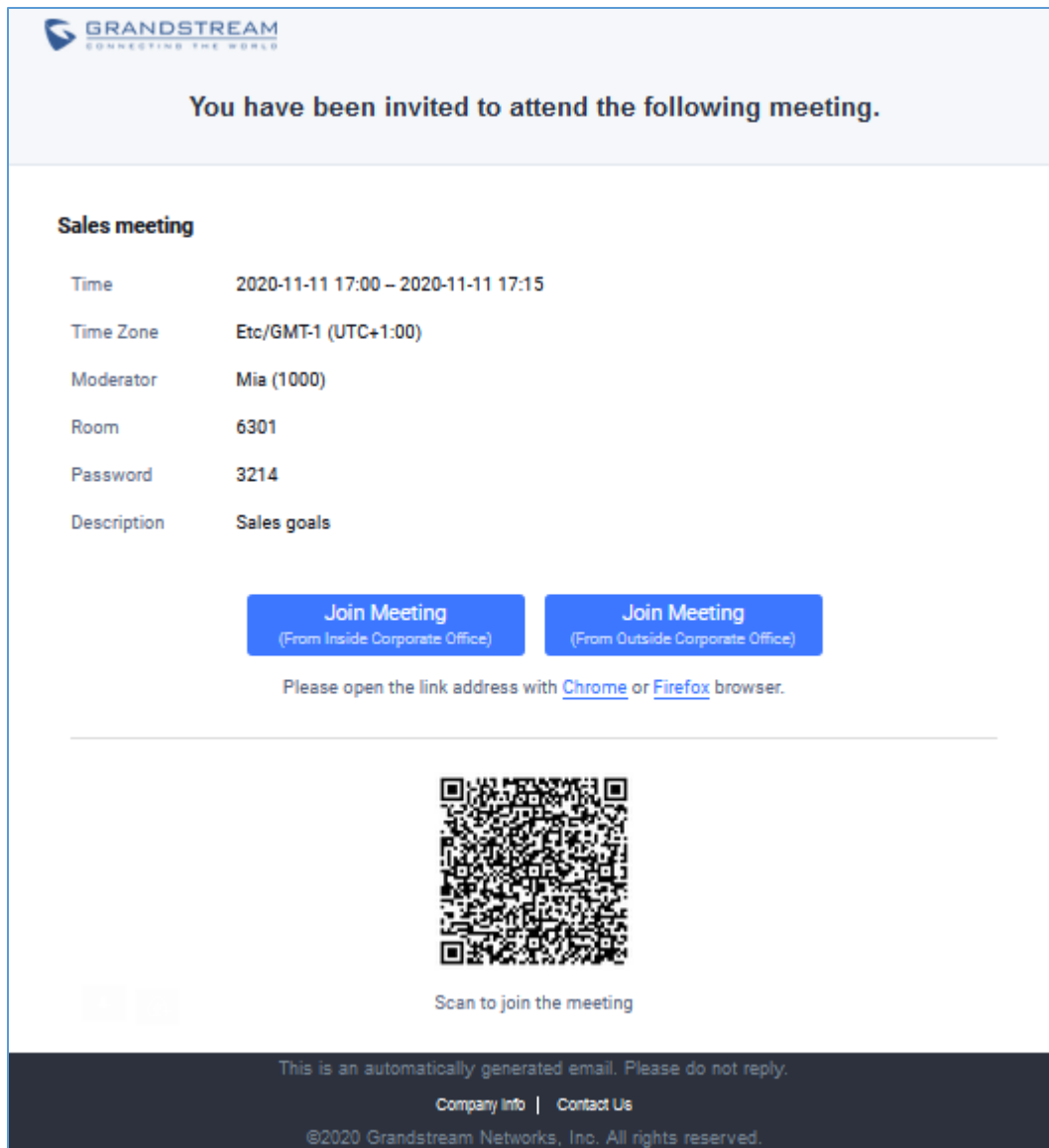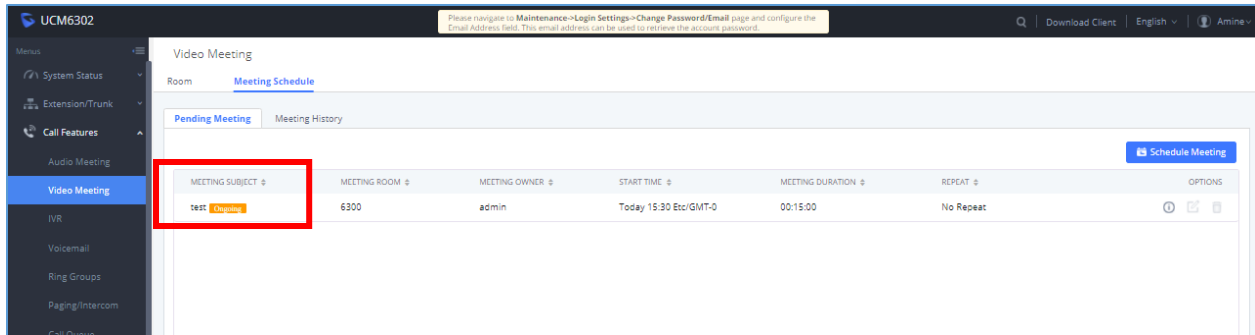
Figure 13: Email Reminder for the Scheduled Meeting

If meeting schedule information has been modified, participants will receive email update immediately.

To join meeting, the Wave user can click on the link in the email notification to join meeting directly, or Wave mobile app user can scan the QR code in the email notification to join meeting as well.

Once the meeting started, it will be displayed under Unstarted meeting with an "Ongoing" status, as displayed below.
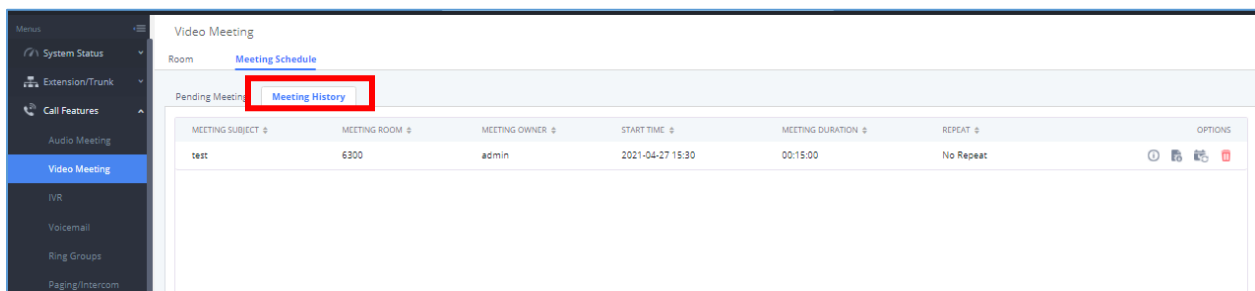
Figure 14: Video Meeting Schedule – Pending

Once the meeting is finished, the meeting will be displayed under Meeting History as below:
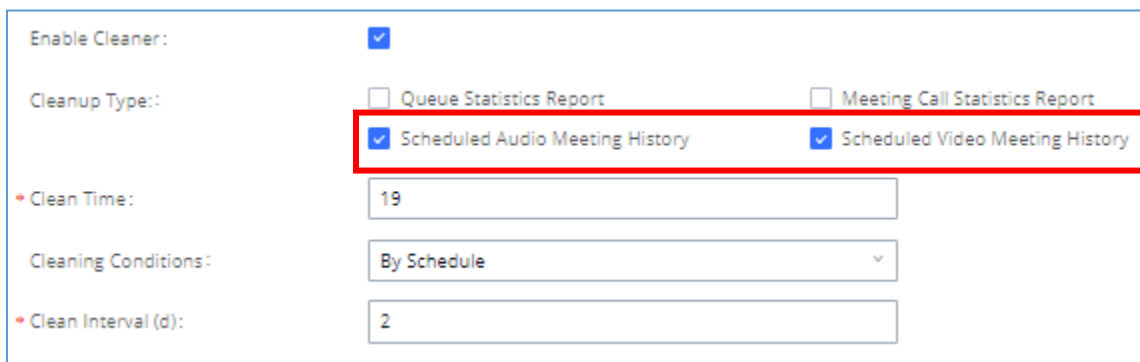
Figure 15: Video Meeting Schedule – Completed

In addition, the system will send a meeting report email to the host, where he/she can view the meeting and participant information.

The users can Clean up the history of audio and video schedule meeting regularly.

Figure 16: Scheduled cleanup for audio/video meeting history

UI CUSTOMIZATION

UCM needs to connect to GDMS, so an open beta plan package for RemoteConnect will be assigned to it to start with.

On the **Value-Added service → UCM RemoteConnect → Company Brand customization page**, users can edit the company name and select a local image file as the new logo. The company name acts on the text part with the company's logo, and the pictures are in different formats and sizes according to the logo position, which are LOGO1 80*80px, LOGO2 256*256px, LOGO3 64*64px (only "ico" format is supported), these logos will be displayed on the "UCM management platform/login", "Reset Password", "Email Template", "Wave_PC", "Wave Login", "Browser Label", "Guide Page" interface preview.

Once done, the administrator can log in to the UCM management platform and customize the Wave LOGO, please refer to the UCM RemoteConnect user guide for details:

http://www.grandstream.com/sites/default/files/Resources/UCM63xx_RemoteConnect_User_Guide.pdf

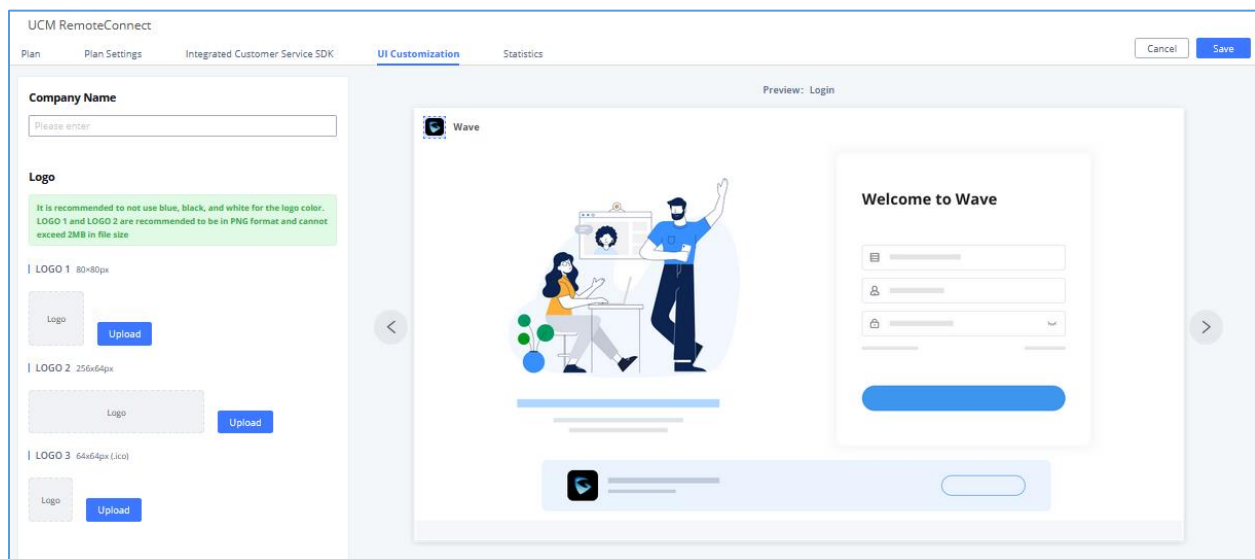After customizing the logo, all Logos on the Wave page are displayed as customized Logos.


Figure 17: Company Brand Customization Interface

IM DATA CLEANING

Administrators are able to clean the Instance message data generated during chat discussions using wave web and in order to do that, please navigate the UCM630x web interface and go under **Maintenance →
System Cleanup/Reset → Cleaner**.

It can either be done manually under Manual Cleaning as show below:
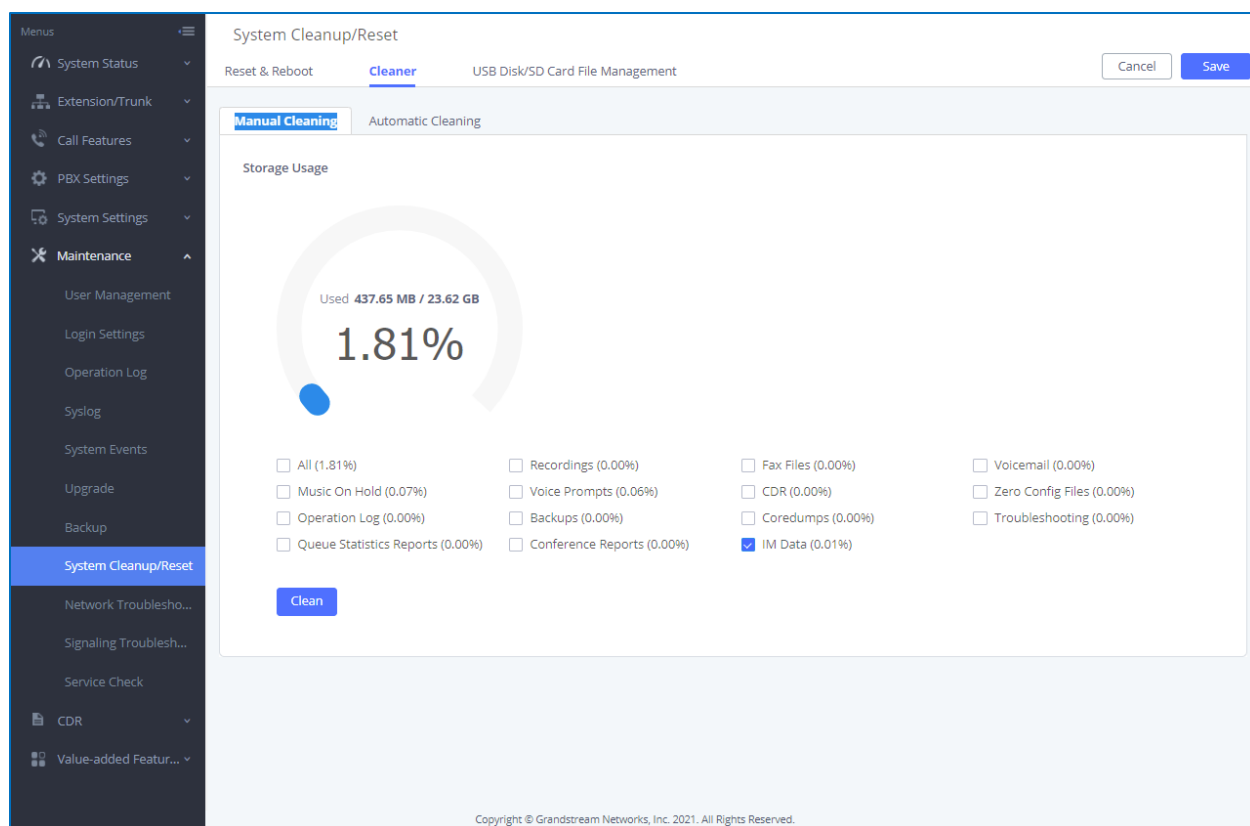
Figure 18: Manual IM Data cleaning

Alternatively, it can be done automatically by configuring IM Data Cleaner as shown below:

Figure 19: Automatic IM Data Cleaner

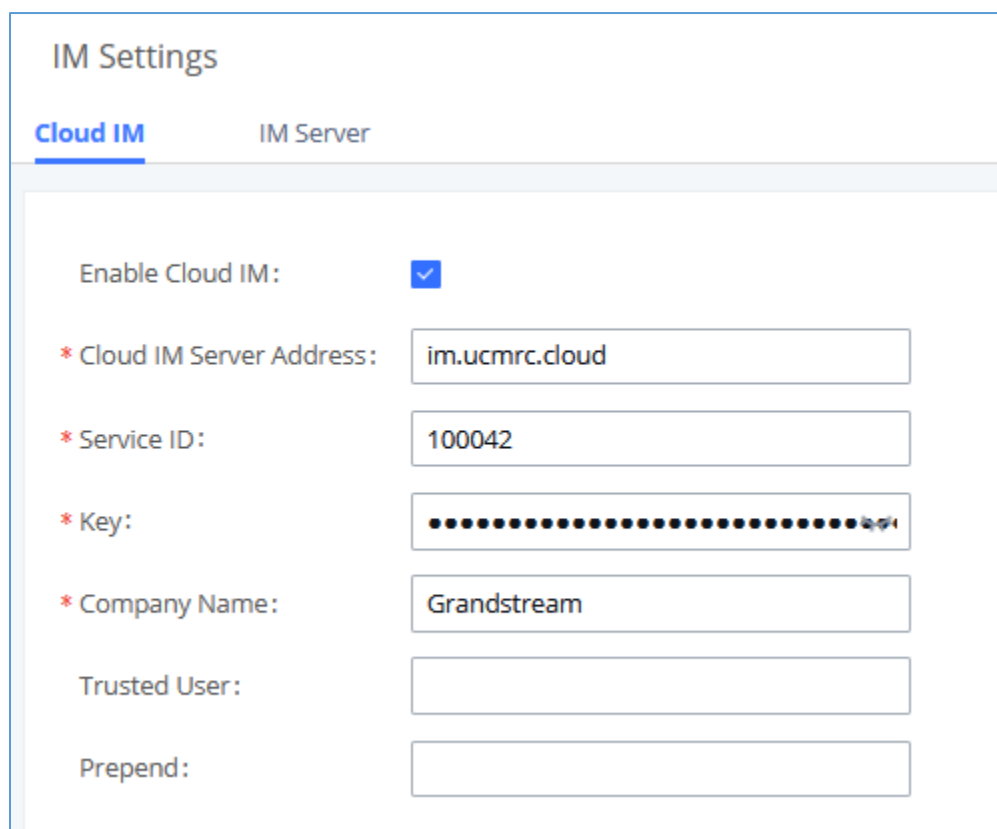**Table 10: Automatic IM Data Cleaner**

Enable Cleaner	Enable the IM Data Cleaner function.
Cleanup Type	Choose the cleanup type; either IM message or IM shared files or both.
Clean Time	Enter the hour of the day to start the cleaning. The valid range is 0-23.
Cleaning Conditions	**By Schedule:** If the clean interval is 3, cleaning will be performed every 3 days to delete all files. **By Threshold:** Check at the configured cleaning time every day to see if the storage threshold has been exceeded and perform cleaning of all files if it has. **Keep Last X Days:** Delete all files older than X days.
File Clean Interval	Enter 1-30 to specify the day of the month to clean up the files.

CLOUD IM

When enabling the Cloud IM, all IM data in GSWave is stored in the external server Cloud IM, it is no longer stored in the UCM. The GDMS can configure CouldIM service for UCM devices. At this time, the UCM device synchronizes the configuration item information.

Figure 20: Cloud IM

Table 11: Cloud IM parameters

Enable Cloud IM	You can configure it, If you have purchased the UCM Cloud IM package or the Grandstream IM server. If not, the configuration will not take effect, only the UCM local IM service is allowed.
Cloud IM Server Address	The domain name or IP address of the Cloud IM server.
Service ID	The service ID of the Cloud IM server.

Key	The Key of the Cloud IM server.
Company Name	The Company name.
Trusted User	The trusted User of Cloud IM. Only letter, numbers, and special characters @ . allowed.
Prepend	It is added before the extension number. like the extension prefix.