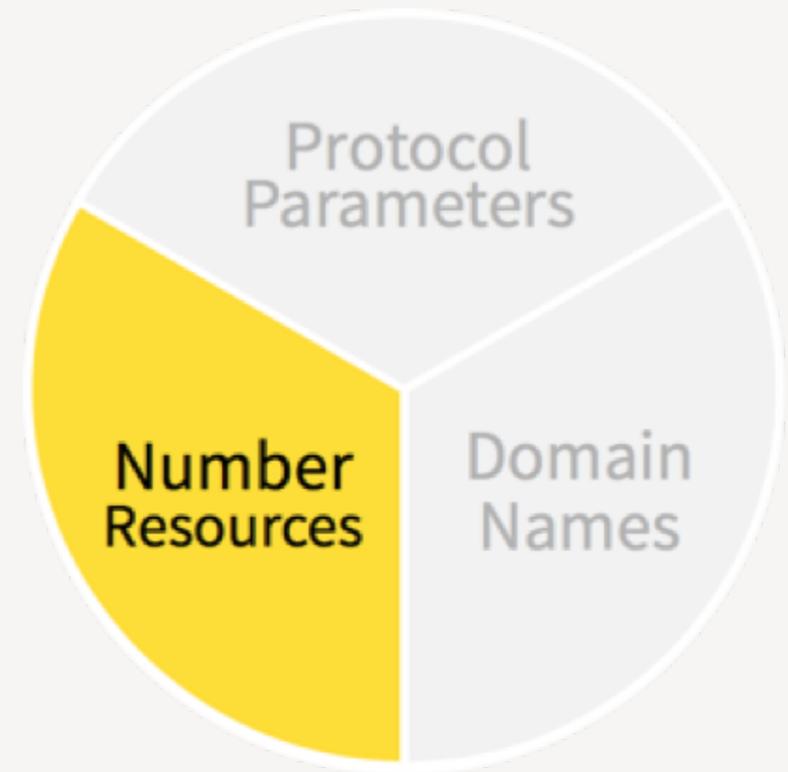


IANA Numbers Function Update

Kim Davies
President, PTI

RIPE 79: Rotterdam
18 October 2019



PTI | An ICANN Affiliate

Our team



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PRODUCT MGMT



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AUDIT



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REQUEST SPECIALIST



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IETF RELATIONS



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PRESIDENT



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CRYPTOGRAPHY



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EXCELLENCE & AUDIT



Jennifer Johnson
EXECUTIVE ASSISTANT



Ali Mohammadi
SOFTWARE



Andres Pavez
CRYPTOGRAPHY



Seman Said
SOFTWARE



George Sarkisyan
REQUEST SPECIALIST



Naela Sarras
SERVICE DELIVERY



Sabrina Tanamal
REQUEST SPECIALIST

Reverse DNS Service

- IANA provides an API service for RIRs to update delegations in in-addr.arpa and ip6.arpa
- Ongoing work to enhance this service
 - Platform upgrades
 - Running new and old services in parallel since July, against the same production database
 - Seek to conclude dual operations by end of year
 - Software improvements
 - Porting to latest Python by end of year
 - Provide a good basis for future enhancement next year

<https://iana.org/performance>

Number Resource Dashboard

- **Today**, we are launching a new IANA service that reports the inputs that inform global allocation policies for number resources
 - Replaces deprecated ICANN Research graphs and other tools
- Highlights
 - Shows specific data directly relevant to the application of allocation policies for the IANA
 - Drill down into specific details per-RIR
 - Average allocation rate, supply forecast, etc.
 - Directly answers a key question:
 - Can an RIR apply for more of a resource?

<https://iana.org/numbers/allocations>

Number Resource Dashboard



Internet Assigned Numbers Authority

[DOMAINS](#) [NUMBERS](#) [PROTOCOLS](#) [ABOUT US](#)

Number Resources

[Overview](#)

RIR Allocation Data

Overview

- [IPv6 \(AFRINIC\)](#)
- [IPv6 \(APNIC\)](#)
- [IPv6 \(ARIN\)](#)
- [IPv6 \(LACNIC\)](#)
- [IPv6 \(RIPE NCC\)](#)
- [ASN \(AFRINIC\)](#)
- [ASN \(APNIC\)](#)
- [ASN \(ARIN\)](#)
- [ASN \(LACNIC\)](#)
- [ASN \(RIPE NCC\)](#)

Abuse Issues

- [Overview](#)
- [Questions and Answers](#)

Number Resource Allocation Data

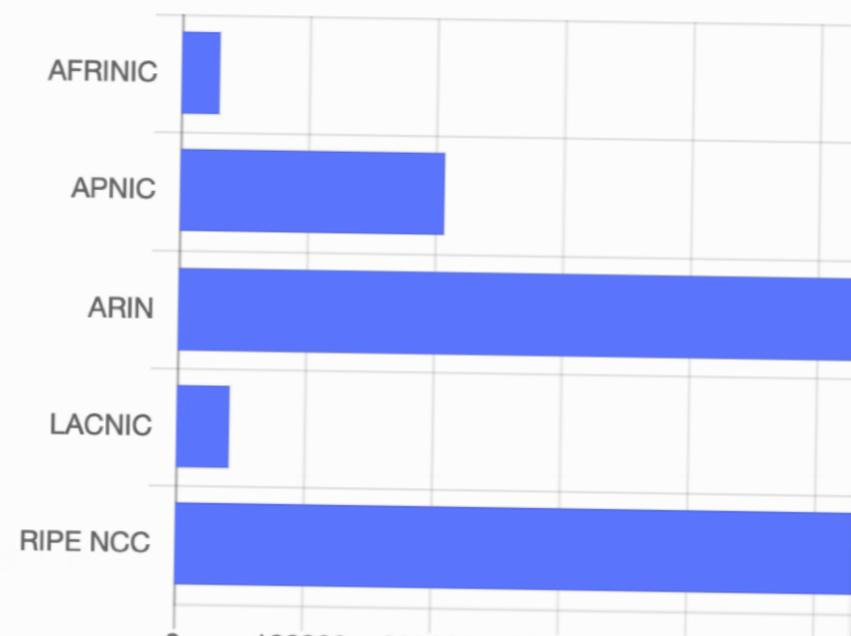
Our primary role in managing [Internet number resources](#) is to provide pools of unallocated IP addresses and AS numbers to Regional Internet Registries (RIRs) according to their needs as described by [ICANN's Global Addressing Policies](#).

These policies contain allocation algorithms that are based on the level of resource utilization of prior allocations. We track allocation rates here and provide analysis of eligibility for future RIR allocations.

IP Address Allocations

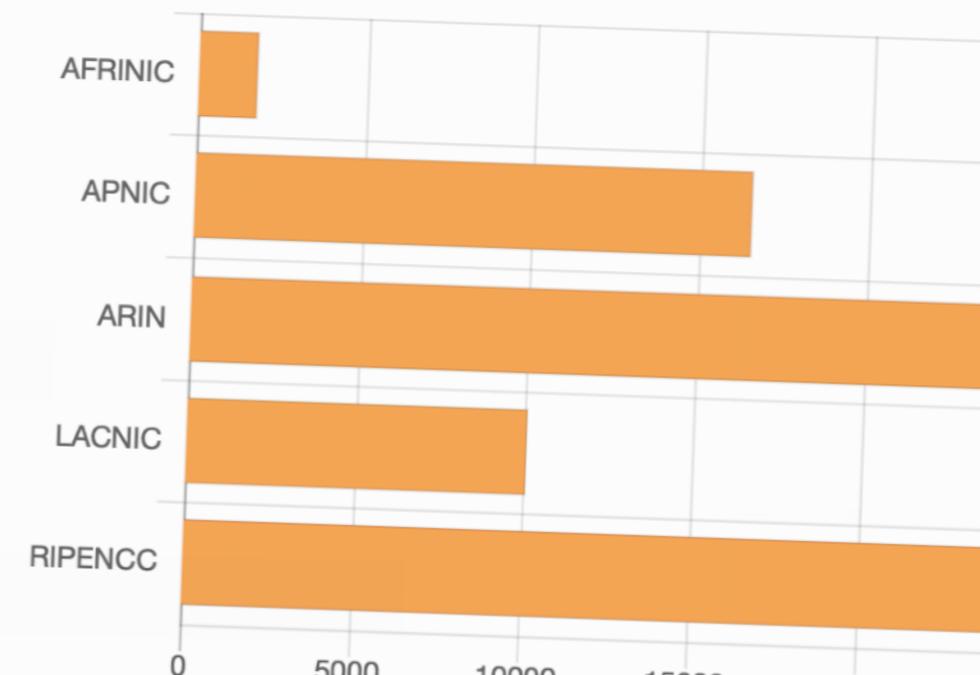
The chart below summarizes allocations of IPv6 addresses RIRs that have not represented as IANA's supply has been exhausted and other RIRs. Space does not factor in utilization.

Detailed information is available for each RIR by clicking the



Autonomous System Number Allocations

The chart below summarizes allocations of AS numbers that RIRs have not represented as IANA's supply has been exhausted and other RIRs. Detailed information is available for each RIR by clicking the

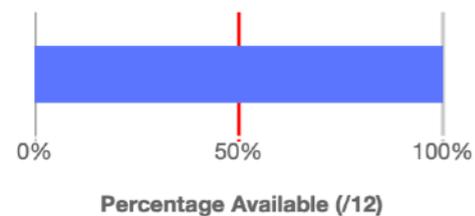


Number Resource Dashboard

RIPE NCC IPv6 Allocations

Allocations of IPv6 address space are made to regional Internet registries according to their needs, based on allocation rates they publish. Specifically, RIRs are eligible for further allocations if their available space of existing allocations is less than 50% of a /12 address block, or less than their necessary space for the following 9 months.

Current Space and Eligibility

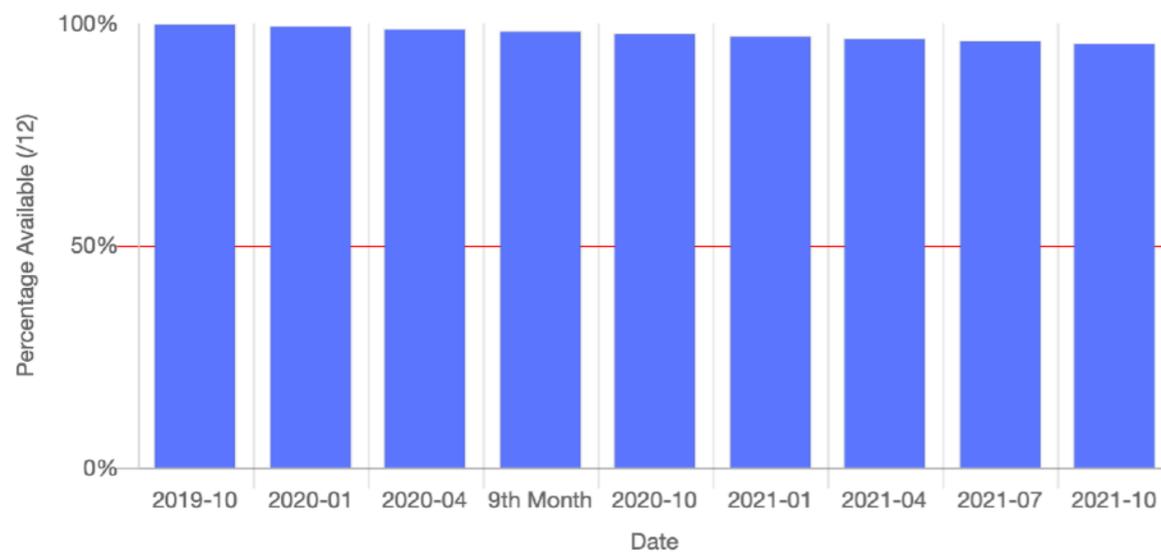


Eligibility	Not Eligible
Available Space	1,198,311
Necessary Space	17,208
Monthly Average	1,912

measurements are in /32

24 Month Forecast

The chart below uses RIPE NCC's current average allocation rate to forecast their available IPv6 space over the next 24 months. This can be used to estimate if RIPE NCC will become eligible to apply for additional IPv6 space in the near future.



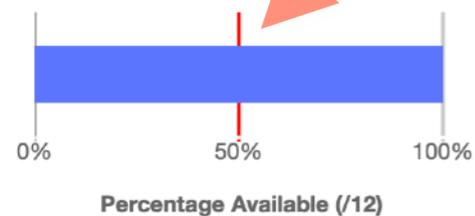
Number Resource Dashboard

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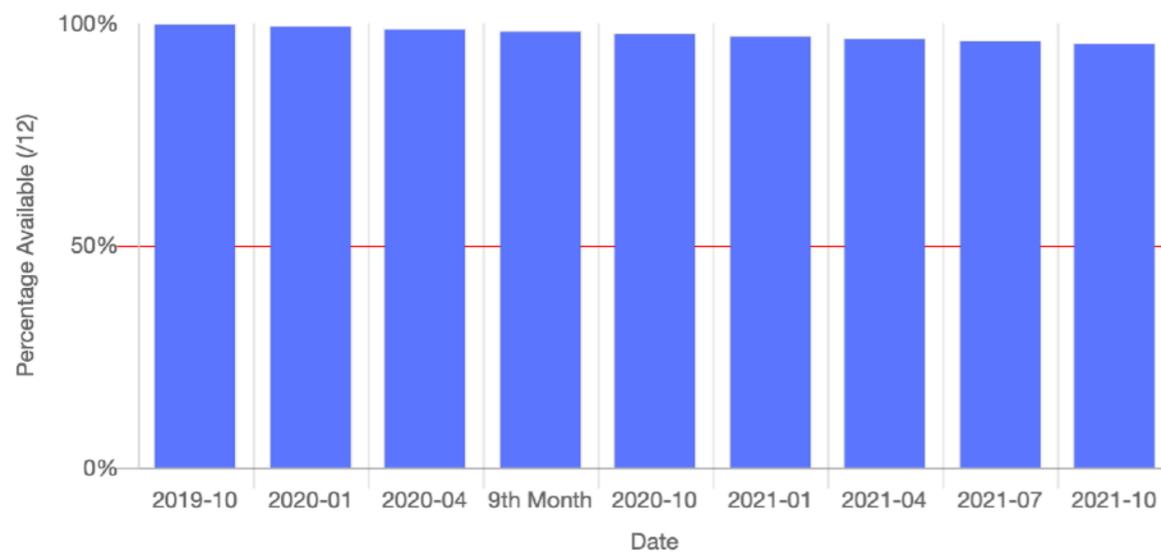


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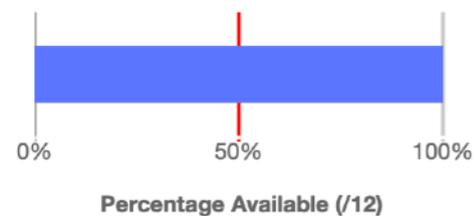


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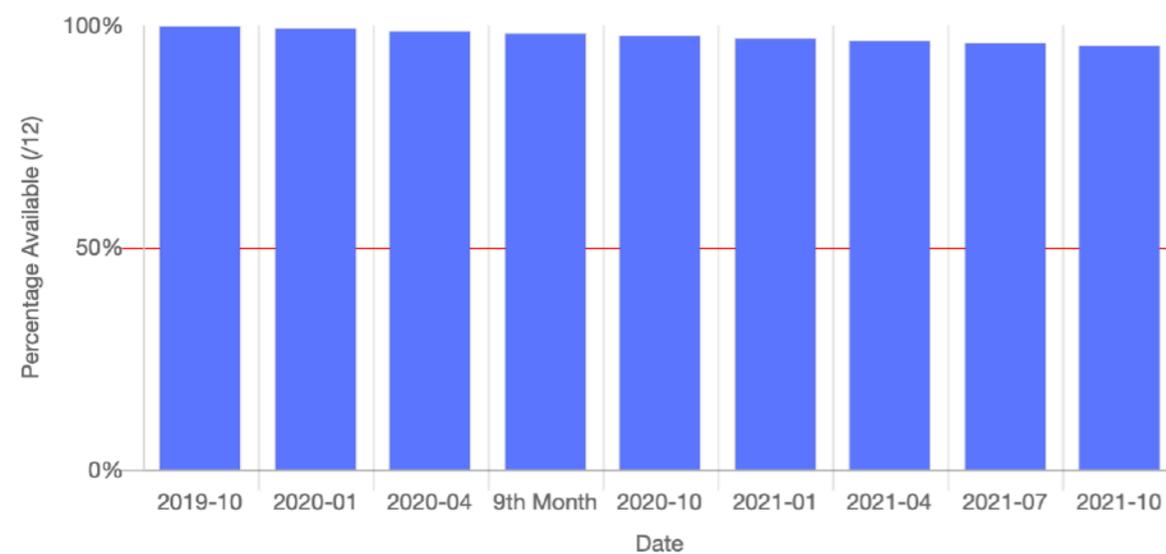


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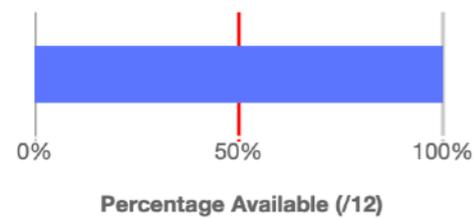
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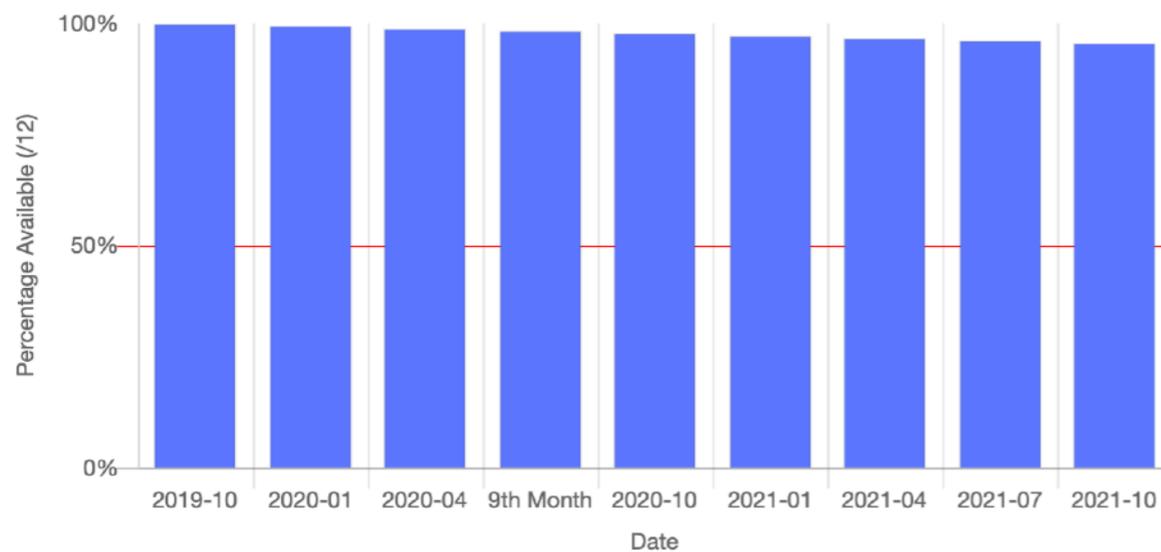


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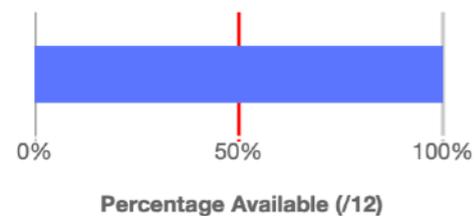
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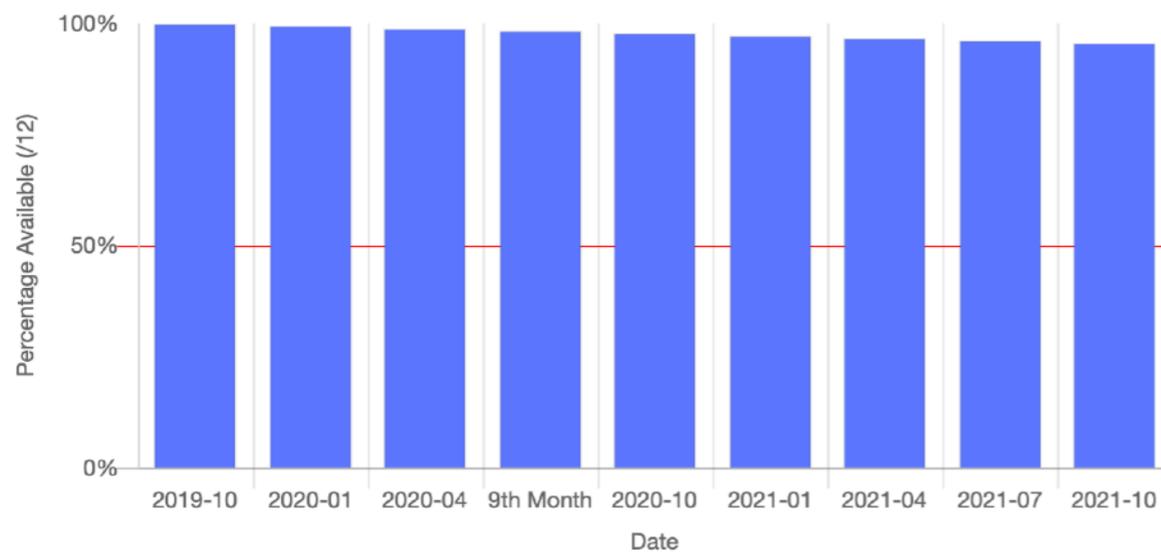


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Eligibility Threshold

Eligibility Status

Trend and Forecast

Additional Data

Allocation by Status

Allocation by Country

Last six months

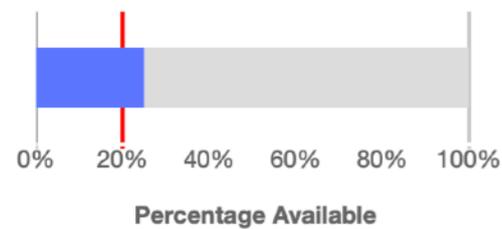
Fragmented allocations

Number Resource Dashboard

RIPE NCC ASN Allocations

Allocations of autonomous system numbers are made to regional Internet registries according to their needs, based on allocation rates they publish. Specifically, RIRs are eligible for further allocations if their available address space is 80% allocated, or the available pool does not satisfy two months of need based on the previous six months' average allocation rate.

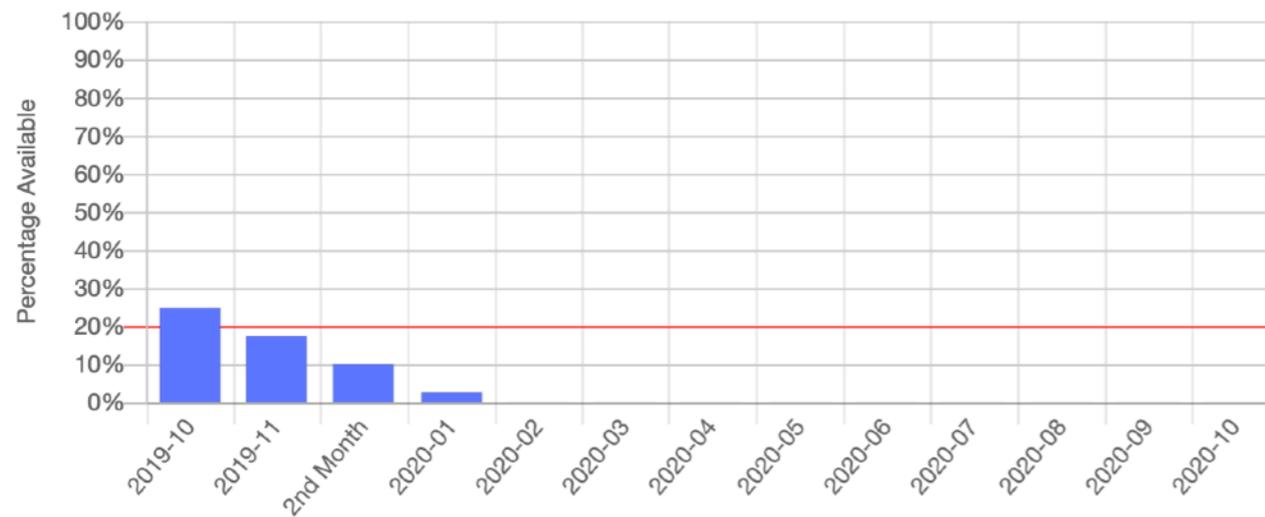
Current Pool and Eligibility



Eligibility	Not Eligible
Available	756
Two Month Need	454
Monthly Average	227
Last Allocation by IANA	3,072 ASNs (2018-08-20)

12 Month Forecast

The graph below uses RIPE NCC's current average allocation rate to forecast their available ASN space over the next 12 months. This can be used to estimate if RIPE NCC will become eligible to apply for additional AS Numbers in the near future.

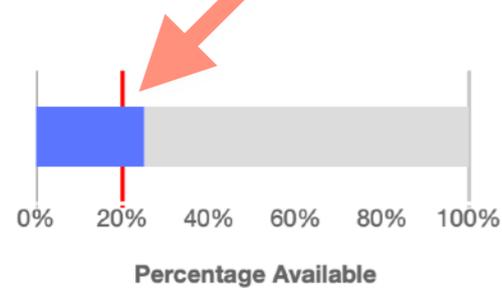


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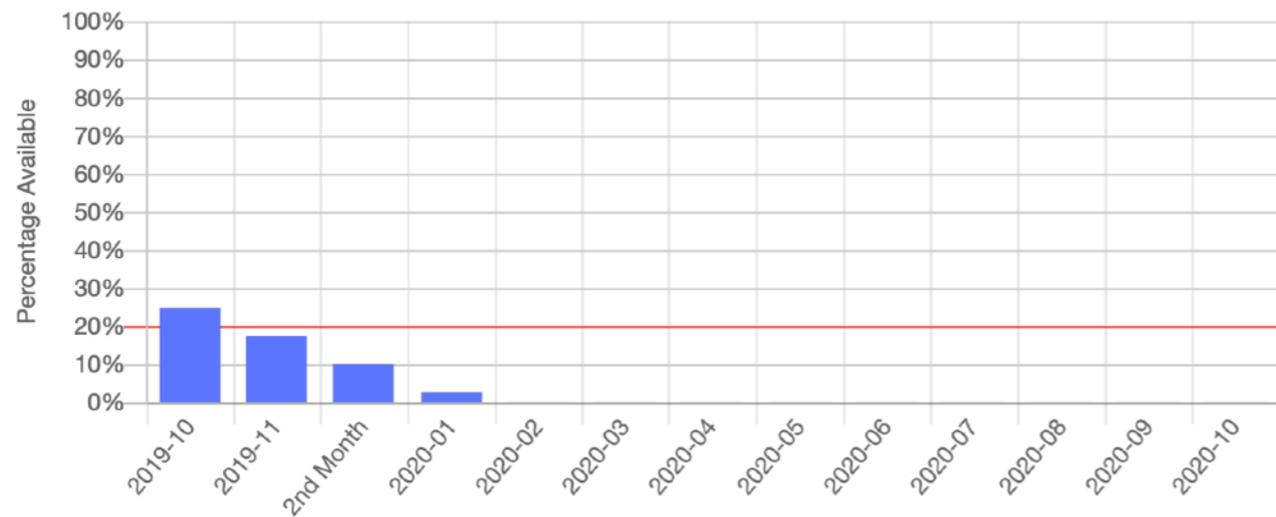
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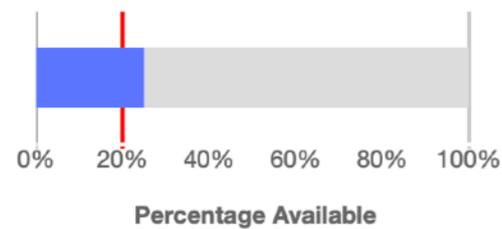
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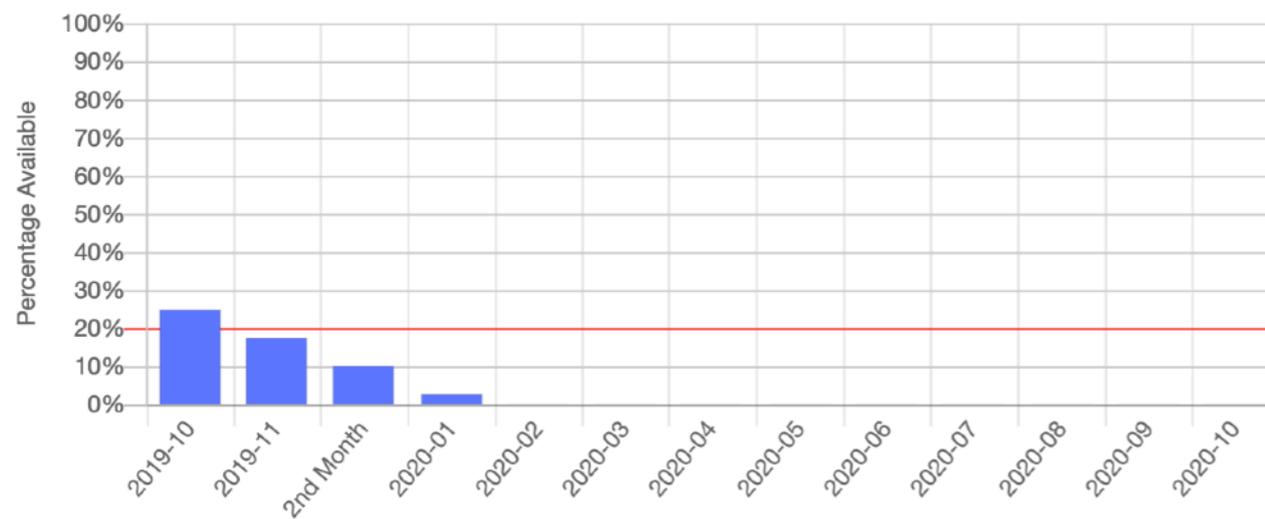


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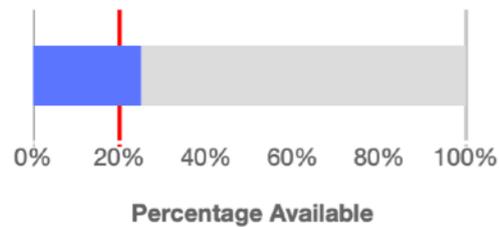


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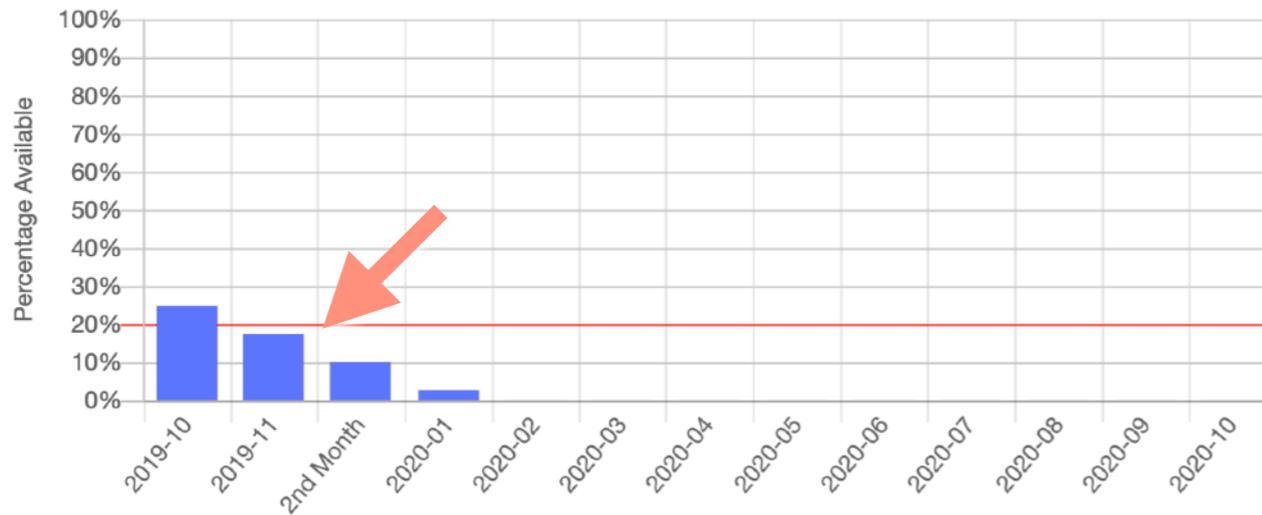
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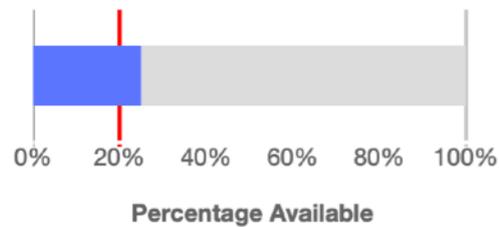
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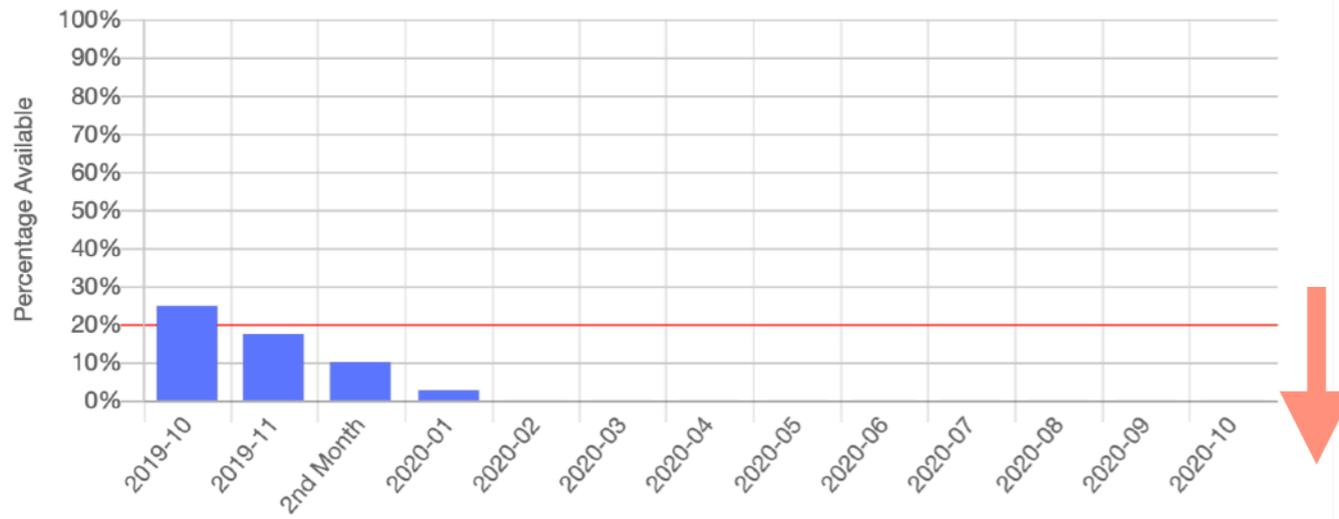
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Eligibility Threshold

Eligibility Status

Trend and Forecast

Additional Data

Allocation by country

Last six months

Number Resource Dashboard

- Updated daily
- This is the first version, feedback welcome on further improvement

<https://iana.org/numbers/allocations>

Customer Satisfaction

- Annual Engagement Survey closed October 11. Results will be shared during ICANN 66 in November.
- Customer satisfactions survey sent after the closure of tickets
 - For Q3 2019:
 - 36% response rate
 - 82% satisfaction rate
 - No responses from number functions in period

<https://iana.org/performance>

"How did we do?"

- Launched in October 2018
- A simple one question survey with a binary response
- To either response, a followup comment can be optionally provided which will be reviewed by our continuous improvement team, and triaged for follow-up if requested.
- Surveys are limited to one in a period (e.g. 60 days)
- Customers can opt-out permanently

How was your recent IANA service experience regarding .fk?

IS IANA Services <noreply-45900088aa66416ba9fa085fb6874313@iana.org>
Seman Said;
Monday, October 15, 2018 at 3:39 PM
[Show Details](#)

Dear Colleague,

We'd like to hear about how your recent request was handled by our team. Please take a single question survey to provide us your feedback.

On 5 October 2018, you submitted a change request for the .fk domain. How do you rate your experience?

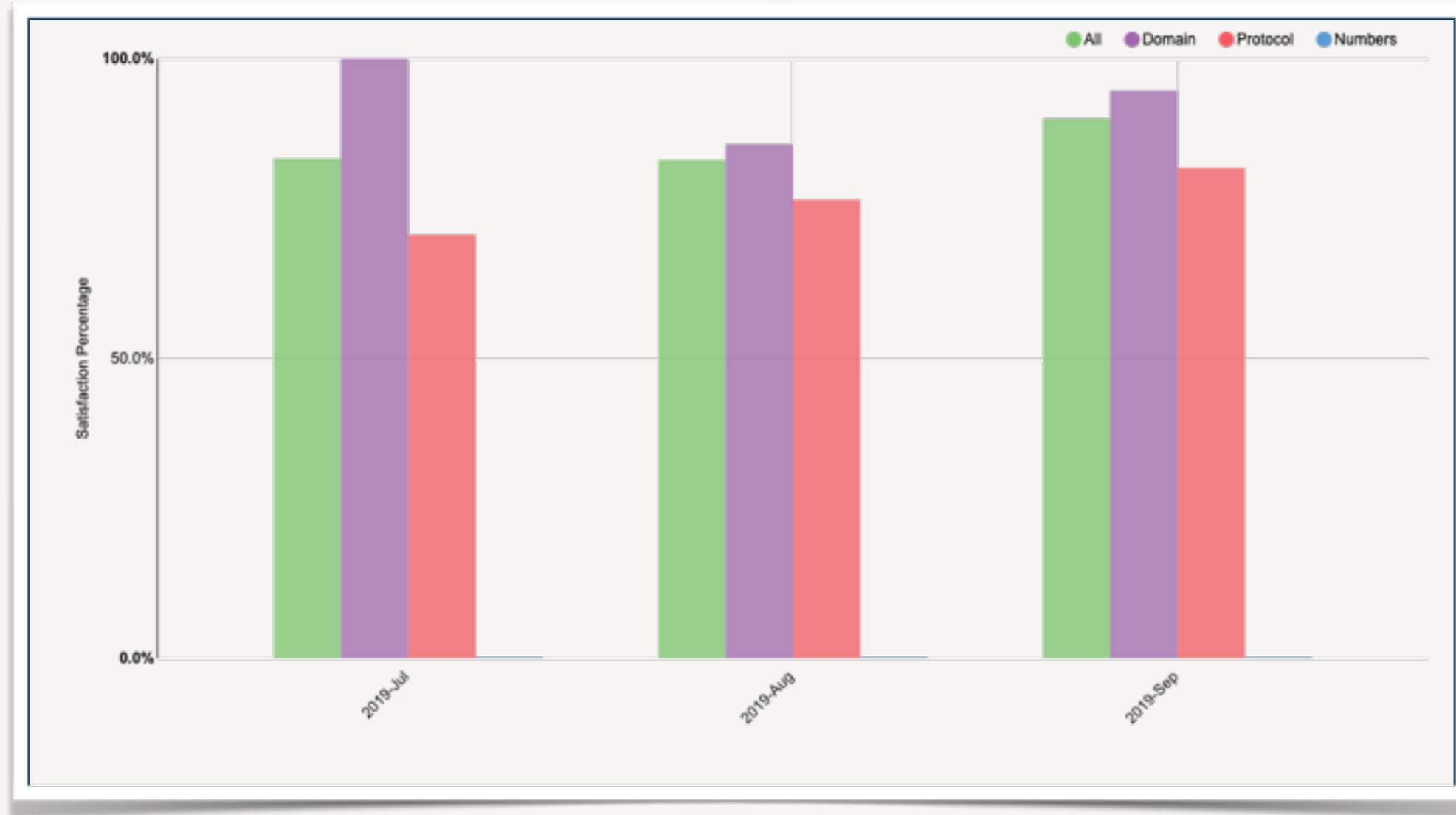
Thank you!
Your quick feedback will help us identify areas for improvement. If you provide a comment and ask us to contact you, we'll be in touch soon to learn more about your issue and try to make things right.

Provide any additional comment (optional)

Please contact me to discuss my experience further

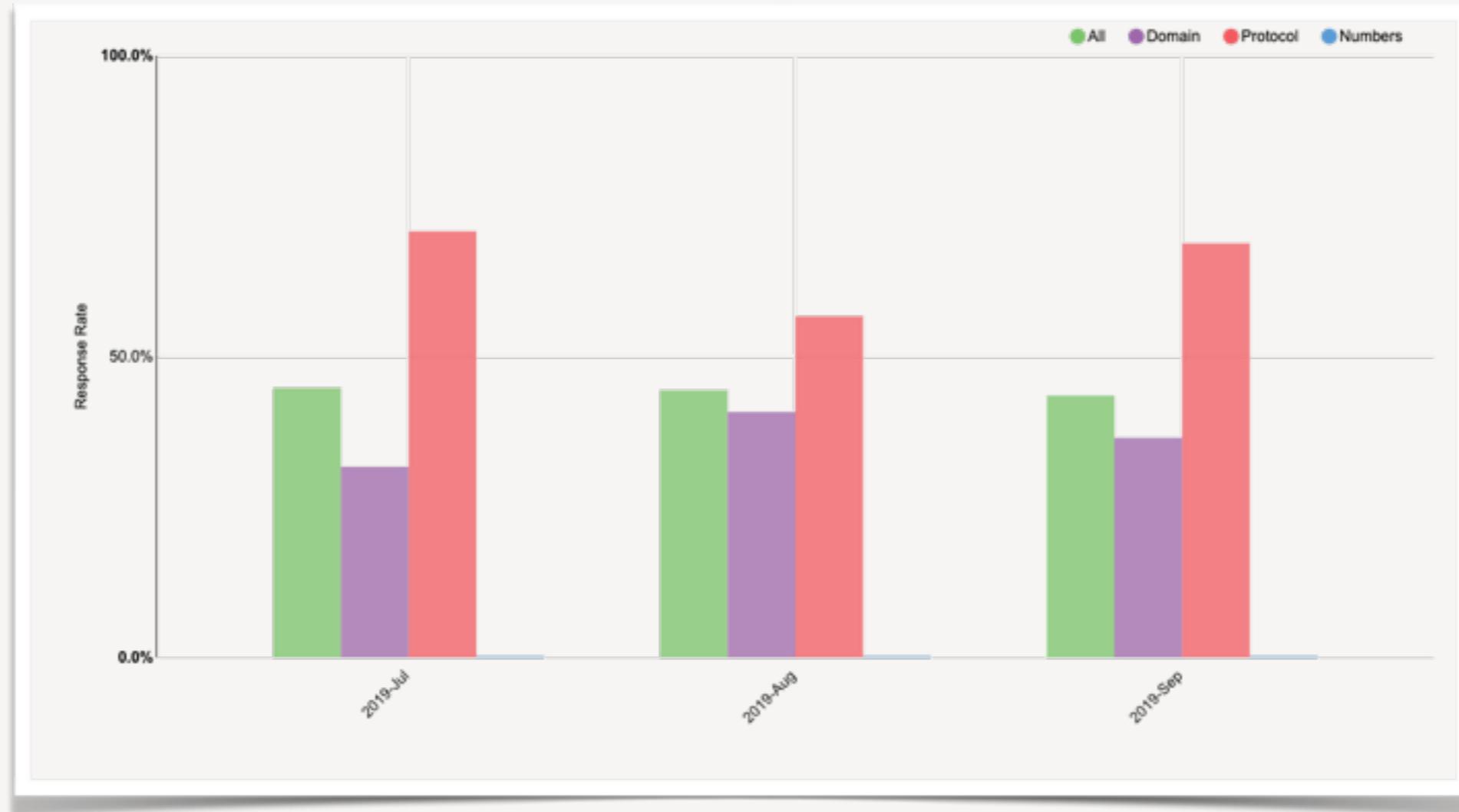
Don't want to receive these surveys?
While your feedback as our customer is valuable, we don't want to bother you if you find these intrusive. We don't send more than one of these requests every 60 days. If you wish to permanently stop receiving customer survey click here

Customer Satisfaction



Satisfaction Rate

Customer Satisfaction



Response Rate

Customer Satisfaction

- Doesn't distinguish between:
 - Service dissatisfaction — the IANA team/product did not provide satisfactory customer service
 - Policy dissatisfaction — customer is unhappy because they were ineligible under the policies IANA is required to implement
- Further work is being done to refine approach
- Performing comprehensive followup with respondents to further understand negative responses

<https://iana.org/performance>

SLA Performance

Number Resource Performance

December 2018

Performance Summary

These performance targets are derived from section 4.3 of the Service Level Agreement for the IANA Numbering Services for the allocation of unicast IP addresses and AS numbers to the five Regional Internet Registries.

- ✓ Requests acknowledged on time (100%)
- ✓ Responded on time (100%)
- ✓ Implemented on time (100%)
- ✓ Implemented accurately (100%)

Individual Requests to Regional Internet Registries

Date	Request Type	Request Processing Details
2018-12-06	AS Number	<ul style="list-style-type: none">✓ Responded on time (0.0 days) More info✓ Implemented on time (1.1 days)✓ Accurately implemented

Status of Unallocated Recovered IPv4 Unicast Addresses

Unallocated remaining Recovered IPv4 Address Space is: 3,328 (11.7 bits) available to allocate. Allocations made from the Recovered IPv4 Address Space are made in accordance with the [Global Policy for Post Exhaustion IPv4 Allocation Mechanism by the IANA \(Ratified 6 May 2012\)](#).

<https://iana.org/performance>

FY21 Budget

- PTI has posted its draft budget for July 2020-June 2021 for public comment



PTI Funding/ICANN Funding

FY21 Funding of PTI is \$10.0M provided solely from ICANN and is driven by the FY21 Expenses



PTI baseline cash expenses

FY21 Expenses of \$10.0M (including \$0.5M contingency) increased versus FY20 Forecast driven by inflationary Personnel increases of \$0.3M, partially offset by decreases in administrative activities of \$0.2M



PTI contingency

Contingency of \$0.5M remains flat in FY21 compared to FY20 Forecast. Contingency is about 10% of the Direct Dedicated costs and represents an amount of budgeted expense unallocated to specific activities or departments



Capital Budget

Capital for FY21 is for a Hardware Security Module (HSM) Replacements and Key Management Facility (KMF) improvements

TOTAL PTI In Millions, USD	PTI Services FY21 Budget	PTI Services FY20 Forecast	Under/(Over)		PTI Services FY19 Actuals	Under/(Over)	
			Total	%		Total	%
Operating Expenses (a)	\$9.9	\$9.8	(\$0.1)	-1.2%	\$7.6	(\$2.3)	-30.6%
Capital	\$0.1	\$0.1	\$0.0	0.0%	\$0.3	\$0.2	64.0%
TOTAL	\$10.0	\$9.9	(\$0.1)	-1.2%	\$7.9	(\$2.1)	-26.8%

(a) Included budgeted contingency of \$0.5M.

Thank you!

kim.davies@iana.org