



**Grid4 Communications**  
HOSTED IP COMPLETE

# **Music on Hold User Guide**





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# 1. Getting Started

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## 1. Getting Started

This manual explains how to configure and manage Grid4 Hosted IP PBX Music on Hold.

### 1.1 About This Manual

Chapter 2, *Overview*, introduces Music on Hold and provides introductory information about how to use it.

Chapter 3, *Using the Business Group Web Interface*, describes how to use the Business Group Web Interface to set up and manage Music on Hold.

Chapter 4, *Telephone Admin Interface*, describes how to use the telephone admin interface to manage Music on Hold.

## 1.2 Conventions

These documents use the following conventions.

USAGE	CONVENTION
Reference to another document	Operations Manual
Reference to a section within a document	Overview
Filename	.login
Commands that you type at an operating system prompt	cd/ vi .login
Placeholder in a command, which you need to replace a specific value	<b>vi filename</b>
Computer Output	Command completed successfully.



Danger

This symbol identifies areas where failure to follow the correct procedure may cause injury to yourself or to other people.



Warning

This symbol identifies areas where failure to follow the correct procedure may prevent the equipment from operating correctly.



Information

This symbol identifies additional information that may help you to use the equipment or to perform a task.



## 2. Overview

This section provides an overview of Grid4 Hosted IP PBX Music On Hold and describes the resources that you will need before you choose recordings to play to your callers.

### 2.1 Music On Hold Operation

The Music On Hold service is intended for business customers who want their callers to hear music or other recordings (such as announcements) when put on hold or queueing to get through.

Grid4 has set up the telephone lines to your business as a Business Group, in other words a group of telephone lines associated with a single organization. Within this group, one or more lines are designated Business Group administrator lines, and are assigned to administrators who manage the overall function of the Business Group (including Music On Hold).

A Business Group Web Interface is provided for the Business Group administrator to upload recordings, and to set default call handling behavior, and exceptions for individual extensions. Behavior can include playing no Music On Hold (callers hear comfort tones or silence), playing a single recording, or playing initial and follow-up recordings. The administrator uses the directory number of his or her administrator line, together with a password, as identification to access the Business Group Web Interface.

A Telephone Admin Interface is provided for the Business Group administrator to

- listen to the music or other recordings made available by the service provider
- create, change or delete recordings for use within the Business Group
- check what a caller hears when put on hold by any extension.



### 2.2 Business Groups and Departments

As described in the previous section, the telephone lines to your business make up a Business Group. If there are a large number of lines, they can be divided into different departments so that each department can manage its own resources. If this applies to your Business Group, your Service Provider will have set these departments up according to your requirements; otherwise you do not need to read this section.

A Business Group administrator line can be assigned to a particular department, so that the user of this line can manage the resources associated with this department and any sub-departments below it. Alternatively, it can be assigned to the top-level Business Group, so that it can manage the whole group.

If you are using Music On Hold with Business Group Lines that are assigned to particular departments, you should be aware of the following.

- To upload resource files (music or other recordings) for use with Music On Hold, you must use an administrator line assigned to the top-level Business Group, not one assigned to a particular department. This is because these resources are associated with the group as a whole. However, after you have uploaded the resources, the user of an administration line for a particular department can manage which resources are used for each line within this department.
- If you are using an administrator line for the top-level Business Group, or for a department that includes sub-departments, you can use the Business Group Web Interface to move Business Group Lines between departments. However, it may take up to a day for your changes to appear in the Music On Hold interface, because information about the Business Group structure is transferred to Music On Hold once a day. Similarly, if you add a new Business Group Line, it may take up to a day for this line's extension to appear in the Music On Hold interface.



## 2.3 Music On Hold Planning

Before configuring Music On Hold, you should consider

- whether all lines in the Business Group should treat calls on hold in the same way, or whether some lines should play different recordings
- whether to play music or other recordings, such as informational announcements or marketing material, to callers on hold
- whether to play only one recording or choose a pattern involving two recordings (see section 3.4, Assigning recordings to directory numbers, for the available options).

You will also need to do the following before setting up your Music On Hold.

- Prepare in .mp3 or .wav file format all recordings that you plan to use as Music On Hold.
- Prepare in written script format all spoken announcements that are to be recorded through the Telephone Admin Interface (see sections 4.5, Manage existing local resource, and 4.6, Record new local resource, for details).



A .wav file that you upload to the server can be in any WAV format, because the server will do any format conversion required.



Playing music to callers on hold constitutes “public performance” of the music and therefore risks infringing the copyright of composers or artists. You must obtain appropriate licenses to play the material that you plan to use as Music On Hold. You can obtain these licenses at a reasonable cost from licensors such as Broadcast Music Inc ([www.bmi.com](http://www.bmi.com)) or the American Society of Composers, Authors and Publishers ([www.ascap.com](http://www.ascap.com)).

Grid4 Communications does not accept any legal liability arising from copyright infringements associated with the use of Music On Hold.

## 3. Using the Business Group Web Interface

This section explains how to use the Business Group Web Interface to create your own customized Music On Hold.

### 3.1 Business Group Web Interface conventions

The Music On Hold Business Group Web Interface uses the following conventions:

### 3.2 Accessing the Business Group Web Interface

To access the Business Group Web Interface, you will need the following information, which your telephone service provider should give to you.

- The web site address (URL) of the Business Group Web Interface.
- The telephone number of the administration line for your Business Group or department.
- The password assigned to this line.

Start your web browser and enter the Business Group Web Interface address in the address bar. You may see one or more security dialogs; choose OK or Yes to accept these.

You should then see the Business Group Web Interface logon screen, which asks you for a directory number and password. Enter your telephone number and password, then click the Login button.

When you have logged in successfully, you will see a list of options for managing your Business Group on the left-hand side of the screen. Choose Music On Hold from this list.

If you are using an administrator line for the top-level Business Group, the screen displays links to settings, mappings and resources. If you are using an administrator line for a department within the Business Group, the screen displays only the links to settings and mappings, because this administrator line does not have access to manage local resources.

## 3.3 Managing recordings

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Playing music to callers on hold constitutes “public performance” of the music and therefore risks infringing the copyright of composers or artists. You must obtain appropriate licenses to play the material that you plan to use as Music On Hold. You can obtain these licenses at a reasonable cost from licensors such as Broadcast Music Inc ([www.bmi.com](http://www.bmi.com)) or the American Society of Composers, Authors and Publishers ([www.ascap.com](http://www.ascap.com)).

Grid4 Communications does not accept any legal liability arising from copyright infringements associated with the use of Music On Hold.

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To manage recordings for use with Music On Hold, you must use an administrator line assigned to the top-level Business Group, not one assigned to a particular department. This is because these resources are associated with the group as a whole. However, after you have uploaded the resources, the user of an administration line for a particular department can manage which resources are used for each line within this department.

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Click the resources link at the top of the screen.

As shown in Figure 1, the screen displays a list of the existing local resources. Each resource has a Resource ID (a two-digit number), by which it can be identified in the Telephone Admin Interface, and a short description.

The screen also displays the volume gain that will be applied to the resource, the size of the resource file, and the play length of the resource in seconds. The volume gain allows you to control the volume level at which each global media resource is played. This can be useful if you want to use an existing recording but it is too loud or too quiet.

Figure 1. Managing Music On Hold local resources

## Music On Hold

[security](#) [mappings](#) **resources**

### Global Media List

ID	Description	Length
12	BING	64 seconds
11	Blues2	641 seconds
10	Blues1	437 seconds

ID	Description	Gain	File size	Length	Actions
> 10	> fbfbfb	+3	0.02 MB	3 seconds	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
> 11	> passwords	-3	0.02 MB	3 seconds	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
> 12	> spanish	+3	0.02 MB	2 seconds	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

ID	Description	Upload local resource file	Actions
<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="button" value="Browse..."/>	<input type="button" value="Add"/>

Disk Used: 0.06 MB of 5 MB used.  
Resources: 3 of 5 used.



If you upload a file to the server before the first call that receives Music On Hold, the file size in the screen above appears as "Processing". This is normal behavior; the file will be processed as soon as Music On Hold is required for a call. After this, the server will check for new uploaded files every 5 seconds and process them as soon as it finds them.

- To listen to a resource using your computer's default player, click its description. Alternatively, right-click its description and choose Save As... to save the resource to your computer and play it later.

# 3. Using the Business Group Web Interface

- To change the description of an existing resource, or to change the volume level at which it will be played, click the Edit button to the right of its description. Edit the fields as described below, then click the Save button to save your changes.

Field	Description
Description	A brief description of the music or other recording so that you, and any department administrators to whom you make it available, can identify it.
Gain	To change the volume at which the resource will be played, click on the down arrow next to the Gain value to see a drop-down list of values. <ul style="list-style-type: none"> <li>Select 0 to play the resource at its original volume.</li> <li>Select +1, +2, or +3 to play the resource louder: +3 is the loudest.</li> <li>Select -1, -2, or -3 to play the resource quieter: -3 is the quietest.</li> </ul>



When you listen to a resource from within the Business Group Web Interface, you hear it at its original volume level; the gain that you have specified is not applied to the resource here, but only when the resource is played to a caller.

To verify that you have set an appropriate gain level for the resource, you can login using the Telephone Admin Interface, to listen to the resource as it would be played to a caller. See Chapter 4 for more details.  
3-4 Using the Business Group Web Interface

- To add a new recording, use the fields below the list of existing resources as follows, then click Add.

## 3. Using the Business Group Web Interface

Field	Description
ID	Choose a two-digit number for identifying and selecting the recording in the Telephone Admin Interface. It must be different from all other IDs in this list, but it can be the same as a global resource ID.
Description	A brief description of the music or other recording so that you can identify it in the Business Group Web Interface.
Upload local resource file	Type the path of the .wav or .mp3 file that you want to add to the local resources. Alternatively, click the Browse... button for a Choose file dialog box.



A .wav file that you upload to the server can be in any WAV format, because the server will do any format conversion required.

- To delete a recording from the local resources, click the Delete button to the right of its description.

## 3.4 Assigning recordings to directory numbers

Click the mappings link at the top of the screen.

Figure 2. Mapping directory numbers to resources

### Music On Hold

[security](#) [mappings](#) [resources](#)

Directory number	Initial resource	Action	Follow-up resource	Start Point	Duration	Actions
203-203-0801	Global 10 - Blues1	Repeat - Initial interrupted	12 - spanish	Start	10 secs	<a href="#">Edit</a> <a href="#">Delete</a>
Default	Global 10 - Blues1	Repeat		Start		<a href="#">Edit</a>

Directory number	Initial resource	Action	Follow-up resource	Start Point	Duration	Actions
<input type="text" value="203-203-0800"/>	<input type="text" value="None"/>	<input type="text" value="Repeat"/>	<input type="text" value=""/>	<input type="text" value="Start"/>		<a href="#">Add</a>

1 of 5 mappings used

The screen shows a list of mappings between the directory numbers of lines in your Business Group or department and the Music On Hold resources that each line uses.

If the department associated with your administration line has one or more subdepartments, you will see links to these at the bottom of the screen.

- To manage resources for a line that is in a sub-department, click on the link for that sub-department.
- When you have followed the link to a sub-department, an additional link appears at the top of the screen, allowing you to move back up to the parent department.

## 3. Using the Business Group Web Interface

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A mapping is an assignment consisting of one or two resources (music or other recordings) and one action, which can be any of the following:

- the initial resource is played repeatedly
- the initial resource is played once, and then the follow-up resource is played repeatedly
- the initial resource and the follow-up resource are continually repeated one after the other
- the initial resource is interrupted at specified intervals by the follow-up resource: for example, a long recording of music is interrupted at intervals by a “please hold the line” announcement
- the initial resource is played once, and then the follow-up resource is interrupted at specified intervals by the initial resource: for example, a “please hold the line” announcement is played first, and then a long recording of music is interrupted at intervals by the same announcement.

You can also specify whether the resource is to be played starting at a random point rather than starting at the beginning. This option means that the caller will hear something different each time he or she is on hold; for example, if the resource consists of three or four different pieces of music one after the other, the user will not always hear the same initial piece of music.

The default mapping, shown first in the list (see Figure 2), applies to all directory numbers except for those with their own individual mappings in the list. You are allowed to make a limited number of individual mappings, and the number you have used out of this limit is shown at the bottom of the display, for example 2 of 3 mappings used. The default mapping is not counted towards your limit.

If you have not configured any mappings, or mapped the initial resource to None, Grid4 provides the default behavior of silence or comfort tones for calls on hold, and ring back for queued calls.



# 3.Using the Business Group Web Interface

## Adding a new mapping

To add a new mapping, use the fields below the list of existing mappings as follows, then click Add.

Field	Description
Directory Number	Full telephone number to which this Music On Hold mapping will apply.
Initial Resource	Choose the music or other recording to be played as Music On Hold for this directory number. If two recordings are to be played, then choose the first recording in the sequence.
Action	Choose one of the following actions: <ul style="list-style-type: none"> <li>• If the initial resource (and the follow-up resource, if any) should be continually repeated one after the other, choose Repeat.</li> <li>• If the initial resource is to be played once, and then the follow-up resource repeatedly, choose Play Once.</li> <li>• If the initial resource is to be interrupted at specified intervals by the follow-up resource (for example, music interrupted at intervals by an announcement), choose Repeat - Initial interrupted.</li> <li>• If the initial resource is to played first and then interrupt the follow-up resource at specified intervals (for example, an announcement followed by music interrupted at intervals by the same announcement), choose Repeat -Follow-up interrupted.</li> </ul>
Follow-up resource	Choose the music or other recording to be played second in the sequence, if applicable.
Start point	Choose Start to start playing a resource at the beginning, or Random to start at a random point. If Action is set to Repeat or Repeat - Initial interrupted, this applies to the initial resource; otherwise it applies to the follow-up resource.
Duration	This field appears only if Action is set to Repeat- Initial interrupted or Repeat -Follow-up interrupted. Specify the duration in seconds for which the interrupted resource should be played between interruptions.

## Changing an existing mapping

To change the default mapping, you must use an administrator line assigned to the top-level Business Group, not one as signed to a particular department. This is because the default mapping is associated with the group as a whole.

To change an existing mapping, click the Edit button to its right.

Figure 3. Changing an existing mapping of a directory number to resources

### Music On Hold

[security](#) [mappings](#) [resources](#)

Directory number	Initial resource	Action	Follow-up resource	Start Point	Duration	Actions
203-203-0801	Global 10 - Blues1	Repeat - Initial interrupted	Local 12 - spanish	Start	10	Save
Default	Global 10 - Blues1	<ul style="list-style-type: none"> <li>Repeat</li> <li>Play Once</li> <li>Repeat - Initial interrupted</li> <li>Repeat - Follow-up interrupted</li> </ul>		Start		Edit
Directory number	Initial resource	Action	Follow-up resource	Start Point	Duration	Actions
203-203-0800	None	Repeat		Start		Add

1 of 5 mappings used

Change the configuration using the selection boxes and click Save.

To delete a mapping, click the Delete button to its right. You will be asked to confirm this.

## 3.5 Changing the password for the telephone admin interface

Each administrator line for the Business Group, or for a department within it, has its own password for use with the telephone admin interface. You can change the password for your administrator line using the Business Group Web Interface.

To change the password, click the security link at the top of the screen. Enter the new password, which must be a four-digit number, and click Apply.

Figure 4. Changing the password for Music On Hold telephone admin

### Music On Hold

[security](#) [mappings](#) [resources](#)

Admin password for telephone access (valid only for the current administrator)

# 4. Telephone Admin Interface

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## 4. Telephone Admin Interface

The Music On Hold Telephone Admin Interface allows you to manage Music On Hold using your telephone. You can

- listen to the music or other recordings for the default mapping or any particular extension
- listen to music or other recordings made available by your service provider for you to use as Music On Hold (called global resources) create, change or delete your own recordings (called local resources).



In order to use the Telephone Admin Interface, you must use a telephone that includes the # (pound) and \* keys.

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To create, change or delete local resources, you must use an administrator line assigned to the top-level Business Group, not one assigned to a particular department. This is because these resources are associated with the group as a whole.

The user of an administration line for a particular department can listen to both local and global resources, but cannot create, change or delete resources.

---

When you listen to a resource in this interface, you hear it as a caller would hear it, with the configured volume gain level.

- For a global resource, the gain is set by your service provider and you cannot change it.
  - For a local resource, the gain is set by an administrator for the top-level Business Group, and cannot be changed by the user of an administration line for a particular department.
- 

To access the Telephone Admin Interface, you will need the following information, which your telephone service provider should give to you.

- The access telephone number of the Telephone Admin Interface
- The telephone number of the administration line for your Business Group or department

You will also need the password assigned to the administration line. This is set up in the Business Group Web Interface, as described in section 3.5, Changing the password for the telephone admin interface.

To use the admin interface, dial the access number. You are then prompted for the administration line telephone number and the password. Enter each of these on your telephone keypad after each prompt.

### 4.1 Quick Key Reference

# 4. Telephone Admin Interface

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When using the Telephone Admin Interface, there are some keys that have special functions throughout the call to help you navigate through the system. As you become familiar with the system, you do not have to wait for any message to finish if you know which button to press in order to perform a function.

Table 1. Quick Key Reference

Key	Function
*	Returns to the previous menu. If you are already on the top-level menu, this key simply replays the top-level menu.
# (pound)	This key is used to indicate the end of a digit sequence, or to indicate the end of speech when creating recordings.

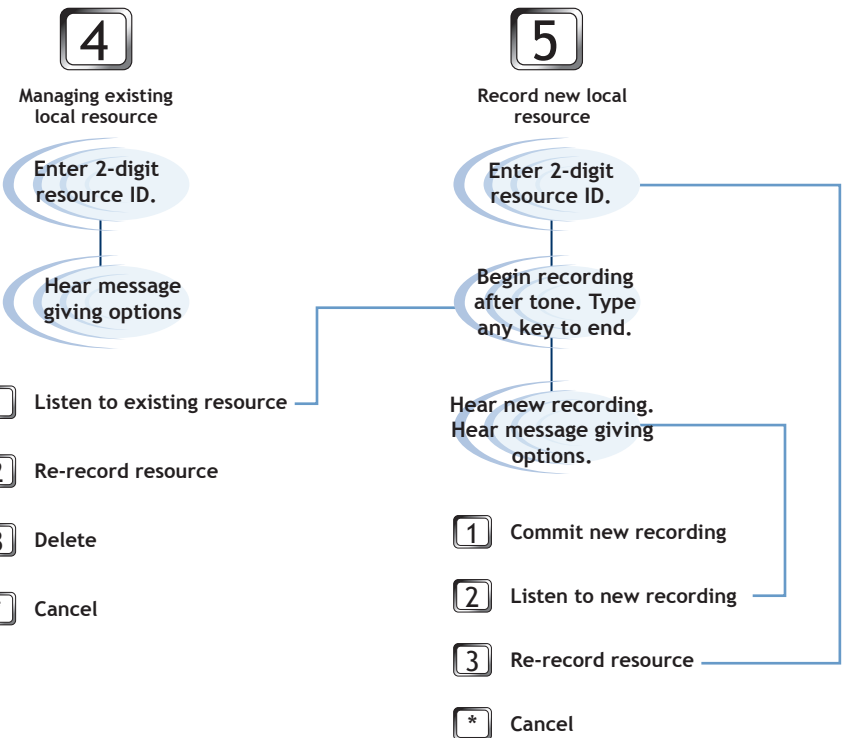
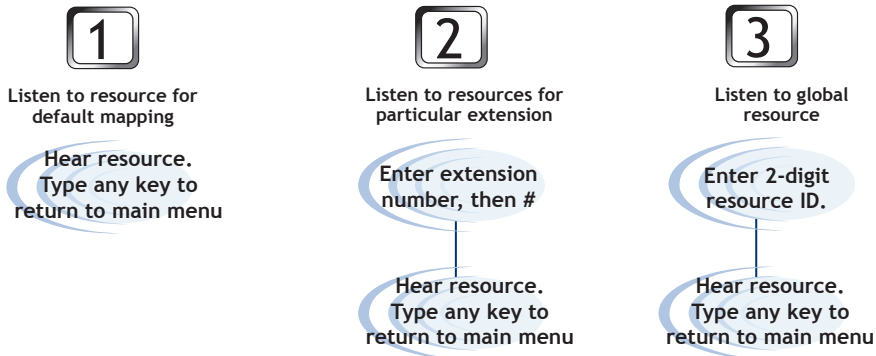
To exit the telephone admin interface, simply hang up the phone.

Figure 5, Administrative telephone navigation map, provides an overview of the telephone admin interface.

# 4. Telephone Admin Interface

Figure 5. Administrative telephone navigation map

## main menu



### 4.2 Listen to resource for default mapping



## 4. Telephone Admin Interface

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To listen to the music or other recordings that are played to callers on hold for extensions that do not have their own mappings, press 1 at the main menu.

You will hear the resources in the same pattern as a caller would hear them. For example, if the default mapping has an initial resource, an action Play Once and a follow-up resource, you will hear the initial resource once and then the follow-up resource repeatedly, until you press any key to return to the main menu.

### 4.3 Listen to resource for particular extension

To listen to the music or other recordings that are played to callers on hold for a particular extension, press 2 at the main menu. Then type the extension number followed by the # (pound) key.

If you type a valid extension number, you will hear the resources in the same pattern as a caller would hear them. For example, if the extension's mapping has an initial resource, an action Play once and a follow-up resource, you will hear the initial resource once and then the follow-up resource repeatedly, until you press any key to return to the main menu.

If you type an extension number that does not match any existing extension, you will hear an error message and be asked to type a valid extension number.

### 4.4 Listen to global resource



In the telephone admin interface, each resource (global or local) is identified by a resource ID (a two-digit number). IDs for all resources are shown in the Business Group Web Interface on the Mappings configuration screen in the Initial resource and Follow-up resource selection boxes. (IDs for local resources can also be seen on the Local resources configuration screen.) You may find it helpful to check the ID of each global resource on the Mappings configuration screen before listening to global resources.

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To listen to the music or other recordings that your service provider has made available for you to use as Music On Hold, press 3 at the main menu. Then type the two-digit resource ID of the resource that you want to hear.

If you type a number that does not match any existing resource ID, you will hear an error message and be asked to type a valid resource ID.

Press any key to return to the main menu.

### 4.5 Manage existing local resource

## 4. Telephone Admin Interface

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To re-record or delete local resources, you must use an administrator line assigned to the top-level Business Group, not one assigned to a particular department. This is because these resources are associated with the group as a whole.

The user of an administration line for a particular department can listen to local resources, but cannot re-record or delete them.

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The telephone admin interface can be used to record spoken announcements for use as Music On Hold.

Other types of audio resource, such as music recordings, should be added to Music On Hold in .wav or .mp3 file format, using the Business Group Web Interface. See section 3.3, Managing recordings, for more details.

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To change or remove recordings that you have added to Music On Hold for use within your own Business Group, press 4 at the main menu. Then type the two-digit resource ID of the resource that you want to change or remove.

If you type a number that does not match any existing resource ID, you will hear an error message and be asked to type a valid resource ID.

If you type a valid resource ID, you will hear another menu of options for managing the recording. After using each of these options, you are returned to the same menu until you press \* to finish and return to the top-level menu.

- To listen to the current recording, press 1.
  - To make a new recording for this resource, press 2. Wait for a tone, then speak into the telephone to make the new recording, and press any key when you have finished. You will then hear the new recording that you have just made, followed by another menu.
  - To commit the recording that you have just made, press 1. You will hear a confirmation of your action, then the previous menu again (1 to listen to the current recording, 2 to re-record, 3 to delete).
  - To listen to the new recording, press 2. You will hear the recording, followed by this menu again.
  - To make the recording again, press 3. Wait for a tone, then speak into the telephone to make the recording, and press any key when you have finished. You will then hear the new recording that you have just made, followed by this menu again.
  - To cancel the change and return to the top-level menu, press \*. You will hear confirmation of your action, before returning to the top-level menu.
  - To delete the existing resource, press 3. You will hear confirmation that it has been deleted and then you will be asked for the resource ID of another resource that you want to manage. If you do not want to manage any more local resources, press \* to finish and return to the top-level menu.
-

# 4. Telephone Admin Interface



After you have made a new recording using option 2, pressing 1 plays the new recording. However, this new recording is not used in Music On Hold until you press 3 to commit it and replace the previous recording. This means that you can experiment with recordings without affecting what callers hear.

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## 4.6 Record new local resource

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To record new local resources, you must use an administrator line assigned to the top-level Business Group, not one as signed to a particular department. This is because these resources are associated with the group as a whole.

The user of an administration line for a particular department cannot use this option.

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The telephone admin interface can be used to record spoken announcements for use as Music On Hold.

Other types of audio resource, such as music recordings, should be added to Music On Hold in .wav or .mp3 file format, using the Business Group Web Interface. See section 3.3, Managing recordings, for more details.

---

To add a recording to Music On Hold for use within your own Business Group, press 5 at the main menu. Then type the two-digit resource ID by which you want the new resource to be identified.

If you type a resource ID that already exists, you will hear an error message and be asked to type a new resource ID.

If you press the # (pound) key without typing a resource ID, the system will allocate the lowest unused two-digit number as the ID for the new resource and you will hear a message telling you this number.

Once you have typed or been given a valid resource ID, you will hear a tone. After the tone, speak into the telephone to make the new recording, and press any key when you have finished. You will then hear the new recording that you have just made, followed by another menu.

- To commit the recording that you have just made, press 1. You will hear a confirmation of your action, then the previous menu again (1 to listen to the current recording, 2 to re-record, 3 to delete).
  - To listen to the new recording, press 2. You will hear the recording, followed by this menu again.
  - To make the recording again, press 3. Wait for a tone, then speak into the telephone to make the recording, and press any key when you have finished. You will then hear the new recording that you have just made, followed by this menu again.
  - To cancel the change and return to the previous menu, press \*. You will hear confirmation of your action, before returning to the previous menu.
-

## 4. Telephone Admin Interface

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After you have made a new recording using option 2, pressing 1 plays the new recording. However, this new resource is not used in Music On Hold until you press 3 to commit it. This means that you can experiment with recordings without affecting what callers hear.

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When you commit the new recording, it is added to the resources available to you for Music On Hold. To use the new recording, you must map at least one extension to it (see section 3.4, Assigning recordings to directory numbers.)

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Playing music to callers on hold constitutes “public performance” of the music and therefore risks infringing the copyright of composers or artists. You must obtain appropriate licenses to play the material that you plan to use as Music On Hold. You can obtain these licenses at a reasonable cost from licensors such as Broadcast Music Inc ([www.bmi.com](http://www.bmi.com)) or the American Society of Composers, Authors and Publishers ([www.ascap.com](http://www.ascap.com)).

Grid4 Communications does not accept any legal liability arising from copyright infringements associated with the use of Music On Hold.

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administrator line



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.wav file .....	11, 26, 27	password .....	21, 22
file format .....	11, 26, 27	telephone number.....	18
		warning symbol.....	8





Grid4 Communications

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