



C O N E C T

Council for
Network
Efficiency by
Cross-layer
Technical members

JANOG50@Hakodate

2022/7/15

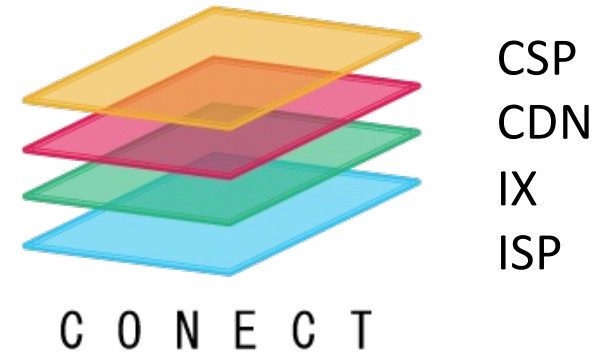
What is CONNECT

CONNECT Chair / NTT Communications
Tomoya Yoshida



April 10, 2020

CONNECT

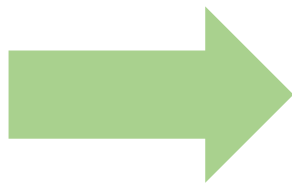


Establishment of “the Council for Network Efficiency by Cross-layer Technical Members”

to share information and exchange opinions in order to ensure smooth distribution of Internet contents

Background of the establishment of the Council

- Internet traffic in Japan is increasing at a rate of 20% to 40% annually
- It is expected that the volume of music and video content will continue to increase, as well as the simultaneous distribution of broadcasting over the Internet
- Each company is working to increase the capacity of its network, but in order to achieve more efficient traffic distribution and visualization, there is a limit to what can be done by each company, and it is necessary to coordinate efforts across the entire industry, including network operators (ISPs, IX carriers, etc.) and content providers.



Establishment of the Council

April 10, 2020

Establishment of “the Council for Network Efficiency by Cross-layer Technical Members”

Established "The Council for Network Efficiency by Cross-layer Technical Members" to share information and exchange opinions in order to ensure smooth distribution of Internet contents.

1. Background

Internet traffic in Japan is increasing at a rate of 20% to 40% annually. The growth in traffic demand is expected to continue as a result of quality improvements in existing contents (e.g., higher definition video contents and the expanded distribution of large-capacity game contents), along with the diffusion and expansion of new contents (e.g., the simultaneous Internet distribution of TV programs).

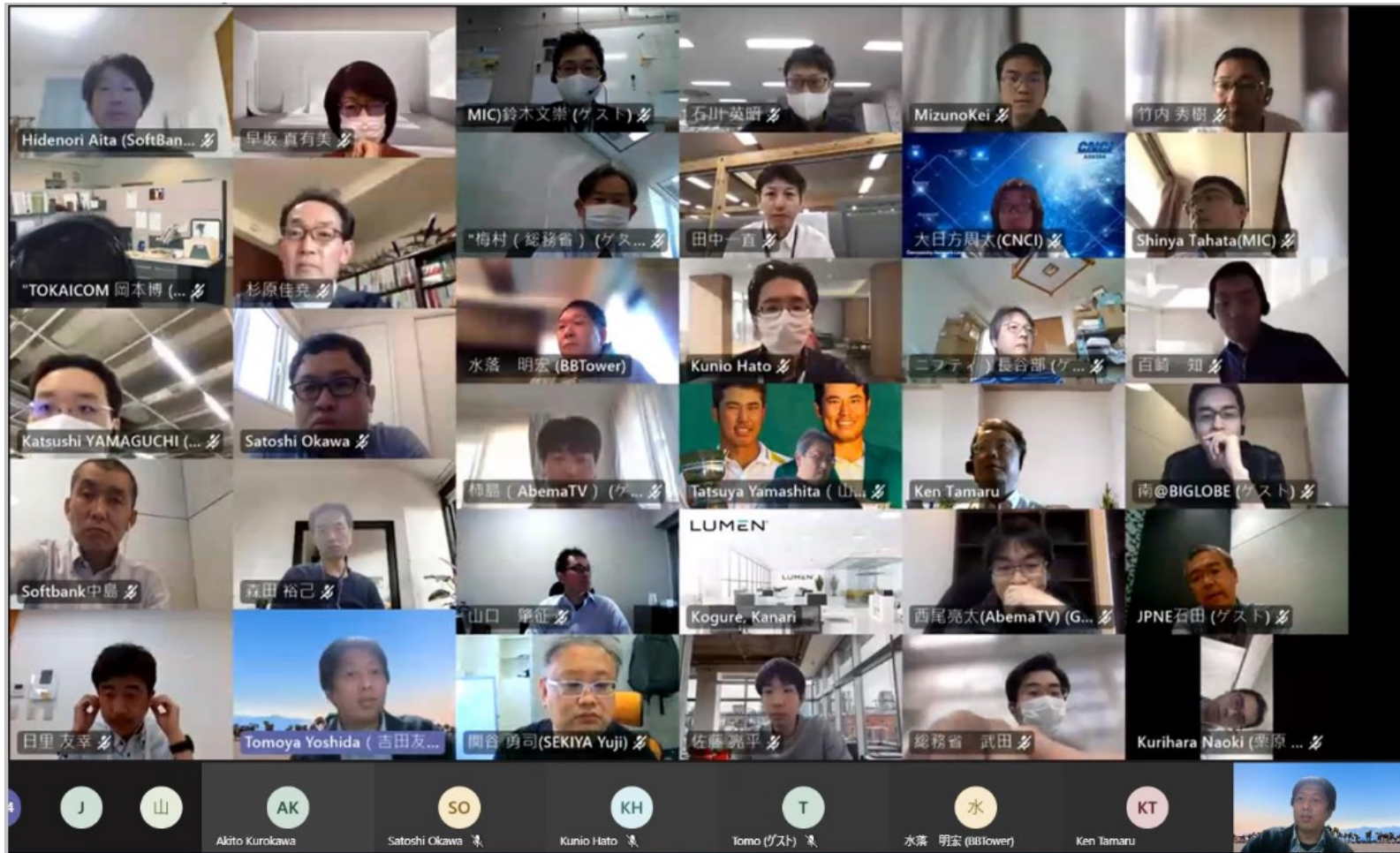
Under these circumstances, to continue maintaining and improving the quality of the Internet in the future, it will be necessary to take measures by cooperating across industries with content providers and network operators. That is the reason for the establishment of the Council for Network Efficiency by Cross-layer Technical Members (CONNECT), where business operators involved in the distribution of Internet traffic will cooperate in sharing information regularly and examining challenges for the smooth distribution of Internet content.

Members (43)

AbemaTV, Inc.
Akamai Technologies GK
Amazon Data Services Japan K.K.
Asahi Net, Inc
ARTERIA Networks Corporation
BBIX, Inc.
BIGLOBE Inc.
BroadBand Tower, Inc
CableTV Co,Ltd
CenturyLink Inc.
Community Network Center Inc.
CyberAgent, Inc.
Google GK.
Equinix Japan Co., Ltd.
Facebook Japan Co., Ltd.
FAMILYNET JAPAN CORPORATION
Internet Initiative Japan Inc.
Internet Multifeed Co.
Japan Internet Exchange Co., Ltd.
Japan Network Enabler Co., Ltd.
J-Stream Inc.
Jupiter Telecommunications Co., Ltd.

KADOKAWA Connected, Inc.
KDDI Corporation
Limelight Networks Japan Ltd.
Microsoft Japan Company, Limited
National Institute of Informatics
Netflix, Inc.
Nifty Corporation
Nippon Telegraph and Telephone East Corporation
Nippon Telegraph and Telephone West Corporation
NTT Communications Corporation
NTT Docomo Inc.
NTT ME Corporation
NTT Plala Inc.
OPTAGE Inc.Google Japan G.K.
SAKURA internet Inc.
SoftBank Corp.
Sony Interactive Entertainment Inc.
Sony Network Communications Inc.
The University of Tokyo (scheduled)
TOKAI Communications Corporation
Yahoo! Japan Corporation

CONNECT meeting held every three months



Study theme

NW Visualisation

Quality
Measurement

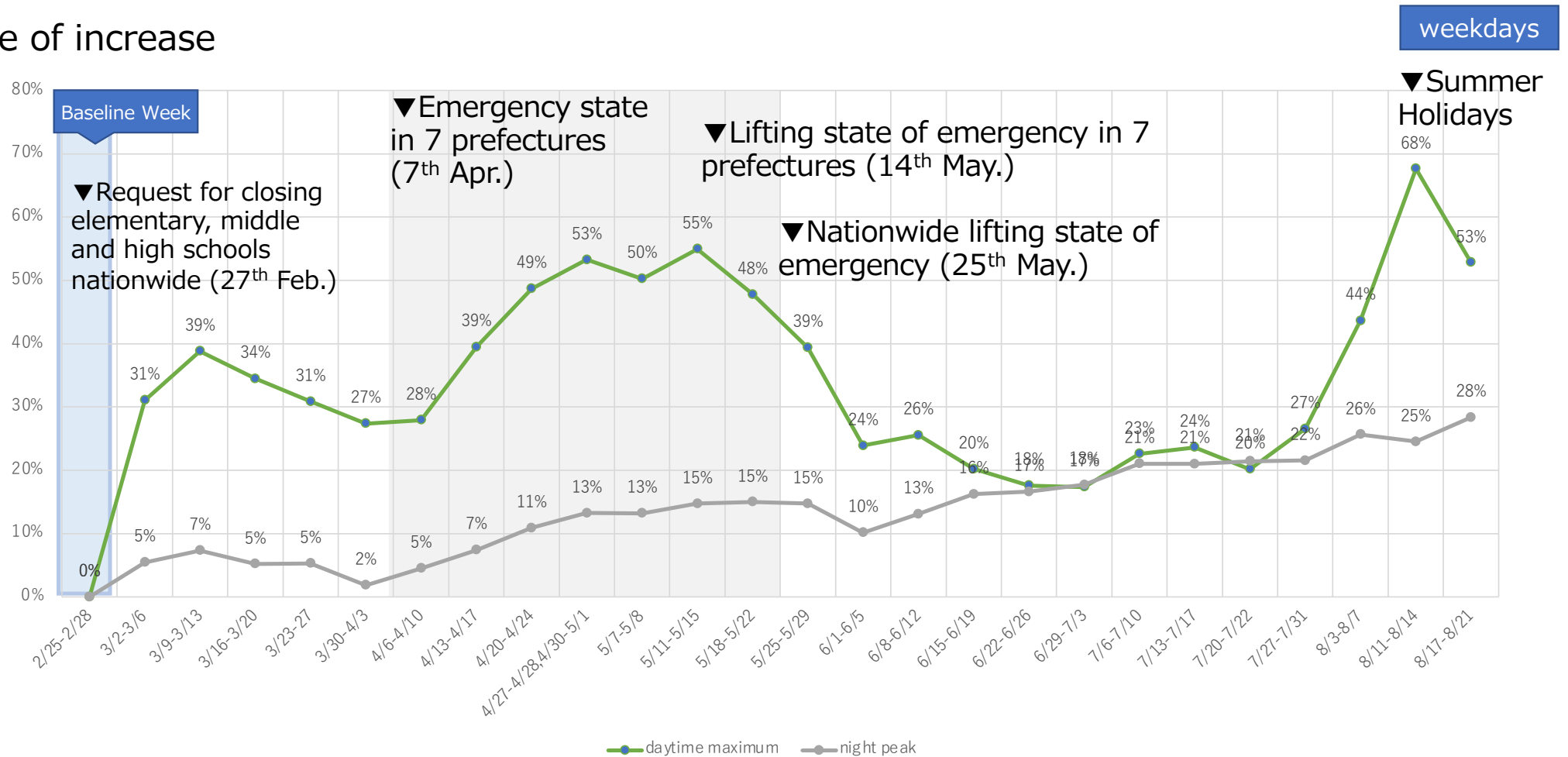
Disaster Prevention
Measures

Local Delivery

First of all, we started sharing information about the situation of COVID-19 in Japan.

OCN(AS4713) Traffic Trend by NTTCom

rate of increase



Traffic Trend in Japan by CONECT

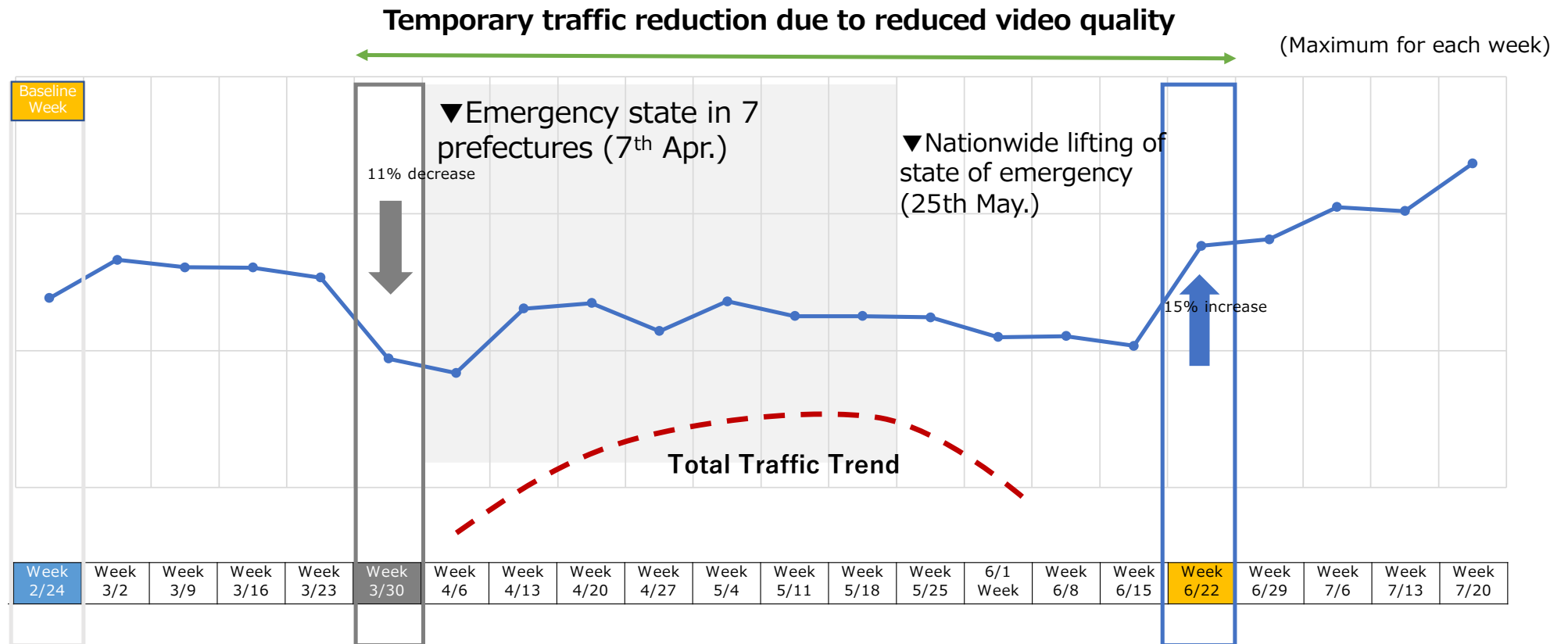
% increase from the end of Feb. 2020

	mid-Apr.	mid-May	mid-Jun.	mid-Jul.	mid-Aug.	Mid-Sep.	Mid-Oct.
weekday daytime	About 30% to 50%	About 30% to 70%	About 20% to 30%	About 10% to 30%	About 30% to 60%	About 10% to 30%	About 10% to 30%
holiday daytime	About 10% to 20%	About 10% to 20%	About 10% to 20%	About 10% to 20%	About 10% to 20%	About 10% to 30%	About 10% to 30%
Weekdays and holidays night (peak)	About 10%	About 10% to 20%	About 10%	About 10% to 20%	About 10% to 20%	About 10% to 30%	About 10% to 30%

Report to the Minister of Internal Affairs and Communications

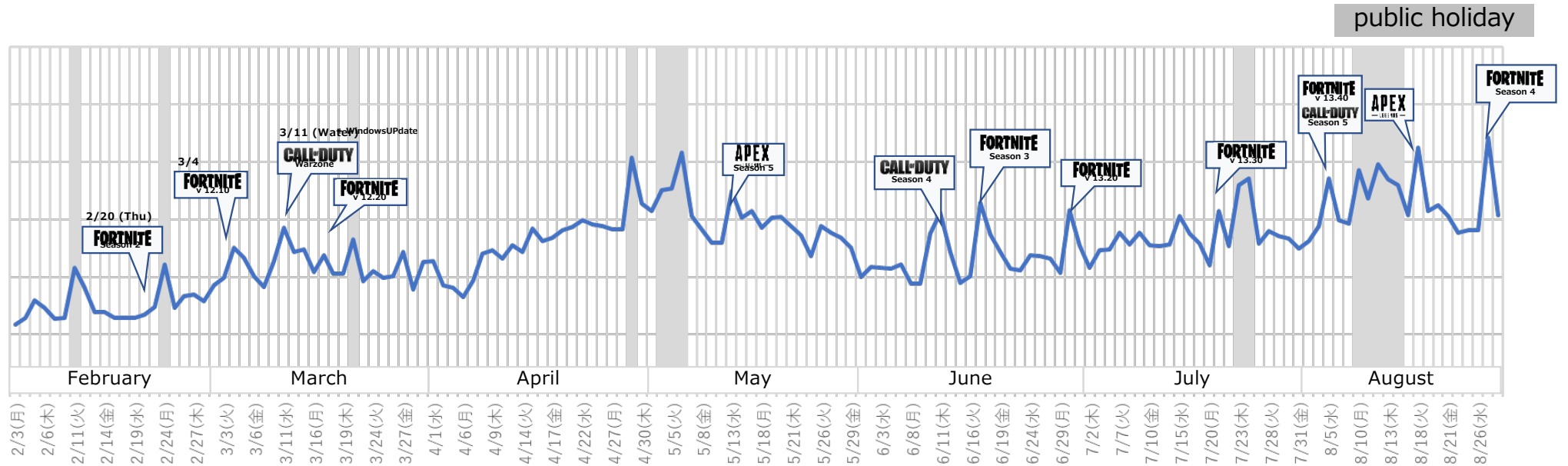
Attending Exhibition: Ministry of Internal Affairs and Communications HP
https://www.soumu.go.jp/menu_seisaku/ictseisaku/conect/index.html

NTTCom(AS4713) Analysis by AS (A popular video distribution/cloud service provider)



CONNECT cooperation avoided traffic congestion throughout Japan

Game DL traffic at NTTCom(AS4713) (Weekday daytime maximum between 9am to 5pm)



FORTNITE

▲2020/02/20 Chapter 2, Season 2.

03/03 v 12.10
03/17 v 12.20

03/24 v 12.21
03/31 v 12.30

04/08 v 12.31

04/15 v 12.40
04/21 v 12.41

05/07 v 12.50.2

05/20 v 12.60
05/26 v 12.61

▲2020/06/17 Chapter Two, Season Three.

06/30 v 13.20

07/21 v 13.30

▲2020/08/27

Chapter 2
Season 4

08/5 v 13.40

v 14.00

CALL OF DUTY

▲3/11 (Wed) Call of Duty: Warzone

+ Windows Update

▲6/11 15:00 ~ Season 4

▲8/5 Season 5

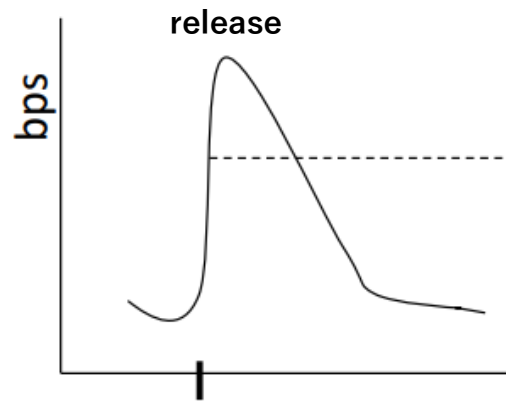
APEX LEGENDS

▲5/13 Apex Legend Season 5

▲8/18 Season 6

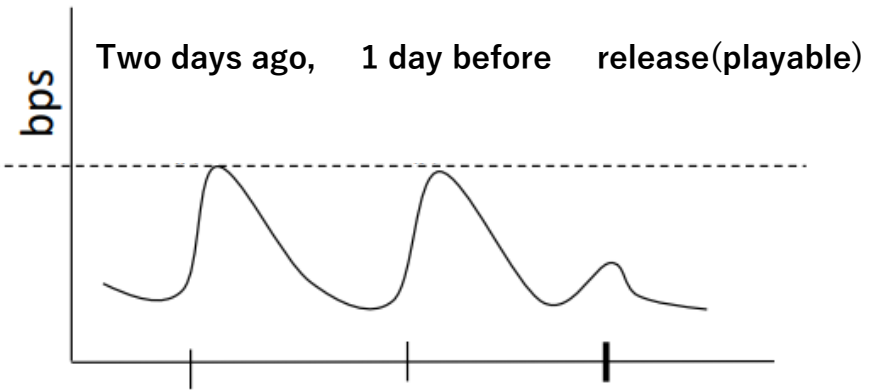
Pre-load : Download game data in advance on release or patch timing

Non Pre-load



Traffic spikes at the timing of patch release

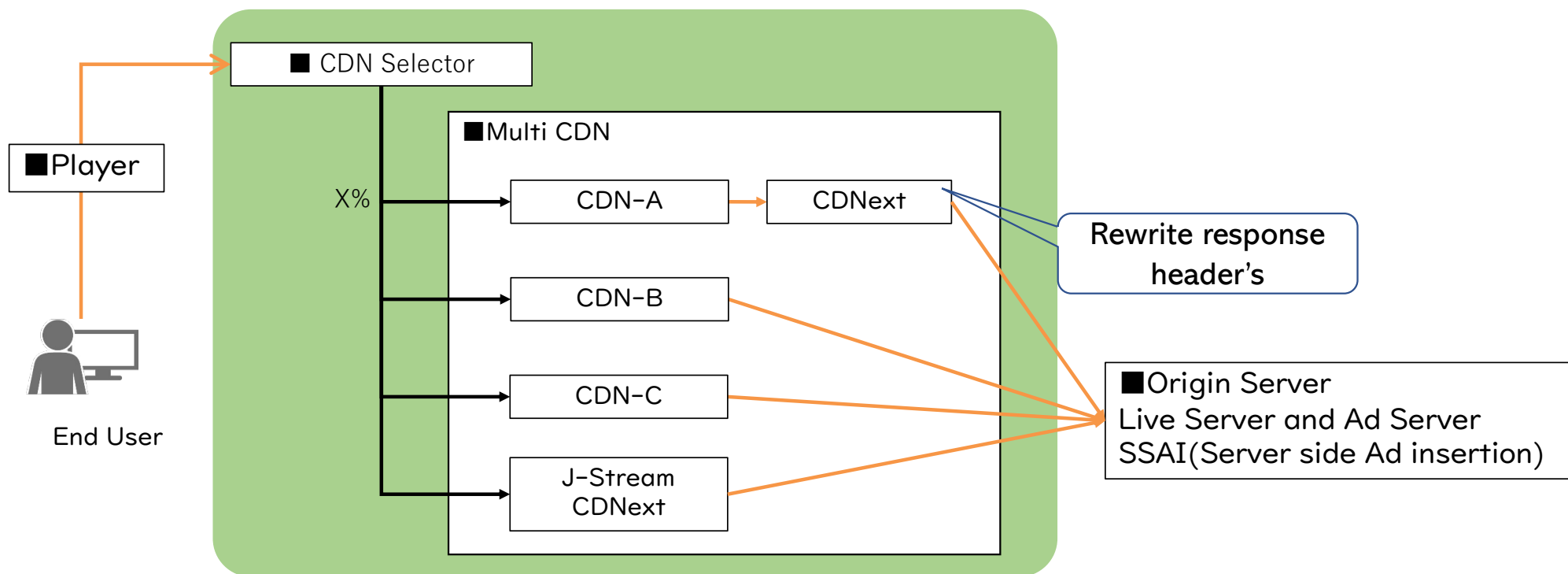
Pre-load



Pre-split distribution of patch data

Tokyo 2020 Olympic Live/VOD

Period: July 1, 2021 - August 31, 2021 (2 Months)
Delivery Type: Live/VOD
Device: Smart Phone, PC
Bandwidth: 2Mbps, 1.2Mbps, 0.5Mbps
CDN: Company A, B, C, J-stream

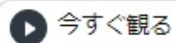


Boxing match at Amazon Prime ONLY



WBA・IBF・WBC 世界バンタム級王座統一戦 井上尚弥 vs ノニト・ドネア
2022

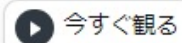
Prime Video
プライム会員特典



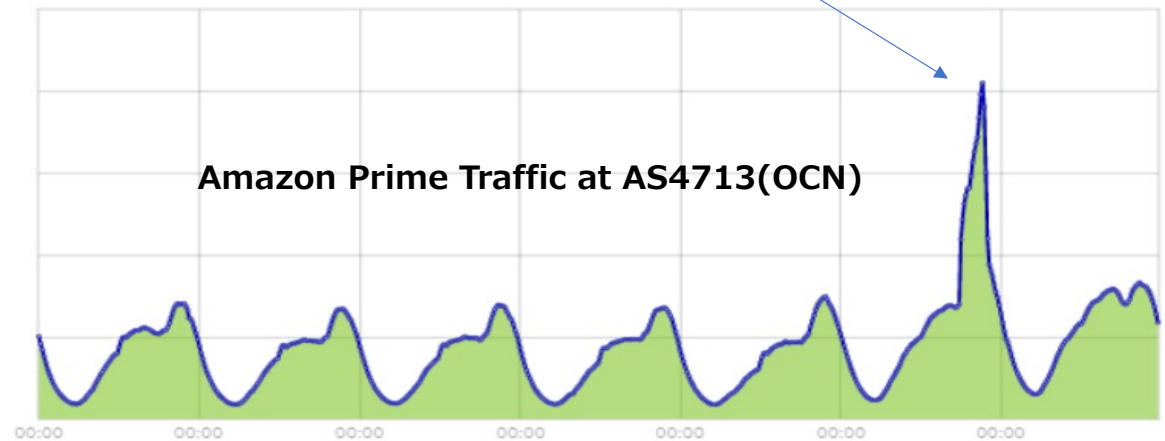
WBA&IBF 世界ミドル級王座統一戦
ゲンナジー・ゴロフキン vs 村田諒太
2022

★★★★☆ 436

Prime Video
プライム会員特典

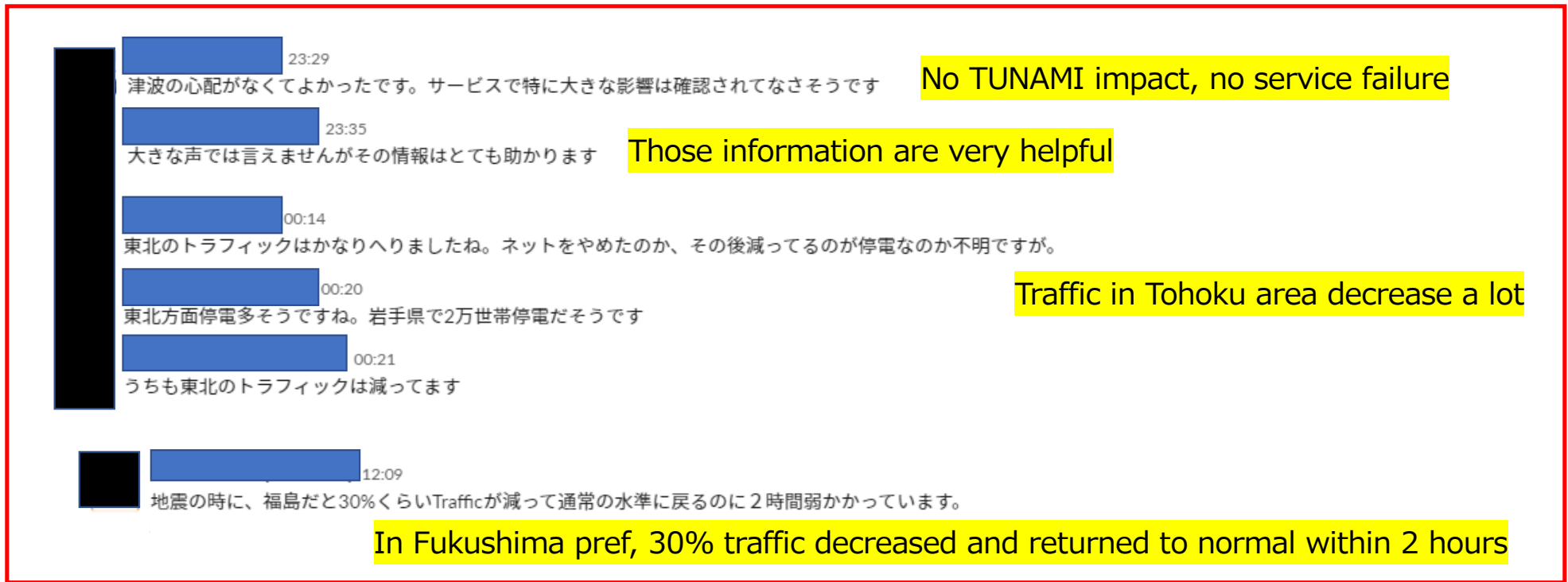


Traffic estimation and CDN information from Amazon Prime for two boxing match in advance

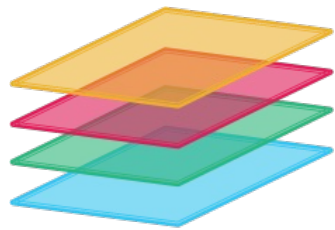


source: amazon.co.jp

2021/2/13 (Sat.) Information Sharing after the Fukushima Earthquake



CONNECT: "densely" alignment across industries



C O N E C T

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CONECTに期待すること

- これまで30社が参加の圏内、インターネットサービスへの対応、事業者間のネットワーク最適化で、各社からの貢献が顕著な、期待を込めてこのオンライン会議を開催している。
- これからは、各社からの期待に応えるネットワーク技術者同士が切磋琢磨するケースが増えること、各社から期待されるネットワーク技術者同士が切磋琢磨するケースが増えること、各社からの期待に応えるネットワーク技術者同士が切磋琢磨するケースが増えること、各社からの期待に応えるネットワーク技術者同士が切磋琢磨するケースが増えること。

OCN Traffic推移 (2020/2/25~)

From Edge Live Virtual Summit 2020 (March)

- 2月~3月グローバルトラフィック ~30%の増加 (通信増加率~3%)
- 前年同期と比較して約2倍のピークトラフィック増加

MINAMI Yuichi

Tomoya Yoshida

Mayumi ONO

會田 英季 Hidenori Aita

大江 (総務省)

yamaguchi

@JANOG46 Meeting at Aug. 2020