WebRTC

Globant
we are ready

Who I am

UI Engineer
globant, current role

C++, PHP, Javascript
developer

github.com/krosti
repo

What I will talk about

- Goals for WebRTC
- Architecture layers and their context
- Security in context
- Data transport
- Interfaces
- WebRTC APIs

What I will NOT talk about

implementation details....

Goals for WebRTC

- Enable Realtime Communication between browsers.
  - No plugins. Intended to be in standard browser
  - No relays required (but relays possible)
  - Real time = 100ms timescale; "interactive"
  - Media = Audio, Video and "other stuff"

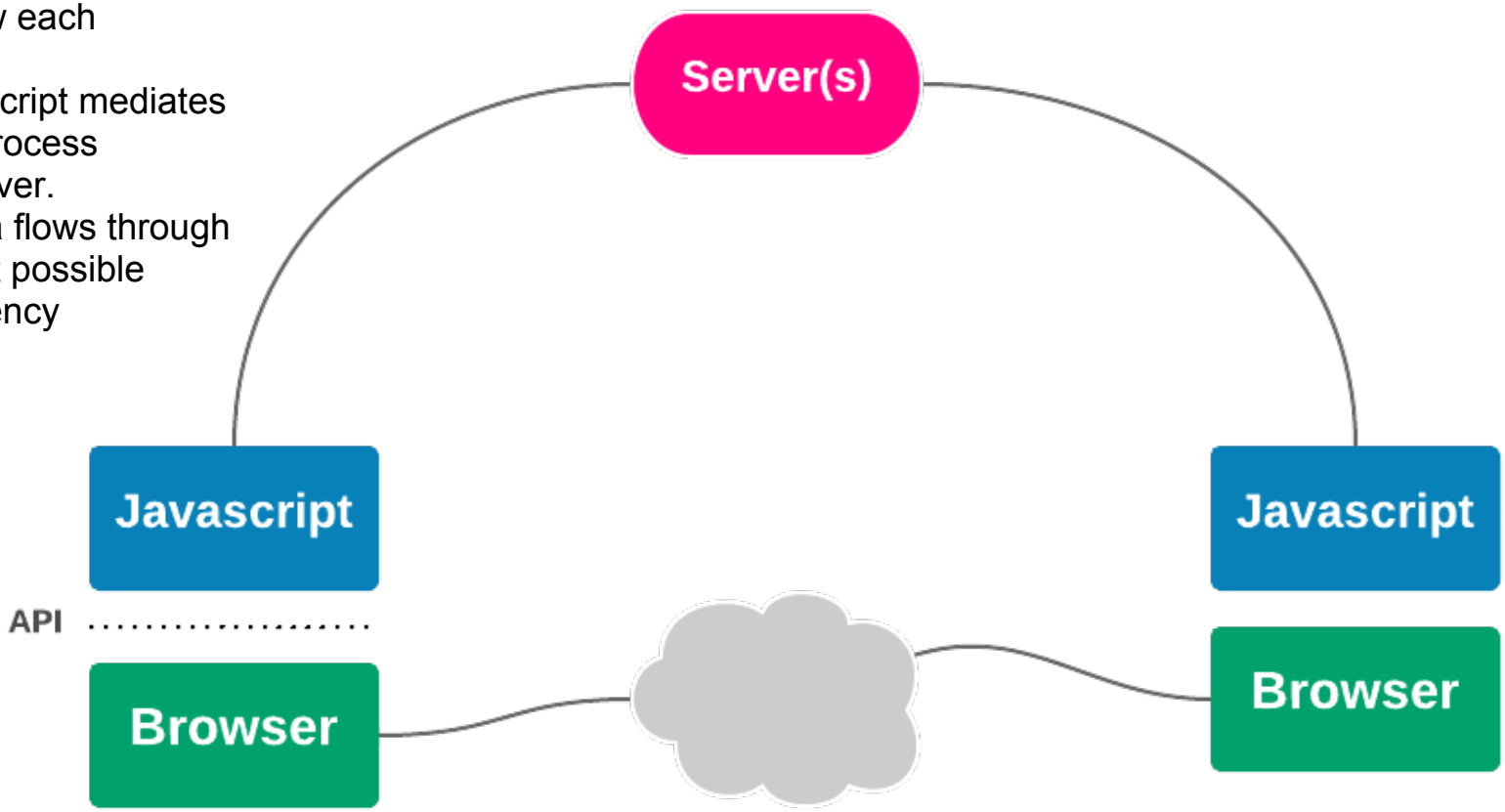
- Drive the design by use cases
  - We expect real world use to be **innovative, different**.
  - Use cases ambition is: "at least this should be possible"

(*1) Backbone: BackboneJS + RequireJS + Handlebars + SASS + Foundation + jQuery + Jasmine + Grunt + i18n plugin

Architecture

Javascript + Browsers

- At startup, browsers do not know each other
- Javascript mediates the setup process through server.
- Media flows through the shortest possible path for latency



Architecture Layer

- Data transport
  - Data path establishment: NAT (network address translation) traversal using ICE
  - Transmission: UDP (TCP backup)
  - Congestion management
- Data encapsulation
  - RTP (real time transport-protocol)
  - Some non-RTP method for non-media data
- Data formats
  - Codec choices go here
- Connection management / signaling
- Presentation and control
- Local system support functions

Security in context

- All components (except the WebRTC implementing browser) must be assumed evil.

- Browser that executes JS using WebRTC is responsible for both its own security and that of victims it can reach (such as other tabs in the same browser, or other devices on the same LAN).

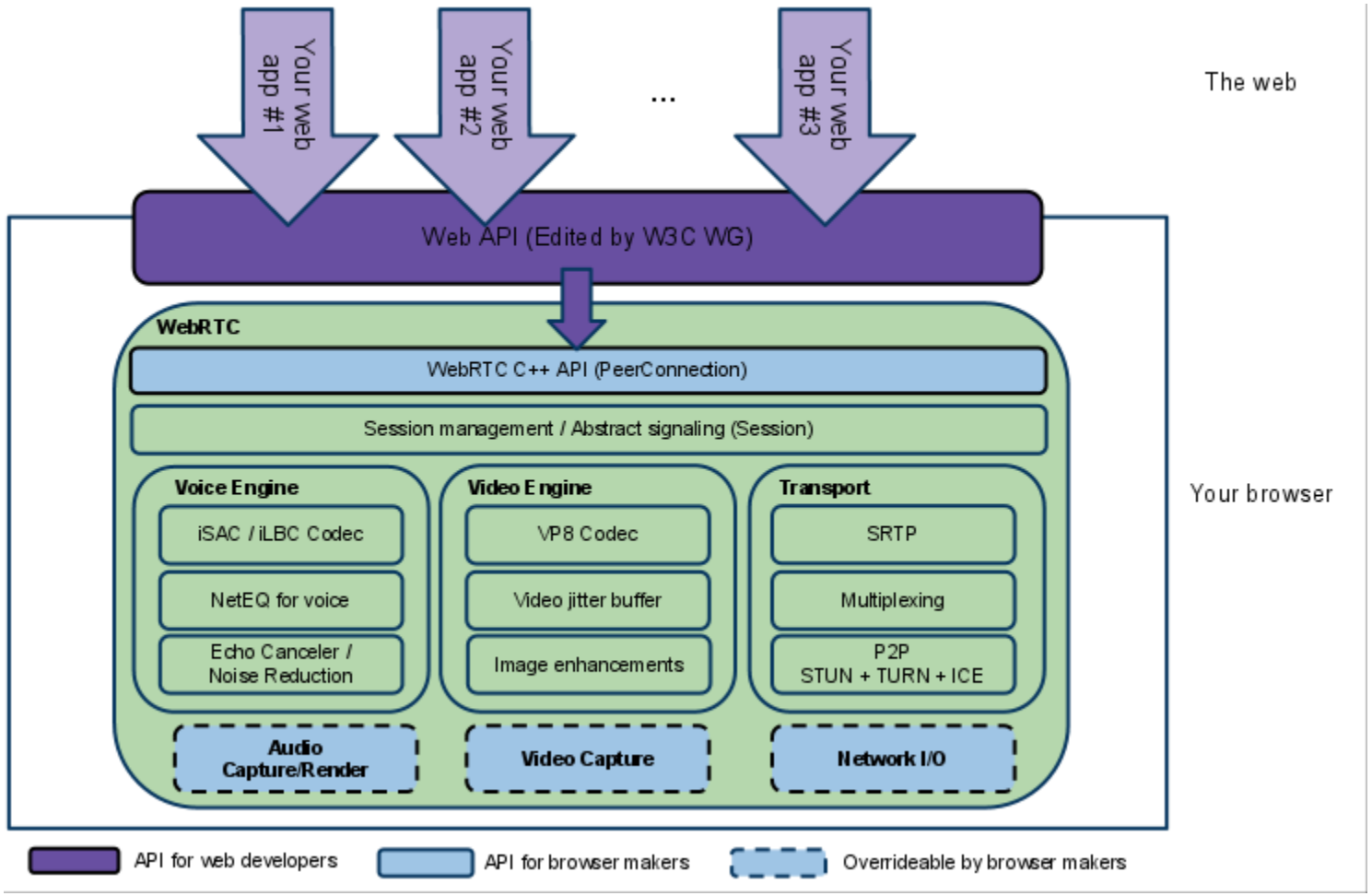
- Keep trust to a minimum

Interfaces

- <Video> tag and friends
  - Needs to connect to a MediaStream
  - Also connect canvas, WebGL...

- Audio interfaces
  - Advanced Audio APIs exist, not universally adopted

WebRTC APIs



Thank you!

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