WebRTC on Urbit

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Black River Software

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What is WebRTC?

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Video calls in the browser!

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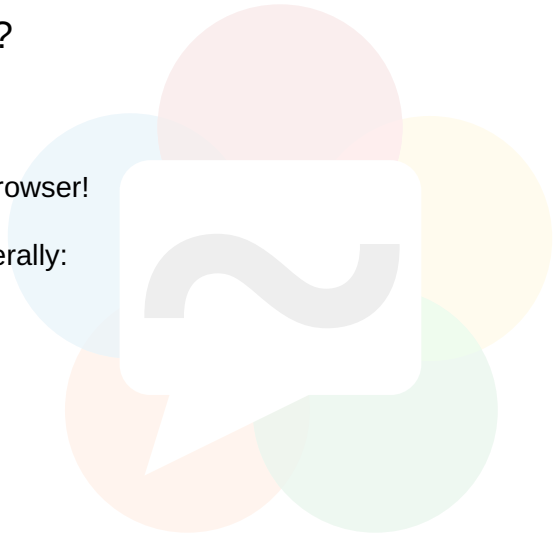
Yes. But more generally:



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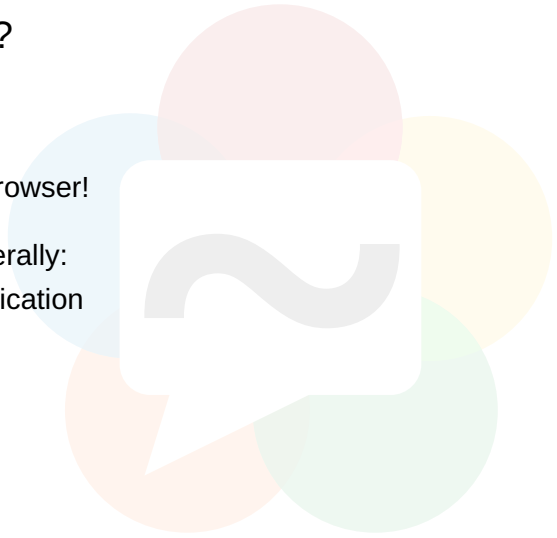

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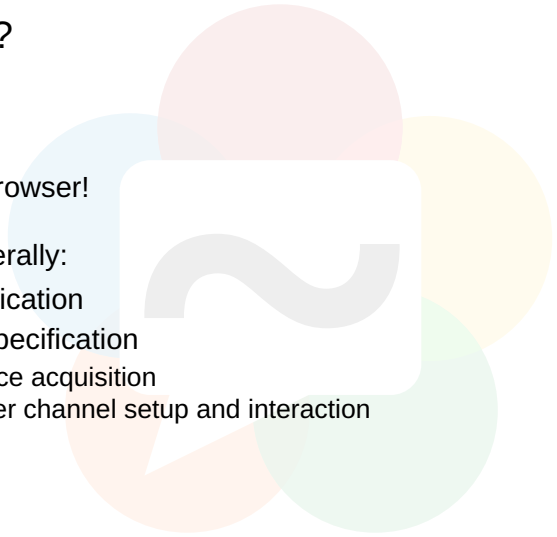

Video calls in the browser!

Yes. But more generally:

- Protocol specification
- Browser API specification
  - Media device acquisition
  - Peer-to-peer channel setup and interaction

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You will need:

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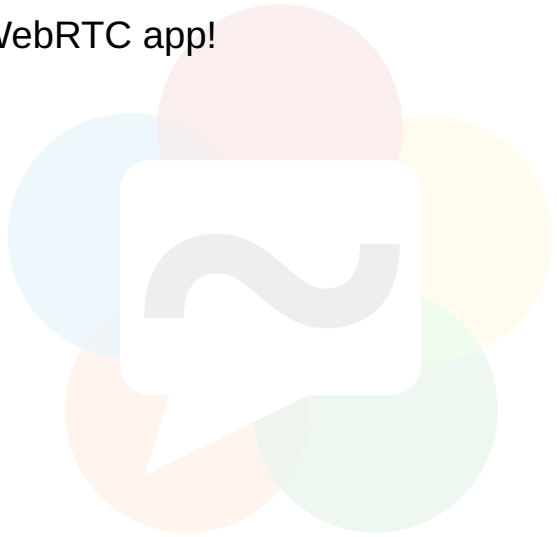
- ICE servers



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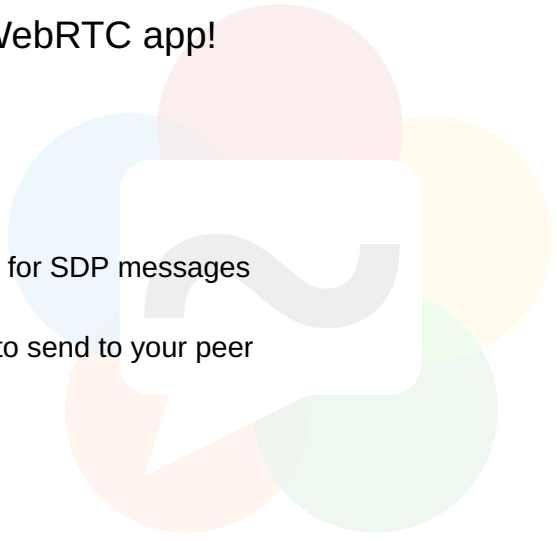

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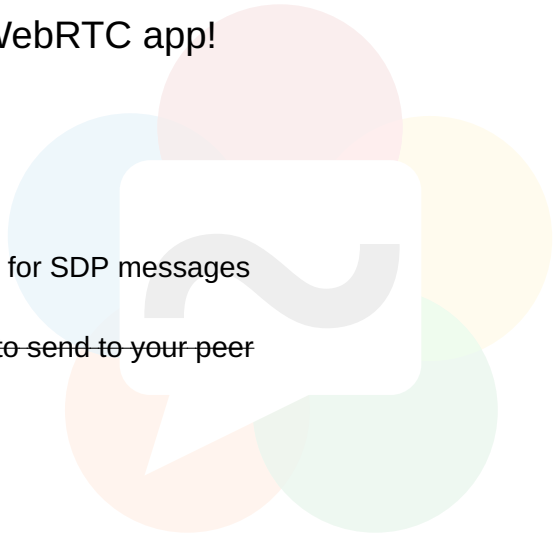

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Given these, `RTCPeerConnection` provides:

- Data channels
- Media stream transit

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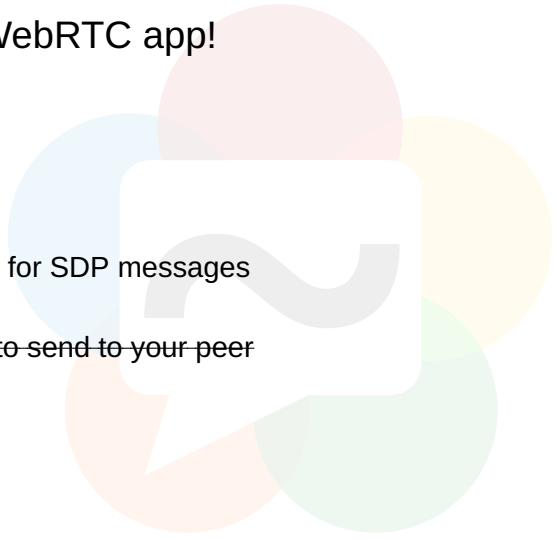

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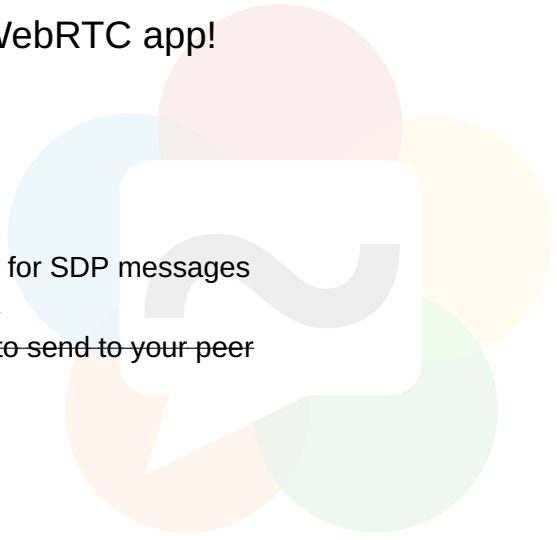

ICE Servers: STUN and TURN

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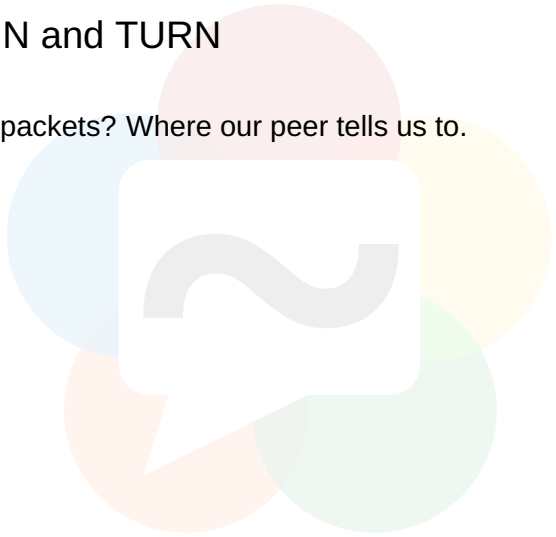

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An ICE Server is either a STUN server or a TURN server.

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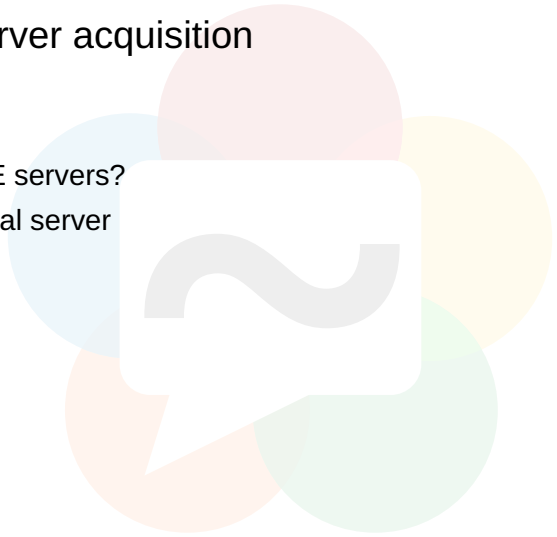

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For instance, stars may well include ICE servers in the infrastructure they provide to sponsored planets.

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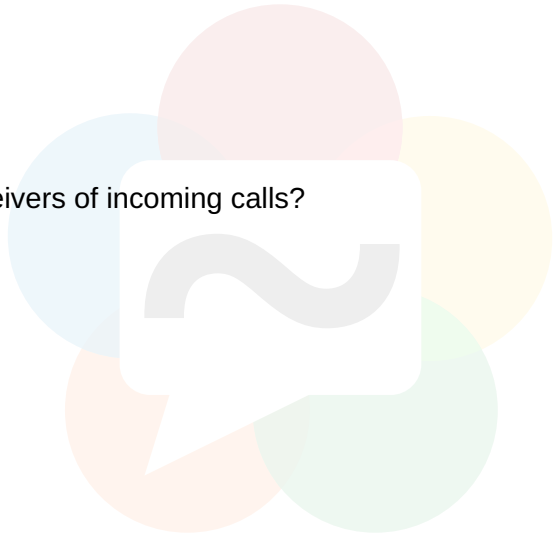

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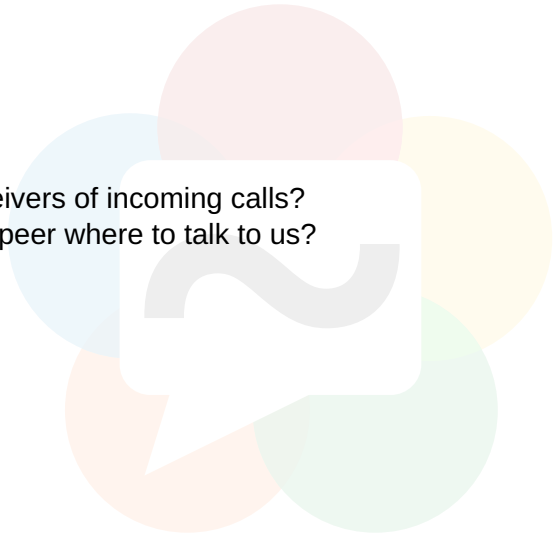

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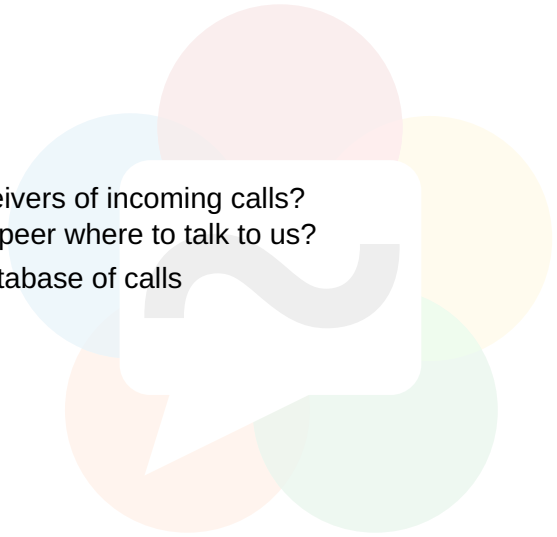

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My app ⟷ my `switchboard` ⟷ your `switchboard` ⟷ Your app

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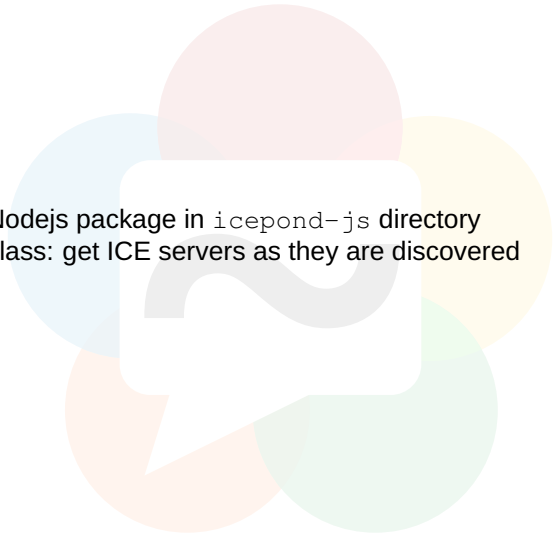

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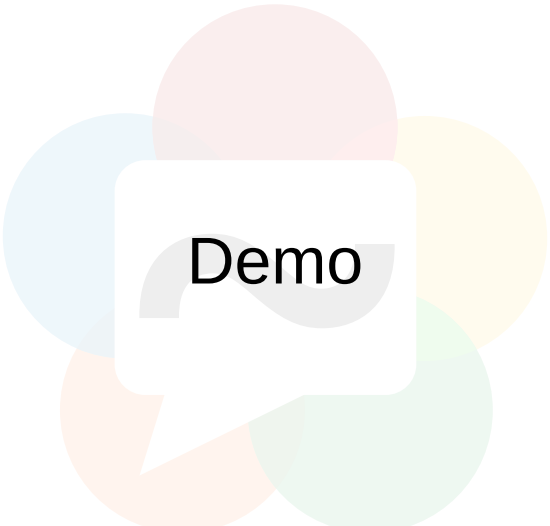
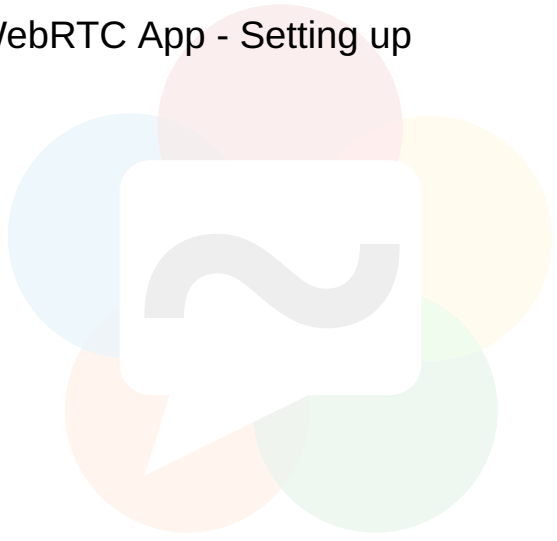
  - `UrbitRTCPeerConnection` class: `RTCPeerConnection` with SDP signalling implemented over Urbit


Demo

Writing an Urbit WebRTC App - Setting up



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- Call `initialize()`

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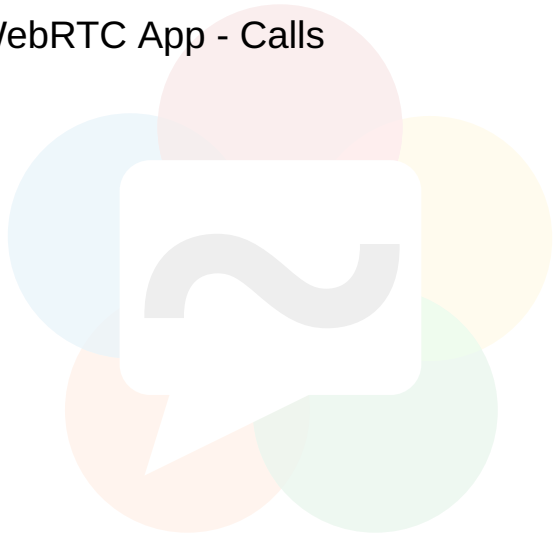

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- Call `initialize()` on both the `Icepond` instance and the peer connection.

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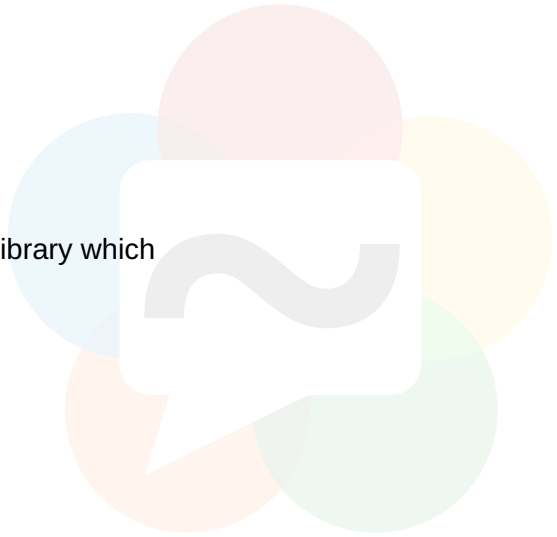

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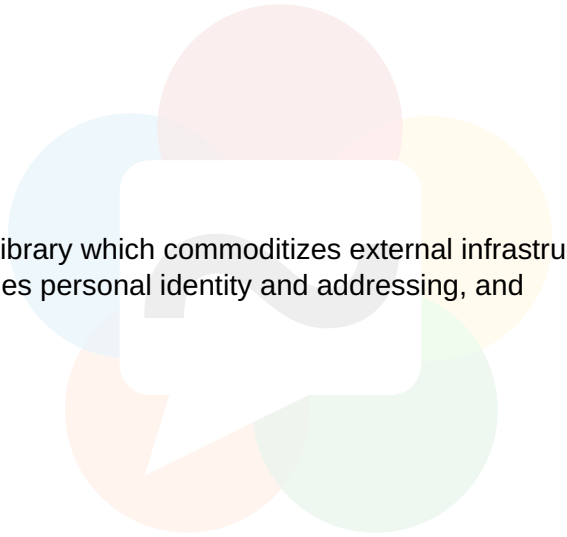

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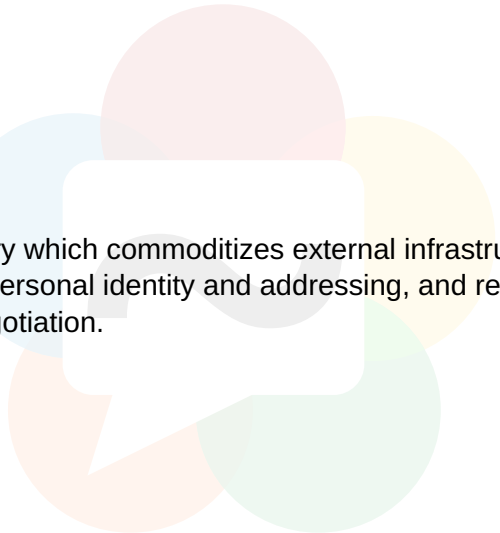

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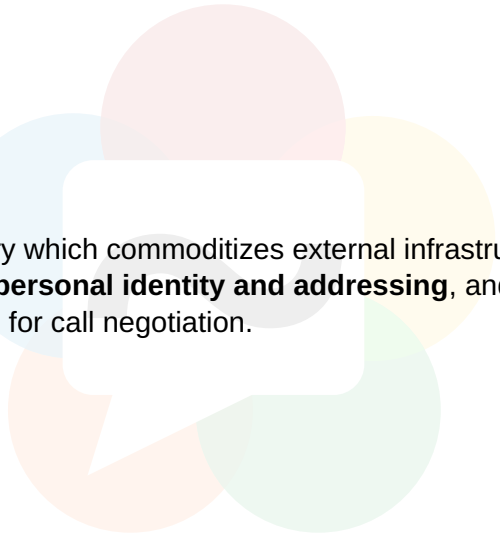

This is a WebRTC library which commoditizes external infrastructure dependencies, **unifies personal identity and addressing**, and removes centralized coordination for call negotiation.


Questions

Links

- Repository: `https://github.com/black-river-software/urbit-webrtc`
- Clay desk: `~dirpub-ritpub-sipsyl %webrtc`