

Relay Proxy

User Guide

DBL Technology Company Limited

www.dbltek.com

sales@dbltek.com

support@dbltek.com

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Relay Proxy

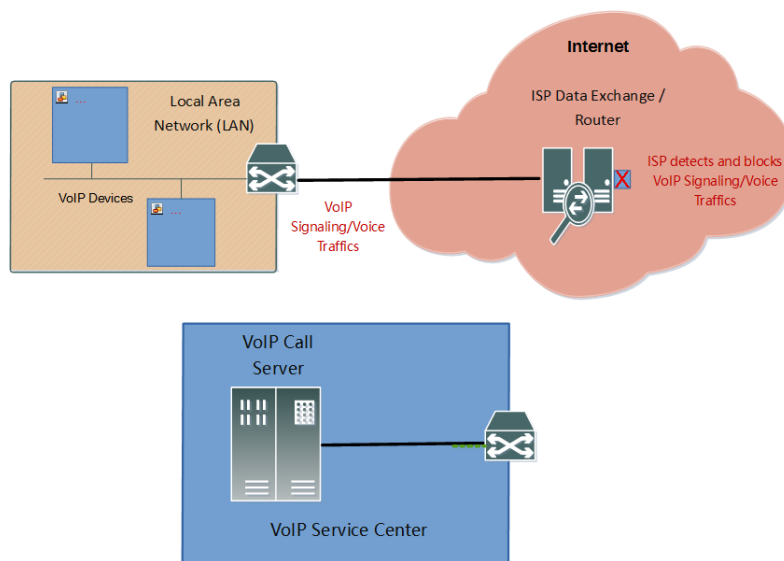
Relay Proxy is a server software developed by DBL Technology. Its main purpose is to facilitate the deployment of DBL's gateways in network environment that does not support NAT or blocks VoIP traffics.

Two common issues encountered with VoIP deployment

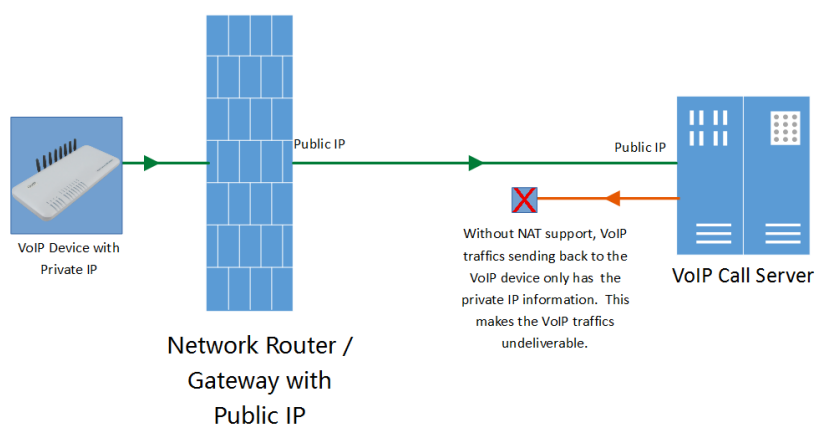
Two major problems are encountered today with VoIP traffics.

1. ISP is blocking VoIP traffics in order to protect the traditional telephone services.

The rapid increase in the internet and intranet data bandwidth in the last two decades has triggered the rapid development and deployment of VoIP services. This has greatly reduced the revenues of the traditional long distance services. As a result, ISPs in certain countries are blocking VoIP traffics as shown in the diagram below.

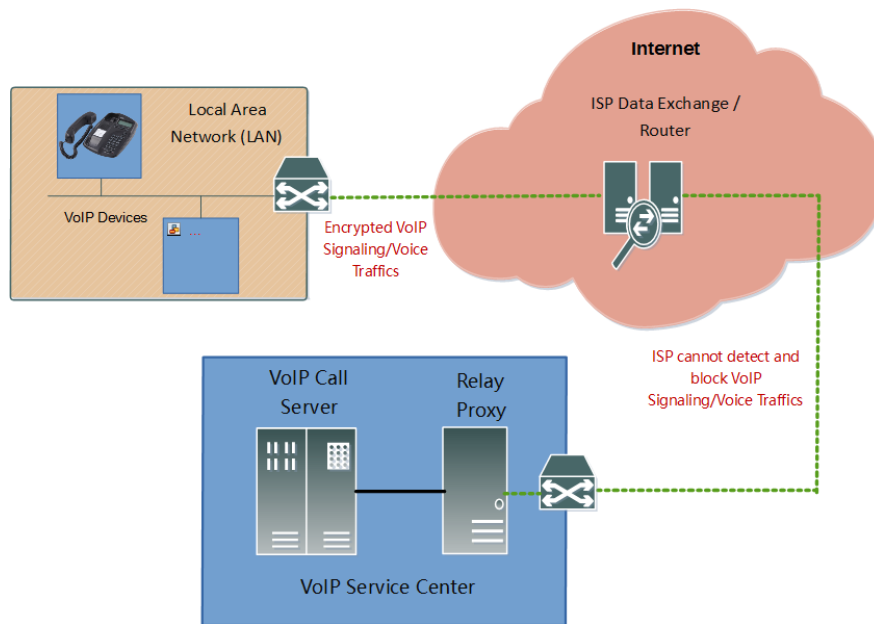


2. VoIP traffics are not getting through due to the inability to support NAT in the Call Server when VoIP devices are installed behind a network router as shown in the diagram below. Some VoIP Call Servers only support call signaling NAT. This means that the VoIP device installed behind NAT can register and make / receive calls. However, when a call is established, only audio stream generated from the VoIP device can reach its destination. As a result, the VoIP device end cannot hear any audio at all.

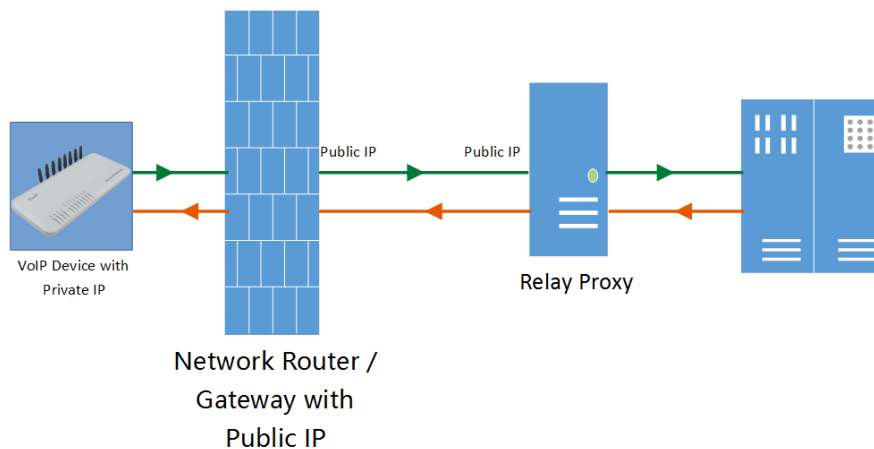


How can Relay Proxy solve both issues?

1. Relay Proxy establishes a virtual tunnel for both VoIP signaling and voice traffics with a very small increase in the data bandwidth. This makes it more difficult for ISPs to block such data traffics. To even protect the data traffics more, Relay Proxy also offers data encryption for both VoIP signaling and voice traffics. The data traffics between Relay Proxy and VoIP Call Server are resumed to the standard VoIP data format. Therefore, they must be installed in the same LAN network or an ISP network that does not block VoIP traffics.



2. Relay Proxy solves the NAT issue by re-routing data traffics from VoIP devices to the VoIP Call Server and vice versa as shown in the diagram below. All data packets now have the proper destination IP, so that they can be delivered. In general, if SIP registration is not successful or one way audio occurs when a call is established, you can try to solve the problems with Relay Proxy.



Installing Relay Proxy

1. PC hardware preparation

Relay Proxy only supports Linux OS and it should run on most PC hardware today with good performance. Relay Proxy has been tested for compatibility in the following Linux platforms.

- 1) RedHat
- 2) CentOS
- 3) Debian
- 4) Ubuntu

For 64-bit OS, the following extended packages should be installed by issuing the command listed below.

a) RedHat / CentOS

```
yum install -y glibc.i686 zlib.i686 krb5-libs.i686
```

b) Debian / Ubuntu

```
dpkg --add-architecture i386  
apt-get update  
apt-get install lib32z1-dev  
apt-get install libgssapi-krb5-2:i386
```

2. Software Installation and Execution

- 1) Login to the root directory.
- 2) Type `wget http://dbltek.com/update/relay_install-2.068.sh` to download the Proxy Server Installation package
- 3) Type `chmod 744 relay_install-2.068.sh` to enable the installation property
- 4) Type `./ relay_install-2.068.sh` to execute the installation script

After the installation is completed

- 5) Type `/root/relay/run_relaysrv` to execute the Relay Proxy
- 6) Type `/root/relay/run_sqlwebd` to execute the Relay Proxy Web Interface

Please note that a Relay Proxy startup script is installed to execute both Relay Proxy and its web interface when the hardware boots up. For Debian / Ubuntu platform, the startup script may not work properly. If this occurs, please delete the line "exit 0" in the document `/etc/rc.local`.

3. Other commands

- 1) `Killall relaysrv` – type this to terminate the Relay Proxy.
- 2) `Killall sqlwebd` – type this to terminate the Relay Proxy web interface.

4. Default Ports

Relay Proxy uses the followings ports for both TCP and UDP communications. Please configure the server firewall accordingly.

TCP 21080 , 1701 , 8089
UDP 1701 , 5000~60000

Note: Please contact technical support at support@dbltek.com for assistance if needed.

Configuring Relay Proxy

1. To configure the Relay Proxy, you need to access its web interface shown below.

- Type <http://<server hardware IP>:8089>
- Enter "admin" as the login ID
- Enter "admin" as the login password

[Relay Proxy configuration](#)

Relay Proxy Manage v1.0

Agent	Username		
dbl	dbl	Delete	Modify

[Add](#)

2. Click on [Relay Proxy configuration](#) to configure the Relay Proxy.

Relay Proxy Configuration

RELAY PORT	21080
UDP PORT	1701
TCP PORT	1701
Parameter	With Sqlite authentication ▾

Web Server Configuration

Web Port	8089
Username	admin
Password	dbladmin

Relay Proxy Configuration

- Modify the Relay Port, UDP Port, TCP Port if needed.
- Parameters:
 - 1) Default – No authentication
 - 2) Sql Authentication – Reserved for testing.
 - 3) Sqlite Authentication – Using SQLite database for authentication (choose this one by default)

- 4) Listen Localhost – Reserved for other use.
 - Press to save the changes (not effective yet).
 - Press to save and make the changes effective immediately. Browser displays a warning message of not be able to access the webpage. Please wait i10 seconds and then reload the webpage. Attention that if website can not load correctly after clicking " SaveReboot" everytime, check command "killall" in your system, make sure it is valid.
3. Click [Add](#) to add a new login account. Enter the fields as required and then click "Add" to complete. Agent is used to classify the user accounts only and it is not required for GoIP configuration. In addition, the same Username is allowed for multiple logins. This means that you can use the same account to configure all your devices to login to the same Relay Proxy.

Add User

Agent	ZhangSan
Username	user1
Password	password
<input type="button" value="Add"/> <input type="button" value="Cancel"/>	

The default test account is "dbl" . To delete an unwanted account, please click [Delete](#) (on the right hand side of the account name) to delete the corresponding account.

[Relay Proxy configuration](#)

Relay Proxy Manage v1.0

Agent	Username	
dbl	dbl	Delete Modify
<input type="button" value="Add"/>		

Configuring DBL's VoIP devices

Please note that all VoIP devices developed by DBL supports Relay Proxy. Either or both VoIP Signaling data and VoIP voice stream can be configured to connect to Relay Proxy.

1. Configuring VoIP Signaling data to use Relay Proxy

VoIP signaling is referring to the IP protocol used for VoIP Call establishment and management. Depending on your device, the location for its configuration varies. For GoIP, it is located under the "Advanced VoIP" as shown in the two figures below.

Locate the parameter "Signaling NAT Transversal" and select "Relay Proxy" . Then the following additional parameters are displayed.

- Address – enter the IP address or domain name of the Relay Proxy
- Port – enter the **Relay Port** as configured in the Relay Proxy
- User – enter the username that is created for your device
- Password – enter the password that is defined for the username
- Click on the check box to enable encryption if it is required. Please note that additional network bandwidth is required if encryption is enabled.

Status

Configurations

- Preferences
- Network
- Basic VoIP
- Advance VoIP**
- Media
- Call Out
- Call Out Auth
- Call In
- Call In Auth
- SIM
- Running Rule
- SIM Forward
- IMEI
- SMS
- GSM Carrier
- GSM Base Station

Tools

Advance SIP

SIP Listening Port Mode	Fixed
Port	5060
SIP INVITE Response	SIP 183
SIP Busy Code	503
Call OUT PSTN Auth Mode	IP
Built-in SIP Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
NAT Keep-alive	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
DTMF Signaling	Inband
Signaling QoS	None
Signaling Encryption	None
Signaling NAT Traversal	Relay Proxy
Address	202.104.186.90
Port	21080
User	user1
Password	*****
	<input checked="" type="checkbox"/> Encryption
Backup Relay Server 1	
Backup Relay Server 2	
Backup Relay Server 3	
Backup Relay Server 4	

Advanced Timing>>
GSM-SIP Code Map>>

Call Settings

Endpoint Type	SIP Phone	Advanced Settings<<	
Config Mode	Config by Line	SIP Local Port Mode	Fixed
<input checked="" type="radio"/> Line 1 <input type="radio"/> Line 2 <input type="radio"/> Line 3 <input type="radio"/> Line 4		Signaling Port	5060
Phone Number	149	Built-in SIP Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Phone Number 2		NAT Keep-alive	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Display Name		Virtual Ringback	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SIP Proxy	192.168.2.2	Register Mode	Mode 1
SIP Registrar Server	192.168.2.2	Advanced Timing>>	
Register Expiry(s)	60	DTMF Signaling	Outband
Outbound Proxy		Outband DTMF type	RFC 2833
Home Domain		RTP Payload Type	101
Authentication ID	149	Signaling QoS	None
Password	***	Signaling Encryption	None
Dial Plan	18:+9	Signaling NAT Traversal	Relay Proxy
Call Forward Type	Not Forward	Address	202.104.186.90
Call Forward Number		Port	21080
Backup Server	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	User	user1
Fax Line>>		Password	*****

Encryption	<input checked="" type="checkbox"/>
Backup Relay Server 1	
Backup Relay Server 2	
Backup Relay Server 3	
Backup Relay Server 4	

Media Settings<<

RTP Port Range	16384 - 32768
PacketLength(ms)	30
Jitter Buffer	Fixed
Delay(ms)	60
Media QoS	None
Media Encryption	None
Symmetric RTP	<input checked="" type="checkbox"/>

Media NAT Traversal	Relay Proxy
Address	202.104.186.90
Port	21080
User Name	user1
Password	*****
Encryption	<input checked="" type="checkbox"/>
Relay Mode	1

Backup Relay Server 1	
Backup Relay Server 2	
Backup Relay Server 3	
Backup Relay Server 4	

Audio Codec Preference>>

2. Configuring VoIP voice stream to use Relay Proxy

When a VoIP call is established, voice stream are sent between the two VoIP devices. To configure the voice stream to use the Relay Proxy, please access your device webpage and then look for the "Media" as shown in the figure below or "Media Settings" as shown in the figure in the previous page.

Locate the parameter "Media NAT Transversal" and select "Relay Proxy" . Then the following additional parameters are displayed.

- Address – enter the IP address or domain name of the Relay Proxy
- Port – enter the **Relay Port** as configured in the Relay Proxy
- User – enter the username that is created for your device
- Password – enter the password that is defined for the username
- Click on the check box to enable encryption if it is required. Please note that additional network bandwidth is required if encryption is enabled.

Status Configurations Preferences Network Basic VoIP Advance VoIP Media Call Out Call Out Auth Call In Call In Auth SIM Running Rule SIM Forward IMEI SMS GSM Carrier GSM Base Station	Media	
	RTP Port Range	16384 - 32768
	PacketLength (ms)	20
	Jitter Buffer	Fixed
	Delay (ms)	60
	Media QoS	None
	Media Encryption	None
		<input type="checkbox"/> Symmetric RTP
	Media NAT Traversal	Relay Proxy
	Address	202.104.186.90
	Port	21080
	User Name	user1
	Password	*****
		<input checked="" type="checkbox"/> Encryption
	Relay Mode	1
	Backup Relay Server 1	
	Backup Relay Server 2	
	Backup Relay Server 3	
	Backup Relay Server 4	
	RTP Disconnect Detect(s)	0
	Audio Codec Preference>>	
	<input type="button" value="Save Changes"/>	