

EXAMPLES

- Bandwidth Constraints

Bandwidth Constraints

```
'use strict';

var Video = require('twilio-video');

/**
 * Connect to a Room with the given bandwidth constraints
 * @param {string} token - Token for joining the Room
 * @param {string} roomName - Room name
 * @param {?number} maxAudioBitrate - Max audio bitrate
 * @param {?number} maxVideoBitrate - Max video bitrate
 * @returns {CancelablePromise<Room>}
 */
function connectWithBandwidthConstraints(token, roomName) {
  return Video.connect(token, {
    maxAudioBitrate: maxAudioBitrate,
    maxVideoBitrate: maxVideoBitrate,
    name: roomName
  });
}

/**
 * Update the bandwidth constraints of a Room.
 * @param {Room} room - The Room whose bandwidth constraints are being updated
 * @param {?number} maxAudioBitrate - Max audio bitrate
 * @param {?number} maxVideoBitrate - Max video bitrate
 */
function updateBandwidthConstraints(room, maxAudioBitrate) {
  room.localParticipant.setParameters({
    maxAudioBitrate: maxAudioBitrate,
    maxVideoBitrate: maxVideoBitrate
  });
}

exports.connectWithBandwidthConstraints = connectWithBandwidthConstraints;
exports.updateBandwidthConstraints = updateBandwidthConstraints;

```

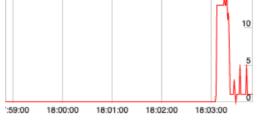
Participant's Media



Select Bandwidth Constraints

Max Audio Bitrate (bps)

16000

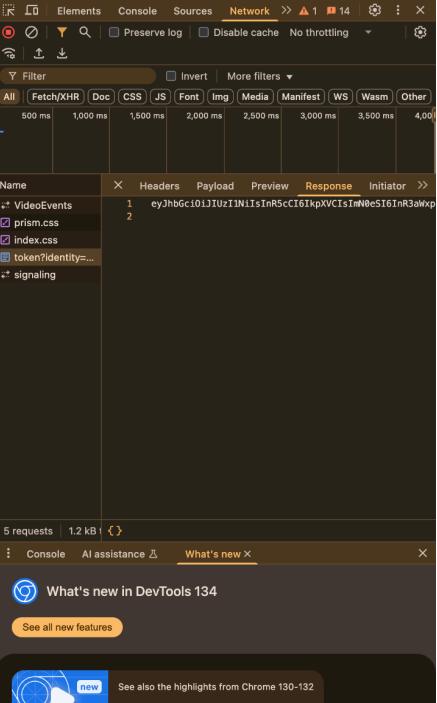


Max Video Bitrate (bps)

64000



Disconnect from Room



- Local Video Snapshot

localhost:3000/localvideosnapshot

Local Video Snapshot

```
'use strict';

var Video = require('twilio-video');

/**
 * Display local video in the given HTMLVideoElement.
 * @param {HTMLVideoElement} video
 * @returns {Promise<void>}
 */
function displayLocalVideo(video) {
  return Video.createLocalVideoTrack().then(function(localTrack) {
    localTrack.attach(video);
    return localTrack;
  });
}

/**
 * Take snapshot of the local video from the HTMLVideoElement
 * in the HTMLCanvasElement.
 * @param {HTMLVideoElement} video
 * @param {LocalVideoTrack} localVideoTrack
 * @param {HTMLCanvasElement|HTMLImageElement} snapshot
 */
function takeLocalVideoSnapshot(video, localVideoTrack, if (window.ImageCapture) {
  const imageCapture = new ImageCapture(localVideoTrack);
  imageCapture.takePhoto().then(function(blob) {
    snapshot.src = URL.createObjectURL(blob);
  });
} else {
  snapshot.getContext('2d').drawImage(video, 0, 0);
}
}

module.exports.displayLocalVideo = displayLocalVideo;
module.exports.takeLocalVideoSnapshot = takeLocalVideoSnapshot;
```

Local Video

Snapshot

The screenshot shows a local video feed in a browser window. A blue button labeled "Take Snapshot" is visible below the video frame. To the right of the video, there is a developer tools Network tab showing network requests for the page, including files like "localvideosnapshot.js", "bootstrap.min.css", and "jquery-3.4.1.slim.min.js".

- Media device Selection

localhost:3000/mediadevices/

Media Device Selection

```
'* eslint-disable no-console */  
'use strict';

var Video = require('twilio-video');

/**
 * Get the list of available media devices of the given kind
 * @param {Array<MediaDeviceInfo>} deviceInfos
 * @param {string} kind - One of 'audioinput', 'audiooutput'
 * @returns {Array<MediaDeviceInfo>} - Only those media devices which are of the specified kind
 */
function getDevicesOfKind(deviceInfos, kind) {
  return deviceInfos.filter(function(deviceInfo) {
    return deviceInfo.kind === kind;
  });
}

/**
 * Apply the selected audio output device.
 * @param {string} deviceId
 * @param {HTMLAudioElement} audio
 * @returns {Promise<void>}
 */
function applyAudioOutputDeviceSelection(deviceId, audio) {
  return typeof audio.setSinkId === 'function'
    ? audio.setSinkId(deviceId)
    : Promise.reject('This browser does not support setting the audio output device');
}

/**
 * Apply the selected input device.
 * @param {string} deviceId
 * @param {HTMLAudioElement} audio
 * @param {string} kind
 * @returns {Promise<LocalTrack>} - The created or restarted local track
 */
function applyInputDeviceSelection(deviceId, localTrack, constraints = { deviceid: { exact: deviceId } }) {
  if (!localTrack) {
    return localTrack.restart(constraints).then(function(localTrack) {
      return localTrack;
    });
  }
}
```

Preview Media

Select Media Devices

Audio Input
MacBook Pro Microphone (Built-in)
Apply

Video Input
FaceTime HD Camera (D288:CE50)
Apply

Audio Output
MacBook Pro Speakers (Built-in)
Apply

Connect

The screenshot shows a media device selection interface. It includes dropdown menus for selecting audio input (MacBook Pro Microphone), video input (FaceTime HD Camera), and audio output (MacBook Pro Speakers). A large blue "Connect" button is at the bottom. To the right, there is a developer tools Network tab showing network requests for the page, including files like "mediadevices.js", "bootstrap.min.css", and "jquery-3.4.1.slim.min.js".

- Codec Preference

The screenshot shows a browser window at localhost:3000/codecpreferences/. On the left, a code editor displays a JavaScript file for 'Codec Preferences' using the 'twilio-video' library. It includes functions for connecting with preferred codecs and creating local video tracks. In the center, a video player titled 'Participant's Media' shows a video feed of a person's face. Below it, a section titled 'Select Codec Preferences' allows setting 'Preferred Audio Codec' to PCMA and 'Preferred Video Codec' to H264. A 'Disconnect from Room' button is present. To the right, the Chrome DevTools Network tab is open, showing network requests for the page. The 'Selected Audio Codec' is opus and 'Selected Video Codec' is H264.

- Share your Screen

The screenshot shows a browser window at localhost:3000/screenshare/. On the left, a code editor displays a JavaScript file for 'Share Your Screen' using the 'twilio-video' library. It includes a function to create a local video track from the user's screen. In the center, a video player titled 'Local Screen' shows a video feed of a terminal window displaying the same code. Below it, a section titled 'Remote Screen' shows another video feed of a terminal window. A 'Stop Screen Capture' button is present. To the right, the Chrome DevTools Network tab is open, showing network requests for the page. The 'Selected Audio Codec' is opus and 'Selected Video Codec' is H264.

- Dominant Screen

The screenshot shows a browser window at localhost:3000/dominantspeaker/. The main content displays a Twilio.js code snippet for connecting to a room with a dominant speaker. Below the code is a participant list with four users: Alice, Charlie, Mak, and Bob. The video feed for Alice is highlighted with a red border. The Network tab in the DevTools panel shows network requests for the page, including fetches for index.css, index.js, and helpers.js, along with signaling and video events.

- Reconnection

The screenshot shows a browser window at localhost:3000/reconnection/. The main content displays a Twilio.js code snippet for handling reconnection events. It includes logic for logging connection errors, attempting reconnection, and updating the room state. The UI shows the 'Room state is:' section with three states: Connected (green), Disconnected (white), and Reconnecting (light blue). Below this is a 'Create Room' button. The Network tab in the DevTools panel shows a single request for a video event, with the initiator listed as 'reconnection'.

- Network Quality

```

    /**
     * Listen to changes in the Network Quality report of a Participant
     * in your application.
     * @param {Participant} participant - The Participant who has joined
     * @param {function} updateNetworkQualityReport - Updates the Network Quality report of the Participant.
     * @returns {void}
     */
    function setupNetworkQualityUpdatesForParticipant(participant) {
      participant.on('networkQualityLevelChanged', function() {
        updateNetworkQualityReport(participant);
      });
    }

    /**
     * Listen to changes in the Network Quality reports and updates
     * @param {Room} room - The Room you just joined
     * @param {function} updateNetworkQualityReport - Updates the Network Quality report of a Participant.
     * @returns {void}
     */
    function setupNetworkQualityUpdates(room, updateNetworkQualityReport) {
      // Listen to changes in Network Quality level of the Local Participant
      setupNetworkQualityUpdatesForParticipant(room.localParticipant);
      // Listen to changes in Network Quality levels of Remote Participants
      room.participants.forEach(function(participant) {
        setupNetworkQualityUpdatesForParticipant(participant);
      });
      // Listen to changes in Network Quality levels of Remote Participants
      room.on('participantConnected', function(participant) {
        setupNetworkQualityUpdatesForParticipant(participant);
      });
    }

    /**
     * Change the local and remote Network Quality verbosity
     * @param {Room} room - The Room you just joined
     * @param {number} localVerbosity - Verbosity level of Network Quality
     */
  
```

Name	Status	Type	Initiator	Size	Time
popper.min.js	200	script	networkquality.js	(memoized)	0 ms
bootstrap.min.js	200	script	networkquality.js	(memoized)	0 ms
prism.css	200	stylesheet	networkquality.js	2.2 kB	6 ms
index.css	200	stylesheet	networkquality.js	2.4 kB	5 ms
index.js	200	script	networkquality.js	1.3 MB	20 ms
css?family=Roboto+Mono:300,400,700,900&display=block&format=woff2	200	stylesheet	localdevfilter.js	(memoized)	0 ms
LOxuDF4xiVMF-BR8bXmIh...	200	font	css	(memoized)	0 ms
helpers.js	200	fetch	index.js:371	3.5 kB	3 ms
token?identity>You	200	fetch	index.js:355	628 B	5 ms
token?identity=Alice	101	websocket	index.js:2345	0 B	Pending
token?identity=Bob	200	fetch	index.js:355	630 B	4 ms
token?identity=Charlie	200	fetch	index.js:355	628 B	5 ms
token?identity=Mak	200	fetch	index.js:355	628 B	6 ms
VideoEvents	101	websocket	index.js:25812	0 B	Pending
VideoEvents	101	websocket	index.js:2345	0 B	Pending
VideoEvents	101	websocket	index.js:25812	0 B	Pending
signaling	101	websocket	index.js:2345	0 B	Pending
signaling	101	websocket	index.js:2345	0 B	Pending

26 requests | 1.4 MB transferred | 1.7 MB resources | Finish: 7.07 s | DOMContentLoaded

Console AI assistance What's new X

What's new in DevTools 134 See all new features

See also the highlights from Chrome 130-132

- Local Media controls

Local Media Controls

Disable Audio Disable Video

RemoteParticipant View

Name	Status	Type	Initiator	Size	Time
prism.css	304	stylesheet	Other	265 B	2 ms
index.css	304	stylesheet	Other	265 B	2 ms
logo-wordmark.svg	(failed)...	image	index.css	0 B	996 ms
VideoEvents	101	websocket	index.js:25693	0 B	Pending

4 requests | 530 B transferred | 4.0 kB resources

Console AI assistance What's new X

What's new in DevTools 134 See all new features

See also the highlights from Chrome 130-132

- **Datatracks**

Data Tracks

```
'use strict';

var Video = require('twilio-video');

/*
 * Connect to the given Room with a LocalDataTrack.
 * @param {string} token - AccessToken for joining the Room
 * @returns {CancelablePromise<Room>}
 */
async function connectToRoomWithDataTrack(token, roomName) {
  const localDataTrack = new Video.LocalDataTrack({
    name: 'chat',
  });

  const room = await Video.connect(token, {
    name: roomName,
    tracks: [localDataTrack],
  });

  return room;
}

/*
 * Send a chat message using the given LocalDataTrack.
 * @param {LocalDataTrack} dataTrack - The {@link LocalDataTrack}
 * @param {string} message - The message to be sent
 */
function sendChatMessage(dataTrack, message) {
  dataTrack.send(message);
}

/*
 * Receive chat messages from RemoteParticipants in the room
 * @param {Room} room - The Room you are currently in
 * @param {Function} onMessageReceived - Updates UI when a message is received
 */
function receiveChatMessages(room, onMessageReceived) {
  room.participants.forEach(function(participant) {
    participant.dataTracks.forEach(function(publication) {
      if (publication.isSubscribed && publication.trackName === message.trackName) {
        publication.track.on('message', function(msg) {
          onMessageReceived(msg);
        });
      }
    });
  });
}

function receiveChatMessages(room, onMessageReceived) {
  room.participants.forEach(function(participant) {
    participant.dataTracks.forEach(function(publication) {
      if (publication.isSubscribed && publication.trackName === message.trackName) {
        publication.track.on('message', function(msg) {
          onMessageReceived(msg);
        });
      }
    });
  });
}
```

P1 **P2**

P2: has connected
P2: hi
P1: hola

Message Message

Submit Submit

Network Tab (DevTools)

Name	Status	Type	Initiator	Size	Time
videoEvents	101	webso...	index.js:25/24	U B	Pending
datatracks/	200	docum...	datatracks	266 B	3 ms
datatracks	304	docum...	Other	(disk c...	Pending
jquery-3.4.1.slim.min.js	200	script	datatracks/277	(memo...	0 ms
popper.min.js	200	script	datatracks/66	(memo...	0 ms
bootstrap.min.js	200	script	datatracks/278	(memo...	0 ms
bootstrap.min.css	200	stylesheet	datatracks/6	(disk c...	3 ms
prism.css	304	stylesheet	datatracks/7	265 B	4 ms
index.css	304	stylesheet	datatracks/8	265 B	4 ms
index.js	304	script	datatracks/64	268 B	5 ms
css?family=Roboto+Mono:3...	200	stylesheet	index.css:1	(memo...	0 ms
helpers.js	304	fetch	index.js:343	265 B	2 ms
LuxDF-4xIVMF-BR8bXMH...	200	font	shared.js:28	(memo...	0 ms
data:image/svg+xml;...	200	svg+xml	shared.js:28	(memo...	0 ms
token?identity=Creative%20...	200	fetch	index.js:327	654 B	3 ms
token?identity=Kindly%20SS...	200	fetch	index.js:327	650 B	3 ms
+> signaling	101	webso...	index.js:23417	0 B	Pending
+> signaling	101	webso...	index.js:23417	0 B	Pending
+> VideoEvents	101	webso...	index.js:25784	0 B	Pending

19 requests | 2.6 kB transferred | 1.7 MB resources | Finish: 2.83 s | DOMContentLoaded

Console AI assistance What's new X

What's new in DevTools 134

See all new features

Cloudinary icon See also the highlights from Chrome 130-132

- **Video Track manual controls**

Video Track Manual Controls

```
'use strict';

var Video = require('twilio-video');

/*
 * Connect to a Room with 'manual' mode. The default mode is 'auto'.
 * @param {string} token - AccessToken for joining the Room
 * @returns {Room}
 */
function joinRoom(token) {
  return Video.connect(token, {
    name: 'my-cool-room',
    bandwidthProfile: {
      video: {
        contentPreferencesMode: 'manual',
        clientTrackSwitchOffControl: 'manual'
      }
    }
  });
}

/*
 * Switch on the RemoteVideoTrack.
 * @param {RemoteVideoTrack} track - The RemoteVideoTrack
 * @returns {RemoteVideoTrack}
 */
function switchOn(track) {
  return track.switchOn();
}

/*
 * Switch off the RemoteVideoTrack.
 * @param {RemoteVideoTrack} track - The RemoteVideoTrack
 * @returns {RemoteVideoTrack}
 */
function switchOff(track) {
  return track.switchOff();
}

/*
 * Set the encoder dimensions of the RemoteVideoTrack
 */

```

Remote Video Controls

Switch Off Control: **Switch On** **Switch Off**

Content Preferences: **1280x720**

Remote Video Track

Video Bitrate

On

2.0k

18:20:00 18:21:00 18:22:00 18:23:00 18:24:00

Network Tab (DevTools)

Name	Status	Type	Initiator	Size	Time
videoEvents	101	webso...	index.js:204/25	U B	Pending
manualrenderhin/	200	docum...	manualrenderhin	4.0 kB	4 ms
manualrenderhin	200	docum...	Other	(disk c...	Pending
bootstrap.min.css	200	stylesheet	manualrenderhin	(memo...	0 ms
jquery-3.4.1.slim.min.js	200	script	manualrenderhin	(memo...	0 ms
popper.min.js	200	script	manualrenderhin	(memo...	0 ms
bootstrap.min.js	200	script	manualrenderhin	(memo...	0 ms
all.css	200	stylesheet	manualrenderhin	(disk c...	8 ms
prism.css	200	stylesheet	manualrenderhin	2.3 kB	8 ms
index.css	200	stylesheet	manualrenderhin	1.9 kB	8 ms
index.js	200	script	manualrenderhin	1.4 kB	18 ms
css?family=Roboto+Mono:3...	200	stylesheet	datatracks/index	(memo...	0 ms
fa-solid-900.wof2	200	font	all.css	(memo...	0 ms
LuxDF-4xIVMF-BR8bXMH...	200	font	css	(memo...	0 ms
helpers.js	200	fetch	index.js:235	1.8 kB	2 ms
token?identity=Lucky%20Ta...	200	fetch	index.js:219	649 B	1 ms
token?identity=Tall%20Dan...	200	fetch	index.js:219	650 B	1 ms
+> signaling	101	webso...	index.js:24058	0 B	Pending
+> signaling	101	webso...	index.js:24058	0 B	Pending

20 requests | 1.4 MB transferred | 1.8 MB resources | Finish: 84 ms | DOMContentLoaded

Console AI assistance What's new X

What's new in DevTools 134

See all new features

Cloudinary icon See also the highlights from Chrome 130-132

- Video Track Automatic Controls

The screenshot shows a browser window with the URL `localhost:3000/autorenderhint/`. On the left, there is a code editor displaying a JavaScript file titled "Video Track Automatic Controls". The code uses the Twilio Video API to connect to a room named "my-cool-room" with an auto bandwidth profile. It includes comments explaining the connection parameters and the return value of the `joinRoom` function.

On the right, there are several UI components:

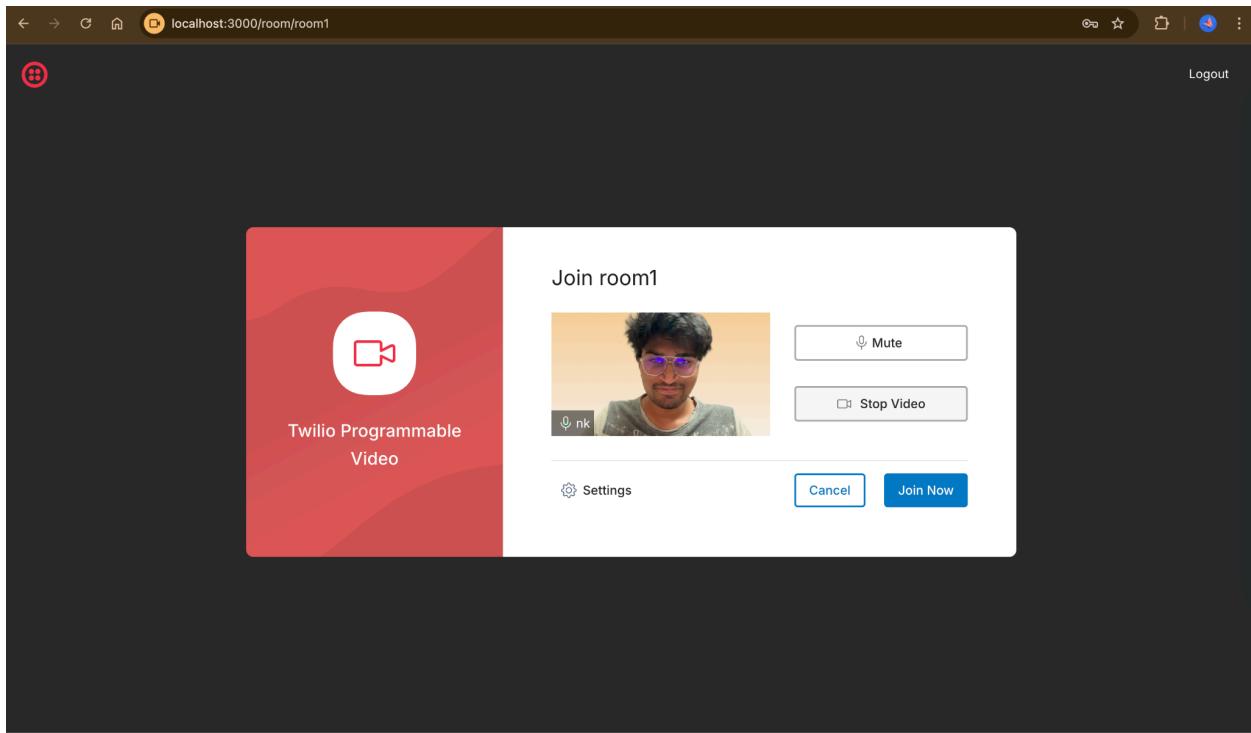
- Remote Video Controls**: Buttons for "Toggle Visibility" (Show, Hide) and "Video Size" (176x144).
- Remote Video Track**: A video preview of a person's face with a green "On" button.
- Video Bitrate**: A line graph showing video bitrate over time, with a sharp peak around 18:25:00.
- Network Tab**: A detailed view of network traffic. It lists 20 requests, including files like `bootstrap.min.css`, `jquery-3.4.1.slim.min.js`, and various Twilio helper scripts. The total transfer size is 1.4 MB and the total resource count is 1.8 MB.

DEMO APP

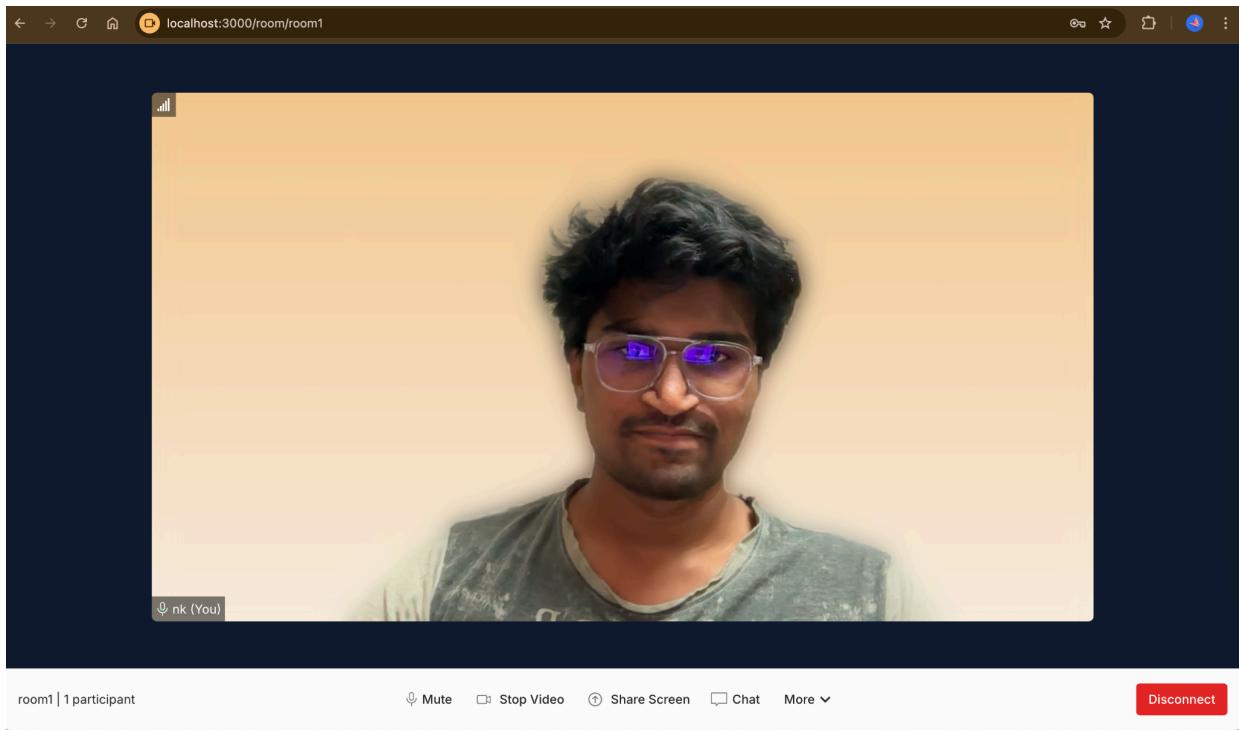
Below are the screenshots of the React Demo App.

The screenshot shows a dark-themed web application interface. On the left, there is a red decorative panel with a white video camera icon and the text "Twilio Programmable Video". On the right, a modal dialog is open with the title "Join a Room". Inside the modal, there is a form with two input fields: "Your Name" and "Room Name", and a "Continue" button. Above the form, there is a placeholder text: "Enter your name and the name of a room you'd like to join". In the top right corner of the main window, there is a "Logout" link.

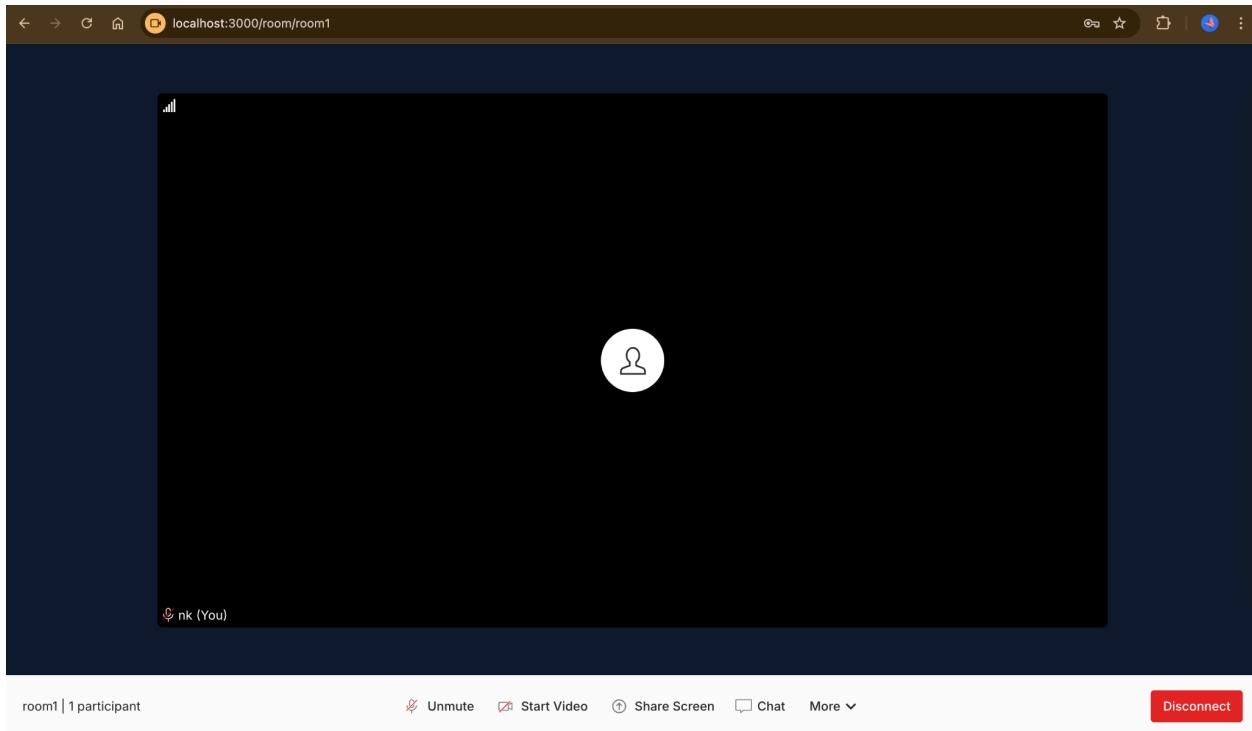
We can enter our username and the room name to enter a room . So when a room name is entered, it is checked if there is already a room in that name and allows us to join it,if we are properly validated. Otherwise , a new room is created with that room name .



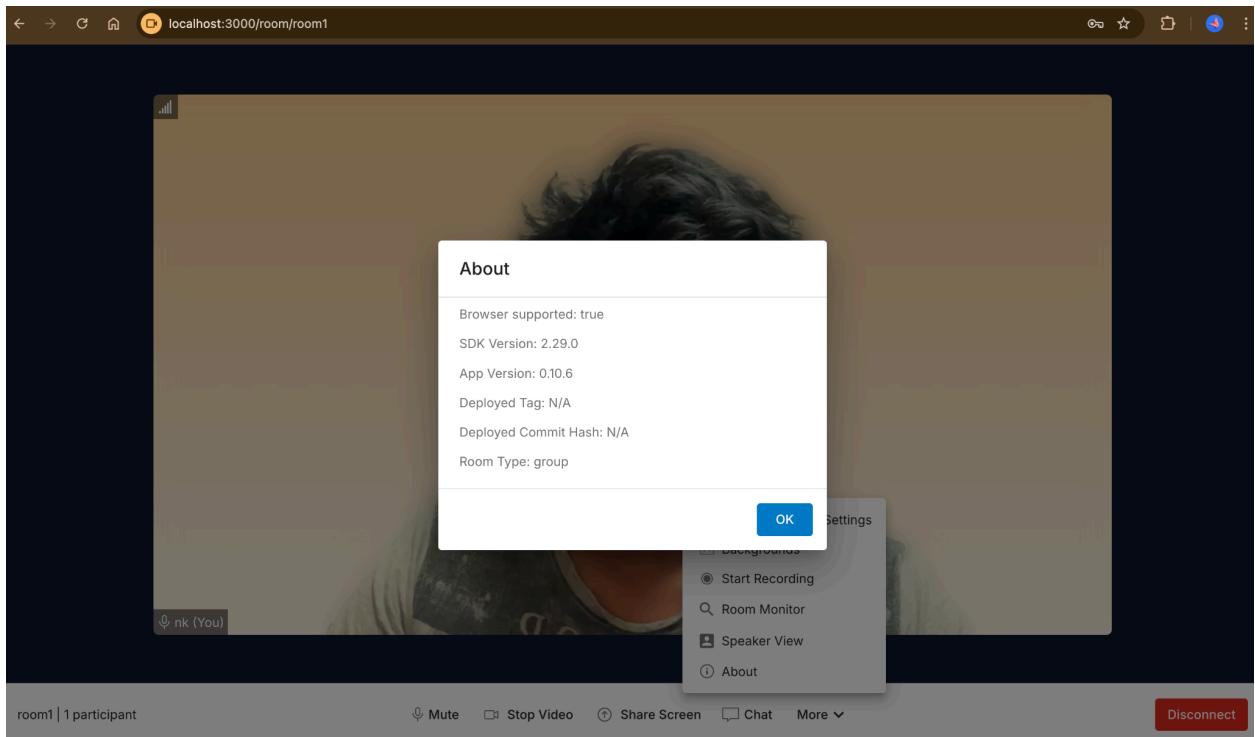
After entering the room name , we can check our camera and mic details prior to joining the room. We can also alter the settings here.



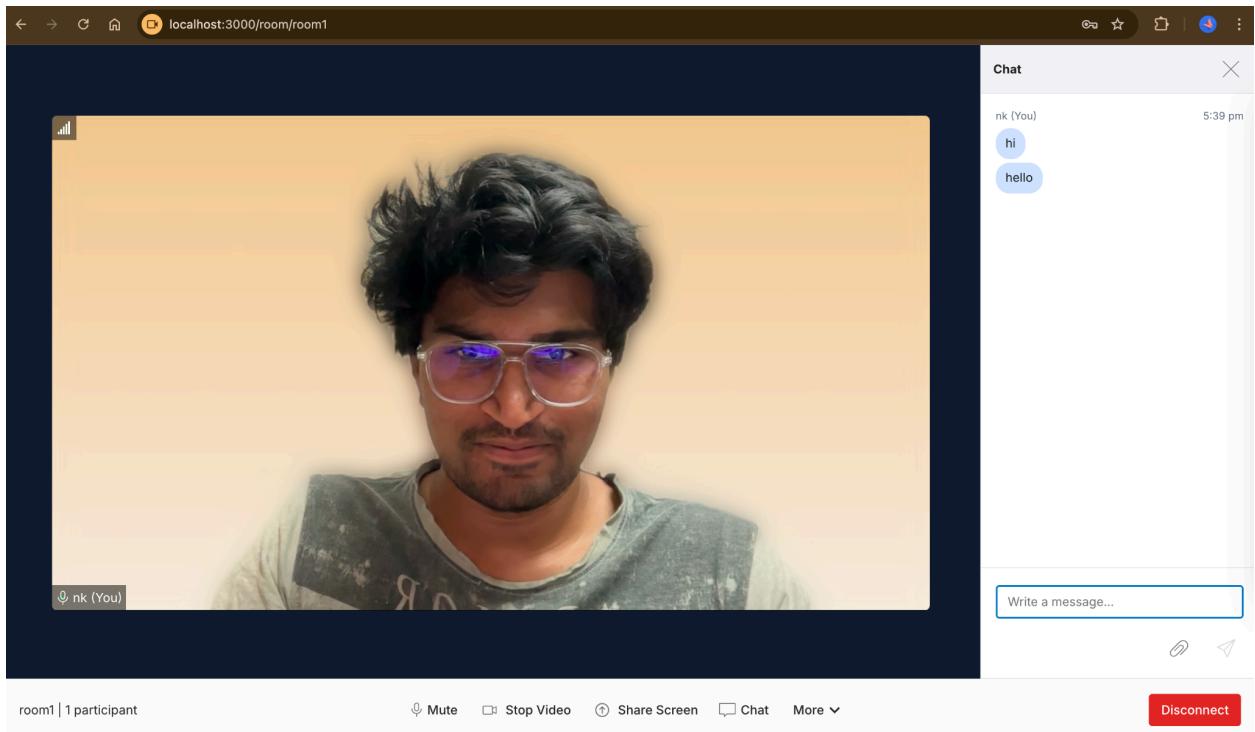
After entering the room we can find various options like Mute/Unmute, to show video or not, Share Screen , Chat , and other settings.



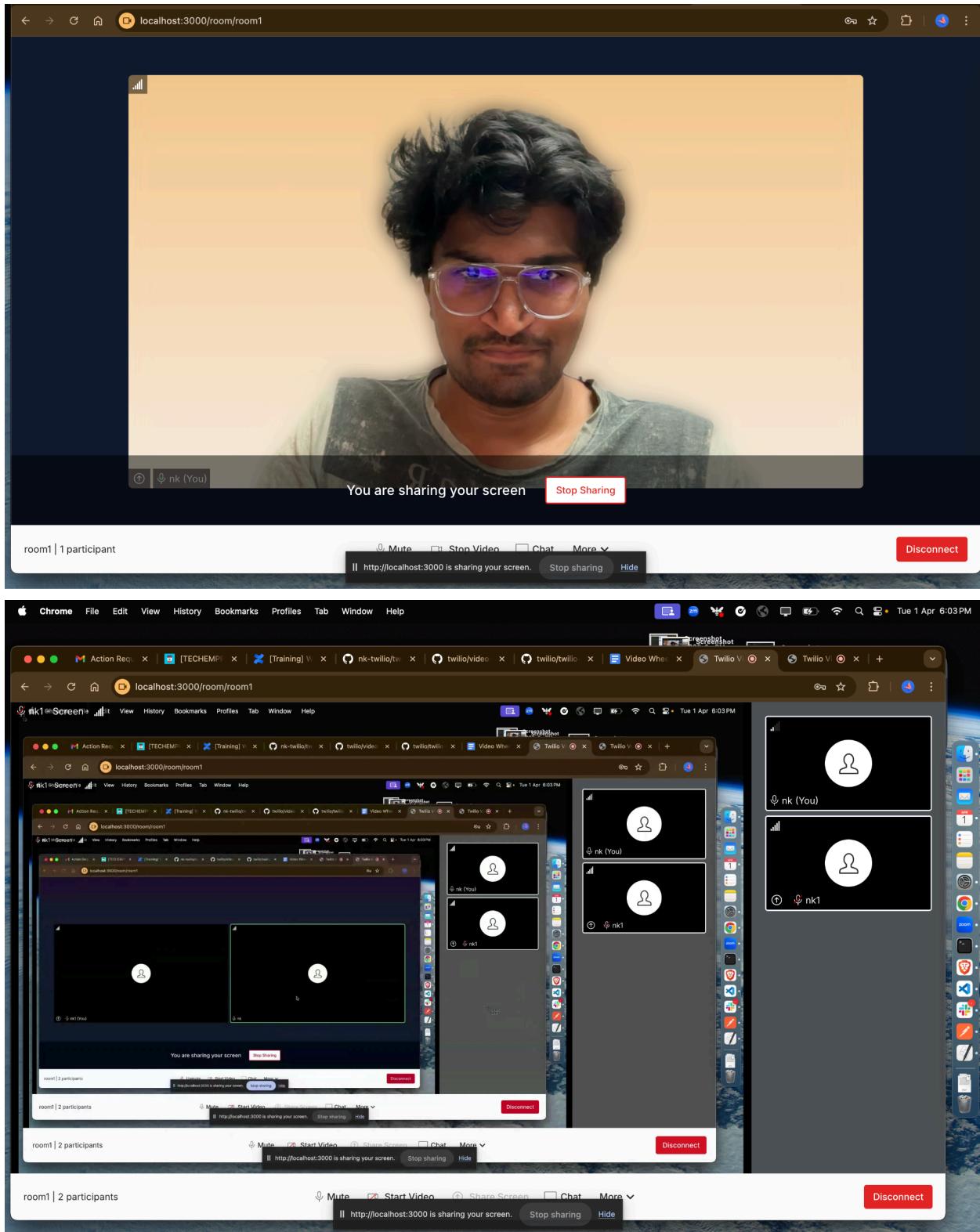
This is the view when we mute ourselves and stop video.



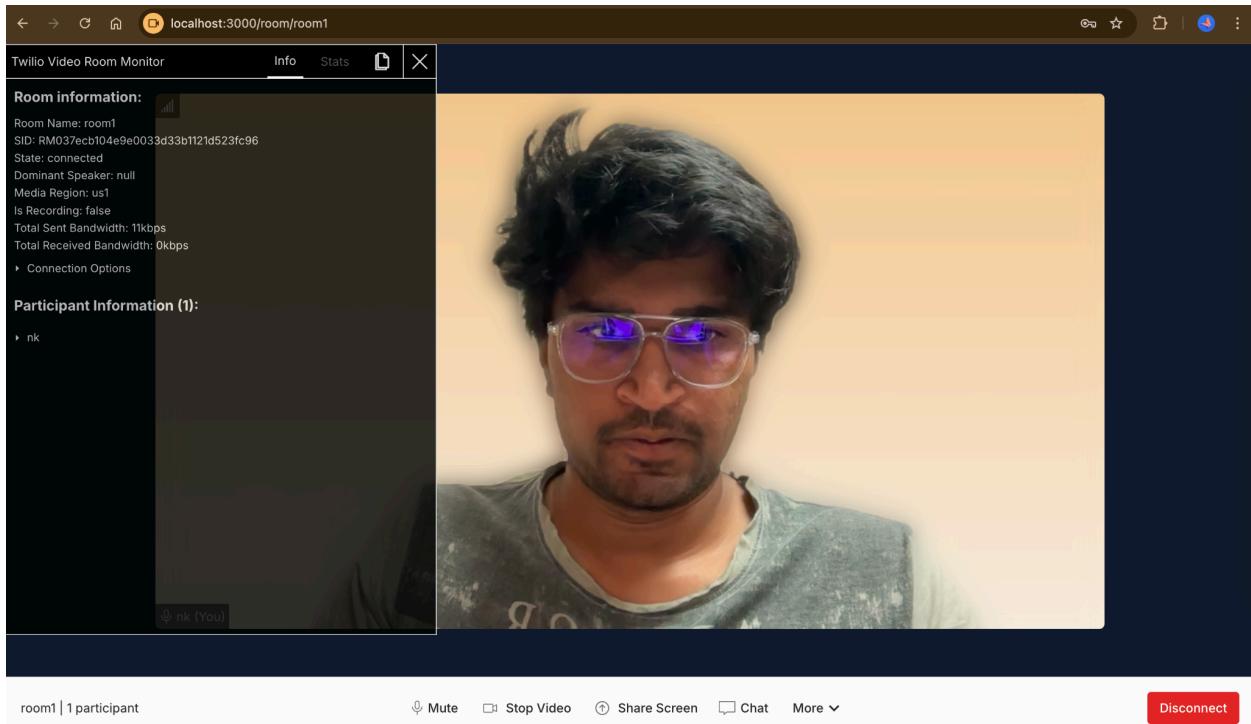
In More Settings we can find About option which details us about Browser, App and SDK versions.



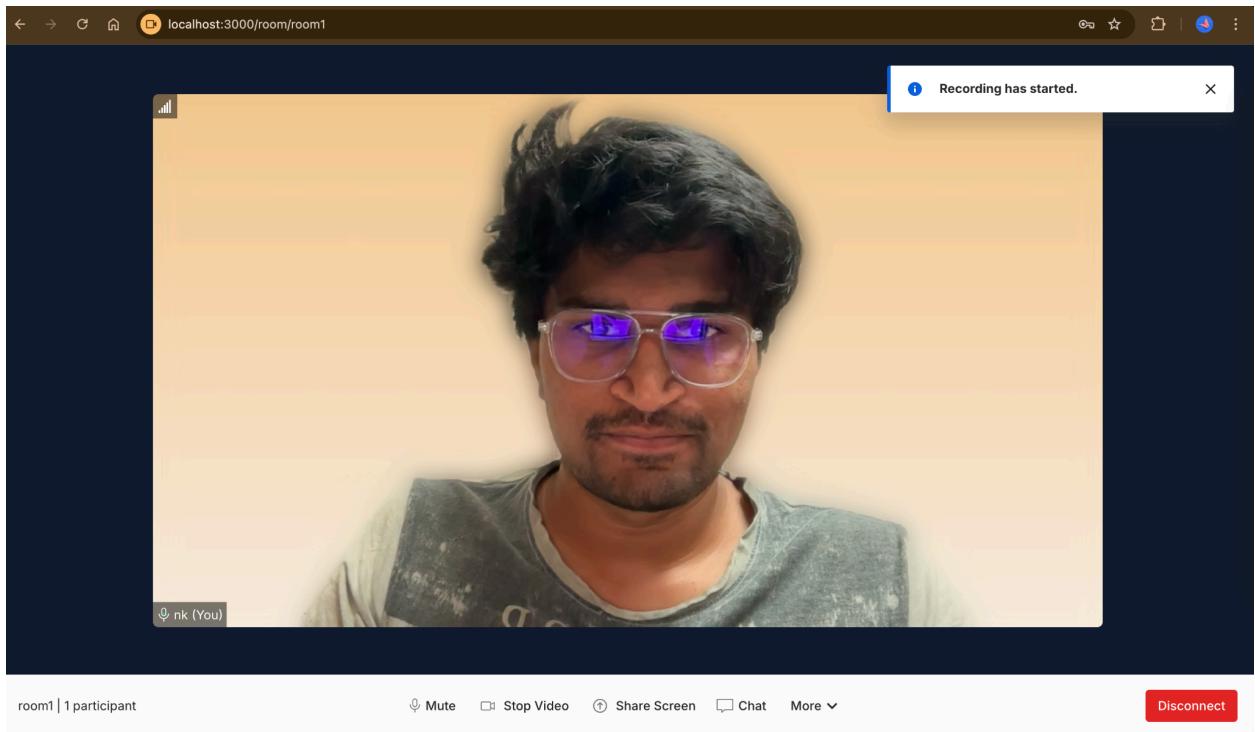
This is a view where we can chat in our room . To enable this we have to add a conversation SID to our environment variables.



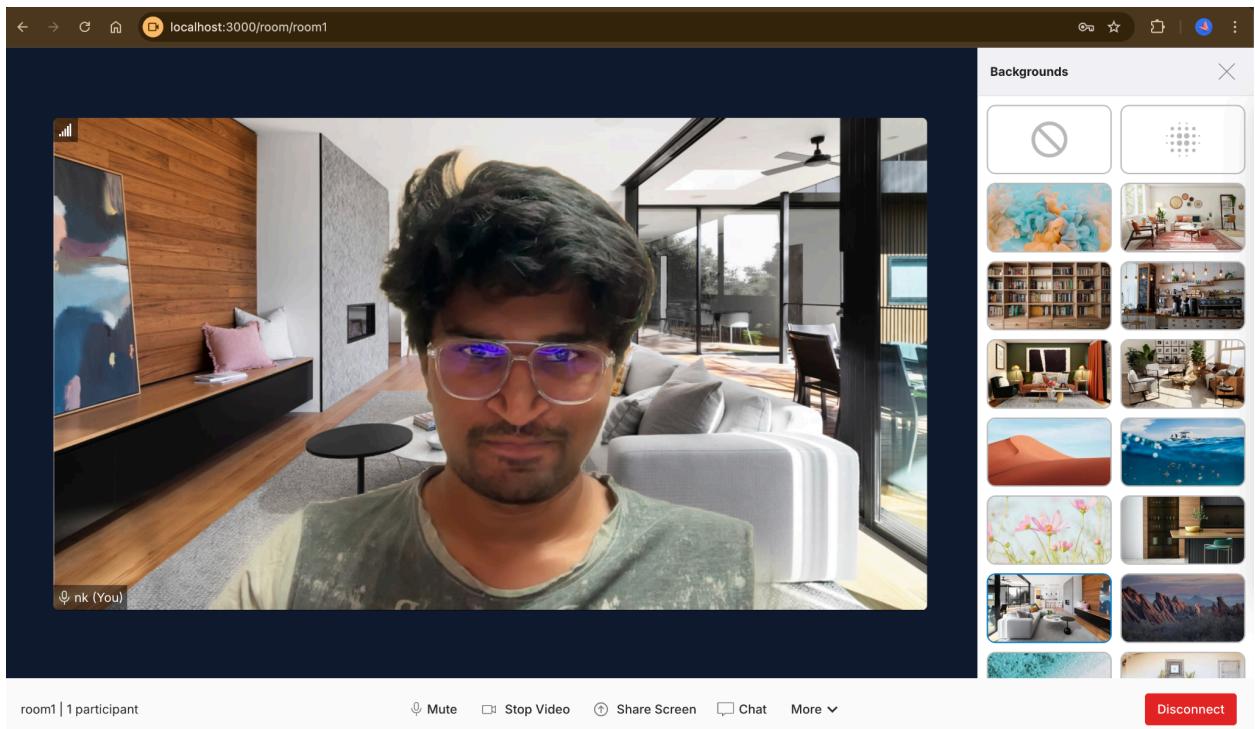
These are few views from when we Share our screen .



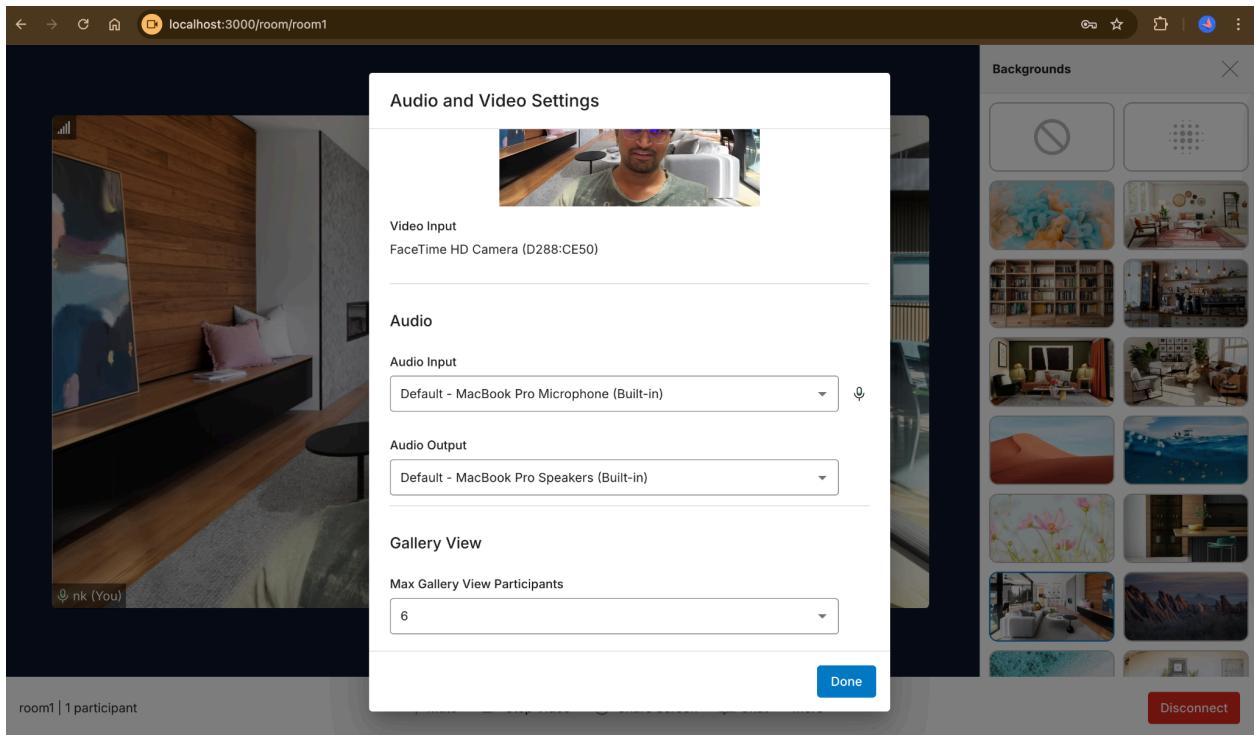
This is the view when we choose the option to show the room Monitor in More Settings Option. Here we can find the room Name, SID, connection status and few more details about the current room .



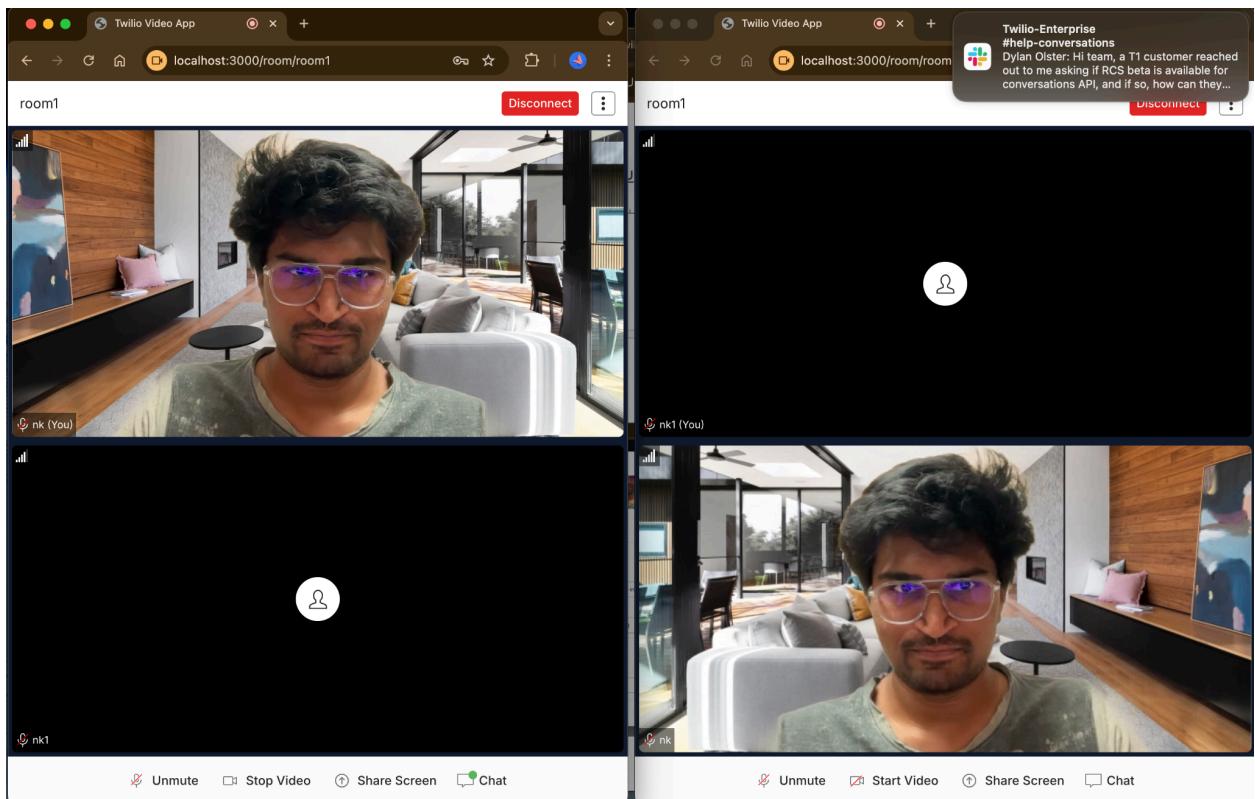
This is the view when we record our room meeting.



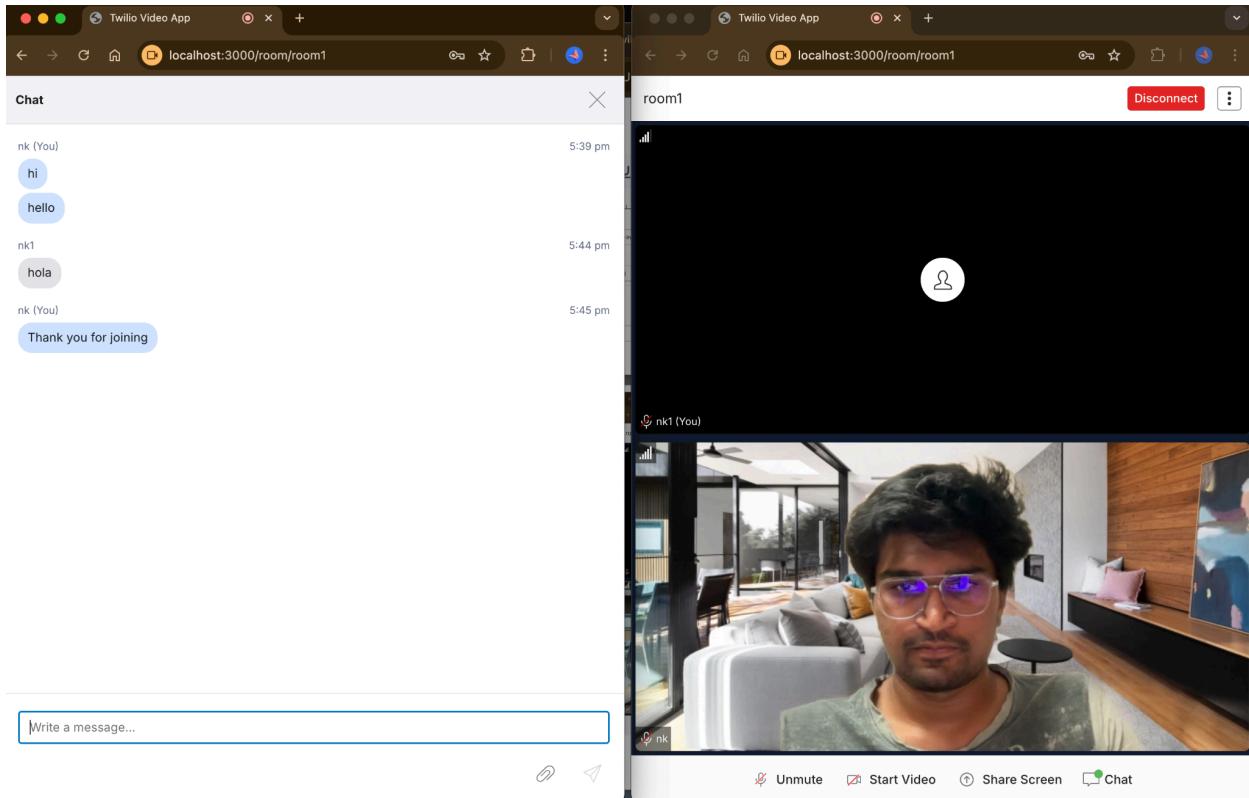
This is the view where we can change the background image of our room .



This is the view where we can change the audio and video settings and also set max gallery view participants .



This is the view where I joined in the meet through another tab in the same room to demonstrate multi participant view in a room and we can also change the view to speaker view alone in more settings option



This is the view of the chat option with multiple participants in a room .

Room SID - RM2583deecba749ffec5f6dfd07eb2c969,

RM037ecb104e9e0033d33b1121d523fc96

← → ⌛ ⌂ console.twilio.com/us1/monitor/insights/video/video-rooms/RM2583deecba749ffec5f6dfd07eb2c969/participants

Twilio Home My first Twilio account ▾ Jump to... Admin ▾

Account Dashboard Develop Monitor

Logs Insights Audit Billing Usage Voice Video

Dashboard Rooms

Messages Messaging Intelligence Beta Verify Alarms

Room summary

About Issues Participants

2 total participants.

Name and SID	Issues	Tracks	Operating system	Browser	Participant duration	End reason
nk PA9fca519d967c55c171d8373f235b9231	0	Video: 1 Audio: 1 Data: 0	Mac OS (10.15.7)	Chrome (134.0.0.0)	00:10:48	disconnected_via_api
nk1 PAe9b1e81328c6467588166c68f8dcc771	0	Video: 1 Audio: 1 Data: 0	Mac OS (10.15.7)	Chrome (134.0.0.0)	00:05:54	disconnected_via_api