



Hosted MOH Service Provider
CMS User Guide

Table of Contents

1 Introduction.....	3
1.1 The overall MOH system.....	3
1.2 System Model.....	3
1.3 Main features.....	4
1.4 New in this release (v1.4).....	4
1.5 System icons:.....	6
2 Using the system.....	7
2.1 What do you need to do to get started?	7
2.2 View MSP Profile.....	8
2.3 Add a Customer.....	9
2.3.1 Prefix Convention.....	11
2.3.2 Send filenames to remote devices.....	12
2.3.3 Create Customer Logon.....	12
2.4 Creating Customer structure (create/edit Groups/Locations).....	13
2.5 Review/Edit Customer details.....	14
2.6 Add Group.....	14
2.7 Select a Group.....	16
2.8 Add Location.....	17
2.9 Select a Location for update/review.....	19
2.10 Add / Schedule Content.....	20
2.10.1 Uploading messaging files.....	20
2.10.2 Scheduling at Group Level.....	23
2.10.3 Scheduling at Location level.....	25
2.10.4 Distinguishing Group and Location level schedules.....	25
2.11 Edit an existing schedule.....	25
3 SIP / VOIP based phone systems.....	26
3.1 Asterisk SIP server.....	26
3.1.1 MOH Client configuration for Asterisk.....	26
3.1.2 Asterisk Server configuration.....	26
3.2 Cisco Call Manager.....	27
3.2.1 Cisco system configuration.....	27
3.2.2 MOH Client configuration for Cisco.....	27
4 Logs.....	28
4.1 Log entries.....	28
4.2 Client status values.....	29
5 Exchanging device configuration updates with central CMS.....	30
6 Legal Information.....	31

1 Introduction

1.1 The overall MOH system

MOH Technology have developed a system that can be used by service providers in the Messaging/ Music on Hold (MOH) industry to distribute on hold content to their customers using the internet.

The same system can also be used as a 'Triggered Messaging' system, where the local hardware is connected to an input trigger and local loudspeakers, for instance at an information booth in a museum, leisure facility or store.

The system comprises:

- a central 'content management' component (CMS), based around a web interface, where service providers upload content files and schedule them for distribution to multiple customer locations.
- a local application that runs on a Barix Exstreamer at each client location. The audio output of the Exstreamer is connected to the on hold audio input of the customer's telephone PBX, or to an information booth, depending upon the desired function. The same CMS can be used to support both MOH and Triggered Messaging points simultaneously. If the Customer has a SIP phone system, the Client can also provide the on-hold audio over the Network.

1.2 System Model.

Before using the system, it is important to understand how it is structured and how this relates to the businesses it supports. There are MOH service providers (MSPs), who generate on hold messaging content for their Customers. These customers can have many individual locations, which are associated together in Groups, according to some common characteristic.

The system model is hierarchical. The central system can support multiple MSPs, each MSP can have multiple Customers and each Customer can have multiple Groups containing many Locations.

When an MSP is set up on the Hosted system, they have a limit set as to how many locations they can have – if this limit is reached, no new devices can be added without System Superadmin action.

There are 3 levels of user access:

- Superadmin: Can see the whole system, used to set up MSP accounts and logons for them. Create, Review, Update and delete (CRUD) privileges.
- MSP: Each MSP has their own logon(s) which gives access allowing them to set up their Customer installations. CRUD privileges on their own hierarchy.
- Customer: Each Customer has their own logon(s) which gives access allowing them to review their Customer installation.

Each level has full privileges over the ones below it.

The CMS has three main functional areas:

- Setting up and maintaining the customer hierarchy of devices
- Uploading and scheduling content for groups and locations
- System logs

This document will cover all aspects of these areas and is intended for use by an MSP.

At each customer Location is a Barix device running the MOH Client firmware, described in a separate document: the MSP Client User Guide.

Typically, a device can be sent direct to site and will operate without any need for onsite intervention by staff.

The devices can be bought from Barix Distributors – check www.barix.com for the distributor most appropriate for you. When ordering devices, make sure to specify that you need them loaded with the MOH Client application.

1.3 Main features

The following list details the main features of the MOH Technology solution:

- Network content distribution: updates can be active in minutes, everywhere!
- Status display: know what audio is playing, where
- Error notifications: if a unit has a problem, the system can notify you by email
- Supports standalone (non network) playback
- Control of remote devices: turn the audio up, disable the device
- Simple mixing functionality to merge two audio files e.g. For corporations who want a Brand feel, but with a local twist
- Easy update of audio at multiple locations
- Network streaming to support VOIP/SIP phone systems.

1.4 New in this release (v1.4)

- Simple mixing functionality

By marking Groups and Locations as using 'Mix', the system will automatically combine the scheduled Location file with the Location's owning scheduled Group file. Any time one of these files changes, a new mix is produced

- Multiple alerting email addresses for notification of problem locations.
- Use of Group/Location prefixes to declutter screens

Using a consistent prefix to identify a Group, Locations in the Group and files that are relevant to them enables the system to just show the relevant information when creating schedules

- Send full filenames to devices













For use with Standalone devices with no network connection to the MOH device, makes things easier for staff. Requires Client firmware V00.34.2K, 08.06.2011 or later.

- Mass upload of files to the server

The user can build a list of files to upload, start the transfer and get on with something else...

- Ability to select and change user CMS password
- Automatic timeout from CMS session when unused (default 15 minutes)
- Support for proxy servers at client locations

1.5 System icons:

Symbol	Meaning
	Status OK
	Add an item: can be a new MSP, Customer, Group, Location, Schedule, or file, depending upon the context. Always has a description to the left, identifying the action.
	Delete item: can be an MSP, Customer, Group, Location, Schedule, or file, depending upon the context. The item to be deleted is always to the left. A pop up confirmation is displayed before the item is deleted.
	Error condition. Used to identify an MSP, Customer, Group or location in error. If a location is in error, this condition is inherited 'upwards' through the hierarchy, to allow users to easily locate error sites by a drill down process. When the error condition clears, the icon reverts back to the OK icon. Note: when a location is newly defined and has not yet been in contact with the centre, it will be flagged in error, but in this case the error is not reported up: this is to avoid the commissioning of new sites from flagging 'false error' conditions.
	Suspended / Expired Account: The MSP / Customer account has either been suspended, or has expired. All 'add item' and scheduling functions are disabled until the Account is reset to OK status by MSP / Superadmin action. Audio will not play at Locations that have called in and received this status.
	Return to previous level: navigated the system back to the calling screen of the current one. Present on those screens that don't have 'Save' or 'Cancel' functions, that achieve the same thing.
	Home: returns the user to their 'Home' screen (i.e. The one displayed on logon). Note: there are differing levels of Home screen: customer, MSP and Superadmin.
	Display / Edit details: clicking on this icon will display the details of the MSP named to the left, allowing them to be updated.
	Indicates that the indicated account has been set up to receive Alerting emails. This flag is set/edited by the add/change User functionality
	Indicates that a Group/Location is not having 'Mix' files produced for it
	Indicates that a Group/Location is having 'Mix' files produced for it by combining the Group level file with the Location specific file
	Indicates that there is a problem with the produced Mix file – hover the mouse over the icon to see a text description of the error.

One principle of the design is that Names (MSP, Customer, Group, Location) are typically links that can be selected to navigate to the next level down in the hierarchy, or reveal further information. In the case of the schedule list, it is the date of the schedule that acts as the link. When the mouse moves over such links, they change colour and the pointer changes to indicate the link.

2 Using the system

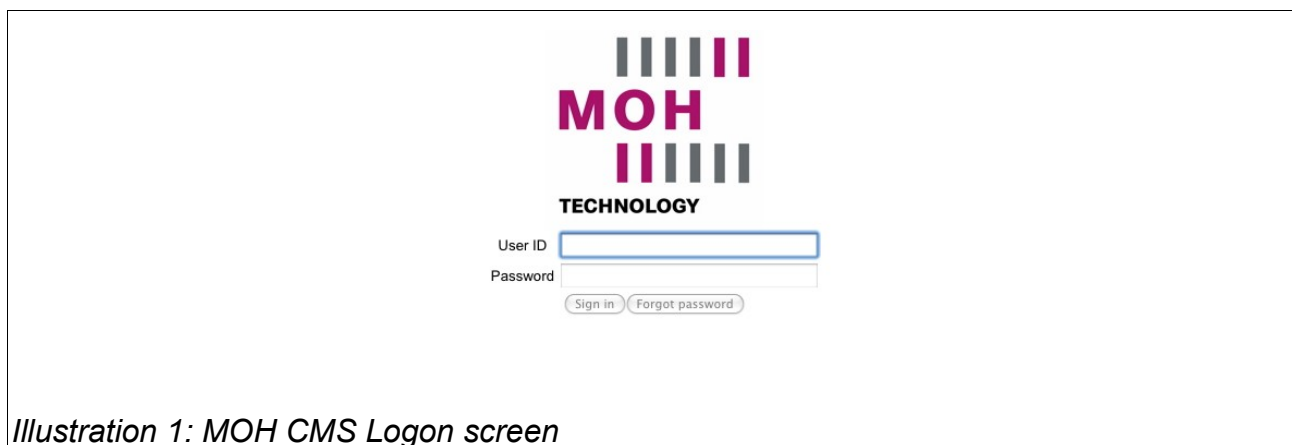
2.1 What do you need to do to get started?

The purpose of this system is to enable MOH service providers to distribute On Hold audio to their customers and have it activate at the right time.

To do this, it is necessary to:

- Define each customer
- Define the customer hierarchy
 - organise Locations into Groups
 - Identify each Location
- Upload the On Hold Messaging / audio for the Customer
- Schedule the audio to Groups/Locations

Access the system via <http://www.barimon.net/moh>¹



Enter your MSP logon credentials, sent via mail when your account was created. If you have forgotten the password, click on the 'Forgot password' button and it will be sent to your registered email address.

Once the correct logon credentials have been supplied you will see the MSP Overview screen, containing details of all the customers for the MSP:

¹ If your system is hosted elsewhere other than by MOH Technology, this URL will be different

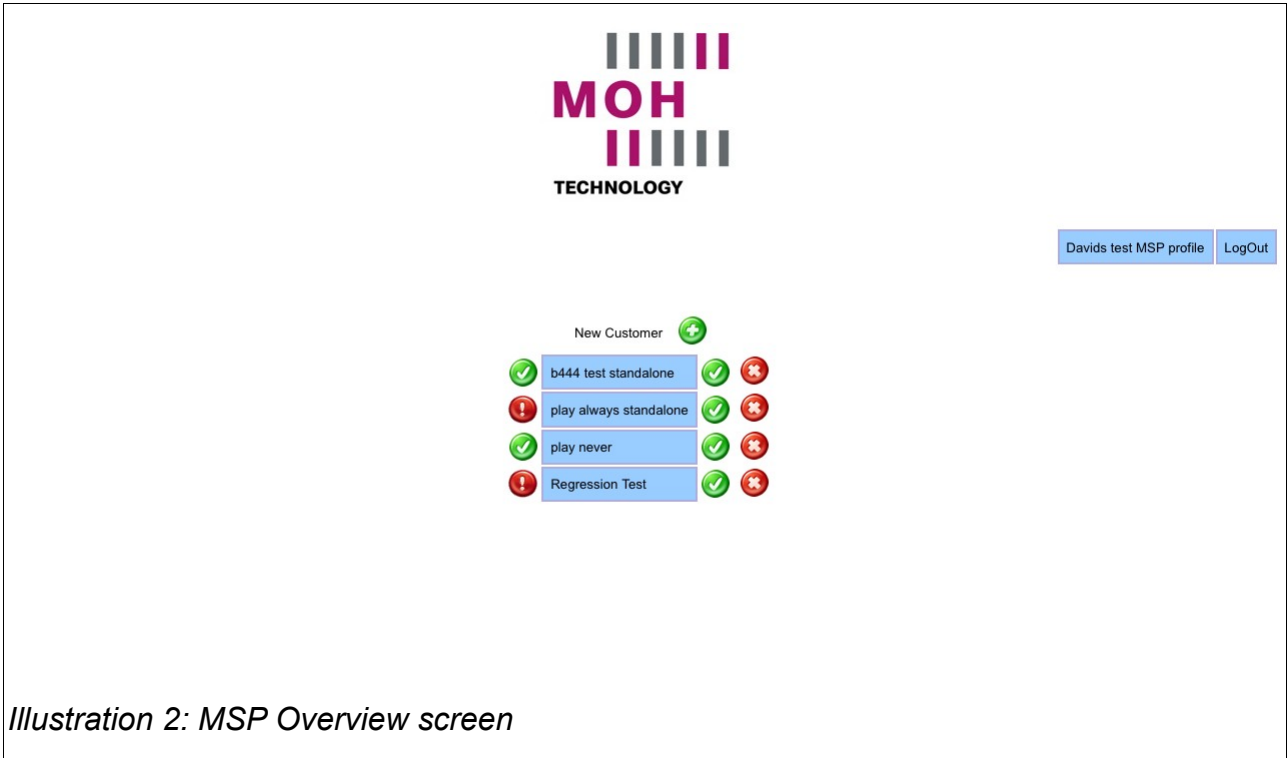


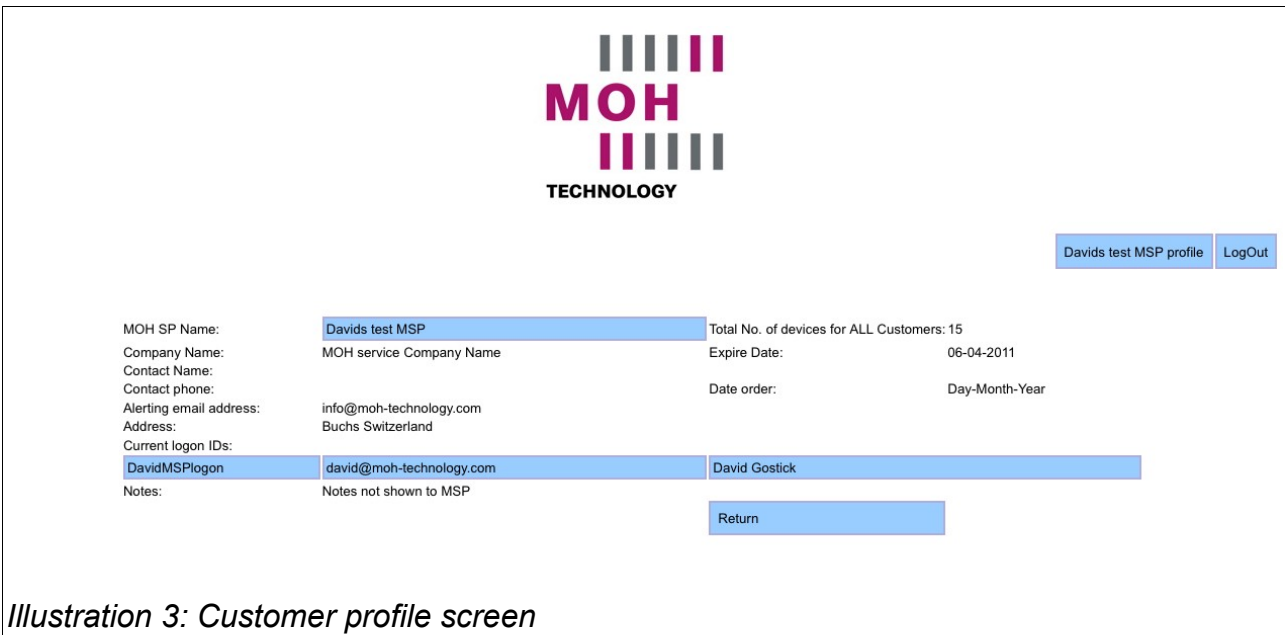
Illustration 2: MSP Overview screen

2.2 View MSP Profile

Clicking on the 'Profile' button (top right of screen, next to the Log Out option) allows an MSP to view their configuration details, as set up on the hosted server:

- Name and Contact details
- Email address to receive Alert messages from the system
- Current logon Ids
- Number of devices authorised for use
- Expiry date of existing contract
- Date format used by the system (US or EU)

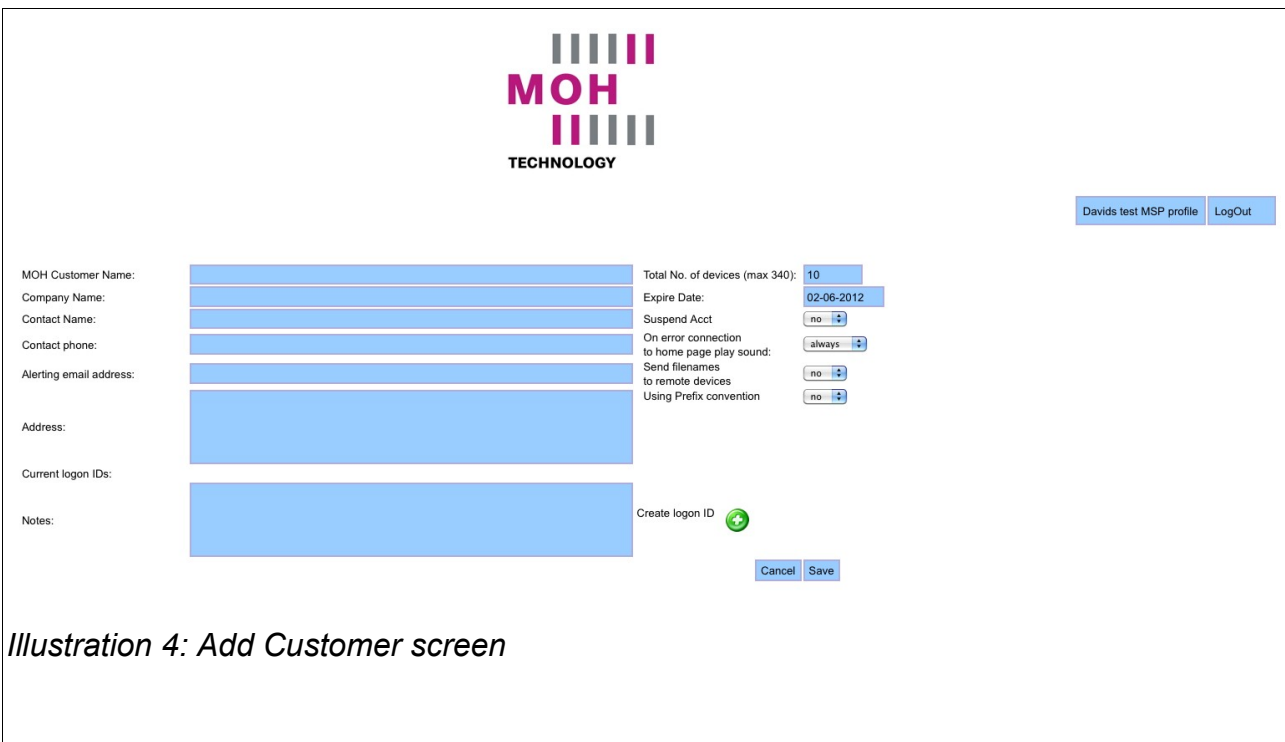
An MSP cannot update the details shown here, but must contact their Host provider to do this if they need any changes made (e.g. MOH Technology, if they are using the MOH Technology hosted platform).



Click on 'Return' to go back to the MSP Overview screen.

2.3 Add a Customer

New Customers are added from the MSP Overview screen. Click on +, or the 'New Customer' text to bring up the 'Add customer' screen:



Enter the details of your customer in the fields and click on 'Save' to create the customer entry, or 'Cancel' at any stage prior to pressing 'Save' to abort the creation of the Customer. The name and contact details are straightforward, however some fields require more explanation:

Field	Usage
Total No. of devices	It is possible to limit the number of locations a customer can have. This functionality is useful if a Hosting Service Provider wishes to operate a 'block licence' price model with the MSPs they host the service for.
Alerting email address	Nominate an email account to receive all system notifications: timeout notifications, upcoming account expiry etc.
Expire date	By default an account is valid for one year: this date can be altered at any time. The functionality is for use by hosting service providers who wish to operate a periodic charging model. Reminder mails are sent 4 weeks and 1 week before expiry. If the account is not renewed, the scheduling and editing functionality is automatically disabled, and the 'no entry' icon is displayed against the account and all sublevels.
Suspend Acct	The operator can choose to suspend a customer account by clicking on the checkbox. To reverse the suspension, simply uncheck the box. Scheduling and editing functionality is disabled for Suspended accounts and the Device playback is stopped for all of the Customer's units from the point of their next call in to the central CMS.
On error connection to home page play sound	From time to time a location can have a network access problem. This setting determines how the MOH devices installed at the Customer's locations will react to such an event. Possible settings are: <ul style="list-style-type: none"> • always => continue playback indefinitely, do not worry about having no connection • disable => stop playback immediately on error • 1, 2, 3, 4, 5, 7, 10 => number of days to continue playback, before disabling audio Once the device is back in contact with the CMS, audio playback will resume in all cases. This functionality enables the hardware to be used as a standalone player (once configured), but also supports the capability to disable audio at problem sites e.g. If a customer is not paying a bill!
Send filenames to remote devices	Early versions of the system sent all audio files as 'Content.xxx' or 'Backup.xxx' and will ignore any other audio files. From Client firmware v00.32k it is possible to send audio

	files with their own filename; the system will add a 'C_' or 'B_' prefix. This is to make support easier. Any installation with an earlier firmware MUST have this flag set to NO, which is the default value
Using Prefix convention	MSPs with large numbers of Group, Locations and Files per Customer can make use of prefixes to make selecting files easier, ensuring that only relevant files are displayed.
Create logon ID	Use this functionality to create Customer logons, able to view data only. Clicking on the + symbol navigates to a screen where logon details can be entered, see section Error: Reference source not found. After creating a logon id, the system returns to the Create Customer screen

Clicking on cancel aborts the creation of the customer account. To create the Customer, Click on 'Save' to commit the details to the database, the system will return to the MSP Overview screen, with the new customer added.

2.3.1 Prefix Convention

For operators with large numbers of Locations and Files, the volume of choice when scheduling a file can be daunting. Such customers can use the prefix convention in naming their Groups, Locations and Files, so that the system will only display the relevant files for scheduling to their Groups/Locations.

First the 'Using Prefix convention' flag must be set to 'yes' for the Customer.

A Prefix is characters preceded by the separator '_' and should be used on the Group/Location names and filenames, for example a Group could be 'Zurich_North' , Locations could be 'Zurich_Oerlikon', 'Zurich_Altstetten' etc, here the prefix is 'Zurich_'

When creating files for this Group, or individual Locations within the Group, the uploaded filename should be preceded by this prefix e.g. 'Zurich_Easter promotion 2011.mp3' In this way, when scheduling files for the 'Zurich_North' Group, the system will only display those files with the correct prefix.

The user can select to 'show all files' if there is a different file to be scheduled.

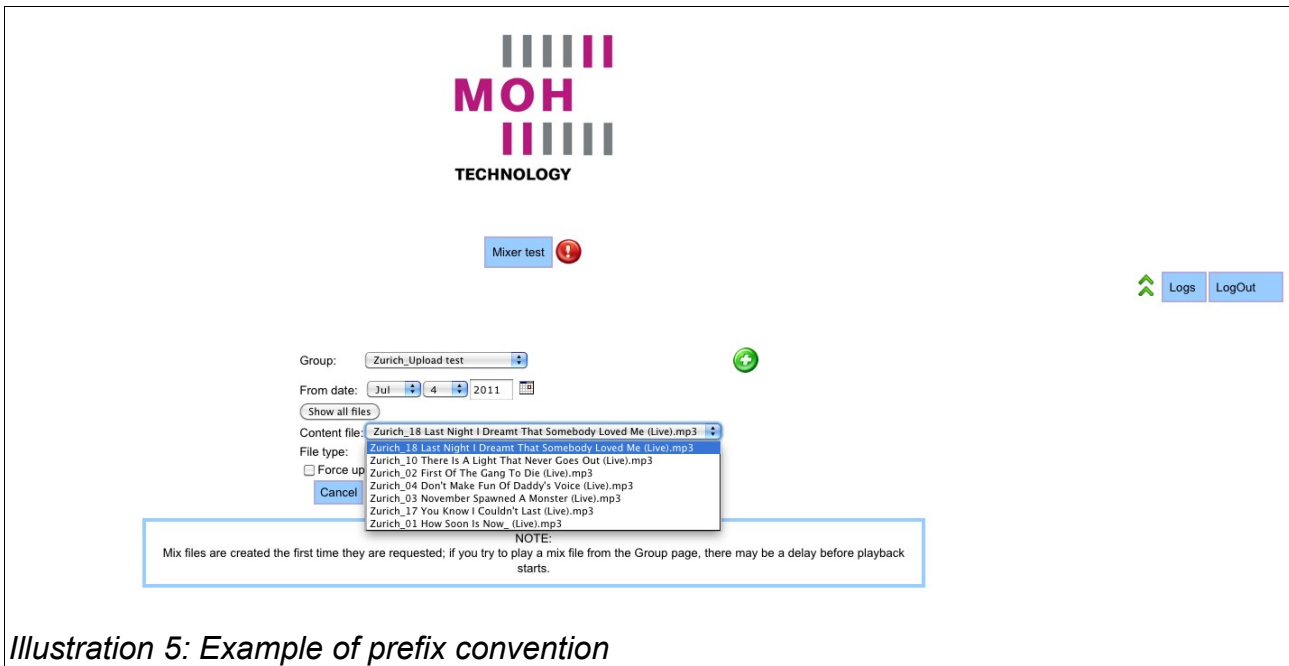


Illustration 5: Example of prefix convention

2.3.2 Send filenames to remote devices

This functionality is useful for those customers who are operating in Standalone mode, receiving updates either physically, or via email, where a user might need to physically confirm what file is on the USB media.

The early versions of the MOH solution sent the audio files to the MOH Client player hardware as a file called 'content.xxx', this was to protect users from someone substituting the file and having an alternative message play.

However, in those few Locations where the player is actually being used in Standalone mode, with Content updates being sent by email, it was found that always having the same filename led to confusion.

Customers with devices with firmware pre version 33.2k must NOT use the 'send filename' functionality with those devices. If they wish to adopt this functionality at such locations, the device firmware must first be updated.

An MSP can support both systems for their customers as this flag is set at the Customer level.

2.3.3 Create Customer Logon

From the Create/edit Customer screen, clicking on the Create logon icon will display the screen below:

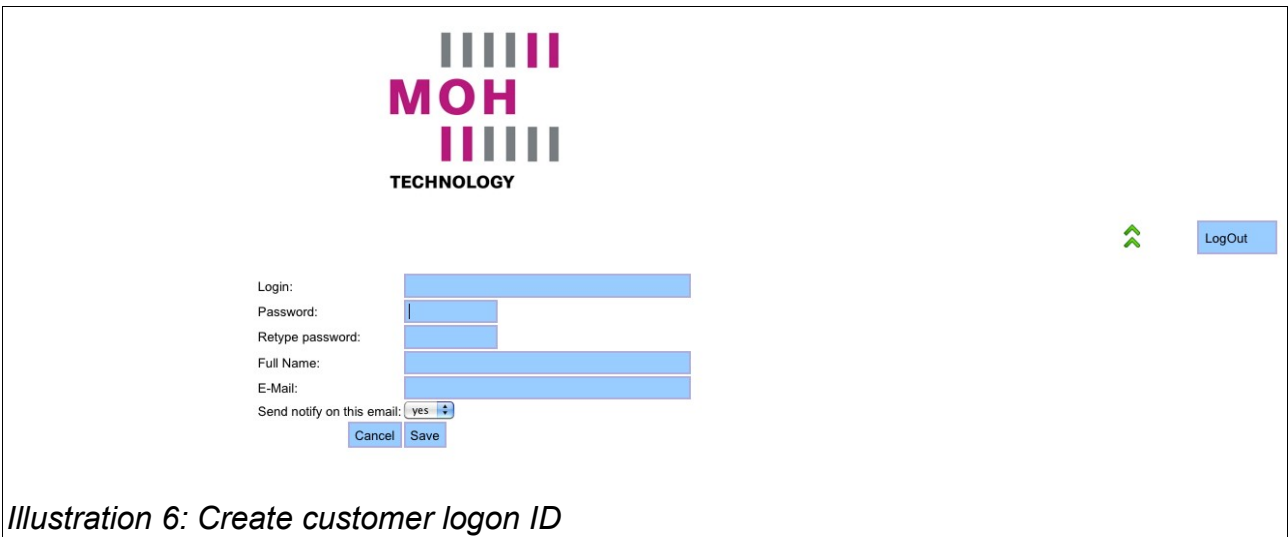


Illustration 6: Create customer logon ID

Enter a Login name and a password (minimum 6 alphanumeric characters).

If you wish that this user be automatically notified of problems at locations, set the 'send notify' flag to yes.

When 'Save' is clicked, the system will send a Userid email to the nominated email address and the system returns to the Create/edit Customer screen, otherwise 'Cancel' returns to the previous screen without creating the Logon.

Logons that have been set up to receive Alerting messages are shown with the icon:



2.4 Creating Customer structure (create/edit Groups/Locations)

From the MSP Overview page, click on a Customer name to select it.

Note, for newly created customers there will be no underlying structure: it must be created.

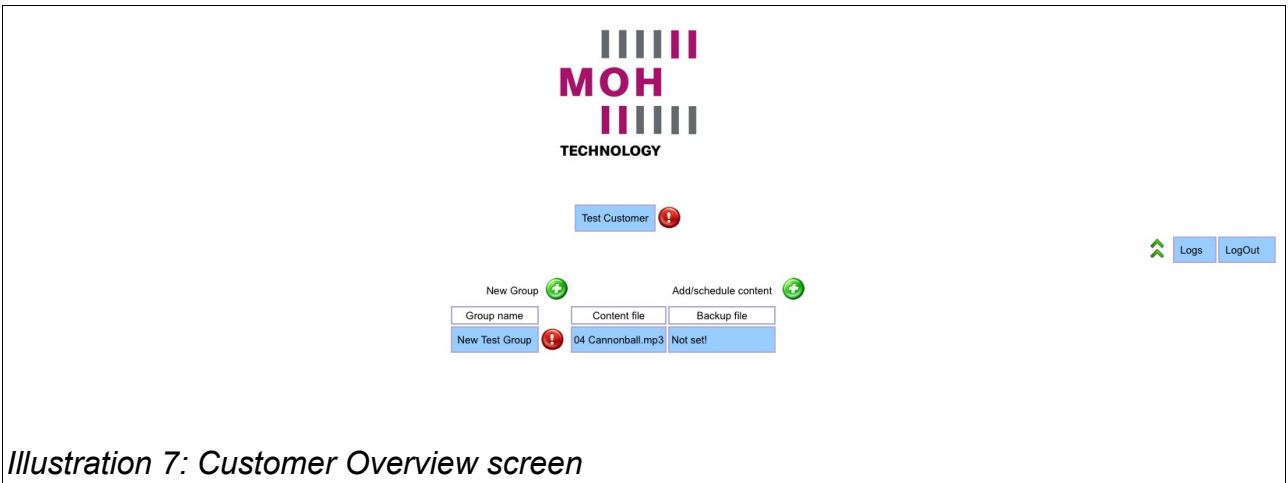


Illustration 7: Customer Overview screen

All individual Customer Locations must be defined in a Group, even if a Customer only has one Location, hence you must add at least one Group before being able to define any Locations.

2.5 Review/Edit Customer details

The current Customer name is displayed at the top of the screen, beneath the MSP logo. The Customer name is a link, clicking on it will bring up the Review/edit Customer screen:

MOH TECHNOLOGY

LogOut

MOH Customer Name: Mixer test

Company Name:

Contact Name:

Contact phone:

Alerting email address: dg@moh-technology.com

Address: nowhere

Total No. of devices (max 400): 60

Expire Date: 15-02-2012

Suspend Acct: no

On error connection to home page play sound: always

Send filenames to remote devices: yes

Using Prefix convention: yes

Current logon IDs:

Mixer	david@moh-technology.com	mixerr
Mixer2	info@moh-technology.com	mixer2

Notes:

Create logon ID

Cancel Save

Illustration 8: Review/edit Customer details screen

Make any changes and press 'Save', or abort the operation by clicking on 'cancel'

2.6 Add Group

Click on 'New Group', or the + symbol:

MOH TECHNOLOGY

Mixer test

Logs LogOut

Group name:

Create Mix Files:

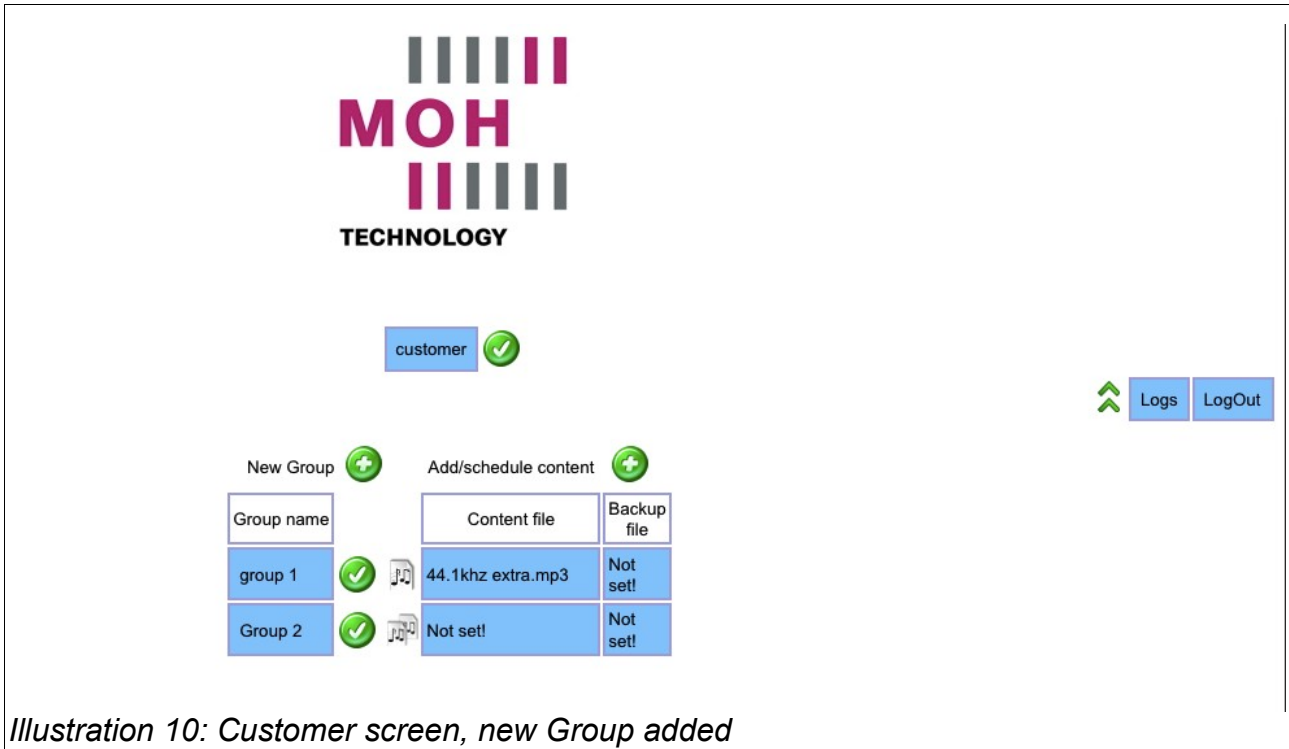
Cancel Save

Illustration 9: Add Group screen

Enter the name for the Group and set the 'Create Mix Files' flag to determine whether the Locations belonging to this Group will have Mix files created from a combination of the Group level file and the individual Location file.


Press 'Save', or 'Cancel' to exit appropriately.


The new group is created and has a 'Green Tick' status, as there are no locations within the Group in an error condition. Similarly, no Content or Backup files have been scheduled for the Group, so these fields in the overview are 'Not Set'



The screenshot displays the MOH TECHNOLOGY interface. At the top, the logo consists of the letters 'MOH' in a large, bold, pink font, with 'TECHNOLOGY' in a smaller, black font below it. The word 'customer' is displayed in a blue box with a green checkmark icon to its right. In the top right corner, there are two blue buttons labeled 'Logs' and 'LogOut', with a green double-up arrow icon to their left. Below the customer name, there are two main sections: 'New Group' and 'Add/schedule content', each with a green plus icon. The 'New Group' section contains a table with two rows: 'group 1' and 'Group 2'. Both rows have a green checkmark icon to their right. The 'Add/schedule content' section contains a table with two rows: '44.1 khz extra.mp3' and 'Not set!'. Both rows have a green checkmark icon to their right. The 'Backup file' column for both rows in the 'Add/schedule content' section is labeled 'Not set!'. A small music note icon is visible to the right of the 'group 1' and 'Group 2' rows.

Illustration 10: Customer screen, new Group added

 - denotes a non-mixing Group

 - denotes a mixing Group

2.7 Select a Group

Now Locations can be defined for the Customer/Group, to do this, it is necessary to select the Group to which the Location will belong by clicking on the Group name:

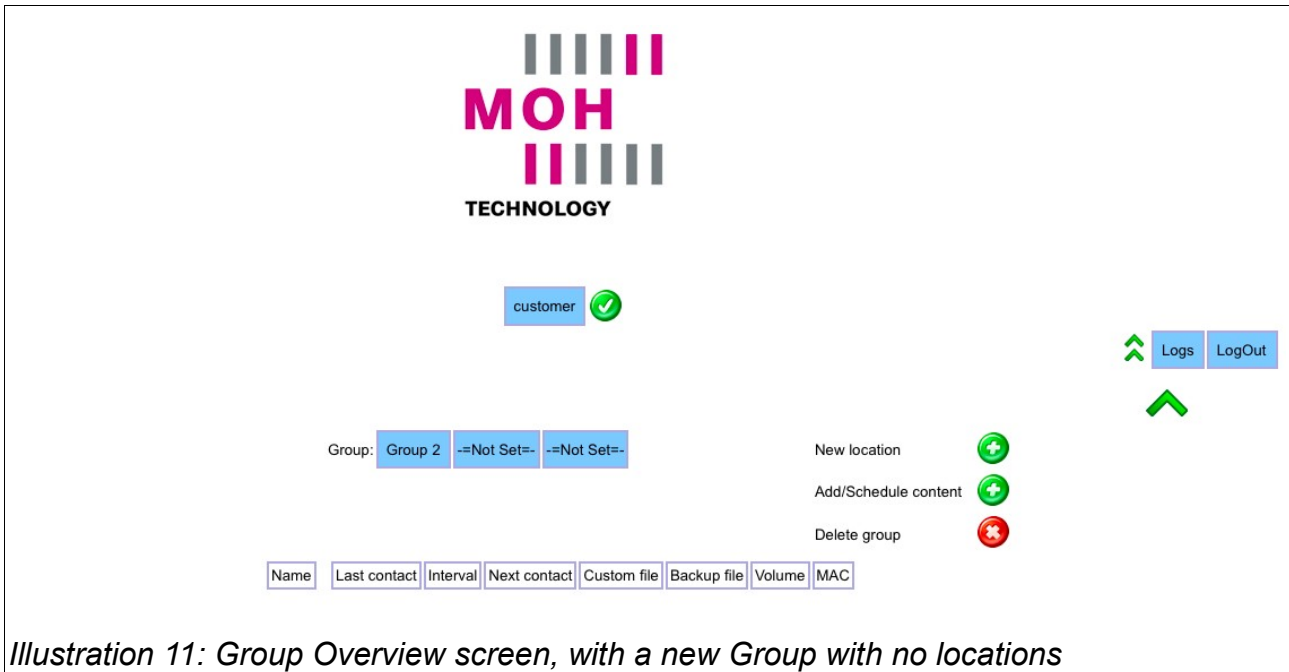


Illustration 11: Group Overview screen, with a new Group with no locations

In the illustration above the text “=Not Set=” refers to the Group Level files – no files had yet been scheduled for this Group.

2.8 Add Location

Click on 'New Location', or the + symbol next to this text, this will bring up the 'Location' screen:

Illustration 12: Create / Edit Location screen

At the Location level, there are several parameters to configure. The most important is the MAC address: this is how a device identifies itself when it calls in to the central system. If an unrecognised MAC address calls in, it is rejected as the system cannot know who it belongs to.

Field	Usage
Add location to Customer	Select which Customer the device is allocated to, defaults to the current one. MSPs may re-use devices as customers change, hence this field can be used to reallocate a device
Add location to Group	Select which Group for the Customer the device is allocated to, defaults to the current one. MSPs may re-use devices as customers change, hence this field can be used to reallocate a device
Location name	Select a display name for the device
MAC address (AABBCCDDEEFF)	Enter the MAC address for the device: this is essential to enable the device to call in for updates from the system. The MAC address can be found on the underside of the Barix device.
Volume	Set the remote device's volume from the available values. Only set a value here if the client default value needs changing.

Phone home period	Define how often the device should call in to the central system. Only set a value here if the client default value needs changing.
Phone home path	The URL for the device to contact the central server. By default, all devices call the MOH Technology hosted service at http://www.barimon.net/moh/update.php WARNING: this setting should only be used by MOH Technology staff, when setting up a self hosted MSP and the client value needs changing.
Device type	Whether a messaging / music on hold device, or triggered messaging
Connection type	The device can also optionally stream the audio via RTP or Raw TCP connection to other network devices. (Intended for streaming to SIP PBX e.g. Asterisk or Cisco all Manager – See later in this document for more information). Default RTP (Network streaming is only supported with uLaw or aLaw: file types u8k, a8k)
TCP Listening port	Set the required port for the client to listen to TCP connection attempts
RTP Stream to address	Set the IP address/port number to stream the audio in RTP. Default 0.0.0.0:0 => disabled
Mixing	Mix flag to control whether this Location has Mix files created for it, or not. In this way a Group with many devices can generally have Mix files, but individual Locations can be excluded. Values are “Create” or “Don't Create” Default value is inherited from the Group setting.
Proxy	For those installations where the customer controls Internet access using a proxy server, the details can be entered here to enable the unit to connect through to the MOH CMS: [user[:password]]@host[:port] Password / Port are optional.

Once all the required settings have been entered, click on “Save” to create the Location (or commit any updates, if you are editing a previously created Location), the CMS will return to the Group Overview screen, showing the device.

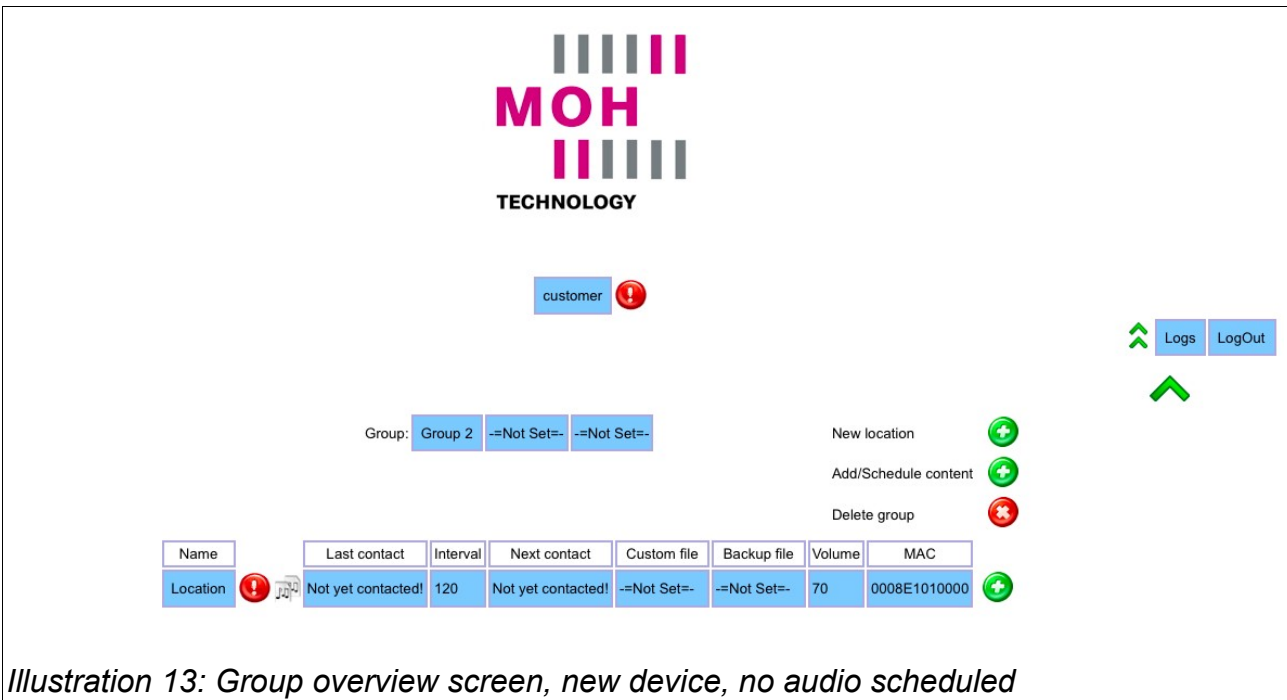


Illustration 13: Group overview screen, new device, no audio scheduled

For a New Customer, which has no audio scheduled yet and whose device(s) have not yet been in contact, as in the screenshot above, you will notice:

- Red exclamation mark for the Location status shown on this screen to indicate that the device has not yet contacted
- 'not yet contacted' in place of time of last/next contact

2.9 Select a Location for update/review

From the Group Overview screen, click on a Location name to select it and enter the Location screen (illustration 12) where you can review/edit the details of that Location.

If the Location details were updated, exit the screen by pressing 'Save' to store the changes, or exit by clicking on 'Cancel' if you were just reviewing the data / do not want to save the changes entered.

2.10 Add / Schedule Content

The purpose of the system is to enable MSPs to distribute the specially prepared content to the places it needs to be heard. To do this, it must first be uploaded to the central system, and then the central system needs to be told where to send it, when. This is achieved using the 'Add / Schedule Content' function, represented by the 'Green Plus' icon on those screens.

In Non-Mix Groups/Locations messaging content can be scheduled either at Group level (on the Customer or Group Overview screens), or against individual Locations (via the Group Overview screen).

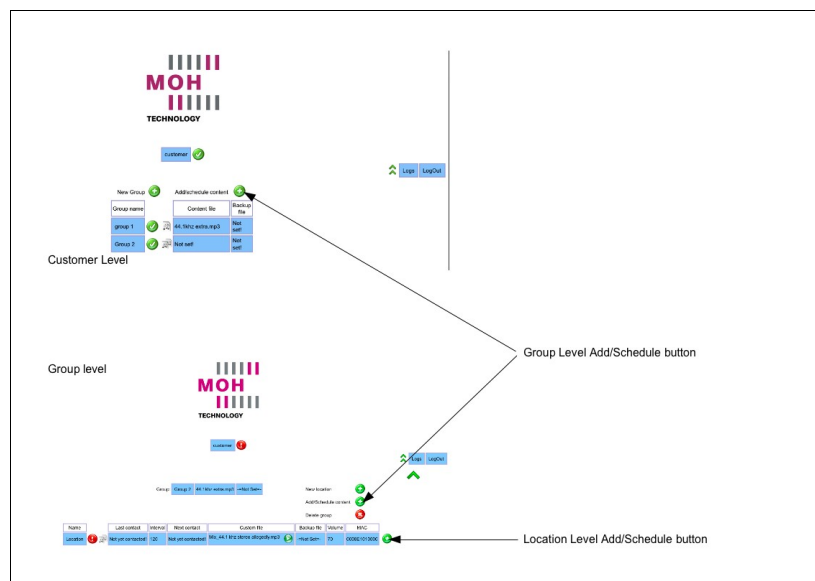
In Mix Groups/Locations messaging content files scheduled to the Group level are appended to the individual files scheduled at the Location level, allowing each Location to have both 'personalised' content and more generic 'Brand' messaging, or to allow a seasonal greeting/special offer to be added to the routine announcement about a Location such as address, website, opening hours etc.

Steps:

1. Upload the messaging content file
2. Select to create a Schedule at the level required
3. When the devices contact the server after the schedule has activated, they will automatically download and use it

2.10.1 Uploading messaging files

Uploading a new file and scheduling it at Group level can be done from both the Customer Home screen and the Group Screen. Both of these screens feature an 'Add/Schedule Content' button and green plus on the middle of the screen, towards the right side. Clicking on this button will bring up the Scheduling screen:



MOH TECHNOLOGY

customer [!]

Current Schedules

Available files

Name	Size	Upload Date
44.1kHz excited.mp3	21.4477	12-05-2011 18:16:06

Upload/Remove files [+]

Schedule file	Start date	Group	Type
44.1kHz extra.mp3	12-05-2011	group 1	Main
44.1kHz extra.mp3	18-07-2011	Group 2	Main
44.1 kHz stereo allegedly.mp3	18-07-2011	Group 2 / [Location]	Main

Group [+]

Location [+]

Logs [↑] LogOut [↑]

List of files uploaded, but not currently used in any schedule

Play audio button

Allows user to upload new files or delete unused ones

Click on the date to edit a specific schedule

Click to create schedule at level shown

Click to delete a schedule

Illustration 14: Explanation of Group Scheduling screen

- The screen displays files that have been uploaded to the server, but are not currently used in any schedule on the left side, and shows the existing schedules on the right hand side.
- The user can select to listen to an unused file by clicking on the green play icon next to the filename, this will cause a popup player to be displayed. n.b. This function is supported for mp3 files only.
- Note: if the customer is using the 'Prefix' system, there will be an option to show “All files”, or to restrict the view to an individual prefix, by selecting from a drop down menu.

To upload file(s), click on the “green plus” icon next to the words “Upload/Remove files”, this will display the File Manager screen, which contains a standard file identification browser option and a list of the currently unused files, which can be deleted:

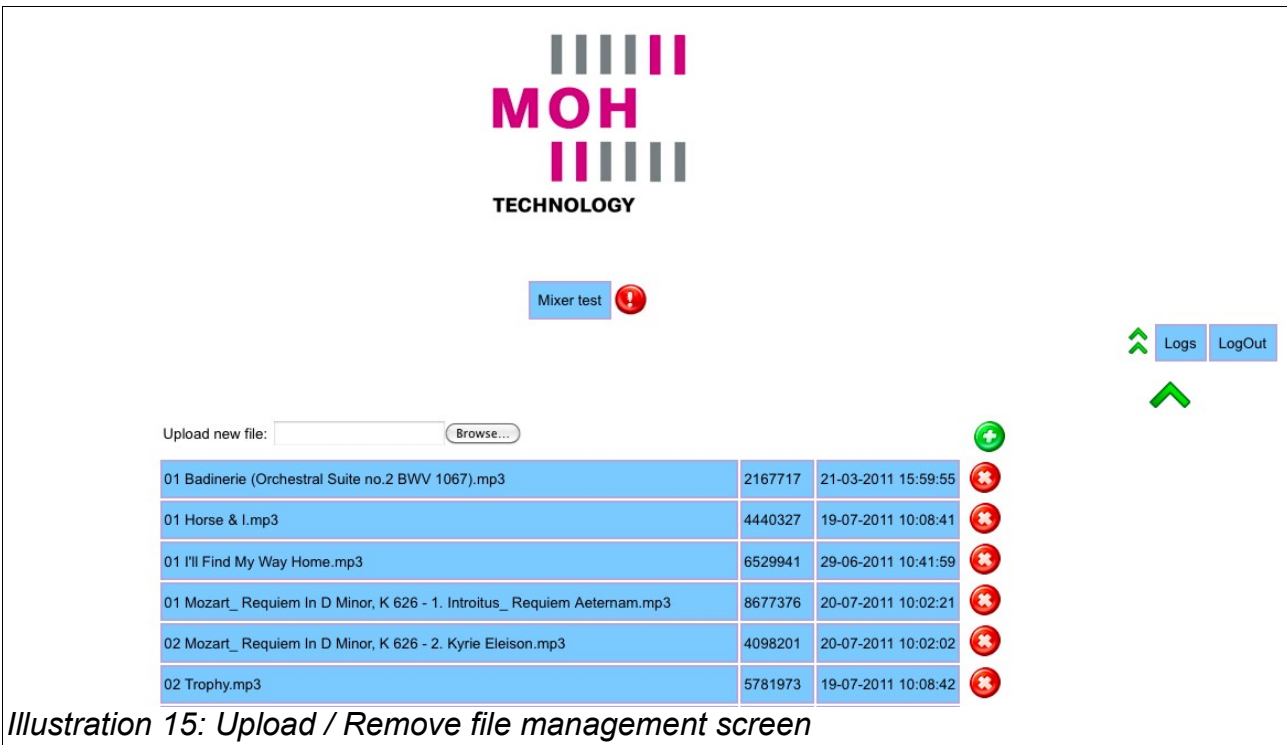


Illustration 15: Upload / Remove file management screen

Click on “Browse” to locate the file on your computer. You can do this multiple times to build up an upload list as shown below:

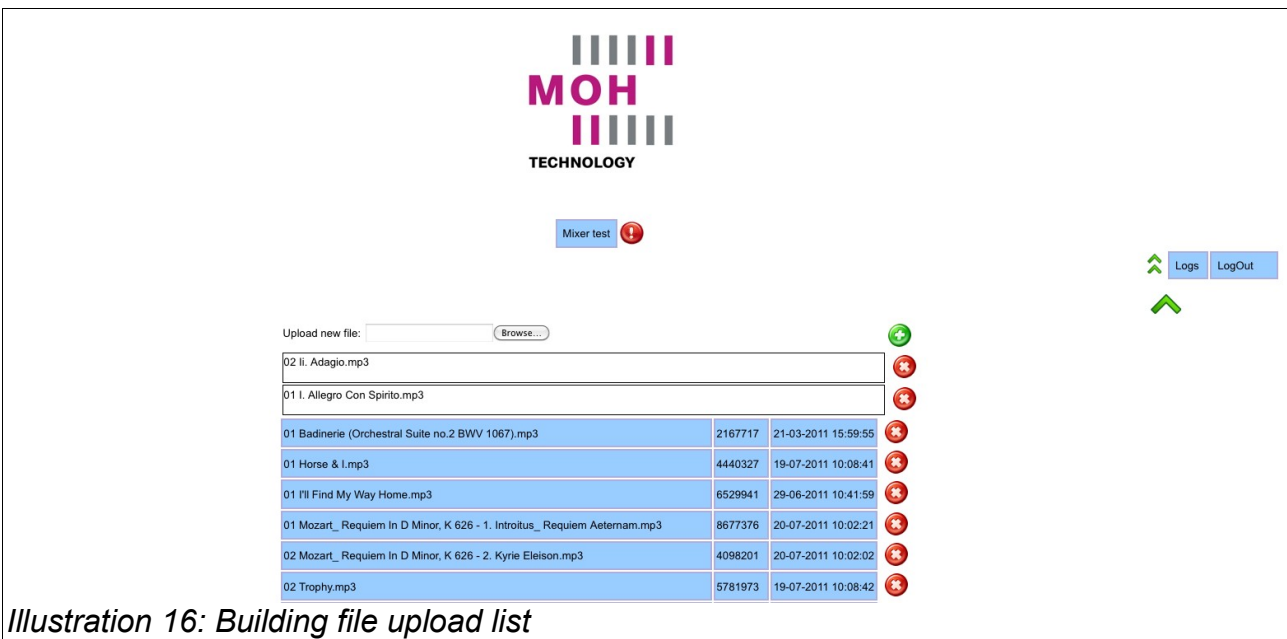


Illustration 16: Building file upload list

click on the “green plus” icon to upload the files to the server: the system will display an “uploading” message:

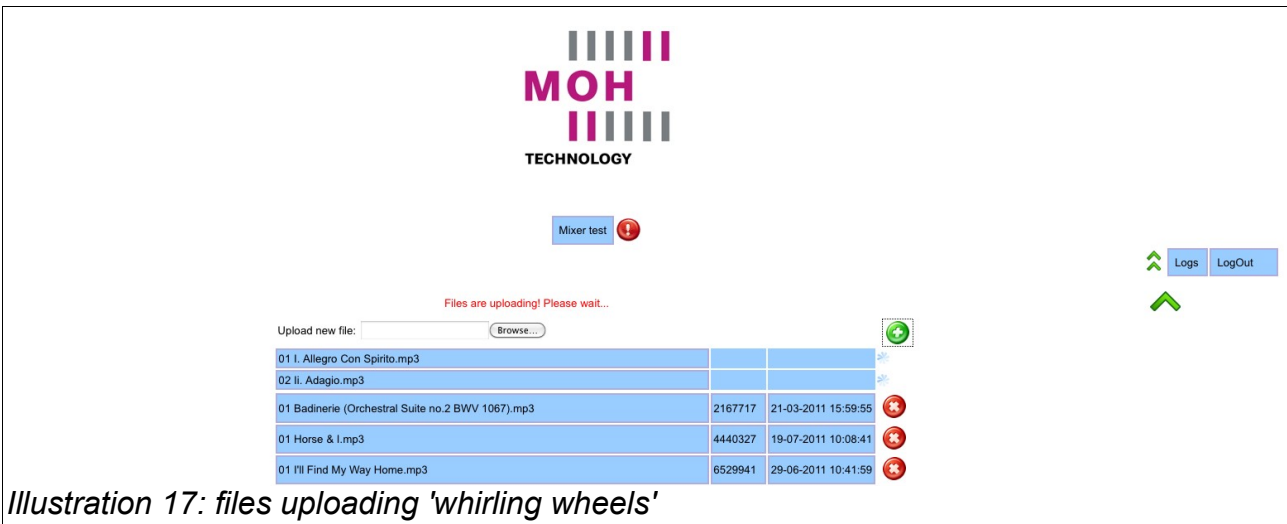


Illustration 17: files uploading 'whirling wheels'

Note, whilst files are uploading, you must NOT navigate away from the screen as this will abort the upload. The system will display a pop up confirmation dialogue if you do try to exit during upload, giving you the option to continue the upload, or to exit the page, aborting the upload.

Once the upload has finished, the system stays in the file management screen, click on the single green up arrow icon to return to the scheduling screen.

2.10.2 Scheduling at Group Level

To create a Group level schedule, click on the "green plus" icon by the word 'Group' (or on the word, also)

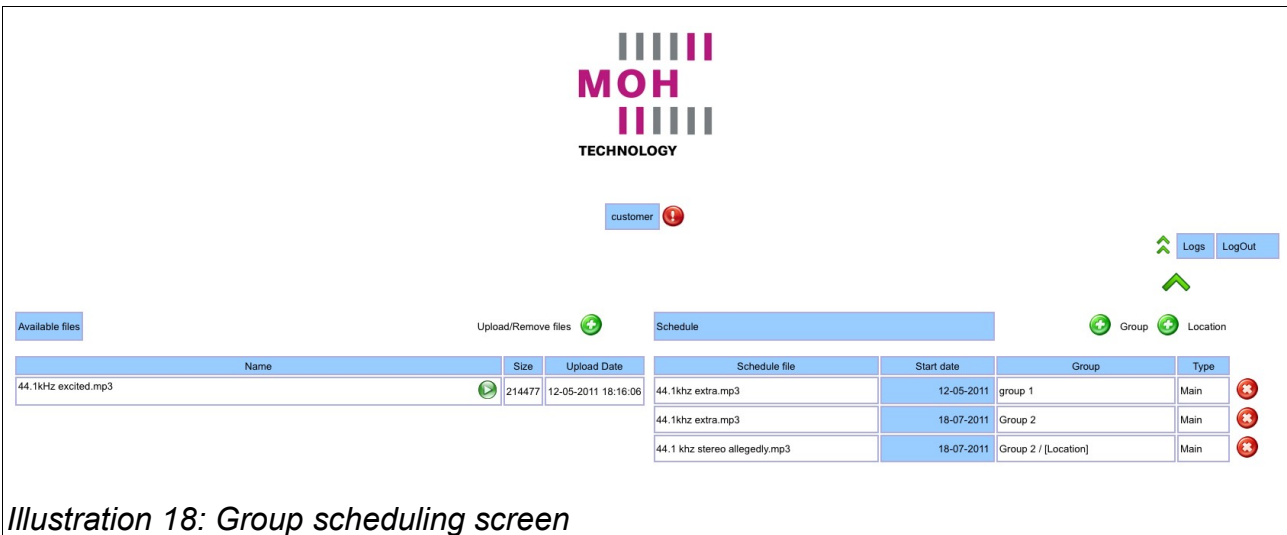


Illustration 18: Group scheduling screen

the system will display add group schedule screen:

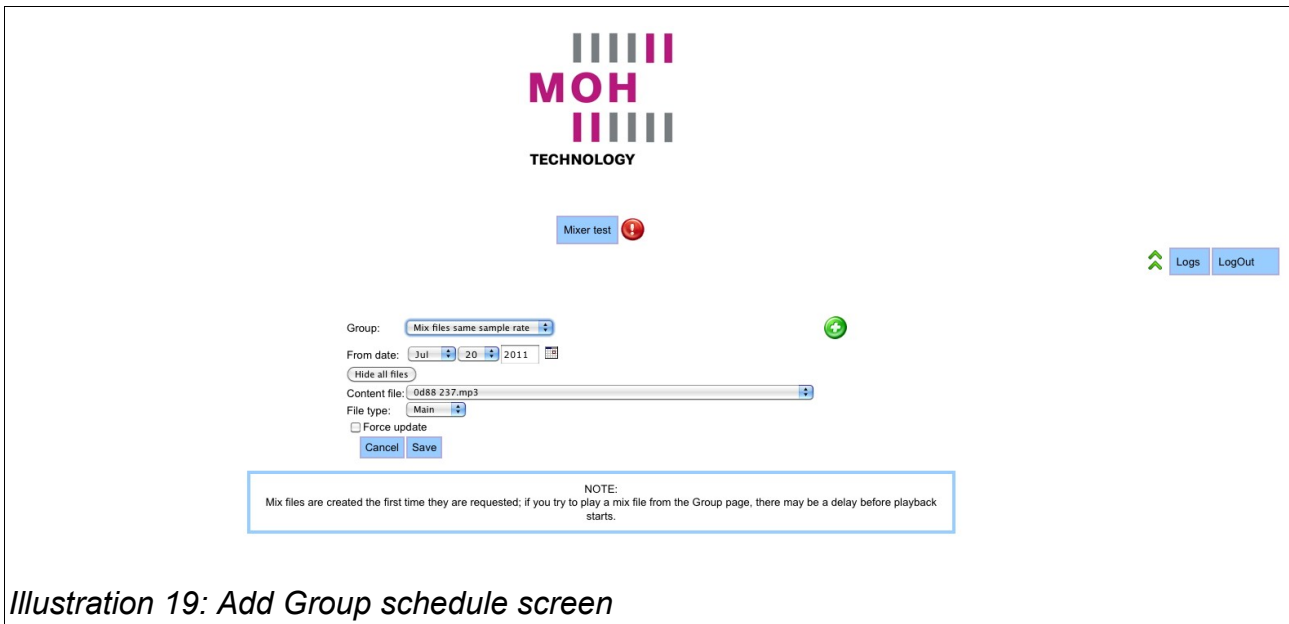


Illustration 19: Add Group schedule screen

Field	Usage
Group	Use the drop down list to select the group for the schedule. If a schedule is for several Groups, use the + symbol to dynamically build a group list.
From Date	The start date of the schedule: the file will be downloaded by Group members the first time they contact the central application on / after this date, according to the setting of their Phone Home Period. A schedule does not expire, but is replaced when a 'newer' schedule becomes active.
Show/Hide files	If the customer is using the Prefix convention, the CMS will display the show/hide files function, hiding files that are not relevant for the currently selected Group, or displaying the full list of available files, as appropriate.
Content file	The file to be used
File Type	Main or Backup. Normally this will be a main file: a Backup file is used by the client in case of a file corruption at the local device.
Force Update	If a schedule is created that would overwrite an existing schedule, an error message will be displayed and the user will be asked to confirm the new schedule by selecting the 'Force Update' button before saving the schedule.

NOTE:

Mix files are created the first time they are requested; if you try to play a mix file from the Group page immediately after creating the schedule, there may be a delay before playback starts.

2.10.3 Scheduling at Location level

Content can also be scheduled for individual Locations. There are two places to access this functionality:

1. At the Group Overview screen, click on the 'green plus' alongside the Location that you wish to schedule content for
2. In the Group Scheduling screen, click on the Green plus next to the word 'Location', or the word itself

this will bring up the 'Create Location Schedule' screen: it is identical to the Create Group schedule screen shown in section 2.10.2, except that it displays Locations, not Groups.

Select the details as appropriate and 'Save' to create the schedule, the system will return to the Group level scheduling screen.

2.10.4 Distinguishing Group and Location level schedules

On the Group level scheduling screen, a Location based schedule is indicated as:

Group Name / [Location Name]

2.11 Edit an existing schedule

To edit an existing schedule, on the 'Add/schedule content' page, move the mouse to the **date** of the schedule line that you wish to change, it will change colour to white, indicating that it is a clickable link – click on the link to display the schedule details.

Make the changes that you wish and then press 'Save' to confirm them. The system will return to the Group level scheduling page, showing the updated schedule details.

3 SIP / VOIP based phone systems

The MOH Client application can stream audio over the network for use as On Hold Music / Messaging by SIP based telephone systems. Both Cisco and Asterisk SIP systems are supported.

To support SIP servers, it is necessary to configure both the client and the SIP server appropriately. The MOH Client can be configured either from the Central CMS, or from the device's web UI. Details of how to configure the Client via its UI can be found in the 'Streaming Settings' section of the Client UI manual.

The client application requires that the files sent to it for use with SIP servers are in either uLaw or aLaw format:

- 16 bit samples,
- sample rate of 8kHz,
- mono,
- headerless file,
- the filenames should have file extensions .u8k or .a8k respectively.

3.1 Asterisk SIP server

Asterisk servers can be configured to request their on hold audio via Raw TCP, using the Streamplayer application that comes with the latest Asterisk installation software.

Both the MOH Client and the Asterisk server require configuration:

3.1.1 MOH Client configuration for Asterisk

- Set the 'Connection Type' parameter to Raw TCP on the MOH Client
- Set the TCP Listening Port: make sure that the same port number is used by both the Client and the SIP server. Your IT Systems Administrator should be able to identify a suitable free port that is not in use by other systems on your network.
- Use .u8k / .a8k format files: mono 8K sample rate headerless.

3.1.2 Asterisk Server configuration

For Asterisk, it is necessary to configure the 'Music on Hold', this is done with entries in two files:

In the 'musiconhold.conf' file:

1. comment out the line 'mode=files'
2. Update the section 'Default':

[Default]

```
mode=custom
application = /<path>/streamplayer <source_IP> <port>
format=alaw2
```

In the file 'extensions.conf' you will need entries for the relevant extension numbers:

```
<extension number>,1,answer
<extension number>,2,musiconhold()
```

Note:

- 1) check that your version of Asterisk has the Streamplayer application: early versions used a different application
- 2) the example above is for an alaw 8kHz file (which would need to have the extension .a8k when uploaded to the CMS system)

3.2 Cisco Call Manager

Cisco SIP systems can have their on hold audio streamed to them across the network using the RTP protocol.

3.2.1 Cisco system configuration

The Cisco website contains comprehensive information about configuration, the information relating to streamed MOH content can be found at the following link:

http://www.cisco.com/en/US/docs/voice_ip_comm/cusrst/admin/sccp_sip_srst/configuration/guide/srst_appendix_b.html

Scroll down to reveal table 2 detailing which addresses and port numbers to use. Note that the MOH Client will support uLaw and aLaw 8kHz G711.

Cisco's website is continually changing: if this link has become outdated, please let us know at info@moh-technology.com.

3.2.2 MOH Client configuration for Cisco

- Set the 'Connection Type' parameter to RTP on the MOH Client
- Set the RTP IP & Port number on the MOH Client: make sure that the same IP & port number is used by both the Client and the SIP server: the address used is determined by the streaming implementation to be used within the Cisco system, as explained in the link above.
- Use .u8k / .a8k format files: mono 8K sample rate headerless.

² Set the mode to ulaw or alaw, depending upon the audio that you are sending from the MOH Client

4 Logs

The system logs major activities, the logs can be viewed by clicking on the 'Log' button: these logs are used by support personnel typically, to investigate system behaviour e.g. If a device is showing an error state.

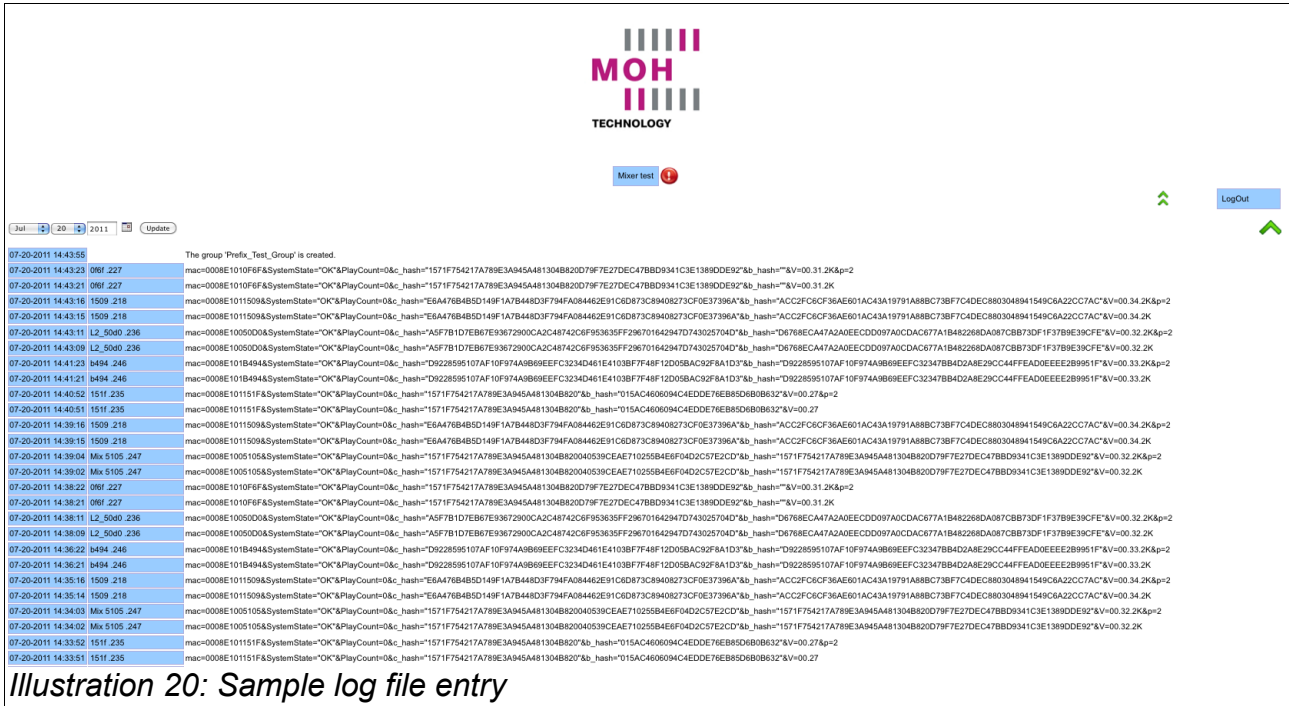


Illustration 20: Sample log file entry

4.1 Log entries

Logs are displayed for a selected day and show

- Date/time
- Location
- Description e.g. Schedule creation
- System data – MAC address, system state, play count (relevant for Triggered Messaging only), Content file hash values (calculated on the first and last 1k of the file from release V00.34.2K, 08.06.2011, on the first 1k of the file before then), client firmware version (from V00.26)
- User

not all fields are shown for every event.

Using the calendar functions, it is possible to select previous days' entries.

4.2 Client status values

Status	Meaning
OK	System operating normally
No server response	The client has had a problem contacting the server (cleared, now that this is being reported in the CMS!)
Update pending	The client has acknowledged that it must download new content
Audio Disabled	Audio is not playing at the Client location: Either because of suspended status, or because the client had been out of touch with the CMS for longer than the configured 'On error connection' period.
No content	The device storage has no content, hence no audio on site
No storage	Either there is no USB stick / Micro SD card inserted, or it is faulty. No audio at client location.

5 Exchanging device configuration updates with central CMS

The MOH System supports the ability for changes to device configuration to be made either centrally using the CMS, or locally via the /expert web UI.

Clearly the configuration must be kept in step at both locations and to achieve this, the client devices and the CMS exchange update information when the client calls in to the centre at every phone home session.

Details of changes in the following parameters are exchanged, alongside any audio content updates:

- Phone home period
- Phone home path
- Volume
- Device type
- Connection type
- TCP port
- RTP IP:Port

6 Legal Information

© 2011 MOH Technology AG, Buchs, Switzerland.

All rights reserved.

All information is subject to change without notice.

All mentioned trademarks belong to their respective owners and are used for reference only.

For information about our solutions and the latest version of this manual please visit www.moh-technology.com

This version details the MOH CMS version 1.4, July 2011 and corresponding Client firmware V00.34.2K, 08.06.2011

MOH Technology AG
CH 9470 Buchs
SWITZERLAND

info@moh-technology.com