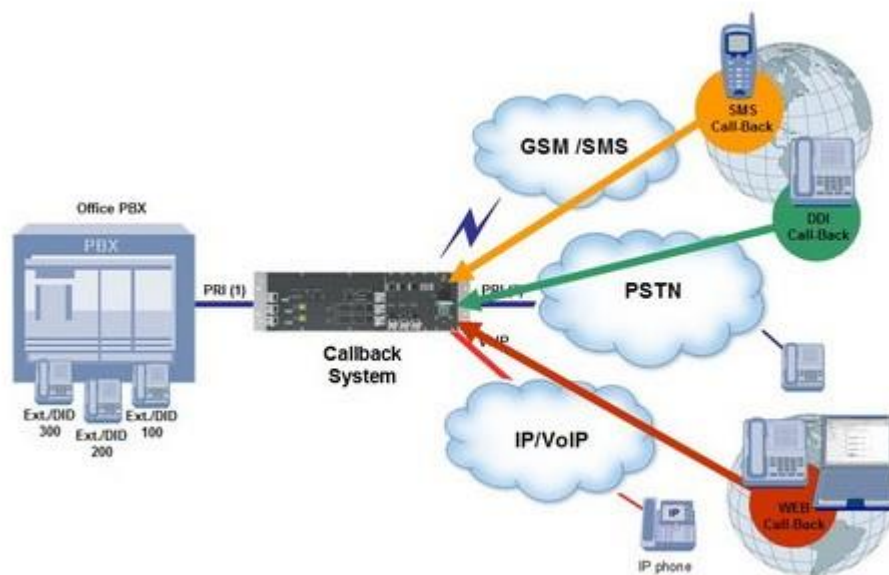




Hypermedia Business Applications



Callback and Callthrough

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Chapter 1

OVERVIEW

The Product_variable_1 package is available as either factory-installed original equipment or as an add-on to an existing Hypermedia Gateway. Depending upon the Gateway, upgrading may involve:

- changing the Gateway's operating system
- replacement and/or addition of new cards
- installation of new software

Note: *For more information on upgrading, contact Technical Support.*

In both cases, see the Gateway's Product Manual for documentation of installation, start-up, an overview of the user interface, and the Save/Load Configuration branch.

This section includes:

- "Overview of Callback and Callthrough" on page 2
- "Call Parameters" on page 3

Overview of Callback and Callthrough

A Hypermedia Gateway can be configured to authorize an incoming call, disconnect the incoming call, and then call-back the User. This feature is called Callback.

A Callback is initiated by a trigger. The trigger can be either a phone call, an SMS message, or a message sent via the Hypermedia Web-based Callback dialer. The trigger initiates the following sequence:

- a. the Gateway identifies the user as a user authorized to activate Callback
- b. the Gateway disconnects the call
- c. the Gateway searches for an available Callback Resource
- d. the Gateway calls-back the User

- e. optionally, the Gateway calls the destination party.

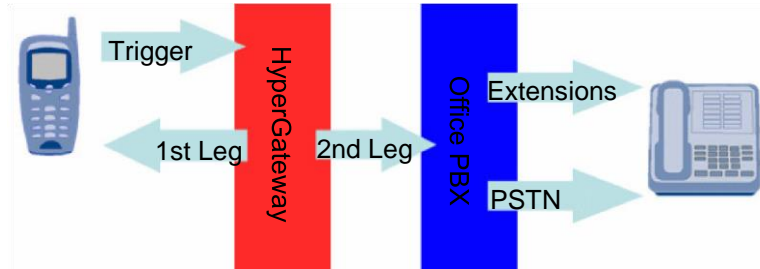


Figure 1: Callback Triggers Diagram

Also, a Hypermedia Gateway can be configured to support Callthrough. Use Callthrough to place calls, via the Hypermedia Gateway, to external numbers. Users receive a dial-tone from the Hypermedia Gateway and can then place outgoing calls.

A Callthrough is initiated by a call to a Resource allocated to Callthrough. The call initiates the following sequence:

- a. the Gateway searches for an available Callthrough Resource
- b. the Gateway connects the call with the linked resource.

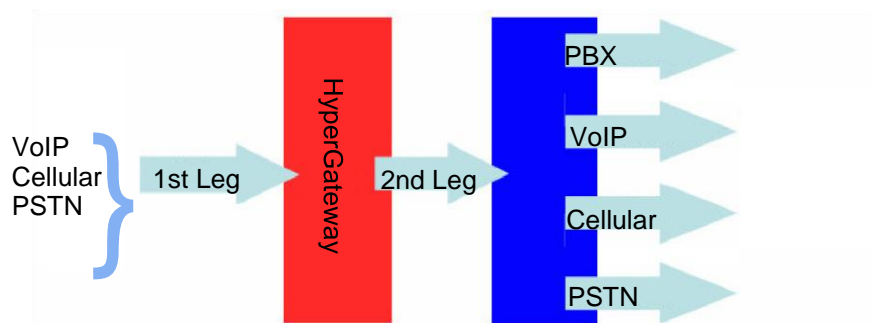


Figure 2: Callthrough Diagram

Overview of Callback and

Call Parameters

Use the Call Parameter branch to configure parameters affecting Callback and Callthrough and general parameters effecting the Media Card.

To define Call Parameters:

1. From the Configure branch of the HMC navigation pane, click the **Call Parameters** subbranch. The Call Configuration screen is displayed.

Call Configuration

Allow Duplicate CLIs Allow two or more simultaneous calls with the same caller ID.	<input type="text" value="Yes"/>
Remote Hangup Closes Session If set to 'Yes' then a hangup initiated by the remote side will disconnect caller and close the session. If set to 'No' then a remote hangup will generate a dialtone enabling making another call.	<input type="text" value="Yes"/>

Submit

Figure 3: HMC Call Configuration Screen

2. Configure the following parameters:

Allow Duplicate CLIs

If Yes is selected, the Gateway allows two or more simultaneous calls with the same caller ID.

Remote Hang up Closes Session

If Yes is selected, a hang-up initiated by the remote side will disconnect the caller and close the session. If No is selected, a remote hang-up will generate a dial tone enabling the user to make another call.

Media Card Fallback

If No is selected, Callback and Callthrough applications will not be created if the system does not include a Media Card. If Yes is selected, Callback and Callthrough applications will attempt to use the PBX's features to complete the call.

Callthrough Authentication Policy

From the dropdown menu, select an option described in the table of authentication policies.

Callback Authentication Policy

If Yes is selected, users are required to enter a personal access code when receiving callbacks.

Call Parameters

Callback Dial Timeout

Enter a period of time, measured in milliseconds, during which the Gateway will attempt to call the party that requested a Callback.

Remote Party Answer Timeout

Enter a period of time, measured in milliseconds, during which the Gateway will attempt to call the remote party.

Number Send Delay

Entered a period of time, measured in milliseconds, after which a dialed number will be automatically sent. This parameter applies only when the Media Card is present.

Dial tone Length

Enter a period of time, measured in milliseconds, during which the dial tone is played for Callthrough or Callback sessions. This parameter applies only when the Media Card is present.

Callback Automatic DTMF Send Delay

Enter a period of time, measured in milliseconds, after which the automatic DTMF sequence is sent when the Callback returns call (if one is defined for the callback number). This parameter applies only when the Media Card is present.

Callback Automatic DTMF Digit Duration

Entered a period of time, measured in milliseconds, which determines the length of a DTMF digit sent for automatic Callback DTMF digits.

Callback Automatic Inter-Digit Duration

Enter a period of time, measured in milliseconds, that defines the period of silence between DTMF digits sent for automatic Callback DTMF digits.

Delay after DTMF Code is Sent

Enter a period of time, measured in milliseconds, that determines the delay before the Gateway dials the second leg of the callback (if a DTMF code is sent to the first leg of the call).

Callback Activation/Delegation Delay

Enter period of time, measured in milliseconds, which determines how long the Gateway waits before returning a Callback to a requesting phone or delegating a Callback request to a remote HGS. This is used so that the remote Callback will not be triggered too early, which can possibly result in receiving a busy signal from the endpoint that requested it.

Enable Using Callthrough Resources for Callbacks

If No is selected, only Callback resources are used to dial callback. If Yes is selected, the Gateway attempts to use Callthrough resources if a Callback is requested but no Callback resources are available.

3. Click **Submit** and wait for the “Successfully updated ... Server refresh returned: OK” messages.

Chapter 2

BEST PRACTICE

This section provides an overview of Callback and Callthrough and documents Best Practices for configuring each. It also includes an explanation of the CDRs.

Note: *A best-practice is a technique or methodology that, through experience and research, has been proven to efficiently and reliably lead to the desired result.*

A Hypermedia Gateway includes many additional Callback and Callthrough parameters that are used in specific settings and are not related to Best Practices. They are documented elsewhere in this manual.

This section includes:

- “Callback Overview” on page 6
- “Callback Best Practice” on page 7
- “Callthrough Overview” on page 15
- “Callthrough Best Practice” on page 16
- “CB/CT CDRs” on page 20

Callback Overview

A Hypermedia Gateway can be configured to authorize an incoming call, disconnect the incoming call, and then call-back the User. This feature is called Callback and is designed, for example, for users who are making calls from an international location to their home country.

A Callback is initiated by a trigger. The trigger can be either a phone call, an SMS message, or a message sent via the Hypermedia Web-based Callback dialer. The trigger initiates the following sequence:

- a. the Gateway identifies the user as a user authorized to activate Callback

- b. the Gateway disconnects the call
- c. the Gateway searches for an available Callback Resource
- d. the Gateway calls-back the User
- e. optionally, the Gateway calls the destination party.

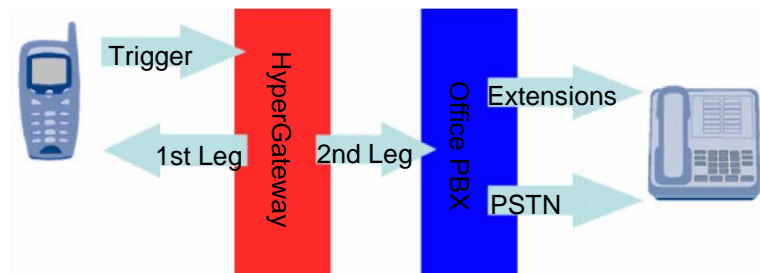


Figure 4: Callback Triggers Diagram

Note: *If several Resources are dedicated to Callback, incoming calls are automatically routed to the first available Resource.*

The most common type of Callback Trigger is a dedicated channel, that is, the Resource ***must be linked to itself***.

Once connected, the user can then make unlimited consecutive outbound calls by doublekeying the pound/hash key (#, #).

Callback is available using cellular cards and PRI cards, but not VoIP cards.

Callback Overview

Callback Best Practice

The best-practice order for configuring Callback is:

1. Determine a trigger strategy.
2. Allocate the Trigger resource.
3. Allocate the Callback resource.
4. Optionally, require PIN code authorization.
5. Authorize the user.
6. Inform users.

Determine a Trigger Strategy

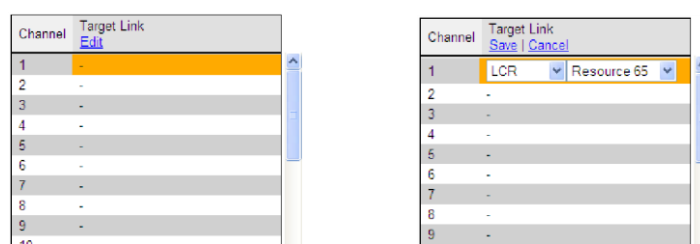
Not all triggers are supported by all PSTNs. The Hypermedia Gateway supports the following types of triggers:

- CLI trigger
The CLI Callback service is used in countries where CLI (calling line identification or caller ID) is available through the PSTN. The user dials a Trigger resource. The Hypermedia Gateway identifies the CLI and begins the Callback process.
- Fixed trigger
With a fixed trigger, the Hypermedia Gateway does not authorize the user. Users call a pre-allocated corporate telephone number that has been allocated as a Trigger resource. This number is called a DDI (Direct Dial-in) number. The Hypermedia Gateway is configured to call back a specific phone number each time the DDI is triggered.
- SMS trigger (cellular resources only)
Users also can initiate a Callback by sending an SMS message. The text of the SMS must include the destination phone number the Hypermedia Gateway must call.
- Web-based Callback Dialer
Using Web-based Callback, a user can configure the DDI settings and trigger a Callback via the Internet. For more information, see “Web Based Hypersavings” on page 47.

Allocate the Trigger Resource

The most common type of Callback Trigger is a dedicated channel, that is, the Resource ***must first be linked to itself*** and then allocated as a trigger.

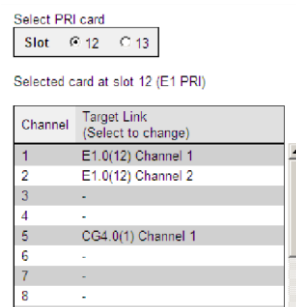
1. Link the Resource to itself:
 - a. From the HMC navigation pane, click the **Media Connections** sub-branch of either the Cellular Cards, PRI Cards, or LCR. The Media Matrix is displayed.
 - b. If more than one slot is displayed, select a specific card. The Media Matrix of that card is displayed.
 - c. Click within a Resource row. The row turns yellow.
 - d. Click **Edit**. The row becomes configurable.



Channel	Target Link
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

Figure 5: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this card to itself by selecting the same card.
- f. From the second dropdown list, assign this channel to itself by selecting the same channel.



Select PRI card

Slot 12 13

Selected card at slot 12 (E1 PRI)

Channel	Target Link (Select to change)
1	E1.0(12) Channel 1
2	E1.0(12) Channel 2
3	-
4	-
5	CG4.0(1) Channel 1
6	-
7	-
8	-

Figure 6: Assigning a Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
 - h. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. Allocate the Resource to Trigger:
 - a. Select one of the Triggers sub-branches (either the PRI Cards > Callback Triggers sub-branch or Cellular Cards > Callbacks > Call Triggers). The Callback Triggers screen is displayed.

- b. Select the checkboxes of the Resources that are allocated as Callback Triggers.

PRI Card Callback Triggers

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Status	Set As Trigger
Channel 1	Free.	<input type="checkbox"/>
Channel 2	Free.	<input type="checkbox"/>
Channel 3	Unmapped.	---
Channel 4	Unmapped.	---
Channel 5	Used as Callback-Leg2	---

PRI Card Callback Triggers

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Status	Set As Trigger
Channel 1	Free.	<input checked="" type="checkbox"/>
Channel 2	Free.	<input checked="" type="checkbox"/>
Channel 3	Unmapped.	---
Channel 4	Unmapped.	---
Channel 5	Used as Callback-Leg2	---

Figure 7: Allocating Resources to Callback Triggers

- c. Click **Apply Settings** and wait for **Configuration Saved** to be displayed. The allocation is confirmed in the Callback Trigger table.

PRI Card Callback Triggers

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Status	Set As Trigger
Channel 1	Used as Callback Trigger	<input checked="" type="checkbox"/>
Channel 2	Used as Callback Trigger	<input checked="" type="checkbox"/>
Channel 3	Unmapped.	---
Channel 4	Unmapped.	---
Channel 5	Used as Callback-Leg2	---
Channel 6	Unmapped.	---
Channel 7	Unmapped.	---
Channel 8	Unmapped.	---
Channel 9	Unmapped.	---
Channel 10	Unmapped.	---
Channel 11	Unmapped.	---
Channel 12	Unmapped.	---
Channel 13	Unmapped.	---

Figure 8: Callback Trigger Table

Allocate the Callback Resource

Allocating a Callback Resources requires, first, linking it, and then setting it as 1st Leg.

1. Link the Resource to another resource:
 - a. From the HMC navigation pane, click the **Media Connections** sub-branch of either the Cellular Cards, PRI Cards, or LCR. The Media Matrix is displayed.
 - b. If more than one slot is displayed, select a specific card. The Media Matrix of that card is displayed.

- c. Click within a Resource row. The row turns yellow.
- d. Click **Edit**. The row becomes configurable.

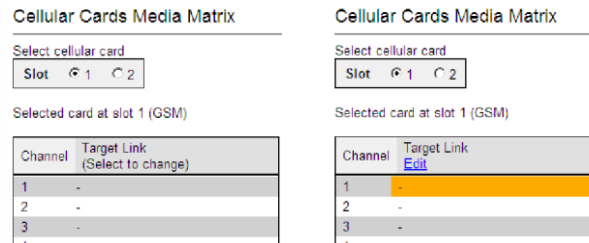


Figure 9: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this card to a target card by selecting the second card.

Note: *If all of the second card's channels are already allocated, the message "Fully allocated" appears.*

- f. From the second dropdown list, assign this Resource (channel) to a specific Resource (channel) on the target card.

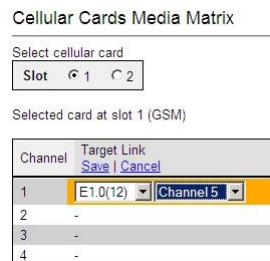


Figure 10: Assigning a Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
 - h. Optionally, repeat the process for additional channels and other media types.
 - i. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. Set the Resource as 1st Leg:
 - a. Select one of the Callback Resources sub-branches (either the PRI Cards > Callbacks sub-branch or Cellular Cards > Callbacks > Resources). The Callback Resources screen is displayed.

Cellular Card Callback Resources

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Module	Set 1st Leg	Status	Group	2nd Leg
Module 1	<input type="checkbox"/>	Free.	General	E1.0(12) Chan. 5
Module 2	---	Unmapped.	---	---
Module 3	---	Unmapped.	---	---
Module 4	---	Unmapped.	---	---

Figure 11: Callback Resources Screen

- b. Select the checkbox of the Resources that is allocated as Callback 1st Leg.
- c. Select the Group that is authorized to access this Resource.

Cellular Card Callback Resources

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Module	Set 1st Leg	Status	Group	2nd Leg
Module 1	<input checked="" type="checkbox"/>	Free.	Demo_2	E1.0(12) Chan. 5
Module 2	---	Unmapped.	---	---
Module 3	---	Unmapped.	---	---
Module 4	---	Unmapped.	---	---

Apply Settings

Figure 12: Selecting the Authorized Group

- d. Click **Apply Settings** and wait for **Configuration Saved** to be displayed. The allocation is confirmed in the Callback Resources table of both legs.

Cellular Card Callback Resources

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Module	Set 1st Leg	Status	Group	2nd Leg
Module 1	<input checked="" type="checkbox"/>	Allocated.	Demo_2	E1.0(12) Chan. 5
Module 2	---	Unmapped.	---	---
Module 3	---	Unmapped.	---	---
Module 4	---	Unmapped.	---	---

Configuration saved.

Selected card at slot 12 (E1 PRI)

Channel	Sat 1st Leg	Status	Group	Other Leg
Channel 1	---	Used for Callback-Trigger	---	---
Channel 2	---	Used for Callback-Trigger	---	---
Channel 3	---	Unmapped.	---	---
Channel 4	---	Unmapped.	---	---
Channel 5	<input checked="" type="checkbox"/>	Used for leg 2	---	CG4.0(1) Chan. 1
Channel 6	---	Unmapped.	---	---
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---

Figure 13: Confirmation of Allocation of Resource to Callback

Optionally, Require PIN Code Authorization

Hypermedia Gateways can be configured to require that users enter a Personal Identification Number (PIN) before receiving Callback resources.

To require PIN code authorization:

1. From the Configure branch of the HMC navigation pane, click the **Call Parameters** subbranch. The Call Configuration screen is displayed.
2. Scroll down to the **Callback Authentication Policy** parameter.



Figure 14: Callback Authentication Policy Parameter

3. Select either Yes or No. If Yes is selected, users are required to enter a personal access code when receiving callbacks.

Note: Optionally, configure other Callback parameters. For documentation on the other parameters, see “Call Parameters” on page 3.

4. Click **Submit**.
5. Wait for the **Successfully updated** message.

Authorize the User

Perform initial user configuration using the Add User screen. To add a single new user:

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **User List** sub-branch. The User List screen is displayed.

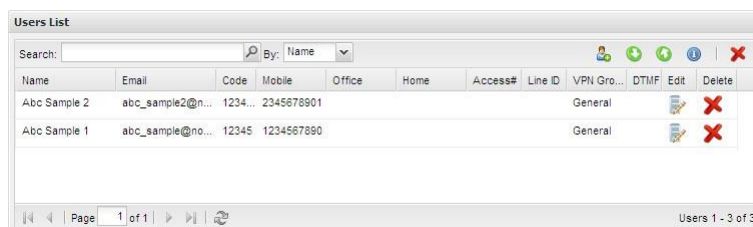
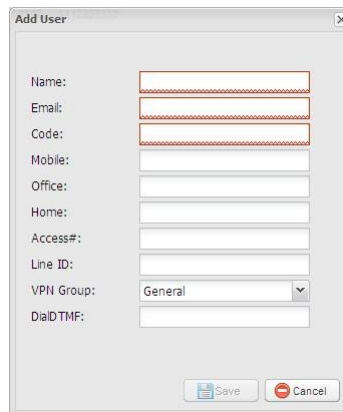


Figure 15: HMC User List

- Click  (Add User). The Add User dialog box is displayed.



The 'Add User' dialog box contains the following fields and controls:

- Name: Text input field
- Email: Text input field
- Code: Text input field
- Mobile: Text input field
- Office: Text input field
- Home: Text input field
- Access#: Text input field
- Line ID: Text input field
- VPN Group: Dropdown menu (currently set to 'General')
- DialIDTMF: Text input field
- Buttons: 'Save' and 'Cancel'

Figure 16: Add User Screen

Note: The name, email, code, and at least one phone number are required. The other parameters are optional.

- Enter the following user information:

Name

This information reappears in the All Users table.

Email

The User's email address.

Code

The is any random string of numbers and letters and is assigned by the Administrator.

Mobile/Office/Home

Enter at least one phone number.

- Define the users Callback access:

Access Number

When selected, the user is able to trigger a Callback via a telephone call. In the Access Number field, enter the phone number the user dials to access the Hypermedia Gateway. This is the DDI number that is allocated as a trigger.

Line ID

Enter the Line Number. The Hypermedia Gateway calls back the number entered in the Line ID field.

VPN Group

From the dropdown menu, assign the user to a VPN Group.

Dial DTMF

Enter the DTMF sequence. This is a DTMF string that the Gateway will automatically dial and which connects the user to an Automated Voice Response (AVR) system.

6. Click **Save**. Focus returns to the HMC Users List and the new user appears in the list.

Inform Users

It is the system administrator's responsibility to inform end-users. They need to know the DDI numbers that allocated to Callback.

Callthrough Overview

Use Callthrough to place calls, via the Hypermedia Gateway, to external numbers. Users receive a dial-tone from the Hypermedia Gateway and can then place calls either:

- via the PBX to a corporate extension
- to a VoIP phone number
- to a Cellular phone number
- to a PSTN phone number

A Callthrough is initiated by a call to a Resource allocated to Callthrough. The call initiates the following sequence:

- a. the Gateway searches for an available Callthrough Resource
- b. the Gateway connects the call with the linked resource.

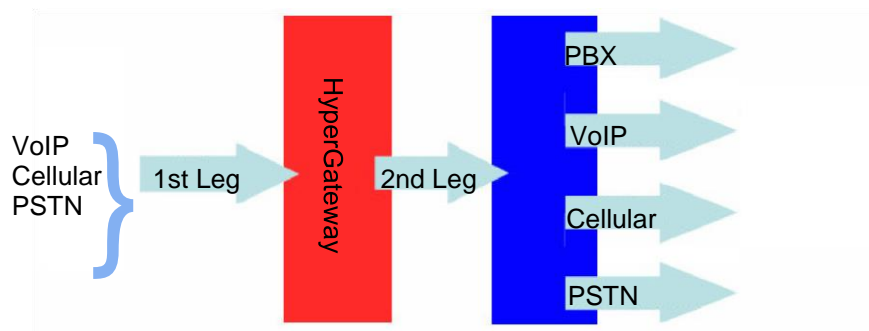


Figure 17: Callthrough Diagram

Callthrough Best Practice

The best-practice order for configuring Callthrough is:

1. Allocate the Callthrough resource.
2. Determine and configure a user authentication strategy.
3. Inform users.

Allocate the Callthrough Resource

Allocating a Callthrough Resources requires, first, linking it, and then setting it as 1st Leg.

1. Link the Resource to another resource:
 - a. From the HMC navigation pane, click the **Media Connections** sub-branch of either the Cellular Cards, PRI Cards, or LCR. The Media Matrix is displayed.
 - b. If more than one slot is displayed, select a specific card. The Media Matrix of that card is displayed.
 - c. Click within a Resource row. The row turns yellow.
 - d. Click **Edit**. The row becomes configurable.

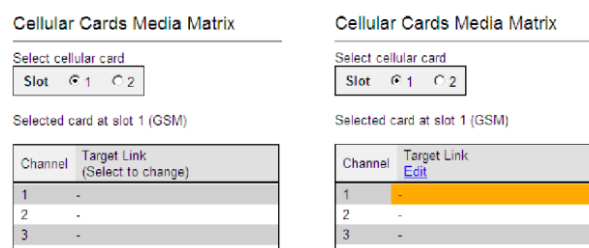


Figure 18: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this card to a target card by selecting the second card.

Note: If all of the second card's channels are already allocated, the message "Fully allocated" appears.

- f. From the second dropdown list, assign this Resource (channel) to a specific Resource (channel) on the target card.

Cellular Cards Media Matrix

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Channel	Target Link
1	E1.0(12) Channel 5
2	-
3	-
4	-

Figure 19: Assigning a Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
 - h. Optionally, repeat the process for additional channels and other media types.
 - i. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. Set the Resource as 1st Leg:
 - a. Select one of the Callthrough Resources sub-branches (either the Cellular, PRI, LCR, or VoIP Cards > Callthroughs sub-branch). The Callthrough Resources screen is displayed. Empty checkboxes appear beside available (Free) resources.

PRI Card Callthrough Resources

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	---	Used for Callback-Trigger	---	---
Channel 2	---	Used for Callback-Trigger	---	---
Channel 3	---	Used for Callback-Leg1	---	---
Channel 4	<input type="checkbox"/>	Free (PRI/Cell GW)	General	CG4.0(1) Chan. 2
Channel 5	<input type="checkbox"/>	Free (PRI/Cell GW)	General	CG4.0(1) Chan. 3
Channel 6	<input type="checkbox"/>	Free (VoIP GW)	General	MG.0(11) Chan. 5
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---
Channel 10	---	Unmapped.	---	---

Figure 20: PRI Card Callthrough Resources Screen

- b. Select the checkboxes of the Resources that are allocated as Callthrough 1st Leg.
- c. Select the Group that is authorized to access this Resource.

PRI Card Callthrough Resources

Select PRI card

Slot ☐ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	---	Used for Callback-Trigger	---	---
Channel 2	---	Used for Callback-Trigger	---	---
Channel 3	---	Used for Callback-Leg1	---	---
Channel 4	<input checked="" type="checkbox"/>	Free (PRI/Cell GW)	Demo	CG4.0(1) Chan. 2
Channel 5	<input checked="" type="checkbox"/>	Free (PRI/Cell GW)	Demo_2	CG4.0(1) Chan. 3
Channel 6	<input checked="" type="checkbox"/>	Free (VoIP GW)	Demo_2	MG.0(11) Chan. 5
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---
Channel 10	---	Unmapped.	---	---
Channel 11	---	Unmapped.	---	---
Channel 12	---	Unmapped.	---	---

Apply Settings

Figure 21: Selecting the Authorized Group

- d. Click **Apply Settings** and wait for **Configuration Saved** to be displayed. The allocation is confirmed in the Callback Resources table of both legs.

PRI Card Callthrough Resources

Select PRI card

Slot ☐ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	---	Used for Callback-Trigger	---	---
Channel 2	---	Used for Callback-Trigger	---	---
Channel 3	---	Used for Callback-Leg1	---	---
Channel 4	<input checked="" type="checkbox"/>	Used for leg 1.	Demo	CG4.0(1) Chan. 2
Channel 5	<input checked="" type="checkbox"/>	Used for leg 1.	Demo_2	CG4.0(1) Chan. 3
Channel 6	<input checked="" type="checkbox"/>	Used for leg 1.	Demo_2	MG.0(11) Chan. 5
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---
Channel 10	---	Unmapped.	---	---
Channel 11	---	Unmapped.	---	---
Channel 12	---	Unmapped.	---	---

Configuration saved.

Figure 22: Confirmation of Allocation of Resource to Callback

Determine and Configure a User Authentication Strategy

The Hypermedia Gateway can be configured to require that the Callthrough user be authorized through a form of authentication. To configure user authentication:

1. From the Configure branch of the HMC navigation pane, click the **Call Parameters** subbranch. The Call Configuration screen is displayed.
2. Scroll down to the Callthrough Authentication Policy parameter.
3. From the dropdown menu, select an option described in the table of authentication policies.

Callthrough Authentication Policy	
The following table summarizes the different call authentication policies and their effect on callthrough sessions:	
OnlyCLI	Call is disconnected if the caller ID is unknown.
OnlyCode	Call is accepted and code always required.
Either	Call is accepted. If caller ID is unknown then code is required.
Both	Both known caller ID and code are required.

Figure 23: Table of Authentication Policies

Note: Optionally, configure other Callback parameters. For documentation on the other parameters, see “Call Parameters” on page 3.

4. Click **Submit**.
5. Wait for the **Successfully updated** message.

Inform Users

It is the system administrator’s responsibility to inform end-users. They need to know the DDI numbers that allocated to Callthrough.

CB/CT CDRs

To manage and download the Callback and Callthrough CDR files:

1. From the HMC navigation pane, expand the **Monitor** branch.
2. Expand the **LCR Card** sub-branch and select **CB/CT CDRs**. The list of CDR files is displayed.

Callback/Callthrough CDR Files






File Name (click to download)	Last Modified	Size (bytes)	
Calls-01-2009.log 	06/01/2009 08:56	0	delete
Calls-09-2008.log 	02/10/2008 08:34	2035	delete
Calls-10-2008.log 	07/10/2008 16:51	139	delete
Calls-11-2008.log 	23/11/2008 10:56	0	delete
Calls-12-2008.log 	07/12/2008 14:53	0	delete

Figure 24: Callback/Callthrough CDR Files Screen

3. Click a file name. The standard Windows Open dialog box is displayed.
4. Define the location where the file will be saved and click **OK**. The file is downloaded to that location.

Chapter 3

CONFIGURING HYPERSAVINGS

This section includes:

- “Cellular Callbacks” on page 22
- “Cellular Callthroughs” on page 26
- “Cellular Dial Filters” on page 27
- “LCR Callthrough” on page 28
- “LCR Number Filters” on page 29
- “LCR Callback Triggers” on page 32
- “PRI Callbacks” on page 36
- “PRI Callthroughs” on page 40
- “PRI Dial Filters” on page 41
- “VoIP Callthrough” on page 42

Cellular Callbacks

Use Callback to cause the Gateway to authorize an incoming call, disconnect the incoming call, and then call-back the User. A Callback is initiated by a trigger. The trigger can be either a phone call, an SMS message, or a message sent via the Hypermedia Web-based Callback dialer. See also “Callback Overview” on page 6.

Resources

For a Resource to be available for Callback, it *must be linked to itself*. Then, Resources must be allocated to the Callback feature. To allocate resources to Callback:

1. Ensure that at least one Cellular Card > Media Connection channel is linked to a Cellular Gateway (CG) and is unallocated. To associate a cellular channel with another media channel:
 - a. From the Cellular Cards branch of the HMC navigation pane, click the **Media Connections** sub-branch. The Media Matrix is displayed.

Cellular Cards Media Matrix

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Channel	Target Link (Select to change)
1	CG4.0(1) Channel 1
2	CG4.0(1) Channel 3
3	CG4.0(1) Channel 2
4	-

Figure 25: Cellular Media Matrix screen

- b. If more than one slot is displayed, select a specific cellular card. The Media Matrix of that cellular card is displayed.
- c. Click within a channel row. The row turns yellow.
- d. Click **Edit**. The row becomes configurable.

Channel	Target Link Edit
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

Channel	Target Link Save Cancel
1	LCR Resource 65
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-

Figure 26: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this channel to a card by selecting the card.

Note: If all of the card's channels are already allocated, the message "Fully allocated" appears.

- f. From the second dropdown list, assign this channel to a specific channel on the target card.

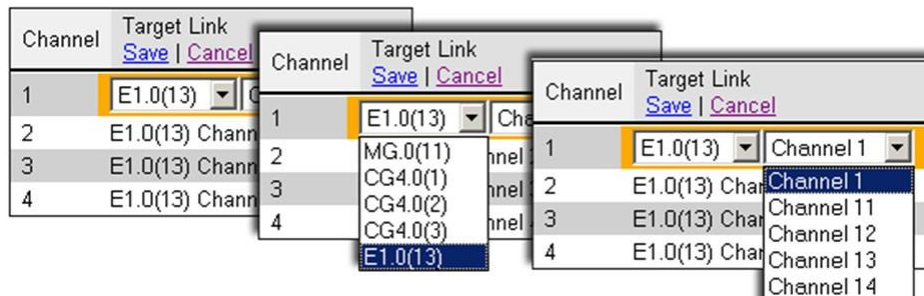


Figure 27: Assigning a Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
 - h. Optionally, repeat the process for additional channels and other media types.
 - i. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. From the HMC navigation pane's **Cellular** branch, expand the **Callbacks** sub-branch.
 3. Click **Resources**. The Resources screen is displayed.

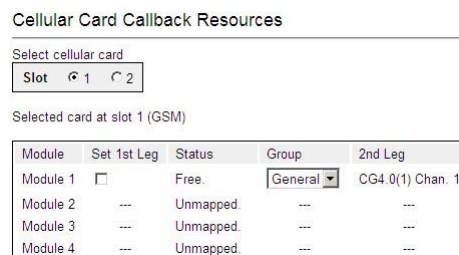


Figure 28: HMC Cellular Resources Screen

4. Select a Resource's **Set 1st Leg** checkbox. When selected, this Resource can accept Callback requests. Also, when selected, this Resource is not used for standard calls.

Note: To clear a checkbox, from the Cellular Card Media Connection branch, select the channel and click Unlink.

- From the **Group** dropdown list, select the Group that will be allowed to use this Callback Resource. These are the Groups that are defined in the VPN Groups sub-branch of the Manage branch.

Note: The 2nd Leg column displays the channel used for the 2nd leg of the Callback.

- Repeat the procedure for other Resources that will be allocated to Callback calls.
- Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Call Triggers

Use Call Triggers to configure the gateway to respond to a call to a specific channel as a Callback request.

- Ensure that at least one Cellular Card > Media Connection channel is linked to a Cellular Gateway (CG) and is unallocated (see step a on page 22).
- From the HMC navigation pane's Cellular branch, expand the **Callbacks** sub-branch.
- Click **Call Triggers**. The Callback Triggers screen is displayed.

Callback Triggers using Cellular Modules

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Channel	Status	Set As Trigger
Channel 1	Free.	<input type="checkbox"/>
Channel 2	Used as Callback-Leg1	---
Channel 3	Used as Callback-Leg2	---
Channel 4	Unmapped.	---

Figure 29: HMC Cellular Call Triggers Screen

- Select the checkbox. When selected, the channel is allocated to Callback.

Note: To clear a checkbox, from the Cellular Card Media Connection branch, select the channel and click Unlink.

- Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

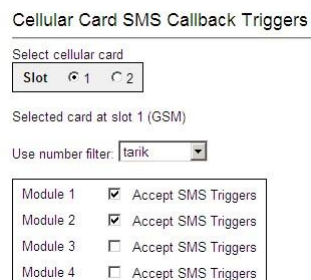
SMS Triggers

Use the SMS Triggers screen to enable use of SMS messages to command the Gateway to call back the party who sent the SMS message.

Note: The SMS message must contain the telephone number that the Gateway is to call.

To enable use of SMS triggers:

- From the HMC navigation pane's Cellular branch, expand the **Callbacks** sub-branch.
- Click the **SMS Triggers** sub-branch. The SMS Triggers screen is displayed.



Cellular Card SMS Callback Triggers	
Select cellular card	
Slot	1 2
Selected card at slot 1 (GSM)	
Use number filter:	tank
Module 1	<input checked="" type="checkbox"/> Accept SMS Triggers
Module 2	<input checked="" type="checkbox"/> Accept SMS Triggers
Module 3	<input type="checkbox"/> Accept SMS Triggers
Module 4	<input type="checkbox"/> Accept SMS Triggers

Figure 30: HMC SMS Triggers Screen

- If more than one slot is displayed, select a specific Cellular Card. The SMS Trigger screen of that cellular card is displayed.
- Optionally, select a Number Filter (see “Number Filters” on page 124).
- Select or clear the checkbox for each module. When selected, an SMS from the user to a SIM card on that module will initiate a Callback.
- Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Cellular Callthroughs

Use Callthrough to place calls, via the Hypermedia Gateway, to external numbers. See also “Callthrough Overview” on page 15.

To configure Callthrough:

1. Ensure that at least one Cellular Card > Media Connection channel is linked to the target Callthrough equipment and is unallocated (see step a on page 22).
2. From the Cellular Cards branch of the HMC navigation pane, click the **Callthrough** subbranch. The Callthrough screen is displayed.

Cellular Card Callthrough Resources

Select cellular card

Slot ☒ 1 ☐ 2

Selected card at slot 1 (GSM)

Channel	Set 1st Leg	Status	Group	Other Leg
Module 1	<input type="checkbox"/>	Free. (PRI/Cell GW)	General	CG4.0(1) Chan. 1
Module 2	---	Used for Callback-Leg1	---	---
Module 3	---	Used for Callback-Leg2	---	---
Module 4	---	Unmapped.	---	---

Figure 31: The Callthrough Screen

3. Select a Module’s **Set 1st Leg** checkbox. When selected, this Module can accept Callthrough calls from the user. Also, when selected, this Module is not used for standard calls.

Note: To clear a checkbox, from the Cellular Card Media Connection branch, select the channel and click *Unlink*.

4. From the **Group** dropdown list, select the Group that will be allowed to use this Callthrough Resource. These are the Groups that are defined in the VPN Groups subbranch (see “VPN Groups” on page 123).

Note: The *Other Leg* column displays the equipment used for the 2nd leg of the Callthrough.

5. Repeat the procedure for other Resources that will be allocated to Callthrough calls.
6. Click **Apply Settings**.

Cellular Dial Filters

Filters enable consistent, automatic management of phone numbers before they are routed.

Note: The Dial Filters feature is relevant only to Hypermedia HG4000 Gateways. Filters are created on the Manage > Number Filters screen (see “Number Filters” on page 124).
Cellular card’s Dial Filters can be used only if linked to a VoIP channel or used with Callback/Callthrough features.

To apply a dialing filter to a module:

1. From the Cellular Cards branch of the HMC navigation pane, click the **Dial Filters** subbranch. The Cellular Card Dial Filters screen is displayed.

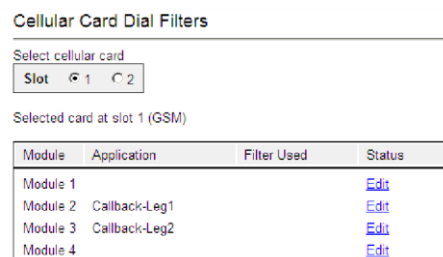


Figure 32: Cellular Card Dial Filters Screen

2. If more than one slot is displayed, select a specific Cellular card. The Dial Filters of that Cellular card are displayed.
3. Click **Edit**. A dropdown list of existing filters is displayed.
4. Expand the list and select a filter.

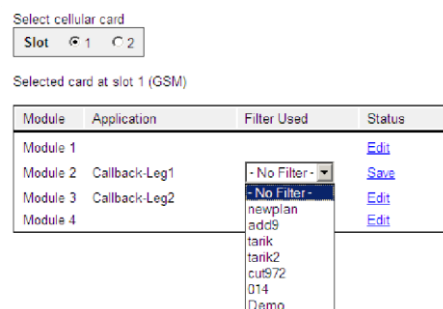


Figure 33: Filters Dropdown List

5. Click **Save**.
6. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Cellular Dial Filters

LCR Callthrough

Use Callthrough to place calls, via the Hypergateway, to external numbers. See also “Callthrough Overview” on page 15. To configure Callthrough:

1. From the HMC navigation pane’s LCR branch, click the **Callthrough** sub-branch. The Callthrough screen is displayed.

Note: The Resources column lists the Resources found on the LCR Media Matrix screen.

LCR Callthrough Resources

Resource	Set 1st Leg	Status	Group	Other Leg
Resource 1	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 1
Resource 2	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 2
Resource 3	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 3
Resource 4	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 4
Resource 5	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 5
Resource 6	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 6
Resource 7	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 7
Resource 8	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 8
Resource 9	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 9
Resource 10	<input type="checkbox"/>	Free. (Gateway)	General	E1.0(12) Chan. 10

Figure 34: The Callthrough Screen

2. Select a Resource’s **Set 1st Leg** checkbox. When selected, this Resource can accept Callthrough calls from the user but is not used for standard calls.

Note: To clear a checkbox, from the LCR Media connections branch, select the Resource and click **Unlink**.

Note: The Status column indicates if the Resource is or is not available. It also indicates the type of equipment used to process the Callthrough.

Note: *The Other Leg column displays the equipment used for the 2nd leg of the Callthrough.*

3. From the **Group** dropdown list, select the Group that will be allowed to use this Callthrough Resource. These are the Groups that are defined in the VPN Groups subbranch of the Manage branch.
4. Repeat the procedure for other Resources that will be allocated to Callthrough calls.
5. Click **Apply Settings**.

LCR Callthrough

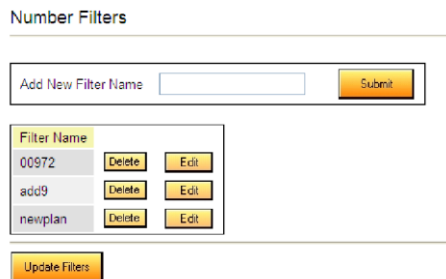
LCR Number Filters

Use Number Filters to manipulate numbers that are sent to, or received by, the Gateway. All numbers are compared to the configured set of rules. If the number matches a rule, the rule is applied and a new number is dialed.

Creating a Number Filter

To create a Number Filter:

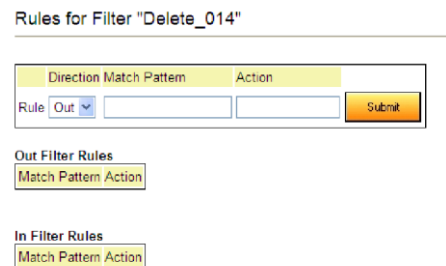
1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **Number Filters** sub-branch. The Number Filters screen is displayed.



Number Filters		
Add New Filter Name <input type="text"/> <input type="button" value="Submit"/>		
Filter Name	Delete	Edit
00972	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>
add9	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>
newplan	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>
<input type="button" value="Update Filters"/>		

Figure 35: Number Filters Screen

3. In the **Add New Filter Name** field, enter a name for the new filter.
4. Click **Submit**. The Number Filters screen is displayed; the new filter appears in the list of Filter Names.
5. Click the **Edit** button beside the new filter's name. The **Rules for Filter <name>** screen is displayed.



Rules for Filter "Delete_014"	
Direction Match Pattern	Action
Rule: Out <input type="text"/>	<input type="button" value="Submit"/>
Out Filter Rules	
<input type="button" value="Match Pattern Action"/>	
In Filter Rules	
<input type="button" value="Match Pattern Action"/>	

Figure 36: Edit Number Filters Screen

6. Select a Rule **Direction**.

Out

Use Out filters to apply the filters to outgoing calls. For example, if a number begins with the Country Code 44 and is followed by seven or more digits, this filter—`^44(d\d\d\d\d\d\d+) $1` —removes the country code and dials only the digits following the Country Code.

This second example is an Out filter that adds the suffix ‘9’ to all outgoing calls which have five or more digits (for getting an outside line)—`(\d\d\d\d\d+) 9$1`

In

Use In filters to apply the filters to incoming calls.

- Using standard Regular Expressions, enter the Match Pattern and the Action that will occur when the pattern is matched.

Note: For more information about Regular Expressions, see:
<http://www.regular-expressions.info>

- Click **Submit**. The Rule is listed in either the Out Filter Rules or the In Filter Rules list.

Rules for Filter "Delete_014"

Direction	Match Pattern	Action
Rule Out		

Out Filter Rules

Match Pattern	Action

In Filter Rules

Match Pattern	Action
*014(d\d\d\d\d\d\d+) \$1	Delete

Figure 37: New Filter is Displayed

- Click the **Number Filters** sub-branch.
- Click **Update Filters**.

Applying a Callthrough Filter

To apply a Callthrough Filter:

- From the HMC navigation pane’s LCR branch, click the **Callthrough Filters** sub-branch.
The Callthrough Filters screen is displayed.

LCR Callthrough Filters

Resource	Application	Filter Used	Status
Resource 1	Callthrough-Leg1	00972	Edit
Resource 2	Callthrough-Leg1		Edit
Resource 3	Callthrough-Leg1		Edit
Resource 4	Callthrough-Leg1		Edit
Resource 5	Callthrough-Leg1		Edit
Resource 6	Callthrough-Leg1		Edit
Resource 7	Callthrough-Leg1		Edit
Resource 8	Callthrough-Leg1		Edit
Resource 9	Callthrough-Leg1		Edit
Resource 10	Callthrough-Leg1		Edit
Resource 11	Callthrough-Leg2		Edit
Resource 12	Callthrough-Leg2		Edit
Resource 13	Callthrough-Leg2		Edit

Figure 38: Callthrough Filter Screen

2. In the **Status** column, click **Edit**. In the Filter Used column, a dropdown list is displayed.

LCR Callthrough Filters

Resource	Application	Filter Used	Status
Resource 1	Callthrough-Leg1	00972	Edit
Resource 2	Callthrough-Leg1	- No Filter -	Save
Resource 3	Callthrough-Leg1	- No Filter -	Edit
Resource 4	Callthrough-Leg1	newplan	Edit
Resource 5	Callthrough-Leg1	add9	Edit
Resource 6	Callthrough-Leg1	00972	Edit
Resource 7	Callthrough-Leg1		Edit
Resource 8	Callthrough-Leg1		Edit
Resource 9	Callthrough-Leg1		Edit
Resource 10	Callthrough-Leg1		Edit
Resource 11	Callthrough-Leg2		Edit
Resource 12	Callthrough-Leg2		Edit

Figure 39: Filter Dropdown List

3. Select the filter.
4. Click **Save**.
5. Click **Apply Settings**.

LCR Callback Triggers

A Callback Trigger is a number dialed by a User that causes the Gateway to authorize the user, disconnect the call, and then call-back the User. See also “Callback Overview” on page 6.

Note: *If several Resources are dedicated to Callback, incoming calls are automatically routed to the first available Resource.*

For a Resource to be allocated to Callback, it **must be linked to itself**. Its Target Link from the LCR Media Matrix must be “LCR Resource #” (see Figure # 44).

To configure Callback Trigger Resources:

1. From the HMC navigation pane’s LCR branch, click the **Media Connections** sub-branch. The LCR Media Matrix is displayed.
2. Link an unassigned Resource to LCR. To link a media to LCR:
 - a. From the HMC navigation pane’s LCR branch, click the **Media Connections** subbranch. The LCR Media Matrix is displayed.

LCR Media Matrix

Resource	Target Link (Select to change)
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

Figure 40: LCR Media Matrix

- b. Click within a Resource row. The row turns yellow.
- c. Click **Edit**. The row becomes configurable.

LCR Media Matrix

Resource	Target Link Edit
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

LCR Media Matrix

Resource	Target Link Save Cancel
1	LCR Resource 65
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

Figure 41: LCR Row when Configurable

- d. From the dropdown menus, select the **media** and the Resource number.

LCR Media Matrix

Resource	Target Link Save Cancel
1	LCR Resource 65
2	LCR
3	MG.0(11)
4	CG4.0(2)
5	E1.0(12)
6	E1.0(13)
7	-
8	-
9	-
10	-
11	-
12	-
13	-

LCR Media Matrix

Resource	Target Link Save Cancel
1	E1.0(12) Resource 65
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

Figure 42: LCR Row Dropdown Lists

- e. Click **Save**. The configuration dropdown boxes are hidden.

LCR Media Matrix

Resource	Target Link Edit Unlink
1	E1.0(12) Channel 1
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

[Apply Settings](#)

Figure 43: LCR Row Configured

- f. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Resource	Target Link
	Edit Unlink
1	LCR Resource 1
2	LCR Resource 2
3	LCR Resource 3
4	LCR Resource 4
5	E1.0(12) Channel 5
6	E1.0(12) Channel 6
7	E1.0(12) Channel 7
8	E1.0(12) Channel 8
9	E1.0(12) Channel 9
10	E1.0(12) Channel 10
11	E1.0(12) Channel 11
12	E1.0(12) Channel 12
13	E1.0(12) Channel 13

Figure 44: LCR Media Linked as Dedicated Channel

3. From the HMC navigation pane's LCR branch, click the **Callback Triggers** sub-branch. The Callback Triggers page is displayed. A checkbox appears beside Resources that can now be allocated as Callback Triggers.

Channel	Status	Set As Trigger
Channel 1	Free	<input type="checkbox"/>
Channel 2	Free	<input type="checkbox"/>
Channel 3	Free	<input type="checkbox"/>
Channel 4	Free	<input type="checkbox"/>
Channel 5	Used as Callthrough-Leg1	---
Channel 6	Used as Callthrough-Leg1	---
Channel 7	Used as Callthrough-Leg1	---
Channel 8	Used as Callthrough-Leg1	---
Channel 9	Used as Callthrough-Leg1	---
Channel 10	Used as Callthrough-Leg1	---
Channel 11	Used as Gateway	---
Channel 12	Used as Gateway	---
Channel 13	Used as Gateway	---

Figure 45: LCR Callback Triggers Screen

4. Select the checkboxes. When selected, the Resource is allocated to Callback.

Note: To clear a checkbox, from the LCR Media connections branch, select the Resource and click **Unlink**.

5. Click **Apply Settings** and wait for **Configuration Saved** to be displayed. The status changes to "Used as Callback Trigger".

Channel	Status	Set As Trigger
Channel 1	Used as Callback Trigger	<input checked="" type="checkbox"/>
Channel 2	Free	<input type="checkbox"/>
Channel 3	Free	<input type="checkbox"/>
Channel 4	Free	<input type="checkbox"/>
Channel 5	Unmapped	---
Channel 6	Used as Callthrough-Leg1	---
Channel 7	Used as Callthrough-Leg1	---
Channel 8	Used as Callthrough-Leg1	---
Channel 9	Used as Callthrough-Leg1	---
Channel 10	Used as Callthrough-Leg1	---
Channel 11	Used as Gateway	---
Channel 12	Used as Gateway	---
Channel 13	Used as Gateway	---

Figure 46: Status “Used as Callback Trigger”

PRI Callbacks

Use Callback to cause the Gateway to authorize an incoming call, disconnect the incoming call, and then call-back the User. A Callback is initiated by a trigger. The trigger can be either a phone call, an SMS message, or a message sent via the Hypermedia Web-based Callback dialer. See also “Callback Overview” on page 6.

Callback Resources

For a Resource to be allocated to Callback, it ***must be linked to itself***. Then, Resources must be allocated to the Callback feature. To allocate resources to Callback:

1. Ensure that at least one PRI Card > Media Connection channel is linked to itself and is unallocated. To associate a PRI channel with another media channel:
 - a. From the PRI Card branch of the HMC navigation pane, click the **Media Connections** sub-branch. The Media Matrix is displayed.

PRI Media Matrix

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Target Link (Select to change)
1	E1.0(12) Channel 2
2	E1.0(12) Channel 1
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-

Figure 47: HMC PRI Media Matrix

- b. If more than one slot is displayed, select a specific E1 card. The Media Matrix of that E1 card is displayed.
- c. Click within a channel row. The row turns yellow.
- d. Click **Edit**. The row becomes configurable.

Channel	Target Link
1	Edit
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

Channel	Target Link
1	LCR Resource 65
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-

Figure 48: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this channel to a card by selecting the card.

Note: If all of the card's channels are already allocated, the message "Fully allocated" appears.

- f. From the second dropdown list, assign this channel to a specific channel on the target card.

Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(1) Fully allocated
3	CG4.0(1) Channel 3
4	CG4.0(1) Channel 4
5	CG4.0(2) Channel 1
6	CG4.0(2) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(1) Fully allocated
3	MG.0(11) Channel 3
4	CG4.0(1) Channel 4
5	CG4.0(2) Channel 1
6	CG4.0(3) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(3) Channel 1
3	CG4.0(1) Channel 2
4	CG4.0(1) Channel 3
5	CG4.0(2) Channel 4
6	CG4.0(2) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Figure 49: Assigning a PRI Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
- h. Optionally, repeat the process for additional channels and other media types.

- i. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. From the HMC navigation pane's **PRI Cards** branch, click the **Callbacks** sub-branch. The PRI Card Callback Resources screen is displayed.

PRI Card Callback Resources

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	<input type="checkbox"/>	Free	General	E1.0(12) Chan. 1
Channel 2	<input type="checkbox"/>	Free	General	E1.0(12) Chan. 2
Channel 3	<input type="checkbox"/>	Free	General	E1.0(12) Chan. 3
Channel 4	---	Unmapped.	---	---
Channel 5	---	Unmapped.	---	---
Channel 6	---	Unmapped.	---	---

Figure 50: HMC PRI Card Callback Resources Screen

3. Select a Resource's **Set 1st Leg** checkbox. When selected, this Channel can accept Callback requests. Also, when selected, this Channel is not used for standard calls.

Note: To clear a checkbox, from the PRI Card Media Connection branch, select the channel and click **Unlink**.

Note: The 2nd Leg column displays the channel used for the 2nd leg of the Callback.

4. From the **Group** dropdown list, select the Group that will be allowed to use this Callback Resource. These are the Groups that are defined in the VPN Groups sub-branch of the Manage branch.
5. Repeat the procedure for other Resources that will be allocated to Callback calls.
6. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Callback Triggers

Use Callback Triggers to configure the gateway to respond to a call to a specific channel as a Callback request.

1. Ensure that at least one PRI Card > Media Connection channel is linked to the target Callback equipment and is unallocated (see a on page 36).

2. From the HMC navigation pane's PRI branch, click **Callback Triggers**. The Callback Triggers screen is displayed.

Selected card at slot 12 (E1 PRI)

Channel	Status	Set As Trigger
Channel 1	Free.	<input type="checkbox"/>
Channel 2	Free.	<input type="checkbox"/>
Channel 3	Free.	<input type="checkbox"/>
Channel 4	Unmapped.	---
Channel 5	Unmapped.	---
Channel 6	Unmapped.	---
Channel 7	Unmapped.	---
Channel 8	Unmapped.	---
Channel 9	Unmapped.	---
Channel 10	Unmapped.	---
Channel 11	Unmapped.	---
Channel 12	Unmapped.	---
Channel 13	Unmapped.	---

Figure 51: HMC PRI Card Callback Triggers Screen

3. Select the checkbox. When selected, the channel is allocated to Callback.

Note: To clear a checkbox, from the PRI Card Media Connection branch, select the channel and click **Unlink**.

4. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

PRI Callthroughs

Use Callthrough to place calls, via the Hypermedia Gateway, to external numbers. See also “Callthrough Overview” on page 15.

To configure Callthrough:

1. Ensure that at least one PRI Card > Media Connection channel is linked to the target Callthrough equipment and is unallocated (see step a on page 36).
2. From the PRI Cards branch of the HMC navigation pane, click the **Callthrough** subbranch. The Callthrough screen is displayed.

PRI Card Callthrough Resources

Select PRI card

Slot ☐ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	<input type="checkbox"/>	Free (PRI/Cell GW)	General	E1.0(12) Chan. 1
Channel 2	<input type="checkbox"/>	Free (PRI/Cell GW)	General	E1.0(12) Chan. 2
Channel 3	<input type="checkbox"/>	Free (PRI/Cell GW)	General	E1.0(12) Chan. 3
Channel 4	---	Unmapped.	---	---
Channel 5	---	Unmapped.	---	---
Channel 6	---	Unmapped.	---	---
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---
Channel 10	---	Unmapped.	---	---
Channel 11	---	Unmapped.	---	---
Channel 12	---	Unmapped.	---	---

Figure 52: HMC PRI Card Callthrough Resources Screen

3. Select a Channel’s **Set 1st Leg** checkbox. When selected, this Channel can accept Callthrough calls from the user but is not used for standard calls.

Note: To clear a checkbox, from the PRI Card Media Connection branch, select the channel and click Unlink.

4. From the **Group** dropdown list, select the Group that will be allowed to use this Callthrough Resource. These are the Groups that are defined in the VPN Groups subbranch of the Manage branch.

Note: The Other Leg column displays the equipment used for the 2nd leg of the Callthrough.

5. Repeat the procedure for other Resources that will be allocated to Callthrough calls.

6. Click **Apply Settings** and wait for **Configuration saved** to be displayed.

PRI Callthroughs

PRI Dial Filters

Filters enable consistent, automatic management of phone numbers before they are routed.

Note: Filters are created on the *Manage > Number Filters* screen (see “Number Filters” on page 124).

Dial Filters can be used only if linked to a VoIP channel or used with Callback/Callthrough features.

To apply a dialing filter to a channel:

1. From the PRI Card branch of the HMC navigation pane, click the **Dial Filters** sub-branch.

The PRI Dial Filters screen is displayed.

PRI Card Dial Filters

Select PRI card

Slot ☒ 12 ☐ 13

Selected card at slot 12 (E1 PRI)

Channel	Application	Filter Used	Status
Channel 1		tanik	Edit
Channel 2		tanik	Edit
Channel 3			Edit
Channel 4			Edit
Channel 5			Edit
Channel 6			Edit
Channel 7			Edit
Channel 8			Edit
Channel 9			Edit
Channel 10			Edit

Figure 53: HMC PRI Card Dial Filters Screen

2. If more than one slot is displayed, select a specific E1 card. The Dial Filters of that E1 card are displayed.
3. Click **Edit**. A dropdown list of existing filters is displayed.
4. Expand the list and select a filter.

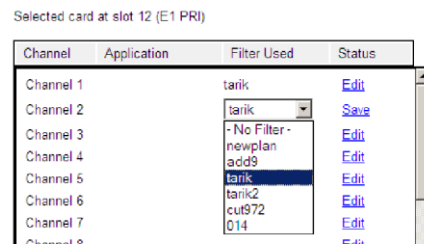


Figure 54: HMC PRI Card Filters Dropdown List

5. Click **Save**. The Application column displays the application that supports the destination Called Party.

PRI Dial Filters

VoIP Callthrough

Use Callthrough to place calls, via the Hypermedia Gateway, to external numbers. See also “Callthrough Overview” on page 15. To configure Callthrough:

1. Ensure that at least one VoIP Card > Media Connection channel is linked to the target Callthrough equipment and is unallocated. To associate a VoIP channel with another media channel:
 - a. From the VoIP Card branch of the HMC navigation pane, click the **Media Connections** sub-branch. The Media Matrix is displayed.

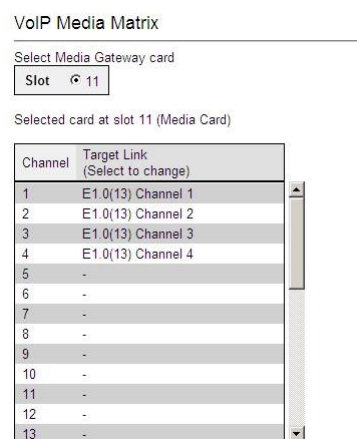
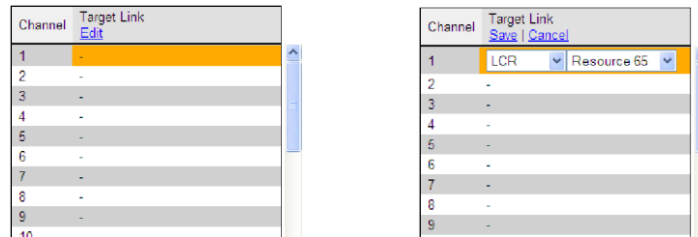


Figure 55: HMC VoIP Card Media Matrix Screen

- b. If more than one slot is displayed, select a specific VoIP card. The Media Matrix of that VoIP card is displayed.
- c. Click within a channel row. The row turns yellow.
- d. Click **Edit**. The row becomes configurable.



Channel	Target Link
1	Edit
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-

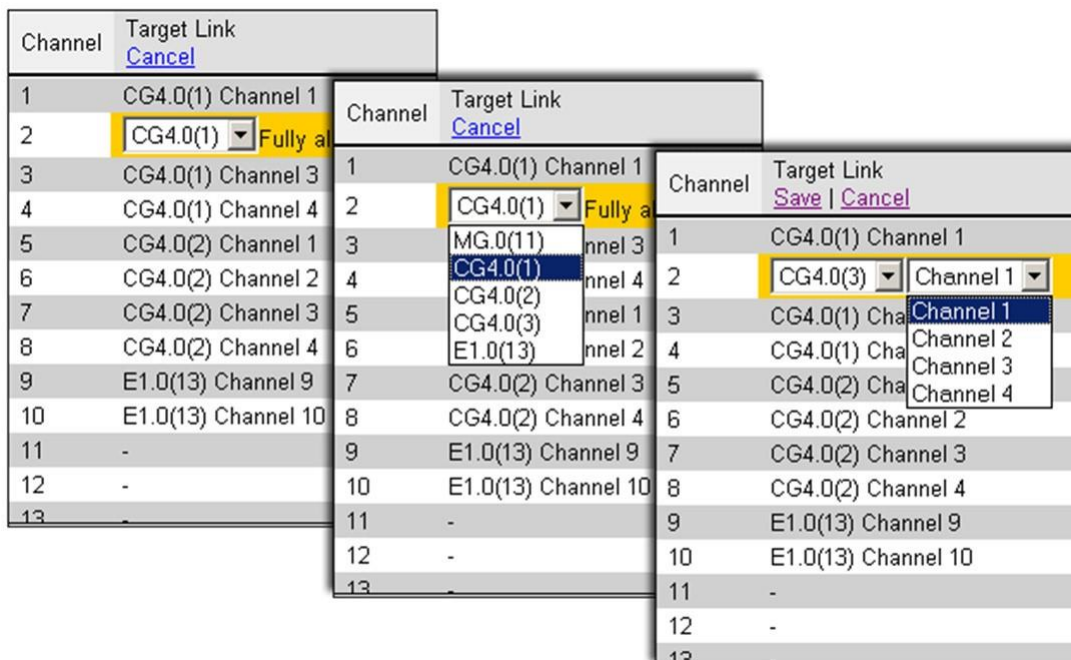
Channel	Target Link
1	Save Cancel LCR Resource 65
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-

Figure 56: Media Matrix Row when Configurable

- e. From the first dropdown list, allocate this channel to a card by selecting the card.

Note: *If all of the card's channels are already allocated, the message "Fully allocated" appears.*

- f. From the second dropdown list, assign this channel to a specific channel on the target card.



Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(1) Channel 1
3	CG4.0(1) Channel 3
4	CG4.0(1) Channel 4
5	CG4.0(2) Channel 1
6	CG4.0(2) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(1) Channel 1
3	CG4.0(1) Channel 3
4	CG4.0(1) Channel 4
5	CG4.0(2) Channel 1
6	CG4.0(2) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Channel	Target Link
1	CG4.0(1) Channel 1
2	CG4.0(3) Channel 1
3	CG4.0(1) Channel 1
4	CG4.0(1) Channel 2
5	CG4.0(2) Channel 3
6	CG4.0(2) Channel 2
7	CG4.0(2) Channel 3
8	CG4.0(2) Channel 4
9	E1.0(13) Channel 9
10	E1.0(13) Channel 10
11	-
12	-
13	-

Figure 57: Assigning a Target Link

- g. Click **Save**. The configuration dropdown boxes are hidden.
 - h. Optionally, repeat the process for additional channels and other media types.
 - i. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.
2. From the VoIP Card branch of the HMC navigation pane, click the **Callthrough** subbranch. The Callthrough screen is displayed.

VOIP Card Callthrough Resources

Select MG card

Slot

Selected card at slot 11

Channel	Set 1st Leg	Status	Group	Other Leg
Channel 1	<input type="checkbox"/>	Free (VoIP GW)	General	E1.0(13) Chan. 1
Channel 2	---	Unmapped.	---	---
Channel 3	---	Unmapped.	---	---
Channel 4	---	Unmapped.	---	---
Channel 5	---	Unmapped.	---	---
Channel 6	---	Unmapped.	---	---
Channel 7	---	Unmapped.	---	---
Channel 8	---	Unmapped.	---	---
Channel 9	---	Unmapped.	---	---
Channel 10	---	Unmapped.	---	---
Channel 11	---	Unmapped.	---	---
Channel 12	---	Unmapped.	---	---
Channel 13	---	Unmapped.	---	---

Figure 58: HMC VoIP Card Callthrough Resources Screen

3. Select a Channel's **Set 1st Leg** checkbox. When selected, this Channel can accept Callthrough calls from the user. Also, when selected, this Channel is not used for standard calls.

Note: To clear a checkbox, from the VoIP Card Media Connection branch, select the channel and click Unlink.

Note: The Other Leg column displays the equipment used for the 2nd leg of the Callthrough.

4. From the **Group** dropdown list, select the Group that will be allowed to use this Callthrough Resource. These are the Groups that are defined in the VPN Groups subbranch of the Manage branch.
5. Repeat the procedure for other Resources that will be allocated to Callthrough calls.
6. Click **Apply Settings** and wait for **Configuration Saved** to be displayed.

Phone2Net Dial Plan

The Phone2Net Dial Plan connects phone calls to IP network phones. For example, when the Hypermedia Gateway system receives an incoming call to: Dialed Number = 077444 it can forward the call to the IP Phone at Destination IP = 192.168.1.67.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Expand the **VoIP** branch.
3. Click **Phone2Net Dial Plan**. The Phone2Net Dialing Plan screen is displayed.

VoIP - Phone to Net Dialing Plan

Dialed Number	Dest. IP	Dest. Number	PIN Code
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="button" value="Add Entry"/>			

Dialed Number	Destination IP	Dest. Number	PIN Code	
0	84.45.67.242	-	-	<input type="button" value="Delete"/>
1	84.45.67.242	-	-	<input type="button" value="Delete"/>
2	84.45.67.242	-	-	<input type="button" value="Delete"/>
3	84.45.67.242	-	-	<input type="button" value="Delete"/>
4	84.45.67.242	-	-	<input type="button" value="Delete"/>
5	84.45.67.242	-	-	<input type="button" value="Delete"/>
6	84.45.67.242	-	-	<input type="button" value="Delete"/>
8	84.45.67.242	-	-	<input type="button" value="Delete"/>
9	84.45.67.242	-	-	<input type="button" value="Delete"/>

Figure 59: HMC VoIP Card Phone to Net Dialing Plan Screen

4. In the **Dialed Number** field, enter the phone number received by the Gateway.
5. Enter either:
 - in the **Dest. IP** field, the IP address that the call will be connected to
 - in the **Dest. Number** field, the phone number that the call will be connected to
6. If necessary, in the **PIN Code** field, enter the PIN code.
7. Click **Add Entry**. The new entry is displayed in the area below.

Phone2Net Dial Plan

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Phone2Net Dial Plan

Chapter 4

WEB BASED HYPERSAVINGS

Use the Web Callback Application to both trigger a callback and to send an SMS via the Internet.

This section

- “Setting Up the Web Callback Application” on page 48
- “Composing and Sending an SMS Message” on page 50
- “Triggering a Callback” on page 51
- “Using the DDI Callbacks Tab” on page 52

Setting Up the Web Callback Application

To access, and add users to, the Web Callback Application:

1. Open a web-browser and enter the Web Callback Application IP address. The IP address is provided by the Network Administrator. The Login Screen is displayed.

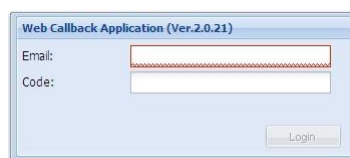


Figure 60: The Web Callback Application Login Screen

2. Enter the **Email** and **Code** and click **Login**. (The code is provided by the Network Administrator.) The Web Callback Application main screen is displayed.

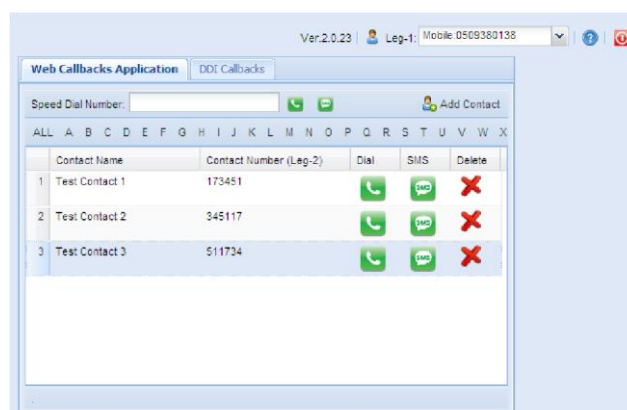
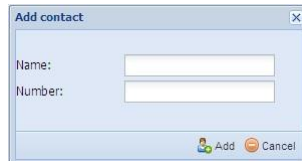


Figure 61: Web Callback Application Main Screen

3. Add contacts:

- a. Click . The Add Contact screen is displayed.



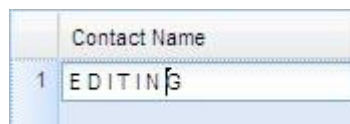
A small dialog box titled "Add contact" with a close button (X) in the top right corner. It contains two text input fields: "Name:" and "Number:". At the bottom right, there are two buttons: "Add" (with a green plus icon) and "Cancel" (with a red minus icon).

Figure 62: Web Callback Application Add Contact Screen

- b. Enter the name and the phone number.
c. Click **Add**. The entry is added to the list.

Setting Up the Web Callback

Note: To edit an existing contact, double-click in the field. The field becomes active and can be edited.





A screenshot of a contact list. The first contact is highlighted. The "Contact Name" field is in an "EDITING" state, indicated by a blue border and the word "EDITING" in the background. The text "1" is visible in the first column of the list.

Figure 63: Editing a Contact's Information

Composing and Sending an SMS Message

To compose and send an SMS message:

1. Access the Web Callback Application main screen (see “Setting Up the Web Callback Application” on page 48).
2. Ensure that the **Web Callback Application** tab is selected.
3. To determine the recipient:
 - Enter the number in the **Speed Dial** field and click  (SMS).
 - In the row of the target contact, click  (SMS).

The Compose Pane is displayed.






Figure 64: The Compose Pane of the Web Callback Application

4. Enter the text of the SMS in the **Text Message** field.
5. Click **Send**. A confirmation message is displayed.

Triggering a Callback

When the Leg-1 number calls the Gateway, it will disconnect the Leg-1 number, call it back, and call the contact's number.

To trigger a callback:

1. Access the Web Callback Application main screen (see “Setting Up the Web Callback Application” on page 48).
2. Ensure that the **Web Callback Application** tab is selected.
3. Select a phone number from the  Leg-1: (Leg-1) dropdown menu.
4. To determine the recipient:
 - Enter the number in the **Speed Dial** field and click  (Callback).
 - In the row of the target contact, click  (Callback).

The Web Callback Application processes the callback request.

5. A confirmation message is displayed. Click **OK**.

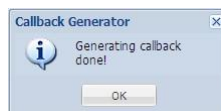
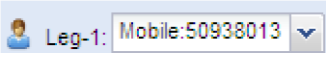


Figure 65: The Web Callback Application Confirmation Message

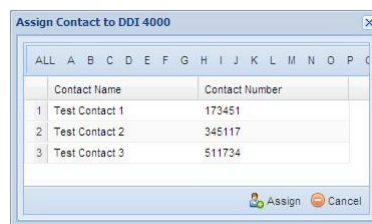
Using the DDI Callbacks Tab

Use the DDI Callbacks tab to assign a Direct Dial-in (DDI) number to a contact. When the Leg-1 number calls the DDI number, the Gateway will disconnect the Leg-1 number, call it back, and call the contact's number.

1. Access the Web Callback Application main screen (see “Setting Up the Web Callback Application” on page 48).
2. Select the **DDI Callbacks** tab.
3. Select a phone number from the  (Leg-1) dropdown menu.



(Assign Contact). The Assign Contact dialog box is displayed.



4. In a DDI row, click

Figure 66: Assign Contact Dialog Box

5. Select a contact and click **Assign**. Focus returns to the DDI Callbacks screen and the new assignment is displayed.

Web Callbacks Application		DDI Callbacks			
DDI Trigger	Contact Name	Contact Number (Leg-2)	Assign Contact	Release Contact	
1 4000	Test Contact 1	173451			
2 4001	Test Contact 2	345117			
3 4002	Test Contact 3	511734			
4 4003					

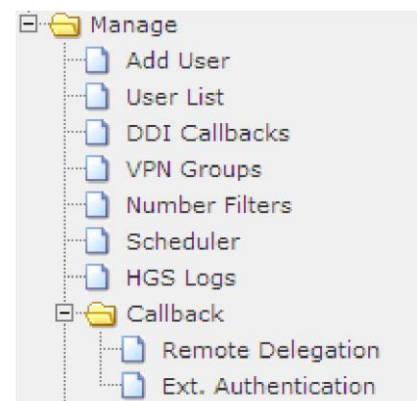
Figure 67: DDI Callback Screen with Assignments

Chapter 5

MANAGING HYPERSAVINGS

This section contains:

- “User List” on page 54
- “DDI Callbacks” on page 56
- “Callback” on page 57



User List

Use the User List to create, and then review, a list of defined Gateway users and to modify their definitions.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **User List** sub-branch. The User List screen is displayed.

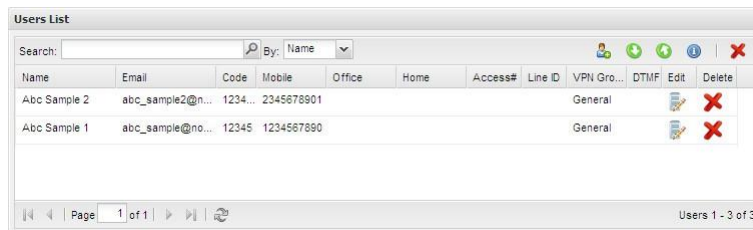


Figure 68: HMC User List

3. There are two ways to populate the Users List:

Adding a Single New User

To add a single new user:

- a. Click  (Add User). The Add User dialog box is displayed.

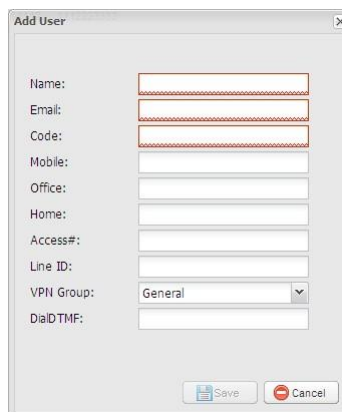



Figure 69: Add User Screen

- b. Enter the name, email, code, and at least one phone number. The other parameters are optional.
- c. Click **Save**. Focus returns to the HMC Users List and the new user appears in the list.

Importing a List of Users

To import a .CSV file containing a list of users:

- a. Prepare a CSV file containing the User information. The CSV file must match these criteria:
 - The file can contain either four fields or ten fields. The HMC will not read any other combination.
 - A four field CSV must contain this information in this order: Name | Email | Code | Mobile
 - A ten field CSV must contain this information in this order:
Name | Email | Code | Mobile | Office | Home | Access number | Line ID | VPN Group | DTMF Dial
- b. Click  (Import CSV). The File Upload dialog box is displayed.

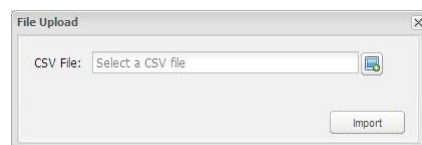


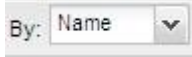
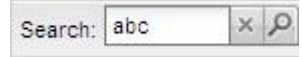


Figure 70: Import CSV File Upload Box

- c. Click  (Browse). The standard Windows browse screen is displayed.
 - d. Select the CSV file. The name of the CSV file is displayed in the File Upload box.
 - e. Click **Import**. The HMC imports the list and the new user names are displayed in the HMC User List.
4. Optionally, to edit an existing User entry, click . The Edit User screen is displayed. Make the changes and click **Save**.
 5. Optionally, from the  dropdown menu, select a table heading. The HMC resorts the entries.
 6. Optionally, use the Search field to search for a specific entry.
 - a. Enter the search criteria into the field.
 - b. Click the magnifying glass icon. The results are displayed in the main screen and an “x” is displayed beside the magnifying glass. For example: 

- c. To display the entire User List, click the “x”. The search results are erased and the entire User List is displayed.

User List

DDI Callbacks

Use the DDI Callbacks branch to assign Direct-Dial-In (DDI) resources to specific users.

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **DDI Callbacks** sub-branch. The DDI Assignments for Callback screen is displayed.

DDI Assignments for Callback

DDI	Assigned To
1000	Test iPhone (-0505230460)
1001	Test iPhone (-0505230460)
1002	Test iPhone (-0505230460)

Enter Range From: To:

Add range Remove range Assign range to: Test iPhone (-0505230460) ▼

Figure 71: DDI Assignments for Callback

3. In the **From** and **To** fields, enter the DDI numbers of the range being created.
4. Click **Add Range**. The new range is displayed.
5. Assign part or all of a range to a User:
 - a. Ensure that the User is entered in the Users List (see “User List” on page 54).
 - b. In the **From** and **To** fields, enter the range being assigned.
 - c. From the **Assign range to** dropdown menu, select the User.
 - d. Click **Assign range to**. The assignment is saved and the screen is updated.

Note: To change an assignment, enter the assignment in the From / To fields, select the new User, and click **Assign range to**. The new assignment is saved and the screen is updated.

Web Application Logo

To customize the logo that is displayed on the Web Application screen:

1. From the HMC navigation pane, expand the **Manage** branch.
2. Click the **DDI Callbacks** sub-branch. The DDI Assignments for Callback screen is displayed.
3. Scroll down to the Web/DDI Callback Application Logo section.
4. Browse to locate, and select, the graphic file.
5. Click **Upload File**.

DDI Callbacks

Callback

Hypermedia Gateway Callback includes tools which expand the feature's flexibility.

Remote Delegation

Use Remote Delegation to forward a Callback trigger to another Hypermedia Gateway. After the receiving Hypermedia Gateway authenticates the calling party, it forwards the Callback trigger to another Gateway, that is, it delegates the Callback request. The remote Hypermedia Gateway performs the Callback.

To configure Remote Delegation:

1. From the HMC navigation pane, expand the **Manage** branch and the **Callback** subbranch.
2. Click the **Remote Delegation** sub-branch. The Remote Delegation screen is displayed.

Callback Event Delegation

Match CLI Rule	and/or	Match DDI Rule	Delegate to IP
<input type="text"/>	and	<input type="text"/>	<input type="text"/>
<input type="button" value="Add Entry"/>			

Match CLI Rule	and/or	Match DDI Rule	Delegate to IP	
	or	9902504	17.34.51.68	<input type="button" value="Delete"/>

Figure 72: HMC Remote Delegation Screen

3. In the **Match CLI Rule** field, enter the user's phone number. When the Gateway identifies the number, it delegates the call to the remote Gateway.
4. Select either **and** or **or**.
5. In the **Match DDI Rule** field, enter the PBX extension. When a user dials the extension number, the Gateway receives the Callback request and delegates it to the remote Gateway.
6. In the **Delegate to IP** field, enter the IP address of the Hypermedia Gateway which receives the delegated Callback requests.
7. Click **Add Entry**. The new entry is added to the Callback Event Delegation table.

Callback

Ext. Authentication

Use Extended Authentication to reserve Callback resources for a specific user or Group of users.

Note: *This feature operates independent of the authentication registered on the User List (see “User List” on page 54).*

To configure Extended Authentication:

1. From the HMC navigation pane, expand the **Manage** branch and the **Callback** subbranch.
2. Click the **Ext. Authentication** sub-branch. The Extended Authentication screen is displayed.

Callback Extended Authentication

Match CLI Rule	Set to Group
<input type="text"/>	General
<input type="button" value="Add Entry"/>	

Match CLI Rule	Set to Group	
9902504	Demo	<input type="button" value="Delete"/>

Figure 73: HMC Extended Authentication Screen

3. In the **Match CLI Rule** field, enter the user’s phone number. When the Gateway identifies the number, it associates the Callback request with reserved resources.
4. From the **Set to Group** drop-down menu, select a Group. These are the Groups that are defined on the VPN Groups screen. Resources are reserved for members of the Group.
5. Click **Add Entry**. The new entry is added to the Callback Extended Authentication table.

Note: *For Extended Authentication to work, a resource has to be allocated to Callback and then assigned to the specific VPN Group.*

Callback

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