Web & Networks IG

TPAC Highlights & Re-charter Proposal Discussion

Outline

- TPAC 2020 Web & Networks IG Highlights (10min)

- Web & Networks IG Update (5min)

- Next Steps : Re-charter Discussion & Draft Proposal (40min)

TPAC 2020 WNIG Highlights

- Link

  https://www.w3.org/2020/10/TPAC/group-updates.html#webnetworks

  Thank You for your Contributions

Joint Meeting Web & Networks And WoT

- 15th October 2020
- Topics discussed
  - Presentation on how Compute Utilities hosted on the Edge can be used by web applications.
  - Discovery of compute utilities implemented as part of WoT Discovery was discussed.
  - Web workload offload to Edge has also seen interest from other groups such as WebML
    - Offload decisions depends on several factors, and Network Info is a key factor

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Web & Networks IG Update

- The [current charter](#) of the IG runs until 31 December 2020.
- Propose acronym for IG Name: **<u>WNIG</u>**
- Two Workstreams
  - Edge Computing workstream
  - Network Monitoring and Prediction workstream
- Over 12 meetings during the past 1 year covering a wide range of use-cases in different verticals
- Proof-of-Concept demos show value in leveraging network capabilities in order to achieve better performance and resources allocation

Topics Covered so far

Meeting No.	Topic	Workstream	Presenters
1	IG Kick-off Meeting	General	Co-Chairs
2	Principles for Web and Networks solutions	General	Dan Druta, Co-Chair
3	Link Performance Prediction	Network Quality Monitoring and Prediction	Jonas Svennebring & Jonathan Devlin, Intel
3	MEC API Examples	Edge Computing	Song Xu, China Mobile
4	Video Cloud Service	Edge Computing	Song Xu, China Mobile
TPAC	TPAC Meeting	Link Performance Prediction	IG
TPAC2	Edge Computing TPAC Breakout	Edge Computing	IG
5	MEC in action: An overview of Edge Computing activities	Edge Computing	Dario Sabella, Intel
5	Accelerating DNNs for the Web with Edge Computing	Edge Computing	Prof. Qiao & Dr. Yakun Huang, BUPT
6	Lessons from Network Information API WICG	Network Quality Monitoring and Prediction	Tarun Bansal, Google
7	EDGE Applications: Supporting an Ambient Computing Ecosystem	Edge Computing	Michael Mccool, Intel
8	Predictive QoS for Edge Computing : Insights from 5GAA	Network Quality Monitoring and Prediction	Dario Sabella, Intel
9	Distributed Web Browser	Edge Computing	Seikwon Kim, Samsung
10	Seamless offloading of Web App via Web Worker Migration	Edge Computing	Hyuk-JinJeong, Seoul National University
11	P2P eCDN Overview	Edge Computing	Shachar Zohar, Peer5
12	Link Performance Prediction Update	Network Quality Monitoring and Prediction	Jonas Svennebring, Intel
13	TPAC 2020 Joint meeting with WoT	Edge Computing	WoT & WNIG
14	TPAC 2020 Key Highlights and IG Roadmap	General	IG Chairs

Thoughts from Developer Community

- "We, specifically Web developers, focus on improving the equipment discovery of common API capabilities, such as detection of local area network ioT equipment capabilities, access to ioT equipment monitoring indicators, performance indicators"

- "We hope browser can provide debugger / emulator to easily simulate network conditions, such as control delay, jitter, packet loss rate to simulate the user's real network environment. Our developers can test the robustness of Web applications (webRTC is a good example)"

- "We are interested in network information API, with which web applications can detect user network quality (delay, jitter, bandwidth, etc.). On the basis of these, web developers can work on adaptation, dynamic loading of remote resources, such as high-definition pictures, 3D models."

- "We wish WNIG can provide best practices to evaluate network communication quality (e.g. audio-visual communication) and guide developer development (e.g. current industry does not have evaluation criteria for webRTC and other communication quality)."

Discussion

Path forward: IG Extension / Re-charter : **Your Thoughts?**

A proposal for re-charter available on github

https://w3c.github.io/web-networks-charter/

Call for Feedback, Suggestions regarding the draft proposal

Email (Members IG PDL) or Raise a Github issue at

https://github.com/w3c/web-networks-charter/issues

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THANK YOU

FOCUS AREAS & COORDINATION (Internal and External)

Use-Case Categories→ Workstreams↓	Media Streaming (Unicast, Multi-cast, Broadcast, P2P)	Video Conferencing	Online Gaming	Compute migration between Client-Edge-Cloud (High compute ops like ML/AI inference, etc)	WebApp Experience for IOT enabled using Edge (low compute / low memory foot IoT devices)	MEC Integration
Guiding Principles	WNIG↔PING/TAG/…					
Network Info - **Instantaneous** - **Predicted**	WNIG↔MEIG IG WNIG↔5G-MAG		WNIG↔Cloud Computing CG	WNIG↔WoT	WNIG↔WoT WNIG↔DAS WG	WNIG↔ETSI WNIG↔5GAA
Edge Computing - **Thing Description** - **Edge Discovery** - **Offload Decision matrix**	WNIG↔MEIG IG WNIG↔5G-MAG		WNIG↔Cloud Computing CG	WNIG↔WoT WNIG↔WebML CG	WNIG↔WoT	
Network Emulation Tools - **Trace format** - **Trace playback** - **Trace collection**	WNIG↔WebPerf WG WNIG↔MEIG IG WNIG↔Dist. Trace WG					
Differentiated Services (Low latency, Reliability, Service Type)	WNIG↔WebTran WG WNIG↔3GPP WNIG↔IEEE WLAN	WNIG↔WebRTC WNIG↔3GPP WNIG↔IEEE WLAN	WNIG↔WebTran WNIG↔3GPP WNIG↔IEEE WLAN			WNIG↔3GPP WNIG↔ETSI WNIG↔IEEE WLAN

FOCUS AREAS: POTENTIAL PROPOSALS, WORK ITEMS

Use-Case Categories→ Workstreams↓	Media Streaming (Unicast, Multi-cast, Broadcast, P2P)	Video Conferencing	Online Gaming	Compute migration between Client-Edge-Cloud (High compute ops like ML/AI inference, etc)	WebApp Experience for IOT enabled using Edge (low compute / low memory foot IoT devices)	MEC Integration
Guiding Principles	Documentation: Guiding Principles for Web & Networks Solutions					
Network Info - **Instantaneous** - **Predicted**	Discussion Items: • Network info hints API • Enhancing MPEG-DASH, HLS using predicted net info					Discussion Items: • MEC API for WebApps
Edge Computing - **Thing Description** - **Edge Discovery** - **Offload Decision matrix**	Discussion Items: • Network optimized content delivery			Discussion Items: • Thing Description for Edge Compute • Edge Discovery API • Offload decision making parameters API		Discussion Items: • MEC API for WebApps
Network Emulation Tools - **Trace format** - **Trace playback** - **Trace collection**	Proposal: Trace based Network Emulation tool in Browser Developer Tools					
Differentiated Services (Low latency, Reliability, Service Type)						