

Statistics in WebRTC

Status per Nov 2013

Main API definition

- GetStats()
- Returns a set of items, each of which has
 - Type
 - Timestamp
 - Identifier
 - A flexible set of key/value pairs
- Stable over the last 6 months

Stats Objects and Variables

- Objects have a type, a typename and an ID
 - Example: RtcInboundRtpStreamStats has name “inboundrtp”, and may have id “ssrc-2453”
- Objects contain name-value pairs
 - Name set by specification - always DOMString
 - Value type set by specification
 - Example: packetsReceived - a “long”

Defining New Stats Items

- Intention: Spec should contain a starting set
- New types and new values should be added based on experience
- IANA registry envisioned
 - Expired draft-alvestrand-rtcweb-stats-registry
 - Suggested expert review as gating mechanism

Stats Defined

- MediaStream, MediaStreamTrack objects
- SSRC-related objects - both remote and local
- Transports
 - Contain SSRCs, ICE address pairs

Implementation status

- Chrome
 - Not enforcing strict IDL
 - Using strings for all values returned
 - Lots of “goog”-prefixed types and values
 - `chrome://webrtc-internals`
- Firefox
 - IDL compiled
 - First stats have landed in nightly

Issues found in practical usage

- Gathering stats takes time.
 - Useful on a 5-second basis. Not so good on a 0.1-second basis.
- Defining good stats requires knowing why you're gathering them
 - Since usage evolves, this argues for much flexibility, and encouraging experimentation
 - All “goog” stats should be taken as experimentation

Issue: Personally Identifiable Info

- Some stats may reveal sensitive info
 - Candidates contain IP addresses
 - Certificates may contain names
- Some of this can't be hidden
 - Public IP addresses are visible to any Web server
 - A call facilitator will know who he connects
- How do we evaluate the tradeoff between debuggability and information hiding?

Questions to address

- How do we know which stats to define?
 - Add them all, see what sticks?
 - Add those that we know we need only?
- Do we need other paths than the PC GetStats call?
 - Volume on a MediaStreamTrack is a classic by now
 - Non-PC usages: do we need stats?
- Are the current specs right?
 - and when do we regard them as “stable”?