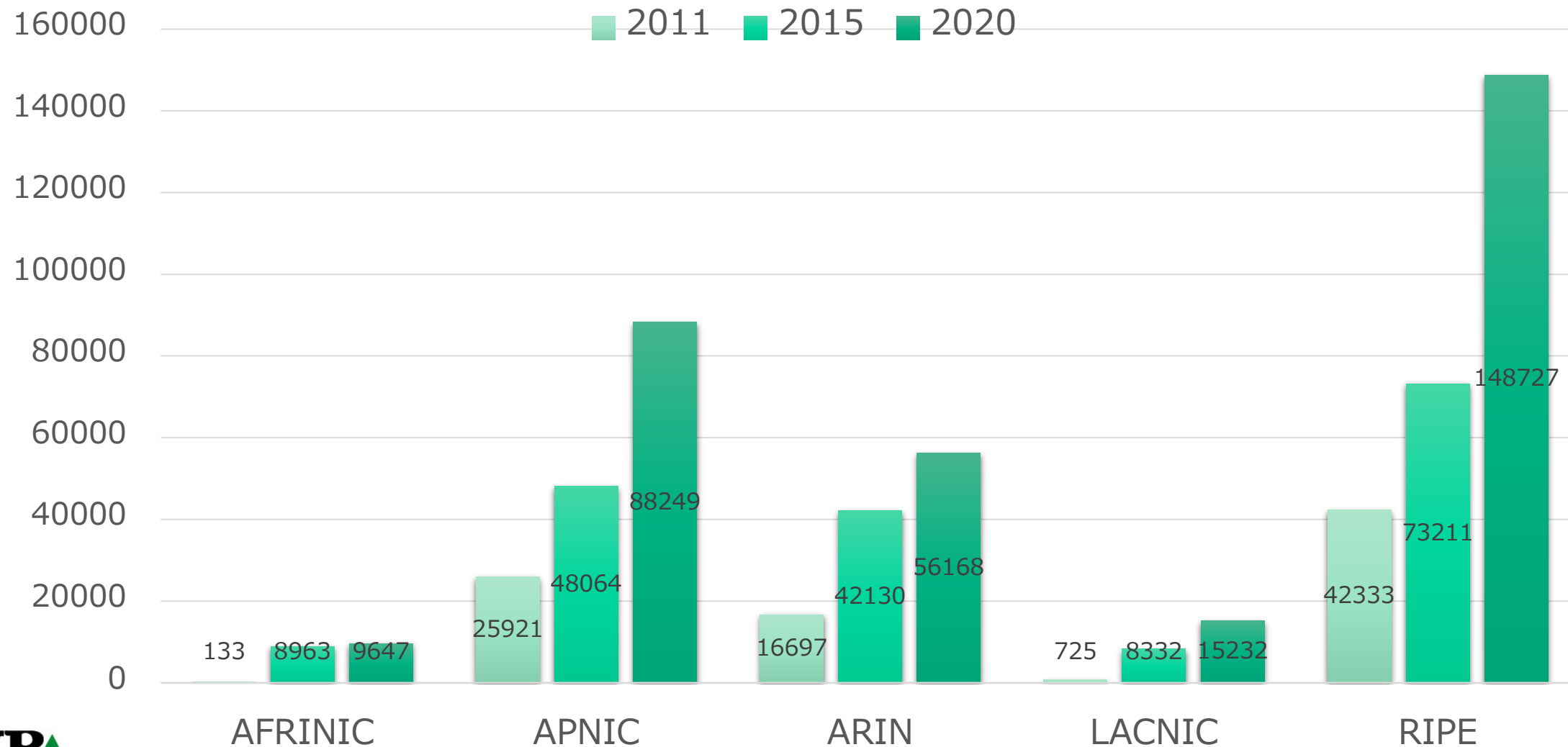


IPv6を取り巻く状況

一般社団法人日本ネットワークインフォメーションセンター
IP事業部 佐藤 晋（サトウススム）

地域(RIR)ごとのIPv6アドレス分配規模の変化

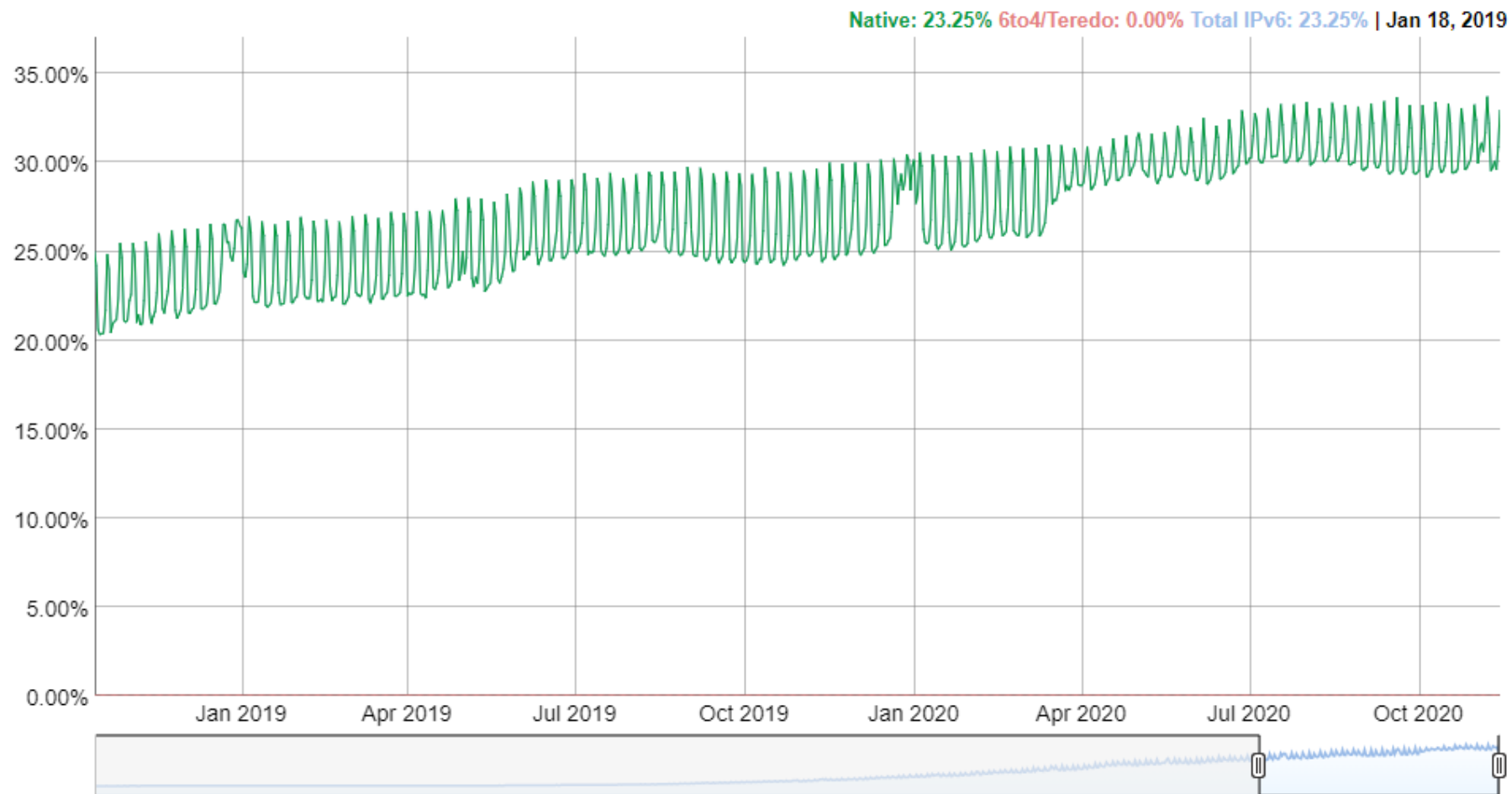
(/32の数)



IPv6 普及状況（Googleより）

IPv6 の採用状況

Google では、Google ユーザー間での IPv6 接続の利用状況を継続的に測定しています。このグラフは、IPv6 を使って Google にアクセスしているユーザーの割合（%）を示しています。



世界のIPv6普及状況 (by APNIC)

2014				2018				2020			
	CC	Country	IPv6 Capable		CC	Country	IPv6 Capable		CC	Country	IPv6 Capable
1	BE	Belgium	24.70%	→	BE	Belgium	56.94%	○	BL	Saint Barthelemy	79.45%
2	DE	Germany	10.69%	○	IN	India	49.21%	→	IN	India	71.26%
3	CH	Switzerland	10.66%	↑	US	United States of America	44.93%	↓	BE	Belgium	60.77%
4	RO	Romania	9.53%	↓	DE	Germany	39.46%	○	YT	Mayotte	58.15%
5	LU	Luxembourg	8.73%	↑	MY	Malaysia	37.06%	→	MY	Malaysia	53.48%
6	US	United States of America	7.71%	○	GR	Greece	34.52%	↓	US	United States of America	50.64%
7	SG	Singapore	6.71%	●	UY	Uruguay	30.31%	↓	GR	Greece	48.86%
8	PE	Peru	6.59%	↓	LU	Luxembourg	28.74%	↑	TW	Taiwan	48.60%
9	FR	France	5.40%	↓	CH	Switzerland	28.00%	↓	DE	Germany	48.35%
10	JP	Japan	5.14%	○	FI	Finland	27.85%	↑	VN	Vietnam	45.71%
11	CZ	Czech Republic	4.94%	●	BR	Brazil	26.90%	↓	CH	Switzerland	45.56%
12	NO	Norway	3.34%	●	GB	United Kingdom of Great Britain and Northern Ireland	26.47%	↑	FR	France	44.28%
13	VU	Vanuatu	3.02%	○	TW	Taiwan	26.21%	↑	JP	Japan	41.48%
14	MY	Malaysia	2.20%	↓	JP	Japan	25.82%	↓	LU	Luxembourg	40.14%
15	PT	Portugal	1.84%	●	AX	Aland Islands	24.32%	○	PR	Puerto Rico	39.99%
16	BT	Bhutan	1.64%	●	EE	Estonia	23.96%	○	GF	French Guiana	38.93%
17	NL	Netherlands	1.57%	●	CA	Canada	23.43%	↑	PT	Portugal	38.12%
18	CN	China	1.46%	↓	FR	France	22.91%	○	MX	Mexico	37.26%
19	BA	Bosnia and Herzegovina	1.44%	●	TT	Trinidad and Tobago	21.33%	○	TH	Thailand	36.85%
20	EU	European Union	1.41%	○	VN	Vietnam	21.03%	↓	FI	Finland	36.28%

日本の事業者の対応状況

2014年9月

#	Name	ASNs	IPv6
1	KDDI	2516	18.01%
2	Softbank BB	17676	3.34%
3	ctc	18126	41.66%
4	So-net	2527	9.90%
5	TOKAI	10010	9.73%
6	IIJ	2497	2.21%
7	Sony Global Solutions	9619	99.41%
8	bit-drive	9600	10.03%
9	TDNC	9354	4.33%
10	BIGLOBE	2518	0.53%
11	ITSCOM	9365	6.12%
12	star cat	17529	12.01%
13	OCN/plala	4713	0.06%
14	SINET	2907	2.52%
15	UCOM	17506	0.41%
16	@Nifty	2510	0.22%
17	K-Opticom	17511	0.19%
18	FreeBit	4691, 10013	0.16%
19	Keio University	38635	13.85%
20	VECTANT	2519	0.09%

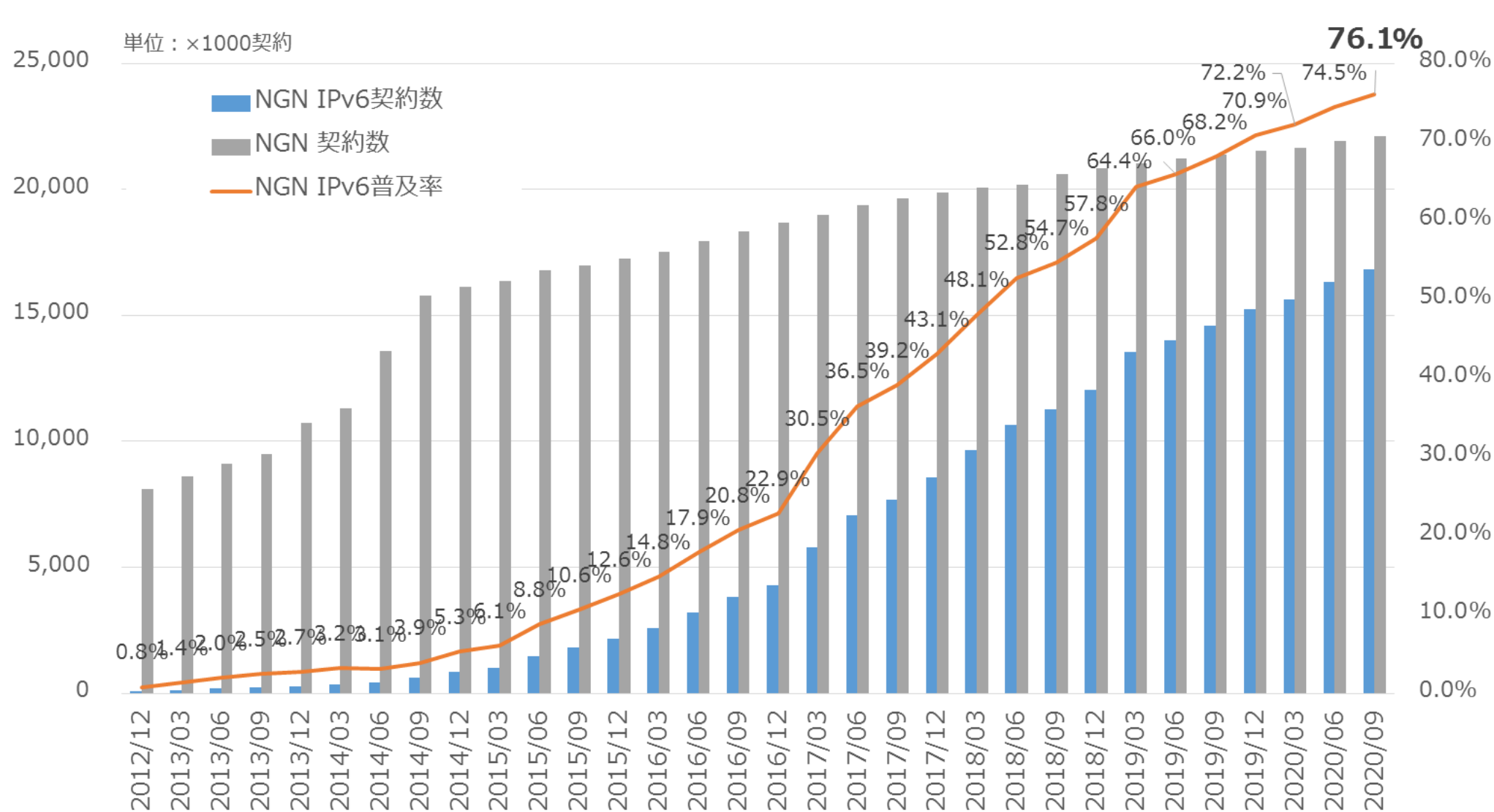
2018年11月

#	Name	ASNs	IPv6
1	KDDI	2516	44.25%
2	SoftBank BB	17676	38.07%
3	OCN / plala	4713	30.31%
4	So-net	2527	41.16%
5	BIGLOBE	2518	48.16%
6	NTT docomo	9605	8.66%
7	ctc	18126	52.78%
8	IIJ	2497	17.76%
9	TOKAI	10010	24.82%
10	@nifty	2510	12.73%
11	iTSCOM	9365	16.60%
12	Sony Global Solutions	9619	99.67%
13	K-Opticom	17511	1.35%
14	star cat	17529	24.53%
15	VECTANT	2519	1.46%
16	bit-drive	9600	13.31%
17	SINET	2907	1.62%
18	SuperCSI	2506	44.09%
19	TDNC	9354	1.95%
20	Keio University	38635	33.79%

2020年11月

ASN	AS Name	IPv6 Capable
AS2516	KDDI KDDI CORPORATION	61.97%
AS17676	GIGAINFRA Softbank BB Corp.	55.06%
AS4713	OCN NTT Communications Corporation	47.61%
AS9605	DOCOMO NTT DOCOMO, INC.	11.74%
AS9824	JTCL-JP-AS Jupiter Telecommunication Co. Ltd	0.23%
AS2527	SO-NET So-net Entertainment Corporation	58.27%
AS17511	OPTAGE OPTAGE Inc.	42.60%
AS2518	BIGLOBE BIGLOBE Inc.	65.24%
AS17506	UCOM ARTERIA Networks Corporation	0.89%
AS18126	CTCX Chubu Telecommunications Company, Inc.	64.01%
AS2519	VECTANT ARTERIA Networks Corporation	17.10%
AS9617	ZAQ Jupiter Telecommunications Co., Ltd.	0.39%
AS2497	IIJ Internet Initiative Japan Inc.	23.64%
AS4685	ASAHI-NET Asahi Net	48.87%
AS10010	TOKAI TOKAI Communications Corporation	24.65%
AS2514	INFOSPHERE NTT PC Communications, Inc.	3.23%
AS138384	RMNI-AS-AP Rakuten Mobile Network, Inc.	40.47%
AS7679	QTNET QTnet, Inc.	0.16%
AS2510	INFOWEB FUJITSU LIMITED	25.38%
AS63949	LINODE-AP Linode, LLC	45.37%

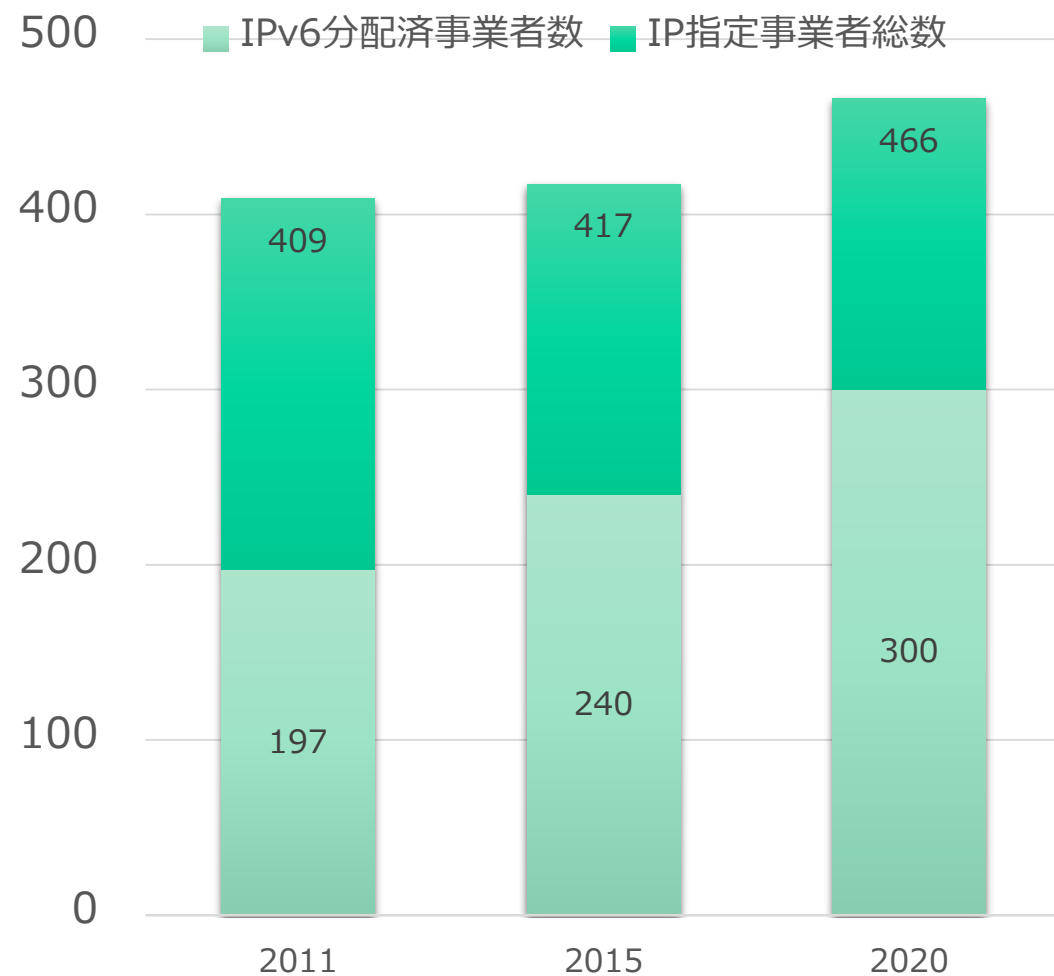
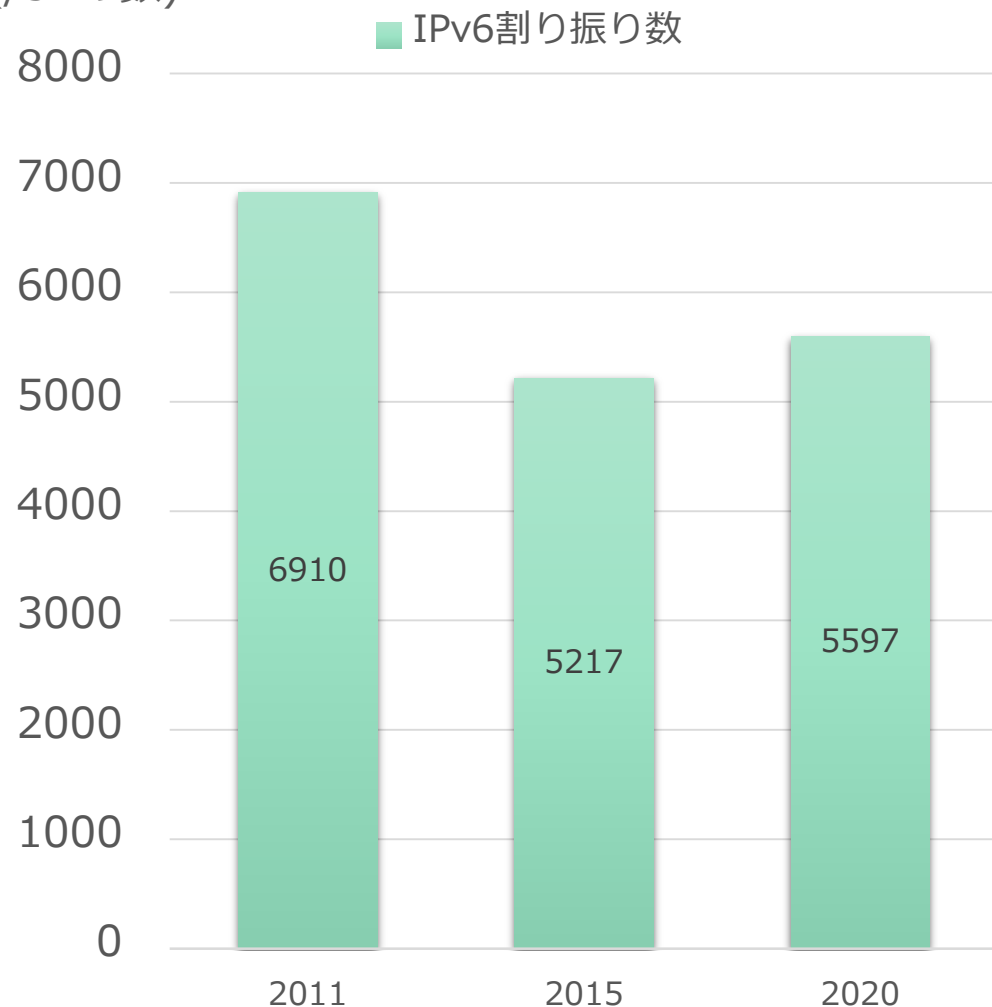
アクセス回線のIPv6対応状況



データ引用元：http://v6pc.jp/jp/spread/ipv6spread_03.phtml

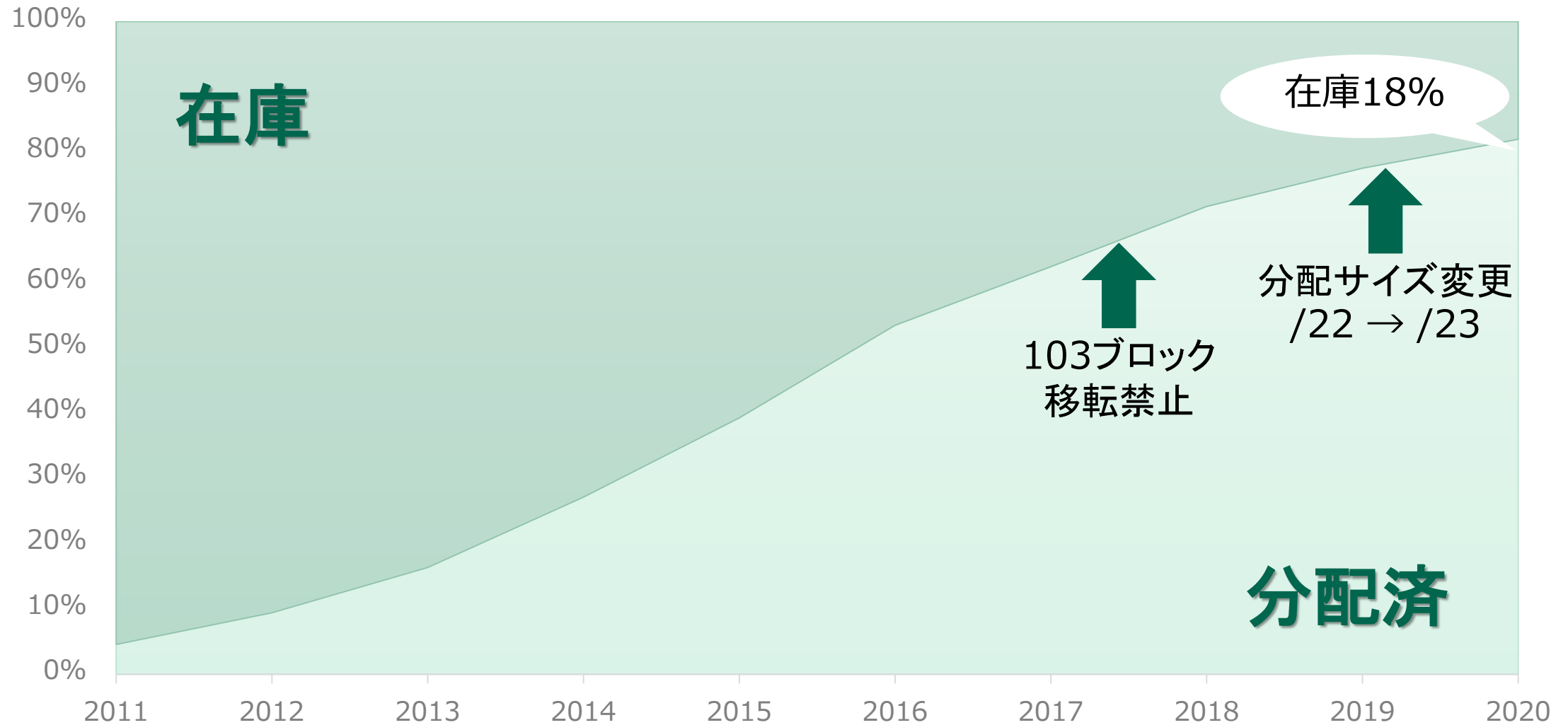
JPNICにおけるIPv6アドレス分配状況

(/32の数)

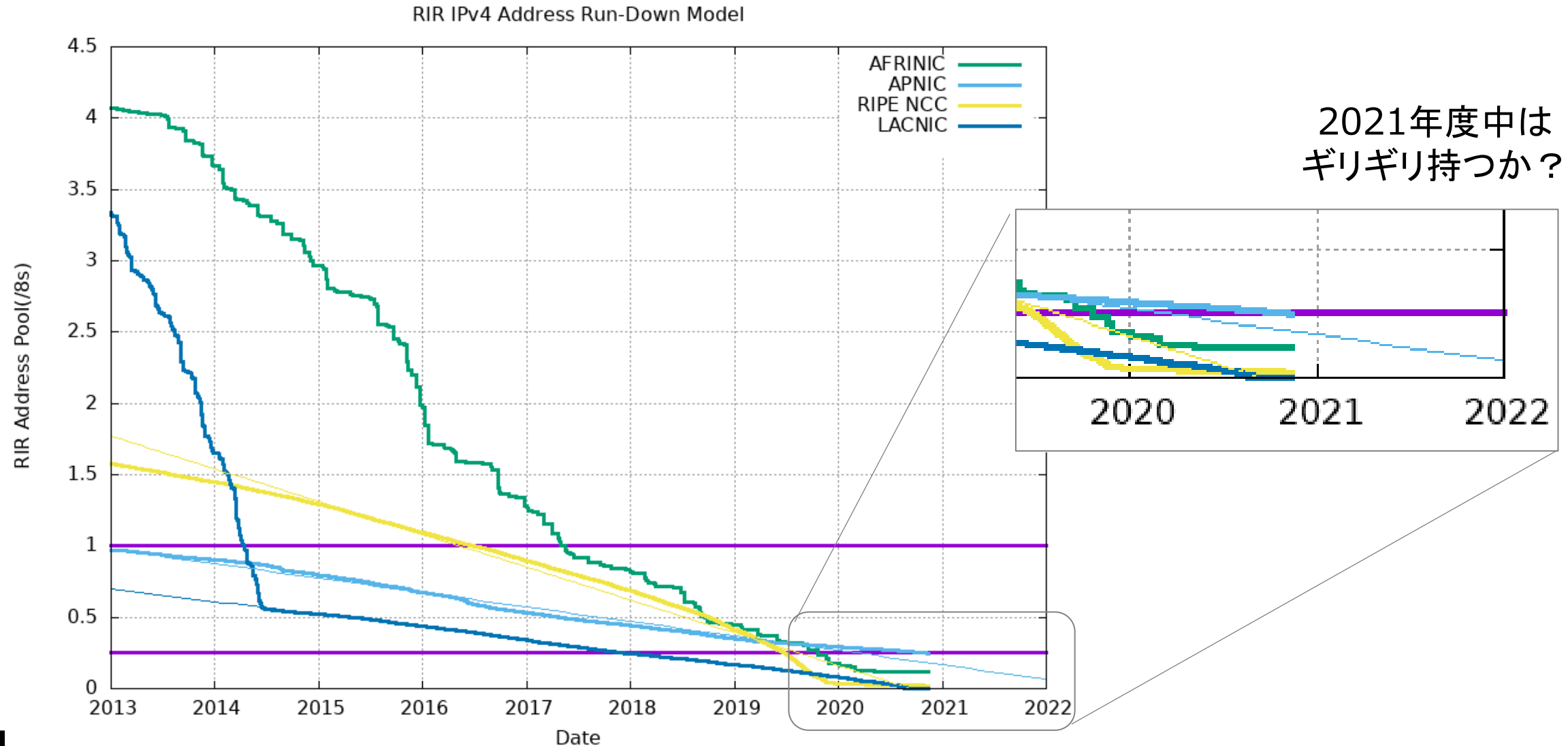


IPv4アドレスの状況

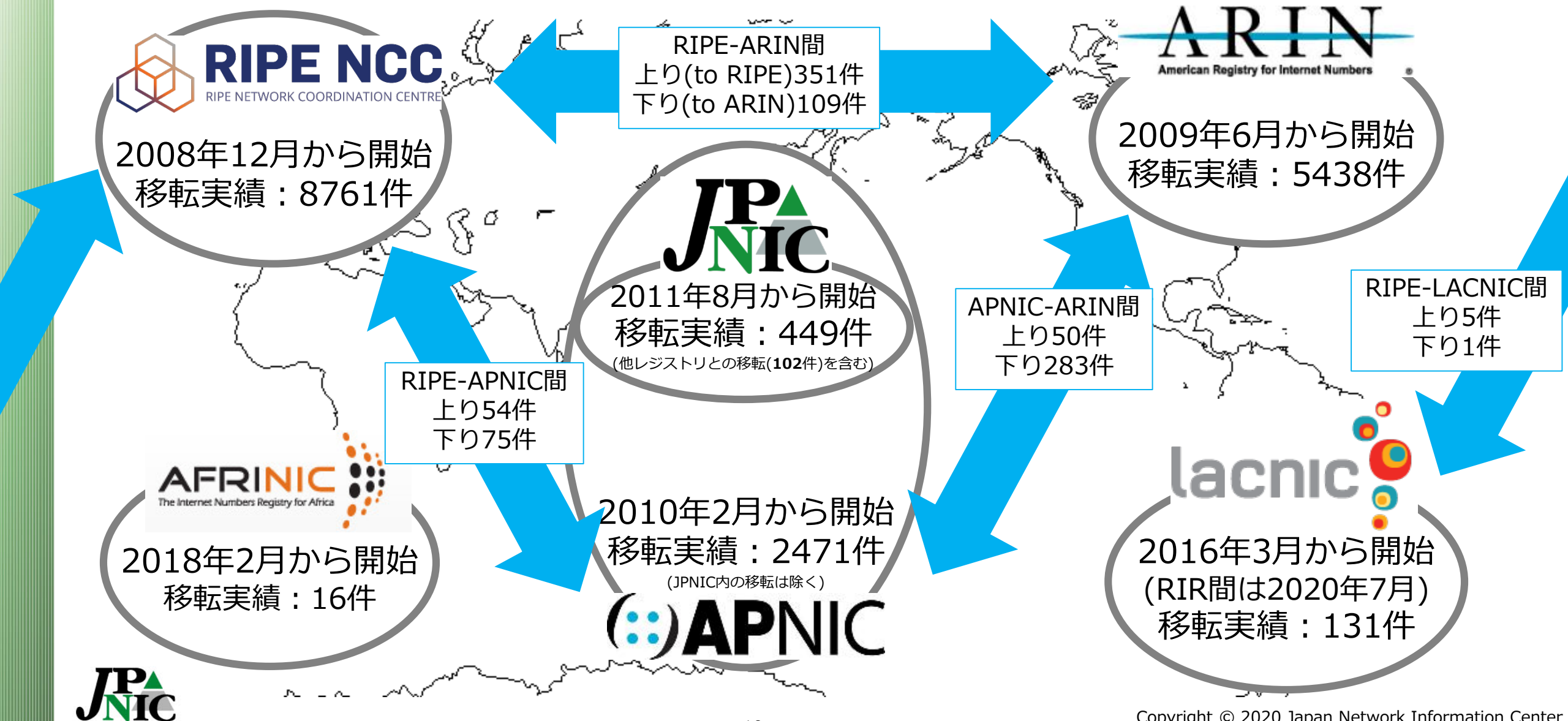
最後の/8ブロック(103/8)分配状況



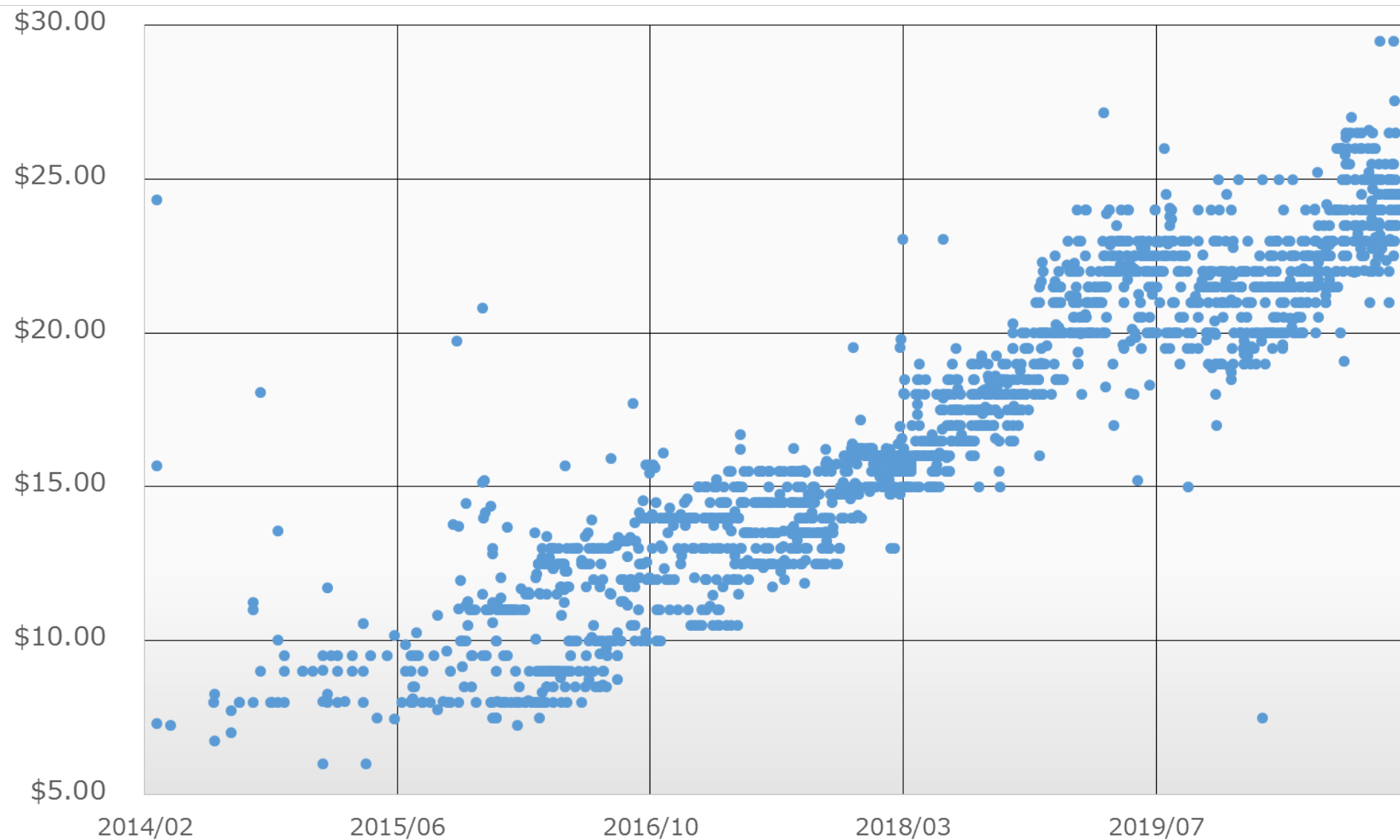
最後の/8ブロック(103/8)分配終了時期？



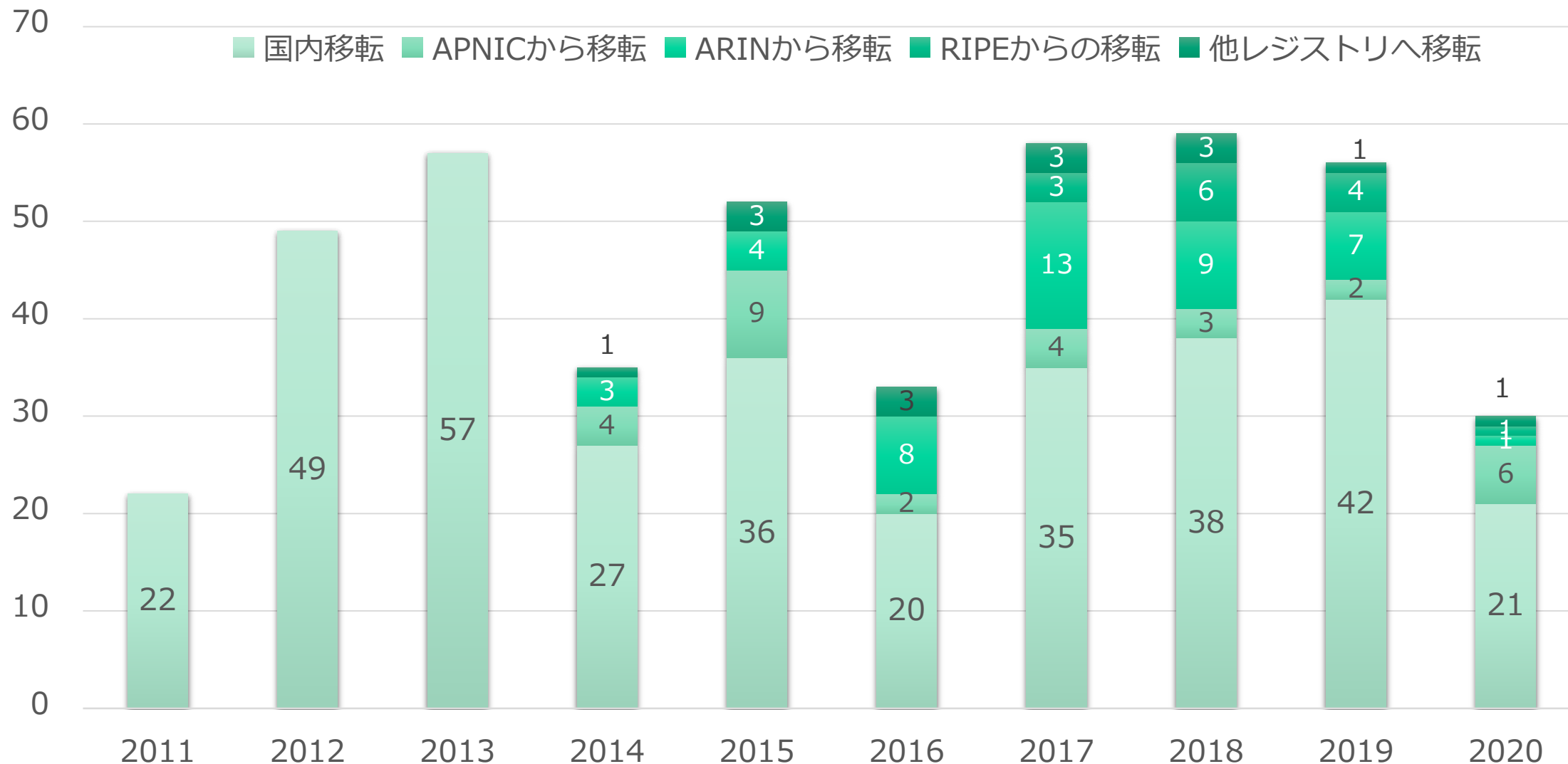
IPv4アドレス移転の世界動向(2020年11月現在)



IPv4アドレスオークション落札価格推移



JPNICのIPv4アドレス移転



ご清聴ありがとうございました！
