iOS Phone

Overview

The example shows how to make an audio SIP call with iOS SDK.

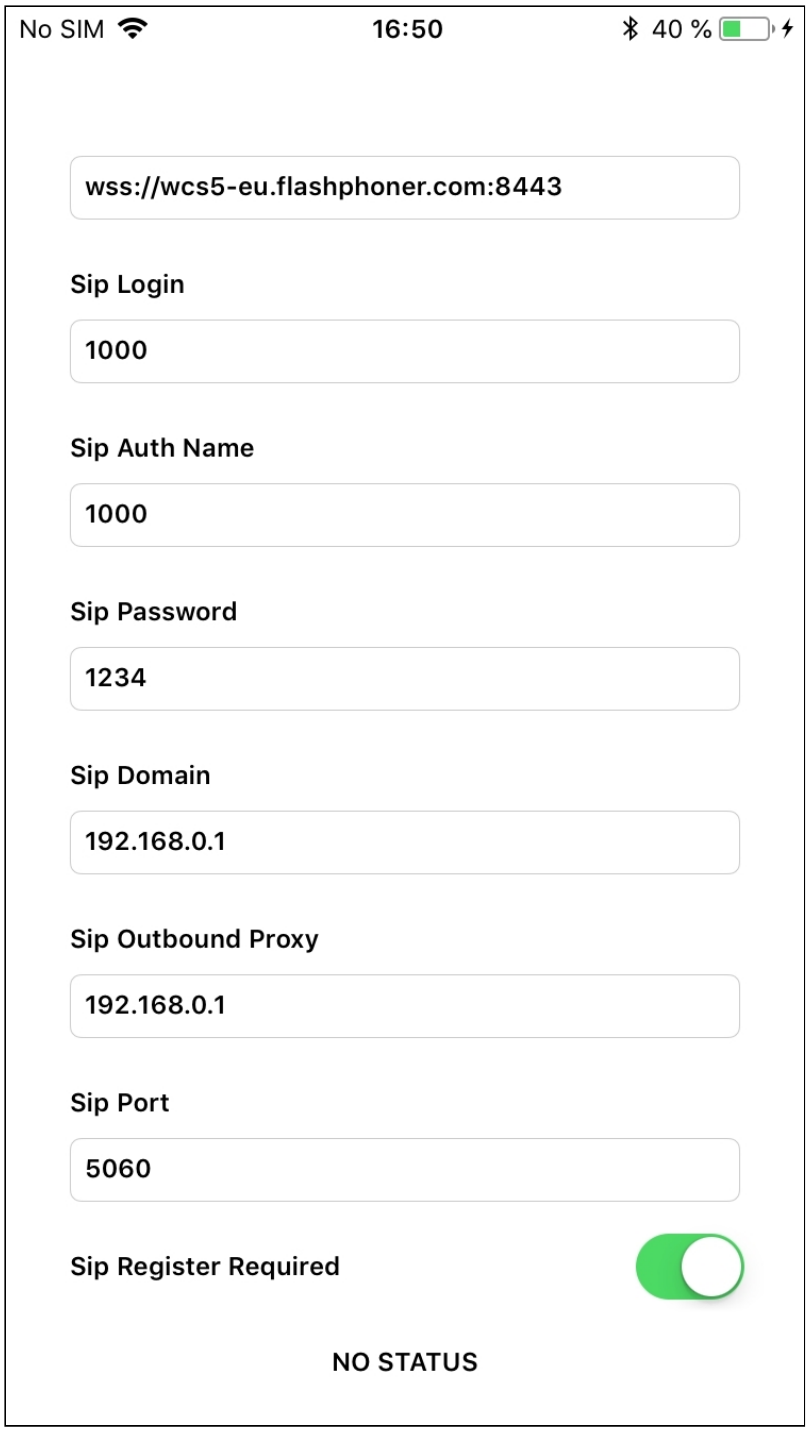
On the screenshot below the example is displayed before a call will be established.

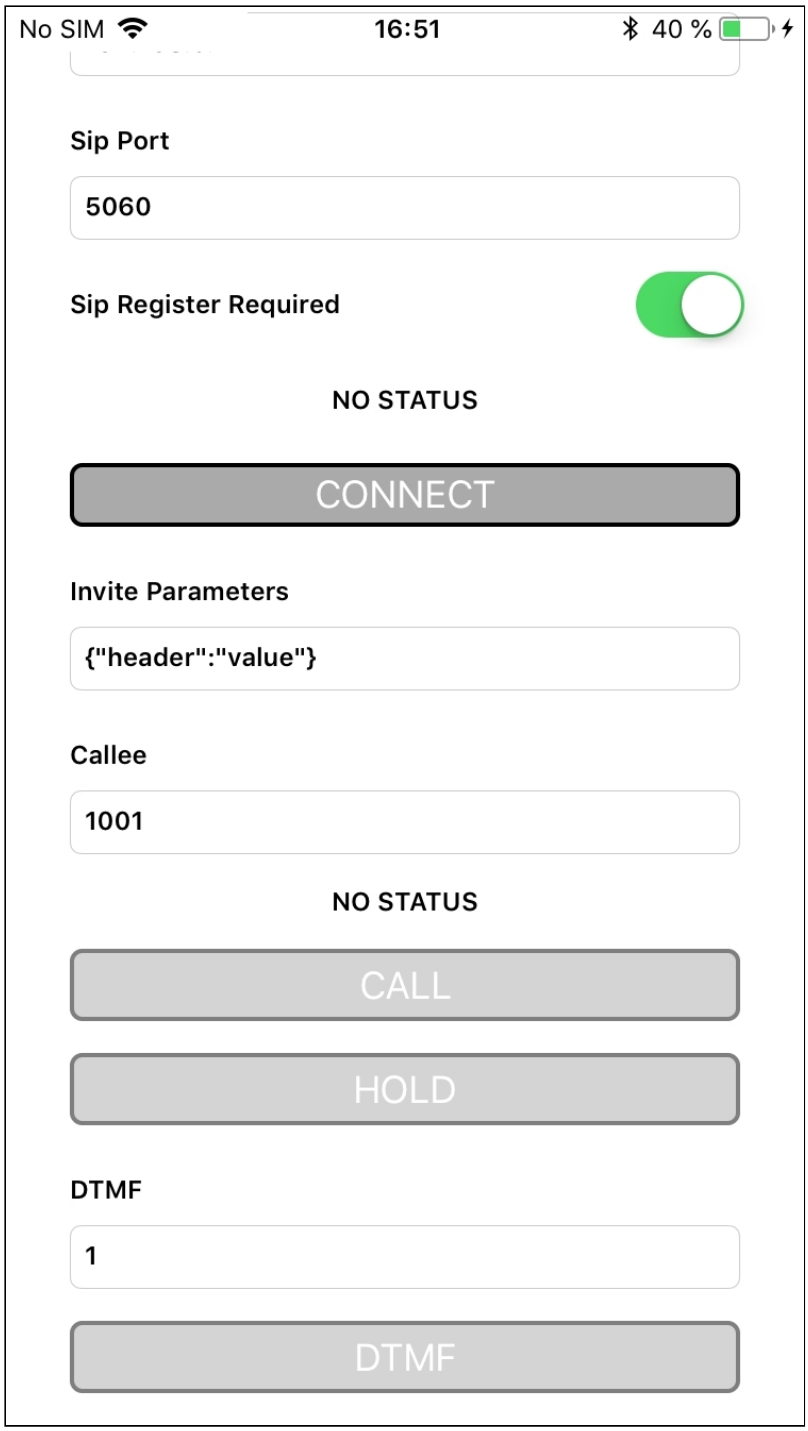
In the input field `WCS URL`, `wcs5-eu.flashphoner.com` is the address of the WCS server.

In `SIP...` fields, SIP parameters to register on SIP server must be entered. In the input field `Callee`, 1001 is the SIP username of the callee.

`Invite parameters` is field to enter additionat `SIP INVITE` message parameters.

SIP connection is established/closed when `Connect/Disconnect` button is clicked. Call is placed/terminated when `Call/Hangup` button is clicked, and put on hold/retrieve when `Hold/Unhold` button is clicked.


No SIM
16:50
40 %
wss://wcs5-eu.flashphoner.com:8443
Sip Login
1000
Sip Auth Name
1000
Sip Password
1234
Sip Domain
192.168.0.1
Sip Outbound Proxy
192.168.0.1
Sip Port
5060
Sip Register Required
NO STATUS



Analyzing the code of the example

To analyze the code, let's take PhoneMin example, which is available on GitHub.

View class for the main view of the application: ViewController (header file ViewController.h; implementation file ViewController.m).

1. Import of API

code

```
#import <FPWCSApi2/FPWCSApi2.h>
```

2. Connection to the server

`FPWCSApi2.createSession`, `FPWCSApi2Session.connect` code

`FPWCSApi2SessionOptions` object with the following parameters is passed to `createSession()` method

- URL of WCS server
- SIP parameters to make outgoing call and to receive incoming calls
- appKey of internal server-side application (defaultApp)

```
FPWCSApi2SessionOptions *options = [[FPWCSApi2SessionOptions alloc] init];
options.urlServer = _connectUrl.text;
options.sipRegisterRequired = _sipRegRequired.control.isOn;
options.sipLogin = _sipLogin.input.text;
options.sipAuthenticationName = _sipAuthName.input.text;
options.sipPassword = _sipPassword.input.text;
options.sipDomain = _sipDomain.input.text;
options.sipOutboundProxy = _sipOutboundProxy.input.text;
options.sipPort = [NSNumber numberWithInteger: [_sipPort.input.text
integerValue]];
options.appKey = @"defaultApp";
NSError *error;
...
session = [FPWCSApi2 createSession:options error:&error];
...
[session connect];
```

3. Outgoing call

`FPWCSApi2Session.createCall`, `FPWCSApi2Call.call` code

The following parameters are passed to `createCall()` method:

- callee SIP username
- additional `SIP INVITE` parameters from string set by user

```
- (FPWCSApi2Call *)call {
    FPWCSApi2Session *session = [FPWCSApi2 getSessions][0];
    FPWCSApi2CallOptions *options = [[FPWCSApi2CallOptions alloc] init];
    NSString *parameters = _inviteParameters.input.text;
    if (parameters && [parameters length] > 0) {
        NSError* err = nil;
        parameters = [parameters stringByReplacingOccurrencesOfString:@"""
withString:@"\""];
```

```
        NSMutableDictionary *dictionary = [NSJSONSerialization
JSONObjectWithData:[parameters dataUsingEncoding:NSUTF8StringEncoding]
options:0 error:&err];
        if (err) {
            NSLog(@"Error converting JSON Invite parameters to dictionary %@,
JSON %@", err, parameters);
        } else {
            options.inviteParameters = dictionary;
        }
    }
    options.callee = _callee.input.text;
    ...
    NSError *error;
    call = [session createCall:options error:&error];
    ...
    [call call];
    return call;
}
```

4. Receiving the event on incoming call

`FPWCSApi2Session.onIncomingCallCallback` code

```
[session onIncomingCallCallback:^(FPWCSApi2Call *rCall) {
    call = rCall;

    [call on:kFPWCSCallStatusBusy callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self toCallState];
    }];

    [call on:kFPWCSCallStatusFailed callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self toCallState];
    }];

    [call on:kFPWCSCallStatusRing callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self toHangupState];
    }];

    [call on:kFPWCSCallStatusHold callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self changeViewState:_holdButton enabled:YES];
    }];

    [call on:kFPWCSCallStatusEstablished callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self toHangupState];
        [self changeViewState:_holdButton enabled:YES];
    }];

    [call on:kFPWCSCallStatusFinish callback:^(FPWCSApi2Call *call){
        [self changeCallStatus:call];
        [self toCallState];
```

```
        [self dismissViewControllerAnimated:YES completion:nil];
    }];
    ...
}];
```

5. Answering incoming call

`FPWCSApi2Call.answer` code

```
alert = [UIAlertController
                            alertControllerWithTitle:[NSString
stringWithFormat:@"Incoming call from '%@'", [rCall getCallee]]
                            message:error.localizedDescription
                            preferredStyle:UIAlertControllerStyleAlert];

UIAlertAction* answerButton = [UIAlertAction
                              actionWithTitle:@"Answer"
                              style:UIAlertActionStyleDefault
                              handler:^(UIAlertAction * action) {
                                  [call answer];
                              }];

[alert addAction:answerButton];
UIAlertAction* hangupButton = [UIAlertAction
                              actionWithTitle:@"Hangup"
                              style:UIAlertActionStyleDefault
                              handler:^(UIAlertAction * action) {
                                  [call hangup];
                              }];

[alert addAction:hangupButton];
[self presentViewController:alert animated:YES completion:nil];
```

6. Call hold and retrieve

`FPWCSApi2Call.hold`, `FPWCSApi2Call.unhold` code

```
- (void)holdButton:(UIButton *)button {
    [self changeViewState:button enabled:NO];
    if ([button.titleLabel.text isEqualToString:@"UNHOLD"]) {
        if (call) {
            [call unhold];
            [_holdButton setTitle:@"HOLD" forState:UIControlStateNormal];
        }
    } else {
        if (call) {
            [call hold];
            [_holdButton setTitle:@"UNHOLD" forState:UIControlStateNormal];
        }
    }
}
```

7. DTMF sending

`FPWCSApi2Call.sendDTMF` code

```
- (void)dtmfButton:(UIButton *)button {
    if (call) {
        [call sendDTMF:_dtmf.input.text type:kFPWCSCallDTMFRFC2833];
    }
}
```

8. Switching from the voice speaker to the loud speaker

`FPWCSApi2Call.setLoudspeakerStatus` code

```
- (void)useLoudSpeakerValueChanged:(id)sender {
    if (call) {
        [call setLoudspeakerStatus:_useLoudSpeaker.control.isOn
withError:nil];
    }
}
```

9. Outgoing call hangup

`FPWCSApi2Call.hangup` code

```
- (void)callButton:(UIButton *)button {
    [self changeViewState:button enabled:NO];
    if ([button.titleLabel.text isEqualToString:@"HANGUP"]) {
        if ([FPWCSApi2 getSessions].count) {
            [call hangup];
        } else {
            [self toCallState];
        }
        ...
    }
}
```

10. Incoming call hangup

`FPWCSApi2Call.hangup` code

```
UIAlertAction* hangupButton = [UIAlertAction
                               actionWithTitle:@"Hangup"
                               style:UIAlertActionStyleDefault
                               handler:^(UIAlertAction * action) {
                                   [call hangup];
                               }];

[alert addAction:hangupButton];
```

11. Disconnection

`FPWCSApi2Session.disconnect` code

```
- (void)connectButton:(UIButton *)button {
    [self changeViewState:button enabled:NO];
    if ([button.titleLabel.text isEqualToString:@"DISCONNECT"]) {
        if ([FPWCSApi2 getSessions].count) {
            FPWCSApi2Session *session = [FPWCSApi2 getSessions][0];
            NSLog(@"Disconnect session with server %@", [session
getServerUrl]);
            [session disconnect];
        } else {
            NSLog(@"Nothing to disconnect");
            [self onDisconnected];
        }
        ...
    }
}
```