

WEBTRANS WG

IETF 120

Hybrid Meeting

Thursday, July 25, 2024

15:00 - 16:30 Pacific Time

Session III

Georgia B

Mailing list: webtransport@ietf.org

MeetEcho: <https://meetecho-or.ietf.org/client/?session=33018>

Notes: <https://notes.ietf.org/notes-ietf-120-webtrans>

IETF 120 Meeting Tips

In-person participants





- Make sure to sign into the session using Meetecho (usually the “Onsite tool” client) from the Datatracker agenda
- Use Meetecho to join the mic queue
- *Keep audio and video off if not using the onsite version*



Remote participants

- Make sure your audio and video are off unless you are chairing or presenting during a session
- Use of a headset is strongly recommended

IETF 120 Remote Meeting Tips

- Enter the queue with , leave with 
- When you are called on, you need to enable your audio to be heard.
- Audio is enabled by unmuting  and disabled by muting 
- Video can also be enabled, but it is separate from audio.
- Video is encouraged to help comprehension but not required.

Resources for IETF 120

- Information about IETF 120
<https://www.ietf.org/how/meetings/120>
- Agenda
<https://datatracker.ietf.org/meeting/agenda>
- If you need technical assistance, see the Reporting Issues page:
<http://www.ietf.org/how/meetings/issues/>

Note well

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct. It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

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- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- [BCP 9](#) (Internet Standards Process)
- [BCP 25](#) (Working Group processes)
- [BCP 25](#) (Anti-Harassment Procedures)
- [BCP 54](#) (Code of Conduct)
- [BCP 78](#) (Copyright)
- [BCP 79](#) (Patents, Participation)
- <https://www.ietf.org/privacy-policy/>(Privacy Policy)

Note really well

- IETF meetings, virtual meetings, and mailing lists are intended for professional collaboration and networking, as defined in the [IETF Guidelines for Conduct](#) (RFC 7154), the [IETF Anti-Harassment Policy](#), and the [IETF Anti-Harassment Procedures](#) (RFC 7776). If you have any concerns about observed behavior, please talk to the [Ombudsteam](#), who are available if you need to confidentially raise concerns about harassment or other conduct in the IETF.
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- If you believe you have been harassed, notice that someone else is being harassed, or have any other concerns, you are encouraged to raise your concern in confidence with one of the Ombudspersons.

About this meeting



- Agenda:
<https://datatracker.ietf.org/doc/agenda-120-webtrans/>
- Notes: <https://notes.ietf.org/notes-ietf-120-webtrans>
- WG Chairs: Bernard Aboba & David Schinazi
- Zulip Scribe: David Schinazi
- Note Takers: ?

Agenda



- Preliminaries, Chairs (15 minutes)
 - Note Well(s), Note Takers, Participation hints
 - Agenda Bash
- W3C WebTransport Update, Will Law & Jan-Ivar Bruaroey , (15 minutes)
- WebTransport over HTTP/2, Eric Kinnear (25 minutes)
 - <https://datatracker.ietf.org/doc/html/draft-ietf-webtrans-http2>
- WebTransport over HTTP/3, Victor Vasiliev (25 minutes)
 - <https://datatracker.ietf.org/doc/html/draft-ietf-webtrans-http3>
- Wrap up and Summary, Chairs & ADs (10 minutes)

W3C WebTransport Update (1 of 6)

W3C WebTransport WG progress since March 18, 2023

- **Status:** Published a [Working Draft](#) - latest version June 4th. 2024
- **Charter** current [charter](#) was extended to 31 August 2024. We will renew & extend (by two years) charter as necessary to complete work.
- **Timetable** for year
 - October, 2024: Candidate for Recommendation - requires stability in API
 - December 2024: Proposed Recommendation - requires two independent implementations per our charter.
 - January 2025: Call for Review of a Proposed Recommendation
 - February 2025: Publication by W3C as a Recommendation after AC review
- **Milestone** status
 - [Candidate Recommendation](#) (88% complete, 7 open (5 ready-for-PR), 53 closed)
- [Annual TPAC meeting](#) will be held 23-27 Sept 2024 in Anaheim. We have 14:00 - 16:00 PST on Tuesday 24 September.

W3C WebTransport Update (2 of 6)

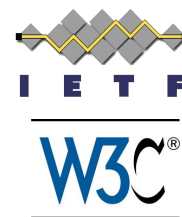
Major decisions and updates since last IETF report (March 18, 2023):

- **Add note about retransmissions and send order #595** - Ordering of retransmissions is implementation-defined, but user agents are *strongly encouraged to prioritize retransmissions of data with higher SendOrder values*.
- **Support relative URLs. #599** - nuff said. Matches WebSocket update.

```
const wt = new WebTransport("mywebtransport/myserver");
```

- **Give datagrams priority over streams but don't starve them #604** - sending datagrams should be given priority over sending streams, but not to the point of blocking the stream flow completely. The definition of 'don't starve them' is left up to the UA implementation.

W3C WebTransport Update (3 of 6)



Browser support as of July 2024



Safari is coming along:

ID	Product	Comp	Assignee	Status	Resolution	Summary	Changed
63412	WebKit	JavaScri	oliver@apple.com	NEW	---	JSON parser has some inefficiencies	2024-02-03
255973	WebKit	Page Loa	webkit-unassigned@lists.web...	NEW	---	Implement BFCache interoperability for WebTransport	2023-05-02
264156	WebKit	CMake	webkit-unassigned@lists.web...	NEW	---	Build failure cause by bindings not being regenerated after settings are removed	2023-11-10
269144	WebKit	WPE WebK	webkit-unassigned@lists.web...	NEW	---	[WPE] git main of 2024-02-10 fails to build due to uninitialized variables in JSAudioWorkletNodeOptions.cpp	2024-02-10
269145	WebKit	WPE WebK	webkit-unassigned@lists.web...	NEW	---	[WPE] git main fails to build with -DENABLE_WEB_AUDIO=OFF	2024-02-10

5 bugs found.

W3C WebTransport Update (4 of 6)



[W3C dependencies](#) on IETF issues and PRs:

<input type="checkbox"/>	3 Open	<input checked="" type="checkbox"/> 0 Closed	Author	Label	Projects	Milestones	Reviews	Assignee	Sort
<input type="checkbox"/>	Add support for client initiated drain ✓	IETF dependency					1		2
<small>#606 opened last month by nidhijaju · Approved</small>									
<input type="checkbox"/>	Add subprotocols constructor argument to WebTransport ✓	IETF dependency					1		13
<small>#598 opened on Apr 9 by jan-ivar</small>									
<input type="checkbox"/>	Remove one dependency on "Data Recvd" ✓	IETF dependency							2
<small>#580 opened on Jan 24 by martinthomson · Approved</small>									

IETF issues:

1. [Issue 167](#): Do we need DRAIN_WEBTRANSPORT_SESSION? – needs debate and resolution.
2. [Issue 15](#): Subprotocol negotiation — has been assigned to Eric Kinnear, has a PR.
3. [PR 14](#): Data Recvd -> all data committed — needs to be merged.

W3C WebTransport Update (5 of 6)



Add `isSendingDataLimited` + `isSendingServerLimited` and `inSendingSlowStart` #603

W3C added `stats.estimatedSendRate`. We are now adding some new qualifying Booleans to help applications in interpreting this value.

```
stats.isSendingDataLimited;    // is sending application limited?  
stats.isSendingServerLimited; // the server is overloaded with data  
stats.inSendingSlowStart;     // the client CC is in slow start
```

1. Are these useful?
2. Should we include all of these?
3. Anything missing? (`stats.serverBlockedFrameCount` ?)

W3C WebTransport Update (6 of 6)



[draft-ietf-webtrans-http3 \(section-3.4\)](#) uses “subprotocols” in WebTransport-Subprotocols-Available

Compare to WebSockets: <https://datatracker.ietf.org/doc/html/rfc6455#section-1.9> says “subprotocols” in the text, but the request header field is “Sec-WebSocket-Protocol”, and <https://websockets.spec.whatwg.org> has “protocols” field but says “subprotocols” in text. But then in the IANA registry, we have <https://datatracker.ietf.org/doc/html/rfc6455#section-11.3.4> (protocol header field) and <https://datatracker.ietf.org/doc/html/rfc6455#section-11.5> (subprotocols). <https://datatracker.ietf.org/doc/html/rfc6455#section-1.3> also uses the words “application-level protocols”.

In its constructor `new WebTransport(url, {subprotocols: [“foo”]})` should W3C use

- subprotocols // current choice, to match IETF webtrans terminology
- protocols // to match new WebSocket(url, {protocols: [“foo”]}) ?
- applicationLevelProtocols

WebTransport over HTTP/2

Eric Kinnear

<https://datatracker.ietf.org/doc/html/draft-ietf-webtransport-http2>

#113: Key Exporters

Same as HTTP/3?

Any reason to do something different?

#105: Use new SETTINGS

Also same as HTTP/3

#105: Use new SETTINGS

Server (only) sends `SETTINGS_WEBTRANSPORT_MAX_SESSIONS`

~~For draft versions of WebTransport only, the server MUST NOT process any incoming WebTransport requests until the client settings have been received.~~

~~**Both sides indicate `SETTINGS_H3_DATAGRAM = 1`**~~

~~Servers should also note that `CONNECT` requests to establish new WebTransport sessions, in addition to other messages, may arrive before this `SETTING` is received (see `buffering incoming`).~~

#105: Use new SETTINGS

Server (only) sends `SETTINGS_WEBTRANSPORT_MAX_SESSIONS`

~~Both sides indicate `SETTINGS_H3_DATAGRAM = 1`~~

Both sides indicate `SETTINGS_ENABLE_CONNECT_PROTOCOL = 1`

#105: Use new SETTINGS

The client MUST wait for receipt of the server's SETTINGS frame before establishing any WebTransport sessions by sending CONNECT requests using the WebTransport upgrade token (see {{establishing}}). This ensures that the client will always know what versions of WebTransport can be used on a given HTTP/3 connection.

Clients can, however, send a SETTINGS frame, multiple WebTransport CONNECT requests, WebTransport data streams, and WebTransport datagrams all within a single flight. As those can arrive out of order, a WebTransport server could be put into a situation where it receives a stream or a datagram without a corresponding session. Similarly, a client may receive a server-initiated stream or a datagram before receiving the CONNECT response headers from the server.

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#105: Use new SETTINGS

Future versions:

- Incompatible CONNECT syntax, change upgrade token
- Incompatible wire format for frames/capsules, change MAX_SESSIONS codepoint
- Incompatible stream format, change unidirectional stream type and bidirectional stream signal value

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First two apply to HTTP/2

What's next?

WebTransport Overview

WebTransport over HTTP/3

Victor Vasiliev

<https://datatracker.ietf.org/doc/html/draft-ietf-webtrans-http3>

Overview #13: DATA RECVD

[Has a PR](#)

There's some discussion on the PR.

Please participate if this is relevant to your interests.

Overview #15: Subprotocol

Has a PR (in review)

(Reconsidered name earlier)

Overview #12: Capabilities

We need to ensure that all capabilities common to all transports are actually covered.

(mostly a tracking issue)

Overview #10: Auth

“WebTransport does not support any traditional means of HTTP-based authentication. It is not necessarily based on HTTP, and hence does not support HTTP cookies or HTTP authentication. Since it requires TLS, individual transport protocols MAY expose TLS-based authentication capabilities such as client certificates.”

Do we still think this is accurate?

HTTP/3 #167: DRAIN

Do we need DRAIN_WEBTRANSPORT_SESSION?

Is it enforced somewhere? Is the W3C API the application here?

HTTP/3 #85: Flow Control

WT_MAX_DATA

WT_MAX_STREAMS

~~WT_MAX_STREAM_DATA~~

WT_DATA_BLOCKED

WT_STREAMS_BLOCKED

HTTP/3 #85: Flow Control

[Pull Request on GitHub](#)

WT_MAX_DATA [_BLOCKED]

WT_MAX_STREAMS [_BLOCKED]

Wrap-up and Summary

Bernard Aboba

David Schinazi

Next steps

- WGLC all the Things
- Finalize the wire image
- Profit

Thank you

Special thanks to:

The Secretariat, WG Participants & ADs