

# Conference React

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## Overview

Conference React application shows how to use Web SDK and RoomApi in React application to publish and play WebRTC streams in chat room

### Conference in React


WCS URL

Login


Record

ESTABLISHED


Leave



user2



user3



PUBLISHING

Mute A Mute V

Stop

13:29 chat - room is empty  
13:29 user2 - joined  
13:30 user3 - joined

Send

The project is available on [GitHub](#), in [Web SDK build archivessince build2.0.201](#) by the following path `examples/react/conference-react`.

# Building the project

## 1. Download WebSDK source code

```
git clone https://github.com/flashphoner/flashphoner_client.git
```

## 2. Go to the example folder

```
cd flashphoner_client/examples/react/conference-react
```

## 3. Install dependencies

```
npm install
```

## 4. Build for local testing

```
npm start
```

or to deploy to your web server

```
npm run build
```

# Analyzing example code

To analyze the code take version with hash456b1c7 which is available [here](#) and in Web SDK build2.0.201

Application code is in [ConferenceApp.js](#) file, additional functions are [infp-utils.js](#) file

## 1. API import

[code](#)

```
import * as Flashphoner from '@flashphoner/websdk/src/flashphoner-core.js';
import * as RoomApi from '@flashphoner/websdk/src/room-module.js';
import * as FPUtils from './fp-utils.js';
```

## 2. API initialization

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

```
componentDidMount() {
  try {
    Flashphoner.init({});
    ...
  }
  catch(e) {
    console.log(e);
    ...
  }
}
```

## 3. Connecting to the server and receiving the event confirming connection is established successfully

[RoomApi.connect\(\)](#), [SESSION\\_STATUS.ESTABLISHED](#) [code](#)

```

createConnection = (url, username) => {
  let app = this;
  let session = this.state.session;

  if (session && session.status() === SESSION_STATUS.ESTABLISHED) {
    ...
  } else {
    console.log("Create new RoomApi session with url " + url + ", login " + username);
    app.setState({joinButtonDisabled: true, serverUrlDisabled: true});
    RoomApi.connect({urlServer: url, username: username}).on(SESSION_STATUS.ESTABLISHED, (session) => {
      app.setState({session: session, sessionStatus: SESSION_STATUS.ESTABLISHED, sessionStatusClass: 'text-
success'});
      app.joinRoom(session);
    }).on(SESSION_STATUS.DISCONNECTED, () => {
      ...
    }).on(SESSION_STATUS.FAILED, () => {
      ...
    });
  }
}

```

#### 4. Enter participant to the room, receiving room state

connection.join(), ROOM\_EVENT.STATE [code](#)

The following parameters are passed to connection.join() function:

- room name
- should room streams be written to multiple recorder file

```

joinRoom = (session) => {
  let app = this;
  let roomName = this.getRoomName();
  let record = this.state.record;

  console.log("Join the room " + roomName + ", record " + record);
  session.join({name: roomName, record: record}).on(ROOM_EVENT.STATE, (room) => {
    let roomParticipants = room.getParticipants();
    let participantsNumber = roomParticipants.length;
    console.log("Current number of participants in the room: " + participantsNumber);
    if (roomParticipants.length >= maxParticipants) {
      console.warn("Current room is full");
      app.setState({sessionFailedInfo: "Current room is full"});
      room.leave().then(() => {app.onLeft()});
      return false;
    }
    app.setInviteUrl(roomName);
    if (participantsNumber > 0) {
      let chatState = "participants: ";
      for (let i = 0; i < participantsNumber; i++) {
        app.installParticipant(roomParticipants[i]);
        chatState += roomParticipants[i].name();
        if (i < participantsNumber - 1) {
          chatState += ",";
        }
      }
      app.addMessage("chat", chatState);
    } else {
      app.addMessage("chat", " room is empty");
    }
    ...
    app.publishLocalMedia(room);
    app.onJoined(room);
    ...
  });
}

```

#### 5. Publishing stream to the room

## Room.publish() code

```
publishLocalMedia = (room) => {
  let app = this;
  let constraints = {
    audio: true,
    video: true
  };
  let display = document.getElementById("localDisplay");

  app.setState({publishButtonDisabled: true});
  room.publish({
    display: display,
    constraints: constraints,
    record: false,
    receiveVideo: false,
    receiveAudio: false
    ...
  });
}
```

## 6. Receiving the event confirming the stream is successfully published

### STREAM\_STATUS.PUBLISHING code

```
publishLocalMedia = (room) => {
  ...
  room.publish({
    display: display,
    constraints: constraints,
    record: false,
    receiveVideo: false,
    receiveAudio: false
  }).on(STREAM_STATUS.FAILED, (stream) => {
    ...
  }).on(STREAM_STATUS.PUBLISHING, (stream) => {
    app.setState({publishStatus: STREAM_STATUS.PUBLISHING, publishStatusClass: 'text-success'});
    app.onMediaPublished(stream);
  }).on(STREAM_STATUS.UNPUBLISHED, (stream) => {
    ...
  });
}
```

## 7. Receiving the event about a participant joining the room

### ROOM\_EVENT.JOINED code

```

joinRoom = (session) => {
  let app = this;
  let roomName = this.getRoomName();
  let record = this.state.record;

  console.log("Join the room " + roomName + ", record " + record);
  session.join({name: roomName, record: record}).on(ROOM_EVENT.STATE, (room) => {
    ...
  }).on(ROOM_EVENT.JOINED, (participant) => {
    app.installParticipant(participant);
    app.addMessage(participant.name(), "joined");
  }).on(ROOM_EVENT.LEFT, function(participant) {
    ...
  }).on(ROOM_EVENT.PUBLISHED, (participant) => {
    ...
  }).on(ROOM_EVENT.FAILED, (room, info) => {
    ...
  }).on(ROOM_EVENT.MESSAGE, (message) => {
    ...
  });
}

```

## 8. Receiving the event about a participant publishing a stream

### ROOM\_EVENT.PUBLISHED code

```

joinRoom = (session) => {
  let app = this;
  let roomName = this.getRoomName();
  let record = this.state.record;

  console.log("Join the room " + roomName + ", record " + record);
  session.join({name: roomName, record: record}).on(ROOM_EVENT.STATE, (room) => {
    ...
  }).on(ROOM_EVENT.JOINED, (participant) => {
    ...
  }).on(ROOM_EVENT.LEFT, function(participant) {
    ...
  }).on(ROOM_EVENT.PUBLISHED, (participant) => {
    app.playParticipantsStream(participant);
  }).on(ROOM_EVENT.FAILED, (room, info) => {
    ...
  }).on(ROOM_EVENT.MESSAGE, (message) => {
    ...
  });
}

```

## 9. Playing participant stream with resizing the stream picture to div

### Stream.play(), STREAM\_STATUS\_PLAYING, FPUtills.resizeVideo() code

```

playStream = (stream, remoteVideo, name) => {
  let app = this;
  let participantStream = null;

  participantStream = stream.play(remoteVideo).on(STREAM_STATUS.PLAYING, (playingStream) => {
    let video = document.getElementById(playingStream.id());
    if (video) {
      video.addEventListener('resize', (event) => {
        FPUtills.resizeVideo(event.target);
      });
    }
  });
  app.setParticipantStream(name, participantStream);
}

```

## 10. Sending a text message to all the participants

Participant.sendMessage() [code](#)

```
onSendClick = () => {
  let session = this.state.session;
  let room = this.state.room;
  let message = this.state.message;

  if (session && room) {
    let participants = room.getParticipants();
    this.addMessage(session.username(), message);
    for (let i = 0; i < participants.length; i++) {
      participants[i].sendMessage(encodeURIComponent(message));
    }
    this.setState({message: ''});
  }
}
```

## 11. Receiving text message from other participant

ROOM\_EVENT.MESSAGE [code](#)

```
joinRoom = (session) => {
  let app = this;
  let roomName = this.getRoomName();
  let record = this.state.record;

  console.log("Join the room " + roomName + ", record " + record);
  session.join({name: roomName, record: record}).on(ROOM_EVENT.STATE, (room) => {
    ...
  }).on(ROOM_EVENT.JOINED, (participant) => {
    ...
  }).on(ROOM_EVENT.LEFT, function(participant) {
    ...
  }).on(ROOM_EVENT.PUBLISHED, (participant) => {
    ...
  }).on(ROOM_EVENT.FAILED, (room, info) => {
    ...
  }).on(ROOM_EVENT.MESSAGE, (message) => {
    if (message.from && message.text) {
      app.addMessage(message.from.name(), decodeURIComponent(message.text));
    }
  });
}
```

## 12. Receiving the event about participant is left the room

ROOM\_EVENT.LEFT [code](#)

```

joinRoom = (session) => {
  let app = this;
  let roomName = this.getRoomName();
  let record = this.state.record;

  console.log("Join the room " + roomName + ", record " + record);
  session.join({name: roomName, record: record}).on(ROOM_EVENT.STATE, (room) => {
    ...
  }).on(ROOM_EVENT.JOINED, (participant) => {
    ...
  }).on(ROOM_EVENT.LEFT, function(participant) {
    app.removeParticipant(participant);
    app.addMessage(participant.name(), "left");
  }).on(ROOM_EVENT.PUBLISHED, (participant) => {
    ...
  }).on(ROOM_EVENT.FAILED, (room, info) => {
    ...
  }).on(ROOM_EVENT.MESSAGE, (message) => {
    ...
  });
}

```

### 13. Stopping stream publishing

Stream.stop() [code](#)

```

onPublishClick = () => {
  let stream = this.state.publishStream;
  let room = this.state.room;

  if (!room) return;
  this.setState({publishButtonDisabled: true});
  if (!stream) {
    this.publishLocalMedia(room);
  } else {
    stream.stop();
  }
};

```

### 14. Leaving the room

Room.leave() [code](#)

```

onJoinClick = () => {
  let app = this;
  ...
  let room = this.state.room;
  let participants = this.state.participants;

  if (!room) {
    ...
  } else {
    this.setState({joinButtonDisabled: true}, () => {
      participants.forEach((participant) => {
        // Stop all the playing participants streams
        app.stopParticipantStream(participant.stream);
      });
    });
    room.leave().then(() => {app.onLeft();}, () => {app.onLeft();});
  });
};

```