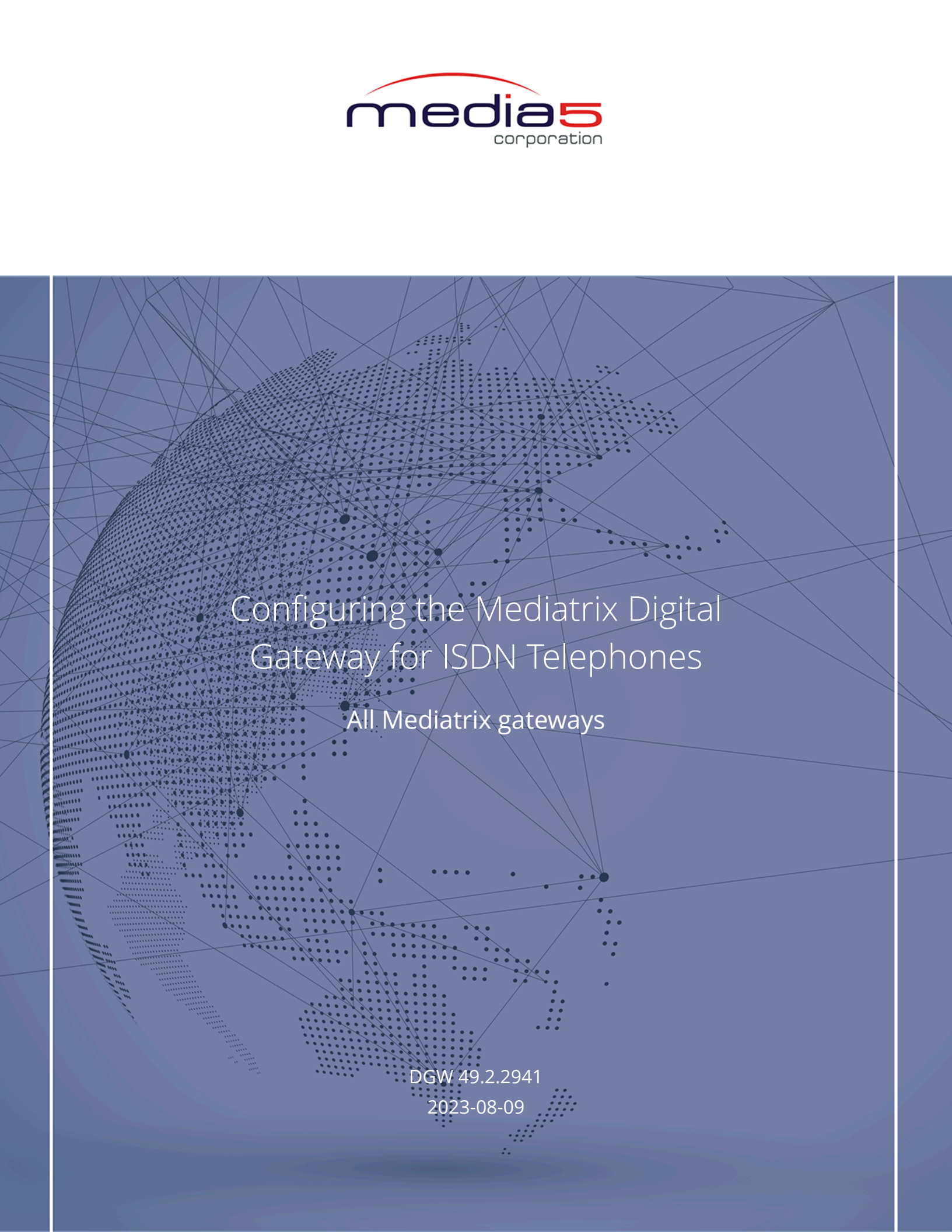




Configuring the Mediatrix Digital Gateway for ISDN Telephones

All Mediatrix gateways

DGW 49.2.2941

2023-08-09

Table of Contents

Mediatrix Digital Gateway with ISDN Telephones	4
Information to Know Before Starting	5
Configuration of the Mediatrix Digital Gateway	6
Logging on to the Mediatrix Unit Web Interface	6
Configuring the Default Network Gateway to a Static IP Address	6
Configuring the Uplink Network Interface to a static IP address	7
Configuring the Lan1 Network Interface	8
Auto-Detecting and Auto-Configuring ISDN Interfaces	9
Restarting Services	10
Configuring the Default SIP Servers	11
Registering a Unit to All Gateways	11
Configuring Unit Authentication	12
Creating a Route From the BRI Interfaces to SipDefault	13
Creating a Route From Sip-default to Each BRI Interface	13
Saving the Routes	14
Performing a Basic Call - Scenario A	15
Online Help	16
DGW Documentation	17
Copyright Notice	18

Configuring ISDN

19

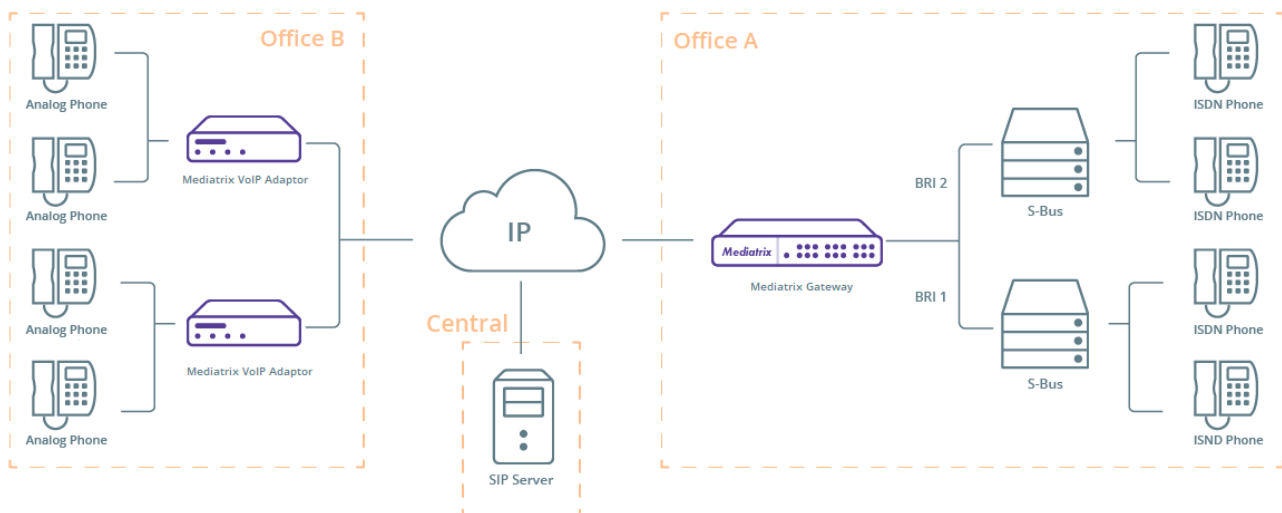
Mediatrix Digital Gateway with ISDN Telephones

This document outlines the configuration steps to set up one Mediatrix digital gateway to provide voice over IP (VoIP) connectivity to ISDN telephones in a corporate network environment.

The Mediatrix gateway is used to connect the ISDN telephones to an existing VoIP network. .

The steps described in the following pages will show you how to setup the Mediatrix unit so it can:

- Receive calls from the ISDN phones and route them to a remote branch through the VoIP network (e.g. from Office A to Office B)
 - A user from Office A picks up an ISDN phone and dials a number.
 - The Mediatrix gateway forwards the call to the appropriate Mediatrix unit.
 - The Mediatrix unit makes the appropriate analog phone ring.
 - A user in Office B picks up the analog phone and the call is established.
- Receive calls from remote branches through the VoIP network and route them on one of the local branch's ISDN phones (e.g. from Office B to Office A)
 - A user from Office B picks up an analog phone and dials a number.
 - The appropriate Mediatrix unit routes the call to the Mediatrix gateway.
 - The Mediatrix routes this call to the appropriate ISDN BRI interface based on the dialed number.
 - The appropriate ISDN phone rings.
 - A user from Office A picks up the ISDN phone and the call is established.



Information to Know Before Starting

Before starting to use these configuration notes, complete the following table to make sure you have the required information to complete the different steps.

Note: The Mediatrix unit is configured in the NT mode. The ISDN ports of the Mediatrix Gateway, i.e BRI ports, must first be configured. For the complete ISDN configuration information, refer to the [ISDN User Guide](#) published on the [Media5 Documentation Portal](#).

Note: If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will be displayed.

Note: The Mediatrix unit must be reinitialised to its factory default settings to make sure the configuration can be successfully executed.

This document includes the basic configuration of a gateway to use ISDN phones (BRI interfaces). If you wish to add registration and authentication, refer to the [Technical Bulletin - Basic SIP Unit Registration](#) and [DGW Configuration Guide - SIP Authentication](#) documentation published on the [Media5 Documentation Portal](#).

Information	Value	Used in Step
IP address of unit		Logging on to the Mediatrix Unit Web Interface (p.6)
IP address or FQDN of Registrar host		Configuring the Default SIP Servers (p.11)
IP address or FQDN of Proxy host		Configuring the Default SIP Servers (p.11)
Type of endpoint used	BRI	Creating a Route From Sip-default to Each BRI Interface (p.13)

Configuration of the Mediatrix Digital Gateway

Logging on to the Mediatrix Unit Web Interface

Before you start

The computer IP address must be in the same TCP/IP network as the Mediatrix unit.

Information

For better performances, it is recommended to use the latest available version of Microsoft Internet Explorer, Google Chrome, or Mozilla Firefox.

Note: You may not be able to log on to the Mediatrix unit Web interface if you are using older browser versions.

Steps

- 1) In your Web browser, enter the IP address at which the Web interface of your Mediatrix unit can be reached.
 - If your network has an IPv4 DHCP server, connect the primary Ethernet port of the Mediatrix unit to the network (ETH1 port), use the provided DHCP server IP address.
 - You can also connect your computer to the secondary Ethernet port of the Mediatrix unit (ETH2), use the 192.168.0.10 IP address. However, the computer must also own an IP address in the 192.168.0.0/24 network.
- 2) Enter **admin** as your username and **administrator** as the password.

Note: You can also use **public** as a username and leave the password field empty; it has the full administration rights by default.

- 3) Click **Login**.

Result

The **Information** page of the Web interface is displayed.

Related tasks

[Configuring the Default Network Gateway to a Static IP Address \(p.6\)](#)

Configuring the Default Network Gateway to a Static IP Address

Steps

- 1) Go to **Network/Host**.

- 2) In the **Default Gateway Configuration** table, from the **IPv4/Configuration Source** selection list, select **Static**.
- 3) In the **IPv4/Default Gateway** field, enter the IP address used as the **Static Default Router** for the Uplink Network Interface.
- 4) In the **Default Gateway Configuration** table, from the **IPv6/Configuration Source** selection list, select **Static**.
- 5) In the **IPv6/Default Gateway** field, enter the IP address used as the **Static Default Router** for the Uplink Network Interface.
- 6) Click **Apply**.

Result

The specified address is used as the current default router address.

Default Gateway Configuration	
IPv4	
Configuration Source:	Static
Default Gateway:	IP address
IPv6	
Configuration Source:	Static
Default Gateway:	IP address

Next Step

[Configuring the Uplink Network Interface to a static IP address \(p.7\)](#)

Configuring the Uplink Network Interface to a static IP address

Steps

- 1) Go to **Network/Interfaces**.
- 2) In the **Network Interface Configuration** table, from the **Link** selection list located next to **Uplink**, leave the default value, i.e. ETH1.
- 3) From the **Type** selection list, select **IpStatic (IPv4 Static)**.

Note: The **Uplink** Network Interface must be set with a fixed public IP address for the NAT/router to be able to do port-forwarding to the unit. It will also be easier for the PBX to communicate with the unit if the address is static.

- 4) In the **Static IP Address** field enter the assigned static IP address.
- 5) From the **Activation** selection list, select **Enable**.
- 6) Click **Apply** to apply all changes to the configuration.

Note: Once the changes are applied, the connection with the unit might be lost. You may need to reconnect to the Web page using the new address.

Result

The unit can be reached (via the Web) through the Uplink static IP address

Network Interface Configuration						
Name	Link	Type	Static IP Address	Static Default Router	Activation	
Uplink	eth1	IpStatic (IPv4 Static)	Uplink static IP address	Default router IP address	Enable	-
						+

Next Step

[Configuring the Lan1 Network Interface \(p.8\)](#)

Configuring the Lan1 Network Interface

Steps

- 1) Go to **Network/Interfaces**.
- 2) From the **Link** list located next to **Lan1**, leave the default value.
- 3) In the **Static IP Address** field, enter the LAN static IP address as defined in your network address range.
- 4) Click **Apply** to apply all changes to the configuration.

Note: A Warning message is displayed, but this is normal.

- 5) Click **Apply**.

Note: Once the changes are applied, the connection with the unit might be lost. You may need to reconnect to the web page using the new address.

Result

The **Lan1** Network Interface will be available in all the lists of the Management Interface where a Network Interface needs to be selected. For example, in the Local Firewall, and Configuration pages.

Network Interface Configuration						
Name	Link	Type	Static IP Address	Static Default Router	Activation	
Lan1	eth2-5	IpStatic (IPv4 Static)	LAN Static IP address/subnet		Enable	-
Uplink	eth1	IpStatic (IPv4 Static)	WAN Static IP address/subnet		Enable	-
						+

Next Step

[Auto-Detecting and Auto-Configuring ISDN Interfaces \(p.9\)](#)

Auto-Detecting and Auto-Configuring ISDN Interfaces

Information

Note: Some parameters cannot be auto configured. For example, the clock mode is configured according to the endpoint type, master for NT and slave for TE.

Steps

- 1) Go to **ISDN/Status**.
- 2) In the **Automatic Configuration** table, from the selection list, choose the interface you wish to auto configure or select all interfaces.
- 3) Click **Start Sensing**.

Note: Launching the Automatic Configuration may terminate abruptly all ongoing ISDN calls. The auto-configuration may take some time to complete and some of the current ISDN configuration settings might be replaced by new values.

Result

Under **ISDN/Status**, the **Physical Link** and **Signaling** fields of each interface should indicate **Up**.

Automatic Configuration	
Status:	--- All --- ▼ Start Sensing
Last Result:	None

Slot5/BRI1 [Configure]	
Physical Link: Up	
Signaling: Up	
Bearer Group	
Channel 1: Idle	Channel 2: Idle

Slot5/BRI2 [Configure]	
Physical Link: Up	
Signaling: Up	
Bearer Group	
Channel 1: Idle	Channel 2: Idle

Slot5/BRI3 [Configure]	
Physical Link: Up	
Signaling: Up	
Bearer Group	
Channel 1: Idle	Channel 2: Idle

Slot5/BRI4 [Configure]	
Physical Link: Up	
Signaling: Up	
Bearer Group	
Channel 1: Idle	Channel 2: Idle

Next Step

[Restarting Services](#) (p.10)

Restarting Services

Steps

- 1) Go to **System/Services**.
- 2) In the **restart required services** table, click **restart required services**.

Next Step

[Configuring the Default SIP Servers \(p.11\)](#)

Configuring the Default SIP Servers

Information

In some instances, the configuration of the default servers may already be completed.

Steps

- 1) Go to **SIP/Servers**.
- 2) In the **Registrar Host** field, indicate the server IP address or FQDN of the SIP Registrar server .
- 3) In the **Proxy Host** field, indicate the server IP address or FQDN of the SIP Proxy server.
- 4) In the **Messaging Server Host** field, indicate the server IP address or FQDN of the Messaging server, if needed.
- 5) Leave the **Outbound Proxy Host** field empty, unless specifically instructed to set a value.

Note: Setting the address to 0.0.0.0:0 or leaving the field empty disables the outbound proxy host.

- 6) Click **Apply**.
- 7) Located at the top of the page, click **restart required services**.

Result

Default Servers			
Registrar Host:	sip.registrarserver.com		
Proxy Host:	sip.proxyserver.com		
Messaging Server Host:			
Outbound Proxy Host:			

Next Step

[Registering a Unit to All Gateways \(p.11\)](#)

Registering a Unit to All Gateways

Steps

- 1) Go to **SIP/Registrations**.
- 2) In the **Unit Registration** table, enter in the **User Name**, a username to uniquely identify the user in the domain.
- 3) From the **Gateway Name** selection list, choose **All**.
- 4) Repeat steps 2 (p.11) and 3 (p.11) for each SIP account/Registration needed.
- 5) Click **Apply and Refresh**.

- 6) Click **restart required services** located at the top of the page.

Result

The information will be displayed in the **Unit Registration Status** table.

Unit Registration			
Index	User Name	Gateway Name	
1	default_user	all	-
			+

Next Step

[Configuring Unit Authentication \(p.12\)](#)

Configuring Unit Authentication

Before you start

The SIP gateway must be configured as a Trunk.

Unit Authentication applies to all challenges received for SIP dialogs. You can define several user names and passwords for the Mediatrix unit. These usernames and passwords apply to all endpoints of the unit.

Steps

- 1) Go to **SIP/Authentication**.
- 2) Click **Edit All Entries** located at the bottom of the page.
- 3) In the **Authentication** table, from the **Criteria** selection list, select **Unit**.
- 4) From the **Realm** field, enter the provided realm.
- 5) From the **Validate Realm** selection list, select **Enable**.

Note: If no **Realm** was provided, leave the **Realm** field empty and from the **Validate Realm** selection list, select **Disable**.

- 6) In the **User Name** field, enter the SIP user name.
- 7) In the **Password** field, enter the appropriate password for each entry.
- 8) Click **Apply and Refresh Registration**.

Result

Each gateway will be registered.

Authentication

Authentication									
Priority	Criteria	Endpoint	Gateway	Username Criteria	Validate Realm	Realm	User Name	Password	
1	Unit				Disable		user_name	password	
2	Unit				Enable	provided realm	user_name	password	
3	Unit				Enable				
4	Unit				Enable				

Next Step

[Creating a Route From the BRI Interfaces to SipDefault \(p.13\)](#)

Creating a Route From the BRI Interfaces to SipDefault

Steps

- 1) Go to **Call Router /Route Config**.
- 2) In the **Routes** table, click **+** located at the bottom of the table.
- 3) In the **Sources** field select all BRI interfaces.
- 4) Set the **Destination** field to **sip-default**.
- 5) Leave the other fields empty.
- 6) Click on **Save**.

Result

Routes							
Index	Sources	Criteria Property	Criteria Rule	Transformations	Signaling Properties	Destination	
1	isdn-Slot5/BRI1, isdn-Slot5/BRI2, isdn-Slot5/BRI3, isdn-Slot5/BRI4	Calling E164				sip-default	   
							

Next Step

[Creating a Route From Sip-default to Each BRI Interface \(p.13\)](#)

Creating a Route From Sip-default to Each BRI Interface

Information

IMPORTANT: 2 routes for each BRI interface must be created as each BRI interface can manage 2 different destination numbers.

Steps

- 1) Go to **Call Router / Route Config**.
- 2) In the **Routes** table, click **+** located at the bottom of the table.

- 3) Set the **Sources** field to **sip-default**.
- 4) Set the **Destination** field to the first BRI interface.
- 5) Set the **Criteria Property** field to **Called E164**.
- 6) From the **Criteria Rule** selection list, choose the digits the dialed number must match to be routed to the selected interface.
- 7) Click **Save**.

Result

Routes						
Index	Sources	Criteria Property	Criteria Rule	Transformations	Signaling Properties	Destination
1	isdn-Slot5/BRI1, isdn-Slot5/BRI2, isdn-Slot5/BRI3, isdn-Slot5/BRI4	Calling E164				sip-default
2	sip-default	Called E164	5550001 example			isdn-Slot5/BRI1
3	sip-default	Called E164	5550002 example			isdn-Slot5/BRI1
4	sip-default	Called E164	5550003 example			isdn-Slot5/BRI2
5	sip-default	Called E164	5550004 example			isdn-Slot5/BRI2
6	sip-default	Called E164	5550005 example			isdn-Slot5/BRI3
7	sip-default	Called E164	5550006 example			isdn-Slot5/BRI3
8	sip-default	Called E164	5550007 example			isdn-Slot5/BRI4
9	sip-default	Called E164	5550008 example			isdn-Slot5/BRI4
						+

Next Step

[Saving the Routes](#) (p.14)

Saving the Routes

Steps

- 1) Go to **Call Router/Route Config**.
- 2) Scroll to the bottom of the page.
- 3) Click **Save**.

Result

At the top of the page, make sure **Config.Modified** is set to **No**.

Next Step

[Performing a Basic Call - Scenario A](#) (p.15)

Performing a Basic Call - Scenario A

Steps

- 1) Pickup Phone A .
- 2) Dial Phone B's number.
- 3) Phone B rings
- 4) Pickup Phone B.

Result

The call is established.

Online Help

If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will be displayed.

DGW Documentation

Mediatrix devices are supplied with an exhaustive set of documentation.

Mediatrix user documentation is available on the [Media5 Documentation Portal](#).

Several types of documents were created to clearly present the information you are looking for. Our documentation includes:

- **Release notes:** Generated at each GA release, this document includes the known and solved issues of the software. It also outlines the changes and the new features the release includes.
- **Configuration notes:** These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step-by-step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically created to guide the user through an aspect of the configuration.
- **Technical bulletins:** These documents are created to facilitate the configuration of a specific technical action, such as performing a firmware upgrade.
- **Hardware installation guide:** They provide the detailed procedure on how to safely and adequately install the unit. It provides information on card installation, cable connections, and how to access for the first time the Management interface.
- **User guide:** The user guide explains how to customise to your needs the configuration of the unit. Although this document is task oriented, it provides conceptual information to help the user understand the purpose and impact of each task. The User Guide will provide information such as where and how TR-069 can be configured in the Management Interface, how to set firewalls, or how to use the CLI to configure parameters that are not available in the Management Interface.
- **Reference guide:** This exhaustive document has been created for advanced users. It includes a description of all the parameters used by all the services of the Mediatrix units. You will find, for example, scripts to configure a specific parameter, notification messages sent by a service, or an action description used to create Rulesets. This document includes reference information such as a dictionary, and it does not include any step-by-step procedures.

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Configuring ISDN

Steps

- 1) Go to **ISDN/Primary Rate Interface**.
- 2) From the **Select Interface** dropbox, select the interface for which you want to make modifications.

Note: Depending on the Mediatrix model, there may be several interfaces.

- 3) In the **Interface Configuration** table, set the **Endpoint Type** to **NT**.
- 4) Leave all the other parameters to their default values.
- 5) Click **Apply**.
- 6) Repeat the tasks 2 (p.19) to 5 (p.19) for each interface.



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