

Dial91 *Android Edition* User Guide

1 About Dial91 Android Edition

Dial91 *Android Edition* is a SIP- based phone for an Android phone. With Dial91 *Android Edition* (Dial91), you can use the Wi-Fi internet connection on your Android phone to make and receive calls without using your mobile data plan. In addition, you can use the mobile data connection for phone calls when you are not in a Wi-Fi zone.

Standard Telephone Features

Dial91 Android Edition has all the standard telephone features, including:

- Call display and Voicemail indicator.
- Speakerphone, Mute and Hold.
- Call history list of received, missed and dialed calls.
- Call transfer.
- Three-way audio conference.
- Ringtones and contact avatars.
- Support for DTMF: the ability to enter numbers to use an auto attendant.

Advanced Features

- Audio codecs G.729, G.711, iLBC, GSM and SILK™
- NAT traversal (STUN and ICE).
- Secure call signaling (TLS).
- Audio encryption (SRTP).
- Quality of Service (QoS).
- DNS SRV record lookups.
- Application diagnostics (logging and log files uploading).

Operating System

Your device must run on Android V2.2 or later.

Accessories

The following accessories are supported:

- Headset with microphone (including BluetoothTM): Dial91 *Android Edition* uses the ear-piece and microphone on the headset.
- Headphones (no microphone): Dial91 *Android Edition* uses the ear-piece on the headphone and the built-in microphone on the Android phone.

2 Configuring Dial91



We strongly recommend that you perform your initial setup from within a "known" network, such as in your enterprise or university campus Wi-Fi zone or within range of your home network (if you have one) and not in a network such as an internet cafe.

2.1 Getting Ready

- 1. Set up Wi-Fi connection. From the main phone screen, tap Settings > Wireless & networks, and look at the Wi-Fi field:
 - If it has a checkmark and a message such as "Connected to MyEnterprise", then your phone has a Wi-Fi connection. Go to the next step.
 - If it has no checkmark and the line "Turn on Wi-Fi", then tap the field to turn on Wi-Fi and wait for the message "Connected to MyEnterprise"
 - If the message does not appear, tap Wi-Fi settings (the next field). On the Wi-Fi settings screen, tap the desired network and complete the popup that appears. The message "Connected" will appear. You can connect to as many networks as you want. Whenever you move into range of one of these networks (and assuming you are not already connected elsewhere), you will automatically connect to that network.

Indicates that there is a Wireless connection

1:34

- 2. Set up mobile data connection (if applicable). From the main phone screen, tap Settings > Wireless & networks, and then tap Mobile networks. Make sure:
 - Data enabled is On
 - Use only 2G networks is Off (in order to enable 3G).
- 3. Contact Dial91 Support to activate your App License
- 4. Tap the Dial91 icon on the phone.

2.2 Setting up



Troubleshooting Registration

If you cannot log in, ask Dial91 Support if they want you to use STUN (to discover your public IP address). If they do not want you to use STUN, go to Settings > Advanced Settings > Network Traversal Strategy and choose the Server Managed profile. For complete settings information, see page 40.

Troubleshooting Audio on a Phone Call

- 1. Go to Settings > Accounts, then tap the account. On the Accounts screen, tap the Account Advanced field and change the Global IP setting (page 42). If this doesn't help, go back to original setting.
- 2. If you still have a problem and you are using the Server Managed profile, speak to your Dial91 Support.

For complete settings information, see page 40.

Account Status

Status	Meaning
Co	The account is in the process of registering.
C ₂	The account is enabled and registered for incoming and outgoing calls.
G	The account is enabled only for outgoing calls. (Accounts > Account Advanced > Incoming Calls is turned off.)
C	The account is disabled. You can enable it; it will then automatically register.
€ ×	The account is enabled but registration failed. Check that you entered your account credentials correctly.

3 Making Phone Calls

3.1 Starting and Quitting Dial91

Tap the Dial91 icon to start Dial91. After a few seconds, the Dial91 screen appears.



To quit the Dial91 application:

- 1. Display the Phone, Contacts, or History screen or the first Settings screen.
- 2. Tap the Menu button on the Android phone and choose Exit.

Troubleshooting

If you experience trouble with the application and need to restart, tap the Menu button and tap Re-Initialize.

3.2 Interaction between Dial91 and Native Phone

Contacts

• Dial91 uses your contacts saved on your phone. Dial91's contacts are continually synchronized with your native contacts; adding, modifying or deleting a contact from one list updates the other list.

Placing Calls

- You can place a Dial91 call so long as you are not already on a native call or not already on two Dial91 calls.
- You can place a native call regardless of the state of Dial91.

Established Calls

- If you accept an incoming native call, any live Dial91 call goes on hold. You will not be able to take the Dial91 call off hold until you end the native call.
- You can have up to two Dial91 calls established at the same time and switch between them.

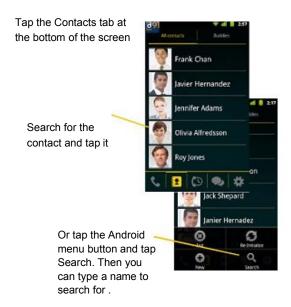
3.3 Placing a Dial91 Call

You can place a Dial91 call unless you are already on a native call or already on two Dial91 calls.

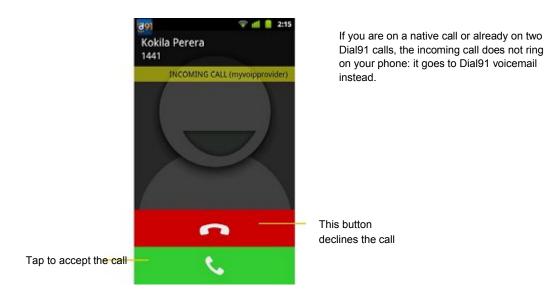
Using the Dial Pad



From the Dial91 Contact ist



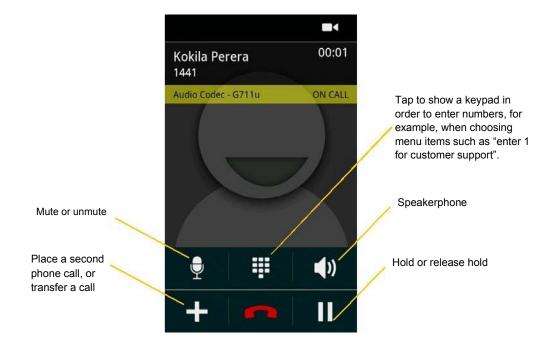
3.4 Handling Incoming Calls



When Dial91 Is in the Background

If you receive an incoming call when Dial91 is in the background, Dial91 will automatically come to the foreground so you can handle the call.

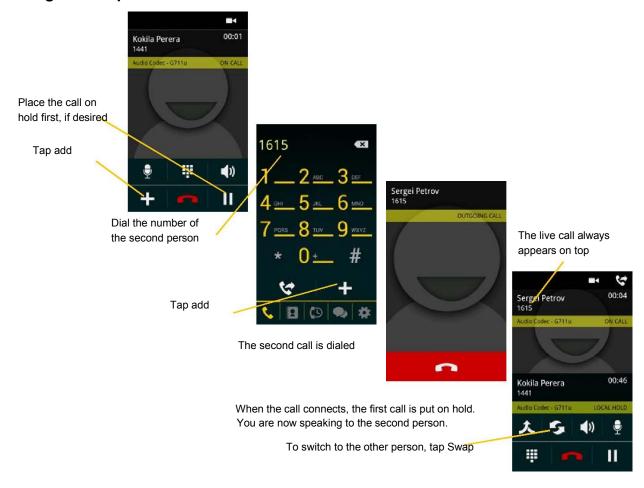
3.5 Handling One Established Call



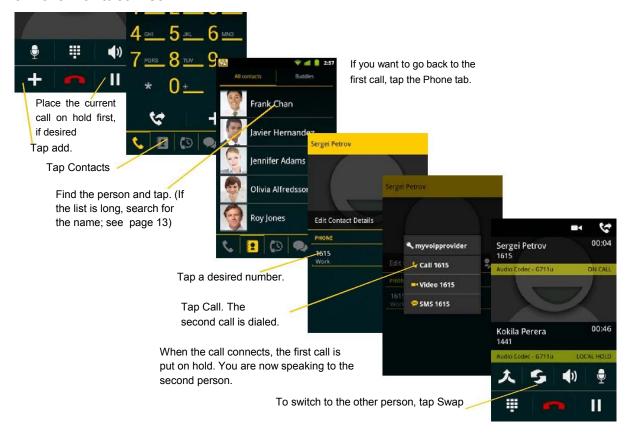
3.6 Placing a Second Dial91 Call

When you are already on one Dial91 call, you can place a second Dial91 call using the dial pad, from your Contact list, or from the History.

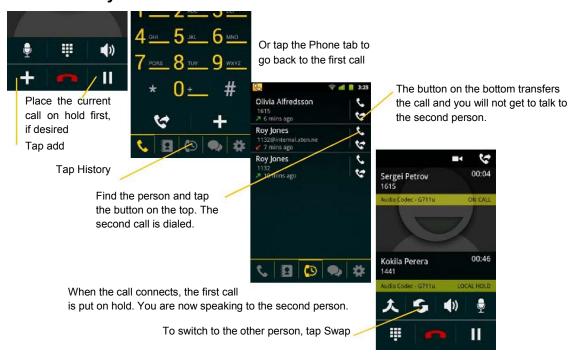
Using the Dialpad



From the Contact List

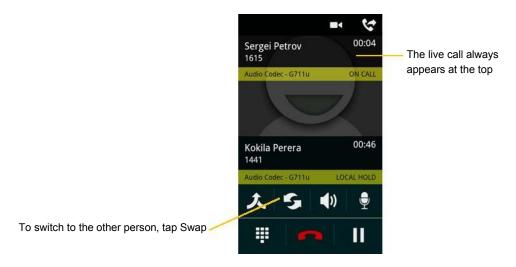


From the History



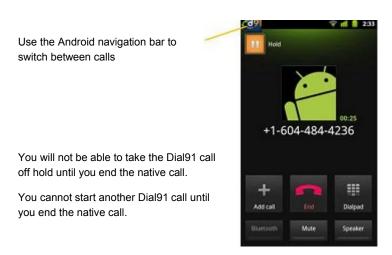
3.7 Handling Two Established Calls

Handling Two Dial91 Calls



Handling a Dial91 Call and a Native Call

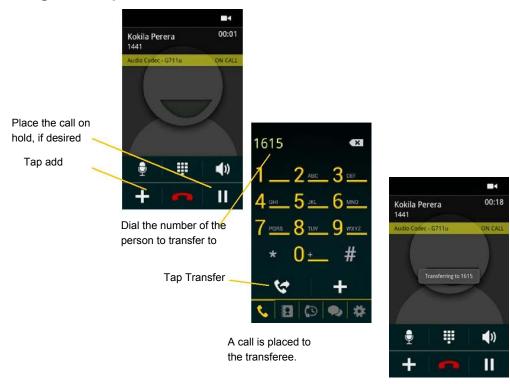
If you accept an incoming native call, any live Dial91 call goes on hold.



3.8 Unattended (Basic) Transfer

You can transfer the current Dial91 call to a second person without first talking to the second person.

Using the Dialpad

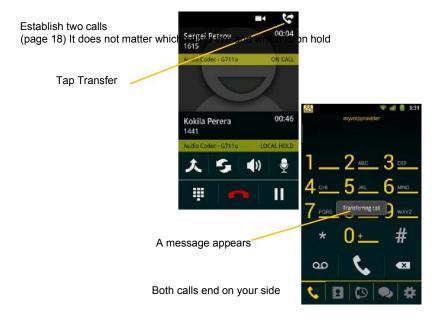


This message appears when the transferee answers

Or if the transferee declines the incoming call, the first call is returned to you

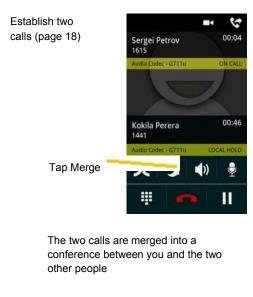
3.9 Attended Transfer

You can speak to the second person first then transfer the first person to them.



3.10 Conference Call

When you have two Dial91 calls established, you can merge the calls into a three-way conference call.





If desired, you can split the conference back into two separate calls. The top call will be the live call.

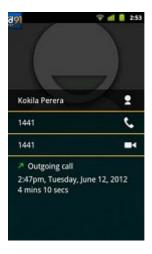
Tapping End Call ends the conference and hangs up on both calls.

3.11 History

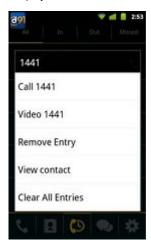




Tapping quickly displays this menu



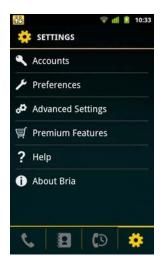
Long-tap on a name displays this menu



Adding a Contact from the History



5 Settings



• Accounts: See page 40.

• Preferences: See page 45.

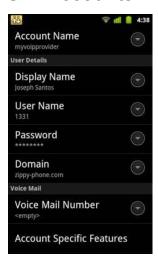
Advanced Settings: See page 47.

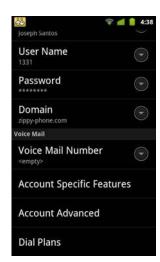
• Premium Features: See page 51.

5.1 Accounts

All the information for the fields on this screen must be supplied by your VoIP service provider. To change these fields on an existing account, you must first unregister the account.

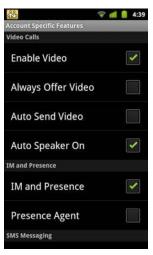
SIP Accounts





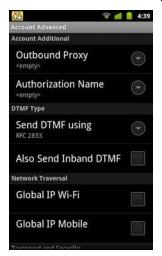
Field	Description
Account Name	Dial91
Display Name	Dial91 PIN
User Name	Dial91 PIN
Password	Dial91 PIN
Domain	Sip1.dial91.net
Account Specific Features	See below.
Account Advanced	See page 42.

Account Specific Features (SIP)



Field	Description
Enable Video	ON to make video calls on this SIP account. To use this feature, you must purchase "Video Calls", and enable video on Preferences . See page 51 for purchasing the feature.
Always Offer Video	ON to always dial a number with video offer. Whether you use the keypad, the Contacts tab, or the History tab, all the outgoing calls will offer video to the other party. The default is Off.
Auto Send Video	When On, Dial91 automatically starts sending video when you receive video calls. When Off, video does not start until you tap the video icon. The default is Off.
Auto Speaker On	Usually ON. While headsets are connected to Dial91, the sound always comes from the headsets regardless of this setting. This setting could solve a problem that audio calls are treated as video calls (thus the speaker comes on automatically). Turning this setting off allows you to hear the sound from the earpiece.
Enable IM & Presence	ON to share your online status with and send instant messages to your buddies. To use this feature, you must purchase "Presence and Messaging". See page 51.
Presence Agent	Turn ON if your VoIP service provider supports Presence Agent for SIP SIMPLE. The default is Off.
Enable SMS	ON to send an SMS to PSTN cell phone numbers by using the SIP SIMPLE protocol. Turn ON if your VoIP service provider supports this feature. The purchase of "Presence and Messaging" is required to use this feature.

Account Advanced (SIP)

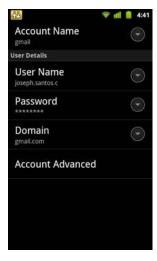




Field	Description
Outbound Proxy	If your VoIP service provider has an outbound proxy and requires that you provide that address to Dial91, enter the domain name or the IP address obtained from your provider.
Authorization Name	May not be required. But if it is required, it will be provided by your VoIP service provider.
Send DTMF using	The method used for DTMF, sent when you press a number key when dealing with an auto attendant (such as "press 1 for customer service").
	Enter the value specified by your VoIP service provider: RFC 2833, SIP Info, or Inband DTMF. If DTMF tones are not being recognized, trying the other method may resolve the issue. If DTMF is still not working, contact your VoIP service provider for information about DTMF and IVR.
Also Send Inband DTMF	This applies when RFC2833 or SIP Info is selected as a DTMF method. When On, inband DTMF is sent in addition to the other two methods (RFC 2833 or SIP Info) chosen above.
Global IP Wi-Fi	• On (checked): Dial91 will publish its public IP address at the signaling level. The public address
	 may not work with some NATs or firewalls. Off: Dial91 will publish its private IPs at the signaling level. Typically, you turn this field off only if instructed to do so by your VoIP service provider or system administrator.
Global IP Mobile	This setting has the same function as Global IP Wi-Fi, but applies only when you are connected over mobile network.
	If you set this setting to On, you must also set Global IP Wi-Fi to On.
SIP Transport	Tap to display the choices. Contact your VoIP service provider to identify the types of transport that are supported.
	UDP and TCP do not support signal encryption.
	• TLS does support signal encryption. You may need to install a certificate on your Android phone; speak to your VoIP service provider.
Encrypt Audio	You can encrypt a phone call at the media (audio) level:
	Never: Audio is not encrypted.
	• If Possible: On a given call, audio will be encrypted if the other person supports and is also using audio encryption. If not, audio will not be encrypted.
	• Always: Audio will always be encrypted. The call will fail if the other person cannot accept encrypted calls.
Incoming Calls	Typically On (which means you can receive calls on Dial91). If Off, you will not be able to receive calls.

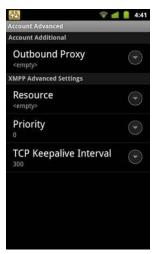
Field	Description
Single Register	Applies only if Global IP is on.
	On (checked): Dial91 will register using a single register request.
	OFF (default): Dial91 will register using an unregister and a register.
	Only turn on if advised by your VoIP service provider.
Refresh Interval	The timer interval between Dial91's attempts to register in order to refresh the account registration. Range 30-900 in seconds. This value is placed in the "Expires" header field of the SIP REGISTER message.
	Change this value only if advised to do so by your VoIP service provider.
URI Format	Change this value only if advised to do so by your VoIP service provider.
Use tel: URI	On: Prefix SIP URIs with tel://
	Off (default): Prefix SIP URIs with sip://
Keep Alive - Wi-Fi Interval	A "keep alive" message is a mechanism for maintaining a "pinhole" through your firewall so that phone calls proceed smoothly. The interval specifies how often the message is sent (in seconds). If you are experiencing problems during a Wi-Fi call (a call made over the Wi-Fi internet connection), try setting this interval to a lower number such as 20.
Keep Alive - Mobile Interval	Same as above, except the interval applies to calls made over the mobile network.

XMPP Accounts



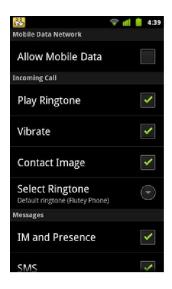
Field	Description	
Account Name	Change the name as desired. For example, "Gmail".	
User Name	The XMPP user ID.	
Password	Password for the XMPP user ID.	
Domain	Domain of the XMPP service. For example, "gmail.com".	
Account Advanced	See below.	

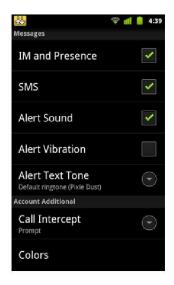
Account Advanced (XMPP)

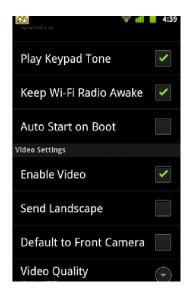


Field	Description
Outbound Proxy	If your VoIP service provider has an outbound proxy and requires that you provide that address to Dial91, enter the domain name or the IP address obtained from your provider.
Resource	Used to identify an XMPP session when you log in to multiple clients with this XMPP account (for example, /work or /home).
Priority	The priority of the resource. The range is from -128 to 127.
TCP Keepalive Interval	Specifies how often a ping message is sent to the XMPP server (in seconds). The default is 300.

5.2 Preferences





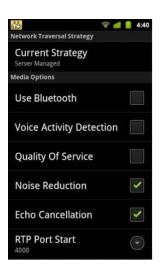


Field	Description
Allow Mobile Data	 On (checked): When a Wi-Fi connection is not available, Dial91 will attempt to place calls or exchange messages using the mobile data network. Data charges with your mobile carrier will apply. If you turn this setting on, we recommend you purchase the G.729 codec (page 51) because it provides better audio quality on 3G/4G calls. Off: When a Wi-Fi connection is not available, you will not be able to place or receive calls, or exchange messages.
Play Ringtone	On to hear the ringtone.
Vibrate	On to vibrate when you receive a call.
Contact Image	ON to display the image of your contact while receiving or making calls. Use the Android native app to save photos of contacts.
Select Ringtone	Set to the desired ringtone.
IM and Presence	On to enable IM and Presence on Dial91.
SMS	On to enable SMS on Dial91.
Alert Sound	ON to play a ringtone when you receive a new message.
Alert Vibration	ON to vibrate when you receive a new message.
Alert Text Tone	The ringtone for incoming messages.
Call Intercept	 On: When you make a call using the native Android phone, the call will be intercepted by Dial91 and placed using Dial91. Off: Calls made from the native phone are placed using the native phone. Calls made from the Dial91 screens are placed using Dial91. Prompt: Each time you make a call using the native Android phone, you will be asked whether you want to place the call via Dial91 or the native phone.
Colors	You can change the default color of Dial91.
Play Keypad Tone	On to hear a tone when you tap the dialpad.

Field	Description
Keep Wi-Fi Radio Awake	Controls whether the Wi-Fi radio stays on when the screen goes dark (phone gets auto locked).
	• On (checked): The Wi-Fi radio stays on, so that when the screen goes dark (1) you stay logged on via Wi-Fi (as long as you are in your Wi-Fi network) and (2) incoming calls will use Wi-Fi instead of mobile data. Radio On uses more battery power.
	Perhaps choose On if you have a limited data plan. • Off: The Wi-Fi radio is turned off, so that when the screen goes dark (1) Dial91 will re-
	log in via the mobile data network and (2) incoming calls will use your mobile data plan. (Unless mobile data is not enabled on your phone and/or in Dial91, in which
	case Dial91 logs out and you will not receive calls as long as the phone is dark.) Radio Off uses less battery power. Perhaps choose Off if you have an unlimited data plan.
Auto Start on Boot	On to automatically start and log into Dial91 when you start your Android phone. Even if Dial91 was logged out when you powered off the phone, Dial91 will start and log in when the phone starts.
Enable Video	ON to make video calls on Dial91. Appears only after the "Video Calls" feature is purchased.
Send Landscape	When ON, your video will be forcibly sent in the landscape orientation. This is a compatibility mode for older devices that cannot render video in the portrait orientation. Use as an exception. The default is "Off".
Default to Front Camera	On to use a front-facing camera by default. When off, Dial91 uses a rear camera for sending your video.
Video Quality	 Automatic: Recommended. Let Dial91 select the best quality to use in a given situation.
	 Lower (QCIF): Quarter Common Intermediate Format uses 176 horizontal pixels and 144 vertical lines. QCIF transfers one fourth the amount of data; therefore it consumes less memory than CIF.
	 Higher (CIF): Common Intermediate Format uses 352 horizontal pixels and 288 vertical lines.
	• Extra High Decode (CIF): Choose this setting when the other party requires a different version of CIF (H.264 Baseline level 1.3), for example, Cisco hard phones.

5.3 Advanced Settings

When you changed an advanced setting, you may be prompted to apply the changes. In order to apply the changes, Dial91 will automatically unregister and reregister all enabled accounts. This may take a few seconds.





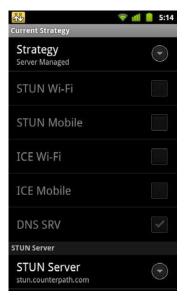


Field	Description
Network Traversal Strategy	Tap to display the choices; see page 48.
STUN Wi-Fi, STUN Mobile, ICE Wi-Fi, ICE Mobile, DNS SRV, STUN server	See "Network Traversal Strategy", below.
Use Bluetooth	On to enable Bluetooth support on Dial91. Since there are many known issues regarding Bluetooth support on Android devices, we recommend that you keep this setting off unless you understand the risks of using Bluetooth on Dial91 on Android devices.
Voice Activity Detection	On: audio is not transmitted when no one is speaking. Turning this feature on may

	reduce bandwidth usage. • Off: audio is transmitted when no one is speaking.
Quality of Service	If desired, ask your VoIP service provider if Quality of Service(QoS) is supported. QoS can allow your phone calls to be given a higher priority on the network.
	Turning QoS on has no effect if your provider does not support it.
Noise Reduction	When on, Dial91 attempts to reduce background noise. Typically on when you are not using a headset, typically off when you are using a headset.
Echo Cancellation	Try turning on this setting if you or the person you are talking to is hearing an echo. If the other person still hears an echo, turn this setting back to Off.
RTP Port Start	Change this value only if advised to do so by your VoIP service provider. This indicates the start of the ports range used for RTP and RTCP sessions. The range is 100 ports wide. The range is not observed if ICE is used. The default is 4000.
Microphone Gain	Changing this setting may improve audio quality if your voice is loud and distorted for the person you are talking. There are five options; the default is Normal (100%).
Speaker Gain	Changing this setting may improve audio quality if your voice is loud and distorted for the person you are talking. There are five options; the default is Normal (100%).
Codec Options	See page 50.
Speakerphone Fix	If the speakerphone is always turned on in Dial91, turn on this setting and see if that forces the speakerphone to turn off. If the speakerphone is still on, turn this setting off again.

Field	Description
Audio Input Source	This setting controls how the device processes the audio input from Dial91. If the person you are talking to is receiving poor audio, try changing the audio source.
Playback Stream	This setting controls how the device processes the audio receiving from the other party. If you are receiving poor audio, try changing the playback stream.
Verbose Logging	Leave this setting OFF unless customer support instructs you to turn it ON in order to troubleshoot a problem you are having on your device. See page 52.
Send Log	Tap to upload the current log to customer support. See page 52.
Delete Log	Tap to delete the log files stored on the device.

Network Traversal Strategy



Speak to your VoIP service provider about the strategy to use. Or leave the default and just change the STUN Server field. Select a profile to set a specific combination of STUN, ICE, and DNS SRV:

•Default Configuration: STUN On, ICE Off, DNS SRV On.

Dial91 will use the specified STUN server to discover the public address of your device. It will present that public address for SIP signaling and when negotiating media routing.

•Application Managed: STUN On, ICE On, DNS SRV On.

Dial91 will use the specified STUN server to discover the public address of your device. It will present your public address for SIP signaling and both your public and private addresses when negotiating media routing.

- •Server Managed: STUN Off, ICE Off, DNS SRV On. Dial91 will present your device's private address for SIP signaling and when negotiating media routing. Choose this option if your VoIP service provider advises you that it has implemented a network-hosted NAT traversal (or farend NAT traversal) technology such as a session border controller (SBC), media proxy or RTP relay.
- User Specified: Set the settings as desired.

Field	Description
STUN Wi-Fi	 On (checked): Dial91 will use a STUN server to discover your public IP address. Off: Dial91 does not discover your public IP address. Therefore, only the private IP address will be used. Typically in this case, Global IP should be turned off.
STUN Mobile	This setting has the same function as STUN, but applies only when you are connected over mobile network.
ICE Wi-Fi	 ICE is involved only in media routing (it is not involved in SIP signaling). On (checked): Dial91 will use ICE to discover addresses for media packets. ICE provides a good guarantee of two-way audio. However, to use ICE successfully, both endpoints in a call must use ICE and specifically must use draft 19 of the ICE standard. Off: Try turning ICE off if you are not using Dial91 behind a firewall or NAT.
ICE Mobile	This setting has the same function as ICE, but applies only when you are connected over mobile network.

Field	Description
DNS SRV	 On (checked): Dial91 will use DNS SRV to discover the network addresses for your VoIP service provider's VoIP-related services such as a STUN server, if any. Off: Dial91 will not use DNS SRV for discovery. Only turn this setting off if your system administrator advises you to do so.
STUN Server	Used only if STUN is on. The default is stun.counterpath.com but we recommend that you change this to an address provided by your VoIP service provider. CounterPath cannot guarantee the availability of their STUN server.

Audio Codecs Selection

Codecs are programs in Dial91 involved in transmitting audio; each codec has different characteristics and therefore each works better in some situations than in others.

Novice and Non-technical Users

We recommend you enable all codecs and let Dial91 select the best codec to use in a given situation.

Technically Savvy Users

You may choose to enable one, some or all codecs. If only one codec is enabled, all calls will be made with that codec. If more than one is enabled, Dial91 negotiates the codec to use (from among the enabled codecs) with the other person. If no codecs are enabled, Dial91 uses G.711u.

You can prioritize codecs by tapping the Up or Down icon in the list. Codecs higher in the list are given a higher priority in the offer, when negotiating codecs with the other party. Therefore, moving a codec higher should improve its chances of being chosen.

G.722 and SILK-HD are wideband codecs. All other codecs are narrowband. When a wideband codec is used, data usage will be higher and audio quality will generally be better. When a narrowband codec is used, data usage may be lower but audio quality may be affected.

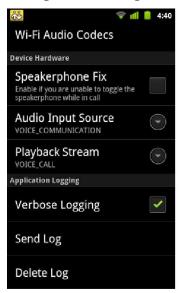
Data usage for the codecs with a fixed bit rate, from high to low usage, is: G.722, G.711, iLBC, GSM, G.729a. SILK-HD and SILK-NB have a variable bit rate; the data usage will fluctuate depending on the network conditions. The optional G.729a codec will provide you the best performance (audio quality and bandwidth usage/cost) when using mobile network for phone calls.

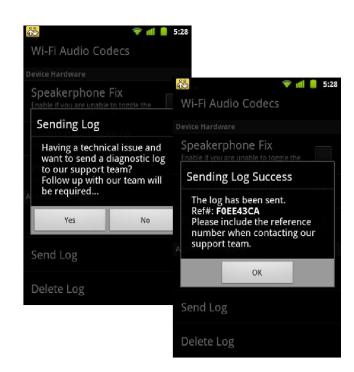
A Troubleshooting

More Information

- You can view Frequently Asked Questions at https://support.counterpath.com/default.asp?W705.
- You can visit our user forum at http://forums.counterpath.com, then go to Dial91 Android / Android Tablet Edition.

Using Dial91 Diagnostics





When you have a problem with Dial91, customer support may ask you to turn on diagnostics in order to capture information.

- 1. Go to Settings > Advanced Settings and scroll down to the bottom.
- 2. Turn on Verbose Logging.
- 3. Reproduce the problem.
- 4. When done, go to Settings > Advanced Settings and tap Send Log. Once the file has been sent, you will see a Sending Log Success notification; this notification includes a reference number.
- 5. Send an email to support@counterpath.com with the details of your issue and the reference number.

If sending the file fails, check your Wi-Fi and/or mobile data connectivity.

C Glossary

phone icon The phone Menu icon, Back icon, Home icon and Search icon are icons (buttons) that

are part of the phone device and may have a different appearance and location on

different phone devices.

Dial91 call A call made using the Dial91 screen. Compare to "native call".

DTMF Dual-tone multi frequency. DTMF is the system that is used in interactive voice-

response menu systems such as the menu system for accessing voicemail messages. The DTMF system allows the user to interact with the menu by pressing keys on a

dial pad or keyboard.

ICE Interactive Connectivity Establishment. A method for traversing a firewall.

IM Instant Messaging. A technology that lets users send text messages for near

instantaneous delivery and display on each others' devices.

IP address A unique number that identifies a computer. Computers on a network use the IP

address communicate with each other.

IVR Interactive Voice Response. IVRs use DTMF.

Media The audio portion of a call. Compare to "Signaling".

Native call A call made using the phone service that comes with the Android phone.

Native phone service The mobile phone service that comes with the Android phone.

PSTN Public Switch Telephone Network. The traditional land-line phone network.

Presence An instant messaging feature that allows users to share information about their online

status.

Signaling The information in a call that deals with establishing and controlling the connection,

and managing the network. The non-signaling portion of the call is the Media.

SIP Session Initiation Protocol. The signaling protocol followed by Dial91 for handling

phone calls.

SIP account An account that provides the user the ability to make VoIP phone calls. The account

encapsulates the rules and functions the user can access.

softphone address The address used to connect to a SIP endpoint. In other words, the "phone number"

used in a VoIP phone call. For example, sip:joseph@domainA.com.

STUN Simple Traversal of UDP through a firewall or NAT.

Wi-Fi call A call made over the Wi-Fi internet. To make a Wi-Fi call, you must be in a Wi-Fi

zone

XMPP account An account that provides the user with the ability to send IMs and view other people's

presence.

3G/4G call A call made over the 3G/4G network. If you start (or receive) a call with an Android

phone when you are not in a Wi-Fi zone, the call will be a 3G/4G call.