In a P2P

- Room Participants exchange media directly
- Media is encrypted end-to-end (E2E) using WebRTC security protocols.
- Twilio does not mediate in the media exchange, which takes place through direct communication among Participants.
- The only exception is when media exchange requires TURN.
- As Twilio does not intercept the media in P2P Rooms, it is not possible to record or to transcode the media or to make it interoperate with other RTC services.

Despite not being in the media path, Twilio manages the signaling path making it possible for Participants to discover each other, and to negotiate the communications in agreement with the application, and SDK requirements. Hence, signaling connectivity to Twilio's cloud is still necessary.

As seen in the P2P Room, clients need to send their media streams once per subscriber.
As a result, upstream bandwidth (and typically battery consumption) scales as n-1, where n is the number of Participants.
Because of this, P2P Rooms do not scale well with n.

In Group Room

- In a Group Room, Participants exchange media directly through Twilio.
- Participants publish media to a Twilio Selective Forwarding Unit (SFU).
- An SFU is a Media Server that decrypts the media, processes, re-encrypts, and routes the media tracks to the correct destinations.As a result, media is not E2E encrypted as the SFU keeps media unencrypted in memory, to process it.
- As Twilio acts as media middleware, Group Rooms can provide services such as recordings and public switched telephone network (PSTN) interoperability.

Group Room clients only need to publish their media tracks once to the SFU, which clones and routes the media to the correct subscribers.
Because of this, upstream bandwidth and battery consumption are independent of the number of Participants.