

# Android Phone

## Example of Android application for audio calls

Input fields to establish SIP connection

- 'WCS URL' - WCS server address
- 'SIP Login' - SIP user name
- 'SIP Password' - SIP password
- 'SIP Domain' - SIP server address
- 'SIP port' - SIP port

SIP callee user name should be set to 'Callee' input field.  
Connect/Disconnect button establishes/closes SIP-connection.  
Call/Hangup button makes a SIP call or finishes it.  
Hold/Unhold button is used to hold the call.

# Phone-min

[Privacy Policy](#)

WCS Url

wss://demo.flashphoner.com:8443

Sip Login

10006

Sip Password

.....

Sip Domain

sip.flashphoner.com

Sip Port

5060

Register required

CONNECT

Auth Token

CONNECT WITH TOKEN

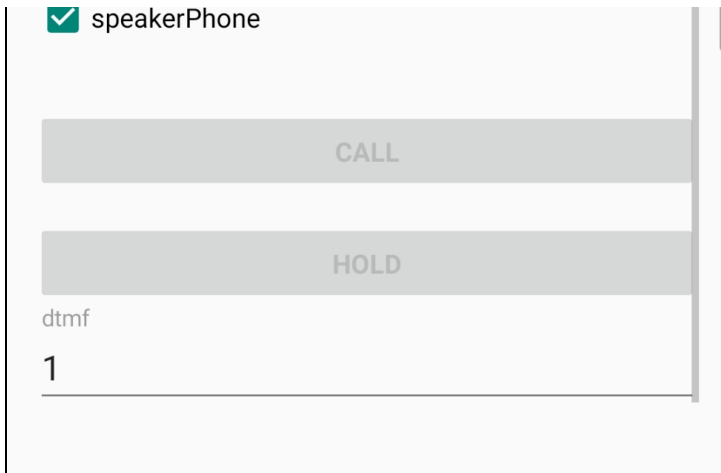
Invite Parameters

{header:value}

Callee

10008

- googEchoCancellation
- googAutoGainControl
- googNoiseSupression
- googHighpassFilter
- googEchoCancellation2
- googAutoGainControl2
- googNoiseSuppression2
- proximitySensor



## Work with code of the example

To analyze the code, let's take class [PhoneMinActivity.java](#) of the phone-min example, which can be downloaded with corresponding build [1.1.0.55](#).

### 1. Initialization of the API.

`Flashphoner.init()` [code](#)

For initialization, object Context is passed to the `init()` method.

```
Flashphoner.init(this);
```

### 2. Session creation.

`Flashphoner.createSession()` [code](#)

Object `SessionOptions` with URL of WCS server is passed to the method.

```
SessionOptions sessionOptions = new SessionOptions(mWcsUrlView.getText().toString());  
session = Flashphoner.createSession(sessionOptions);
```

### 3. Connection to the server.

`Session.connect()` [code](#)

Connection object with parameters required for establishing SIP connection is passed to the method

```
Connection connection = new Connection();  
connection.setSipLogin(mSipLoginView.getText().toString());  
connection.setSipPassword(mSipPasswordView.getText().toString());  
connection.setSipDomain(mSipDomainView.getText().toString());  
connection.setSipOutboundProxy(mSipDomainView.getText().toString());  
connection.setSipPort(Integer.parseInt(mSipPortView.getText().toString()));  
connection.setSipRegisterRequired(mSipRegisterRequiredView.isChecked());  
connection.setKeepAlive(true);  
session.connect(connection);
```

### 4. Receiving the event confirming successful connection.

`Session.onConnected()`, `Session.getAuthToken()` [code](#)

A session token should be kept to connect to the session later

```

@Override
public void onConnected(final Connection connection) {
    runOnUiThread(new Runnable() {
        @Override
        public void run() {
            ...
            String token = connection.getAuthToken();
            if (token != null && !token.isEmpty()) {
                mAuthTokenView.setText(token);
                mConnectTokenButton.setEnabled(true);
            }
        }
    });
}

```

## 5. Call/Hangup button click handler

Button.setOnClickListener() [code](#)

```

mCallButton.setOnClickListener(new OnClickListener() {
    @Override
    public void onClick(View view) {
        if (mCallButton.getTag() == null || Integer.valueOf(R.string.action_call).equals(mCallButton.getTag()))
        {
            if ("".equals(mCalleeView.getText().toString())) {
                return;
            }
            ActivityCompat.requestPermissions(PhoneMinActivity.this,
                new String[]{Manifest.permission.RECORD_AUDIO},
                CALL_REQUEST_CODE);
            ...
        } else {
            mCallButton.setEnabled(false);
            call.hangup();
            call = null;
        }
        View currentFocus = getCurrentFocus();
        if (currentFocus != null) {
            InputMethodManager inputManager = (InputMethodManager) getSystemService(Context.
INPUT_METHOD_SERVICE);
            inputManager.hideSoftInputFromWindow(currentFocus.getWindowToken(), InputMethodManager.
HIDE_NOT_ALWAYS);
        }
    }
});

```

## 6. Outgoing call.

Session.createCall(), Call.call() [code](#)

CallOptions object with these parameters is passed to the method:

- SIP username
- audio constraints
- SIP INVITE parameters

```

case CALL_REQUEST_CODE: {
    if (grantResults.length == 0 ||
        grantResults[0] != PackageManager.PERMISSION_GRANTED) {
        Log.i(TAG, "Permission has been denied by user");
    } else {
        mCallButton.setEnabled(false);
        /**
         * Get call options from the callee text field
         */
        CallOptions callOptions = new CallOptions(mCalleeView.getText().toString());
        AudioConstraints audioConstraints = callOptions.getConstraints().getAudioConstraints();
        MediaConstraints mediaConstraints = audioConstraints.getMediaConstraints();
        ...
        try {
            Map<String, String> inviteParameters = new Gson().fromJson(mInviteParametersView.getText().
toString(),
                new TypeToken<Map<String, String>>() {
                    }.getType());
            callOptions.setInviteParameters(inviteParameters);
        } catch (Throwable t) {
            Log.e(TAG, "Invite Parameters have wrong format of json object");
        }
        call = session.createCall(callOptions);
        call.on(callStatusEvent);
        /**
         * Make the outgoing call
         */
        call.call();
        Log.i(TAG, "Permission has been granted by user");
        break;
    }
}
}

```

## 7.Receiving the event on incoming call

Session.onCall() [code](#)

```

@Override
public void onCall(final Call call) {
    call.on(callStatusEvent);
    /**
     * Display UI alert for the new incoming call
     */
    runOnUiThread(new Runnable() {
        @Override
        public void run() {
            AlertDialog.Builder builder = new AlertDialog.Builder(PhoneMinActivity.this);

            builder.setTitle("Incoming call");

            builder.setMessage("Incoming call from '" + call.getCaller() + "'");
            builder.setPositiveButton("Answer", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i) {
                    PhoneMinActivity.this.call = call;
                    ActivityCompat.requestPermissions(PhoneMinActivity.this,
                        new String[]{Manifest.permission.RECORD_AUDIO},
                        INCOMING_CALL_REQUEST_CODE);
                }
            });
            builder.setNegativeButton("Hangup", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i) {
                    call.hangup();
                    incomingCallAlert = null;
                }
            });
            incomingCallAlert = builder.show();
        }
    });
}

```

#### 8. Answering incoming call.

`Call.answer()` [code](#)

```

case INCOMING_CALL_REQUEST_CODE: {
    if (grantResults.length == 0 ||
        grantResults[0] != PackageManager.PERMISSION_GRANTED) {
        call.hangup();
        incomingCallAlert = null;
        Log.i(TAG, "Permission has been denied by user");
    } else {
        mCallButton.setText(R.string.action_hangup);
        mCallButton.setTag(R.string.action_hangup);
        mCallButton.setEnabled(true);
        mCallStatus.setText(call.getStatus());
        call.answer();
        incomingCallAlert = null;
        Log.i(TAG, "Permission has been granted by user");
    }
}

```

#### 9. Call hold and retrieve.

`Call.hold()`, `Call.unhold()` [code](#)

```

mHoldButton.setOnClickListener(new OnClickListener() {
    @Override
    public void onClick(View view) {
        if (mHoldButton.getTag() == null || Integer.valueOf(R.string.action_hold).equals(mHoldButton.getTag()))
        {
            call.hold();
            mHoldButton.setText(R.string.action_unhold);
            mHoldButton.setTag(R.string.action_unhold);
        } else {
            call.unhold();
            mHoldButton.setText(R.string.action_hold);
            mHoldButton.setTag(R.string.action_hold);
        }
    }
});

```

## 10. DTMF sending

`Call.sendDTMF()` [code](#)

```

mDTMF = (EditText) findViewById(R.id.dtmf);
mDTMFButton = (Button) findViewById(R.id.dtmf_button);
mDTMFButton.setOnClickListener(new OnClickListener() {
    @Override
    public void onClick(View view) {
        if (call != null) {
            call.sendDTMF(mDTMF.getText().toString(), Call.DTMFType.RFC2833);
        }
    }
});

```

## 11. Outgoing call hangup.

`Call.hangup()` [code](#)

```

mCallButton.setEnabled(false);
call.hangup();
call = null;

```

## 12. Incoming call hangup.

`Call.hangup()` [code](#)

```

builder.setNegativeButton("Hangup", new DialogInterface.OnClickListener() {
    @Override
    public void onClick(DialogInterface dialogInterface, int i) {
        call.hangup();
        incomingCallAlert = null;
    }
});

```

## 13. Disconnection.

`Session.disconnect()` [code](#)

```

mConnectButton.setEnabled(false);
session.disconnect();

```

## 14. Connection to an existing session using token

`Connection.setAuthToken()`, `Session.connect()` [code](#)

```
mConnectTokenButton.setOnClickListener(new OnClickListener() {
    @Override
    public void onClick(View v) {
        if (mConnectTokenButton.getTag() == null || Integer.valueOf(R.string.action_connect_token).
equals(mConnectTokenButton.getTag())) {
            connectWithToken = true;
            String authToken = mAuthTokenView.getText().toString();
            if (authToken.isEmpty()) {
                return;
            }
            mConnectButton.setEnabled(false);
            mConnectTokenButton.setEnabled(false);
            createSession();
            Connection connection = new Connection();
            connection.setAuthToken(authToken);
            connection.setKeepAlive(true);
            session.connect(connection);
        } else {
            mConnectButton.setEnabled(false);
            mConnectTokenButton.setEnabled(false);
            session.disconnect();
        }
    }
});
```