Trying to measure the use of unallocated address space

...and some other news

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Overview

- What's the problem?
- What are we trying to measure?
- What does it not measure?
- What are the results?
- What else?
- IANA News
- IDNs

Define the problem

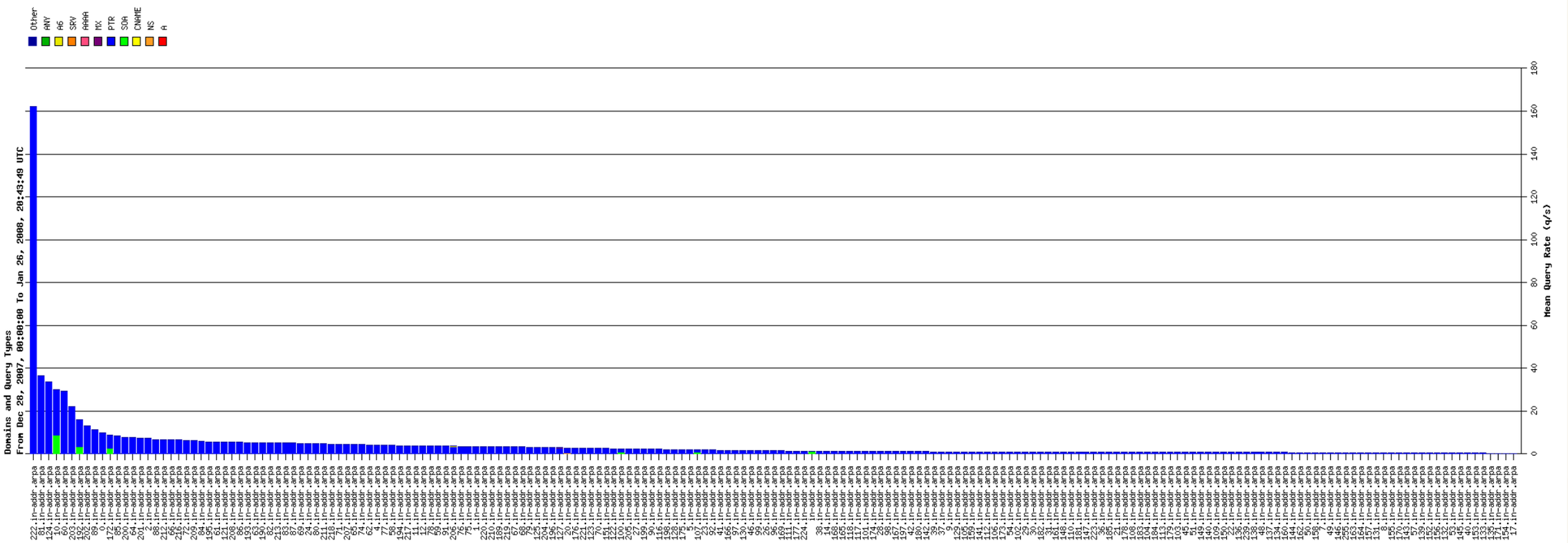
- All unallocated unicast space will be allocated
- Some networks and services already use this space
- http://www.uknof.org.uk/uknof8/Vegoda-Unallocated.pdf

What are we trying to measure?

- PTR queries received at root DNS servers where the IPv4 address is not part of an allocated /8

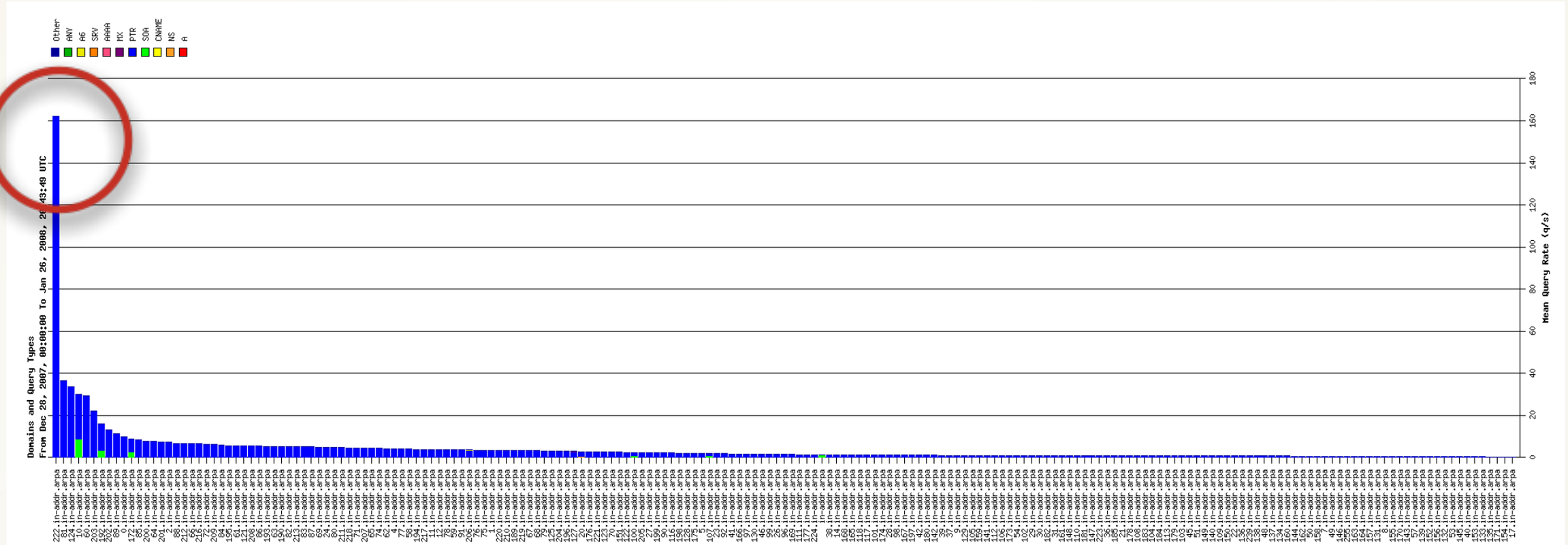
What can't we measure?

- Usage by otherwise well run sites using unallocated space
  - Split-horizon DNS
  - Egress filters



What are the results?

- Let's look at the distribution for all /8s



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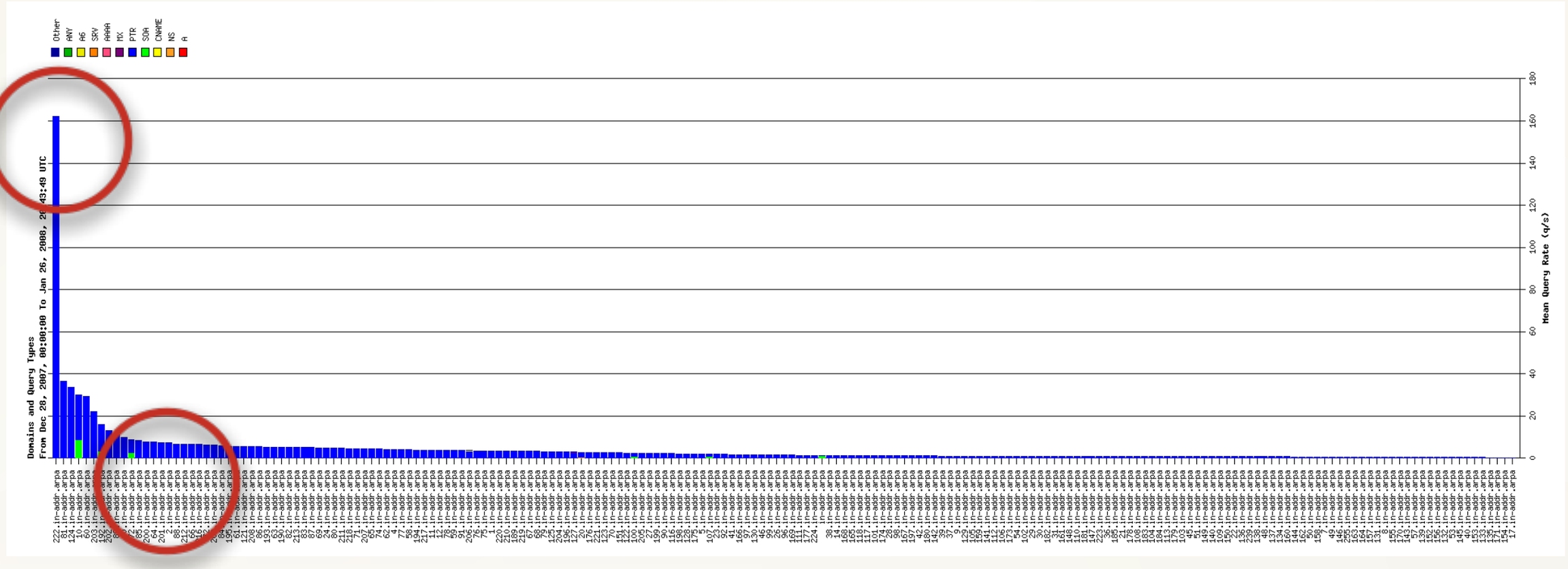

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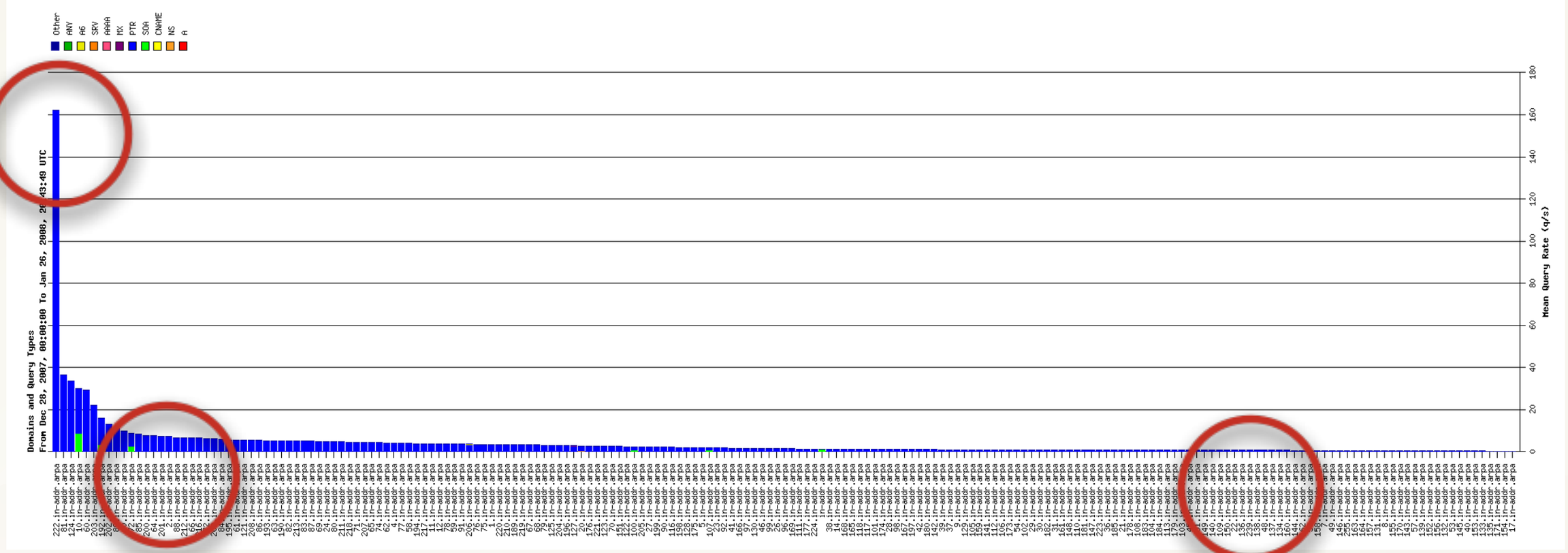

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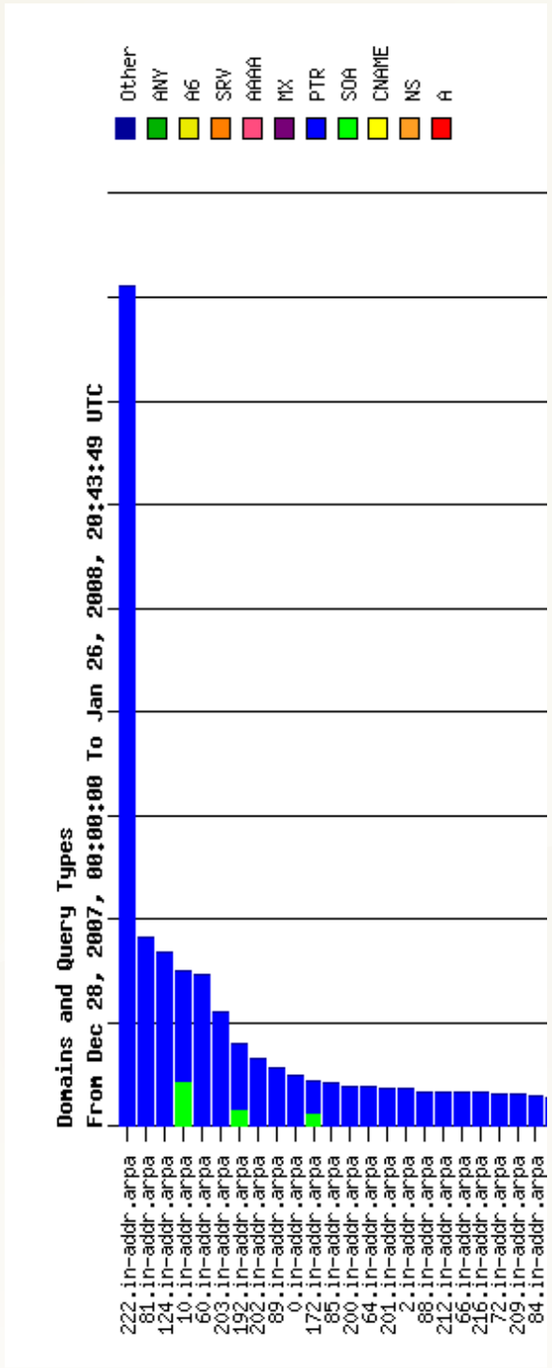
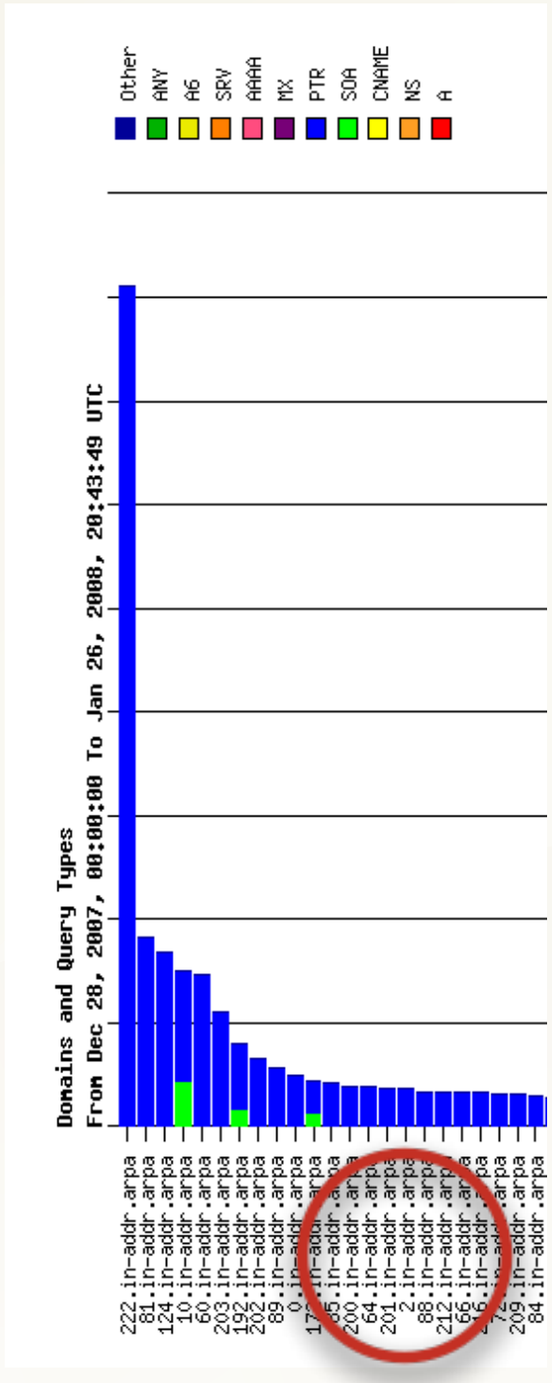


A closer look



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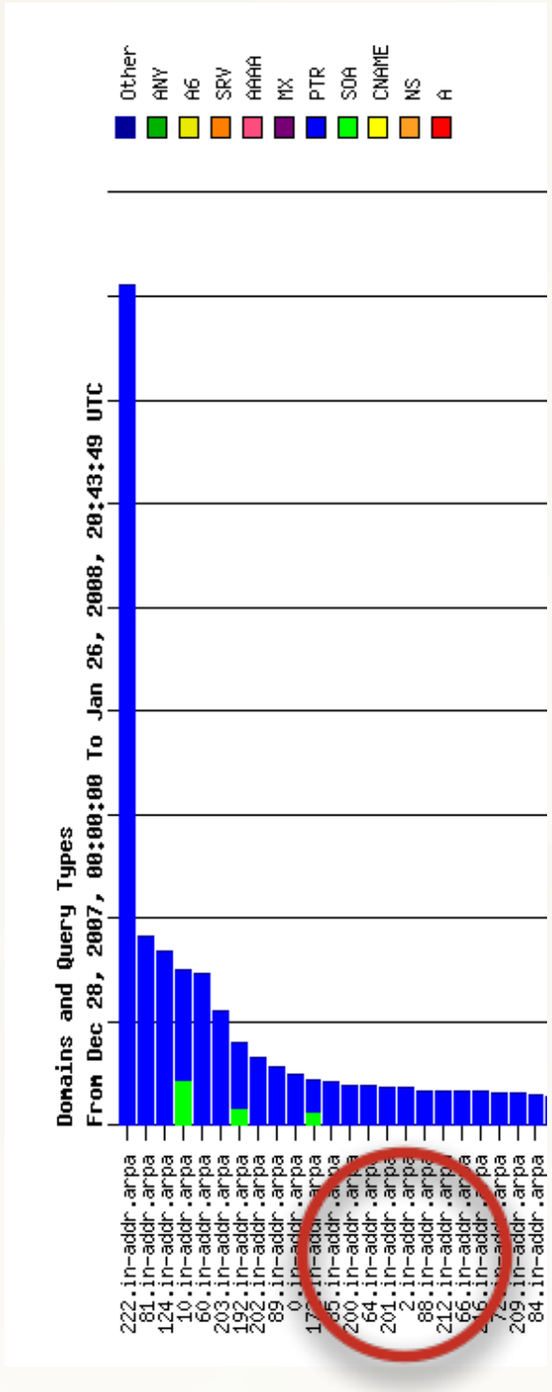
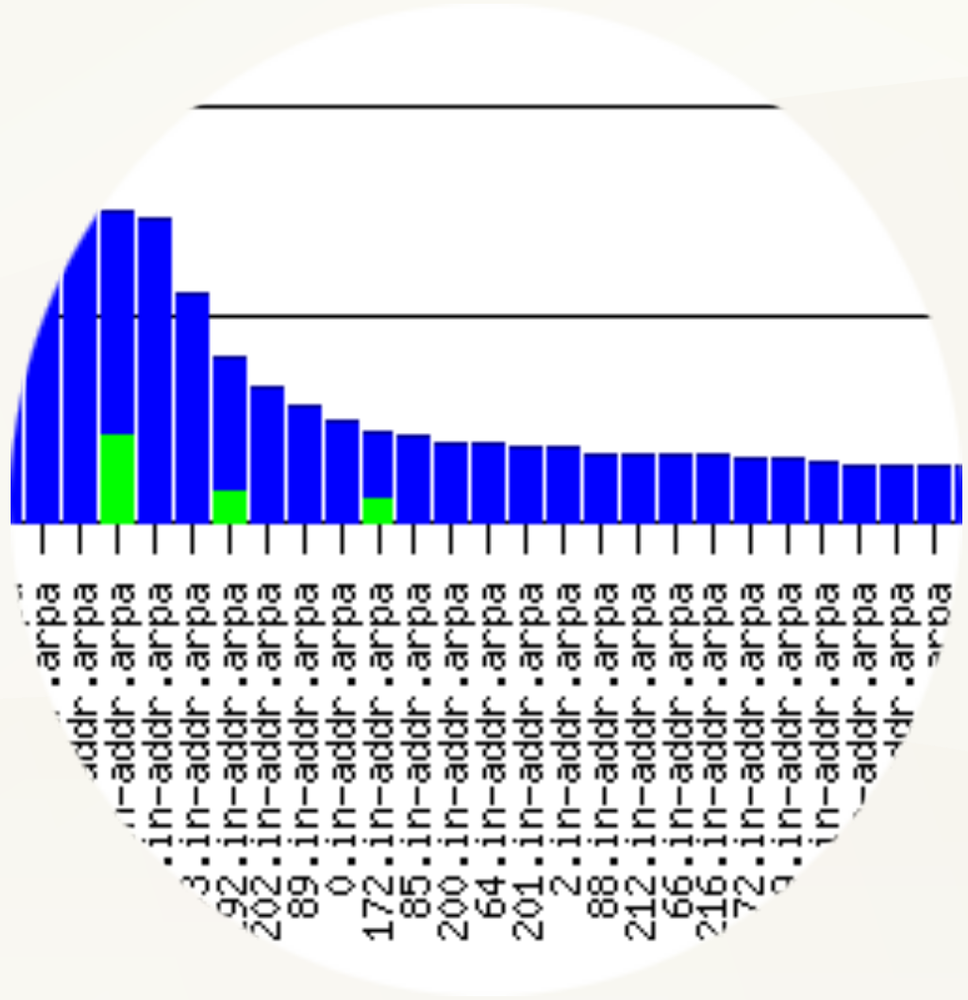
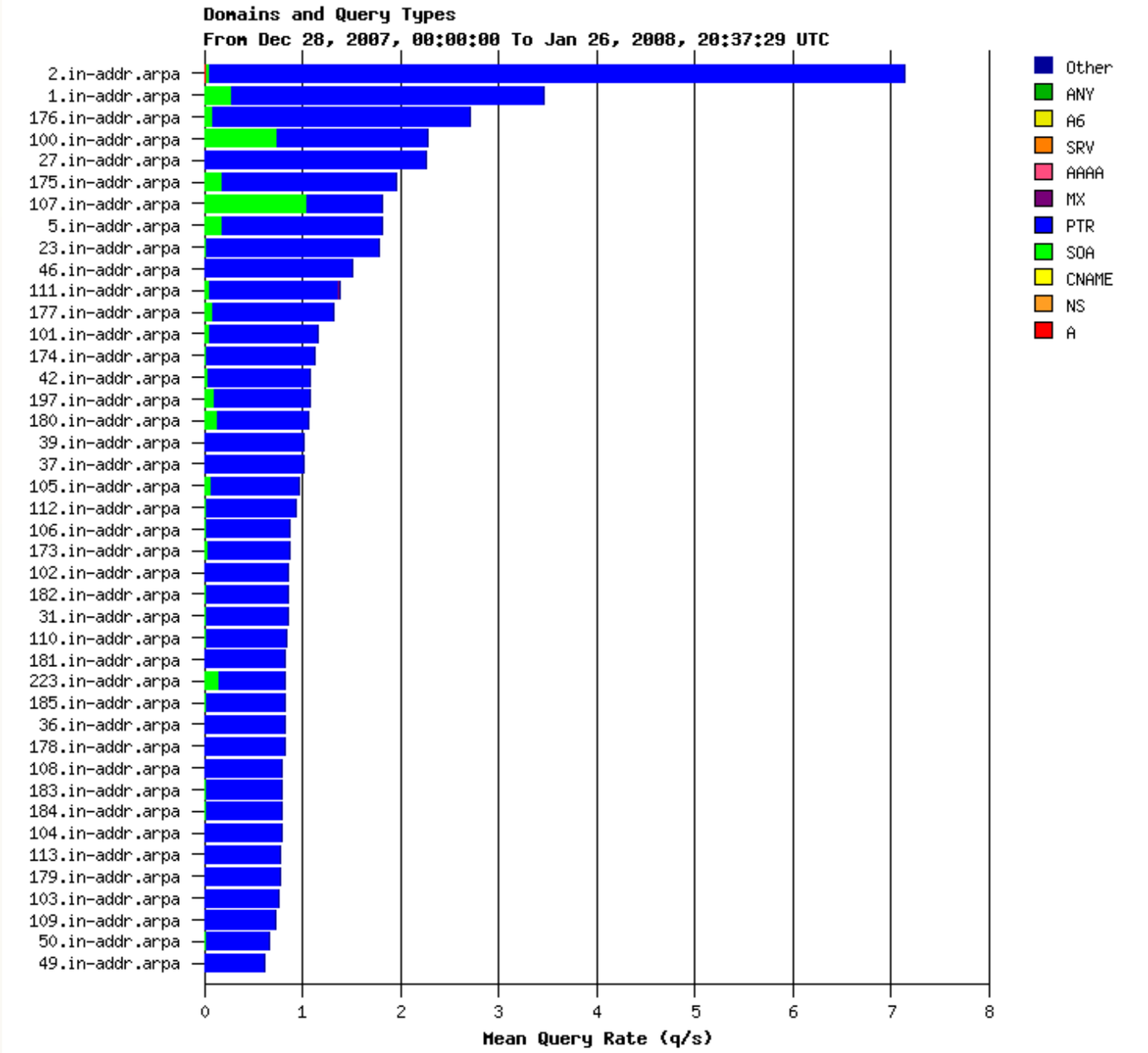




A closer look

Query distribution over 30 days



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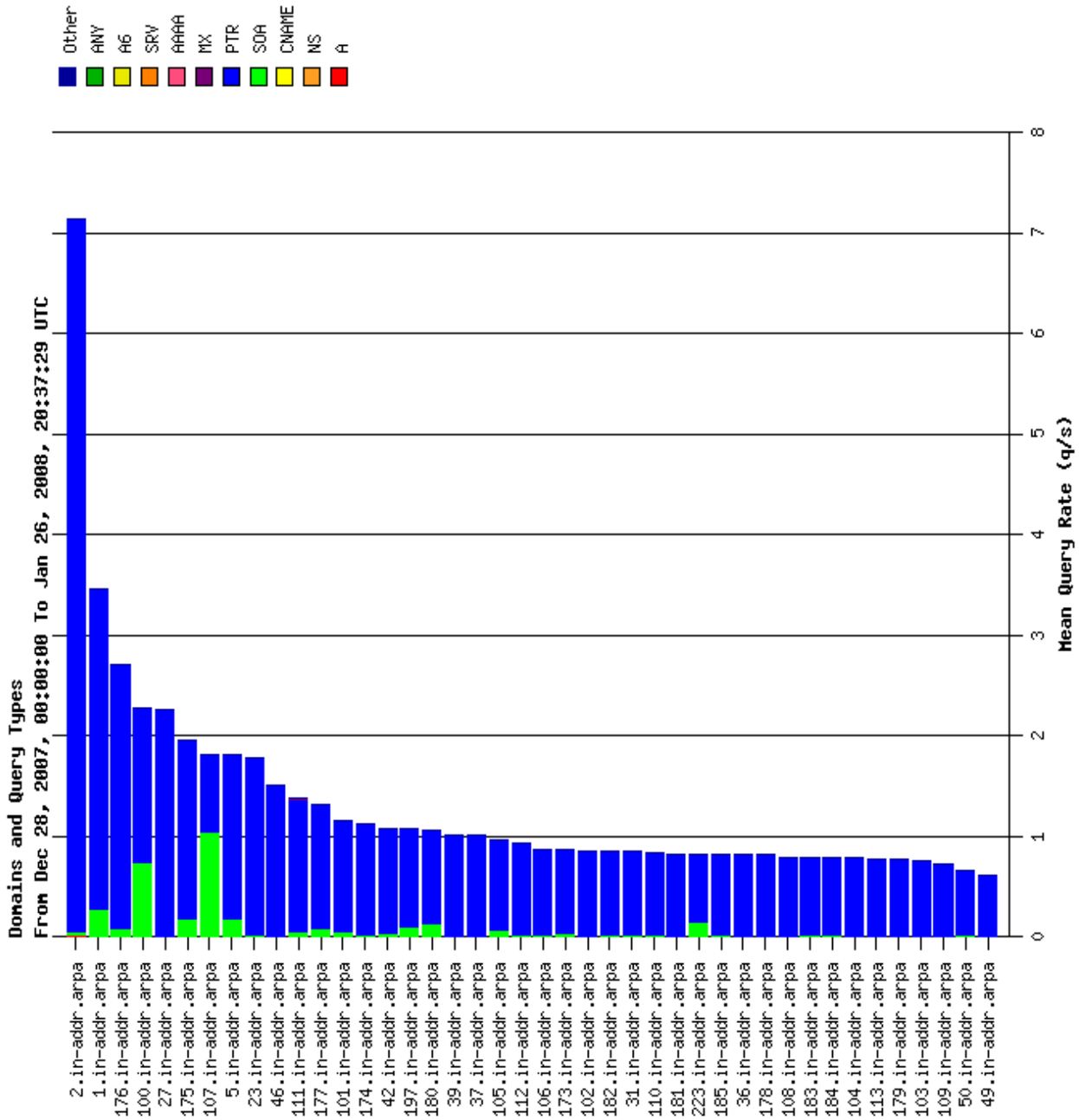

Top 10

1	2.in-addr.arpa
2	1.in-addr.arpa
3	176.in-addr.arpa
4	100.in-addr.arpa
5	27.in-addr.arpa
6	175.in-addr.arpa
7	107.in-addr.arpa
8	5.in-addr.arpa
9	23.in-addr.arpa
10	46.in-addr.arpa

Query distribution over 30 days

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But that was just L-root

- The technique seems to work
  - Data from other root server operators would give a broader picture
- More analysis would be useful

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Moving on…

- 14.0.0.0/8 reclaimed in January
  - 43 /8s remain in IANA free pool
- IPv6 for root DNS servers
  - F, H, K and M
  - 4 February 2008

IDNs

Test IDN TLDs and the IDN wiki

- Application testing
- Registry applicant testing

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Script	Language	SLD.TLD U-labels	SLD A-label	TLD A-label
Arabic	Arabic	مثال.إختبار	xn--mgbh0fb	xn--kgbechtv
Arabic	Persian	مثال.آزمایشی	xn--mgbh0fb	xn--hgbk6aj7f53bba
Chinese, simplified	Chinese	例子.测试	xn--fsqu00a	xn--0zwm56d
Chinese, traditional	Chinese	例子.測試	xn--fsqu00a	xn--g6w251d
Cyrillic	Russian	пример.испытание	xn--e1afmkfd	xn--80akhbyknj4f
Devanagari	Hindi	उदाहरण.परीक्षा	xn--p1b6ci4b4b3a	xn--11b5bs3a9aj6g
Greek	Greek	παράδειγμα.δοκιμή	xn--hxajbheg2az3al	xn--jxalpdlp
Hangul	Korean	실례.테스트	xn--9n2bp8q	xn--9t4b11yi5a
Hebrew	Yiddish	בײַשפּיל.טעסט	xn--fdbk5d8ap9b8a8d	xn--deba0ad
Kanji Hirigana, and Katakana	Japanese	例え.テスト	xn--r8jz45g	xn--zckzah
Tamil	Tamil	உதாரணம்.பரிட்சை	xn--zkc6cc5bi7f6e	xn--hlcj6aya9esc7a

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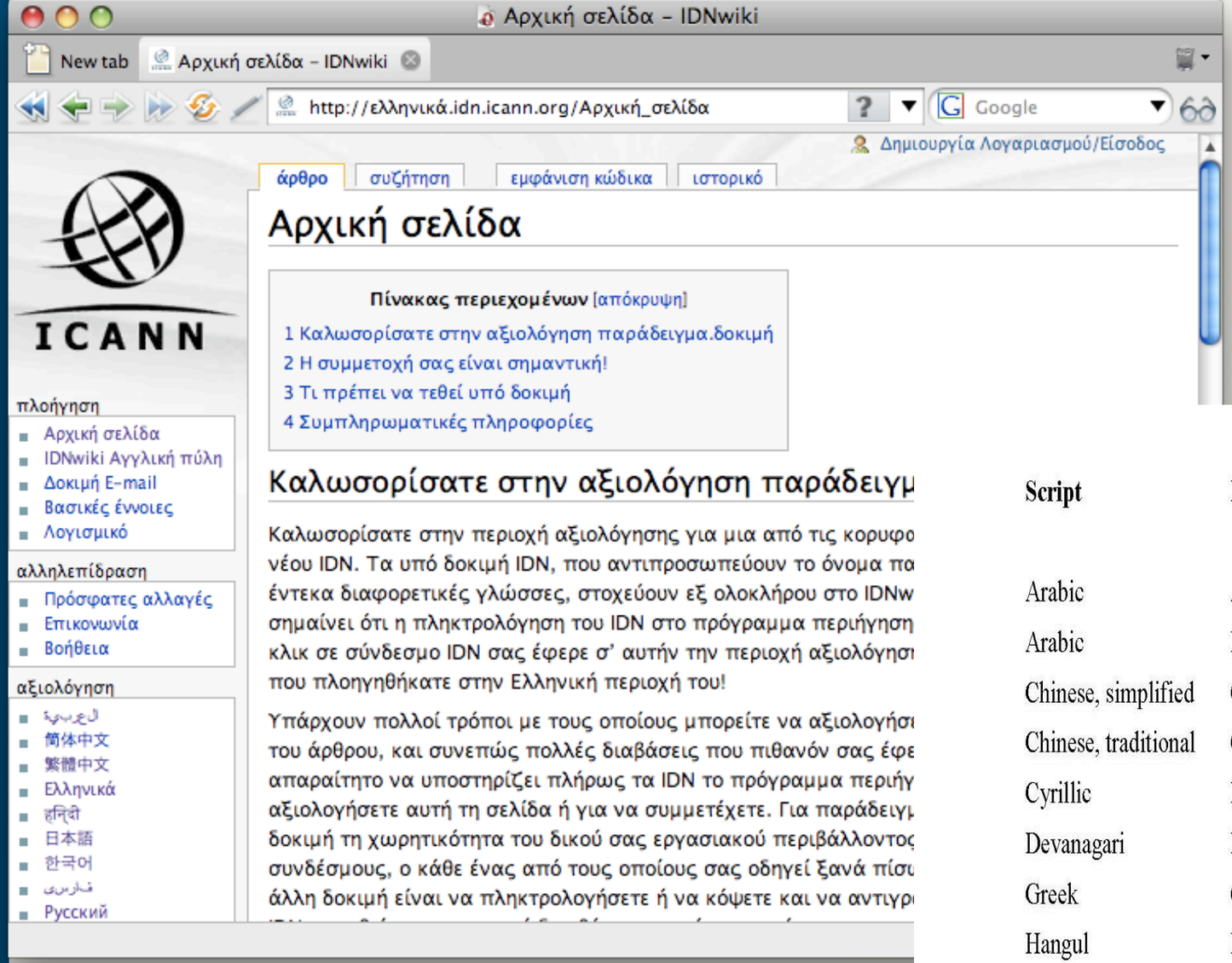

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Hangul	Korean	실례.테스트	xn--9n2bp8q	xn--9t4b11yi5a
Hebrew	Yiddish	בישפּיל.טעסט	xn--fdbk5d8ap9b8a8d	xn--deba0ad
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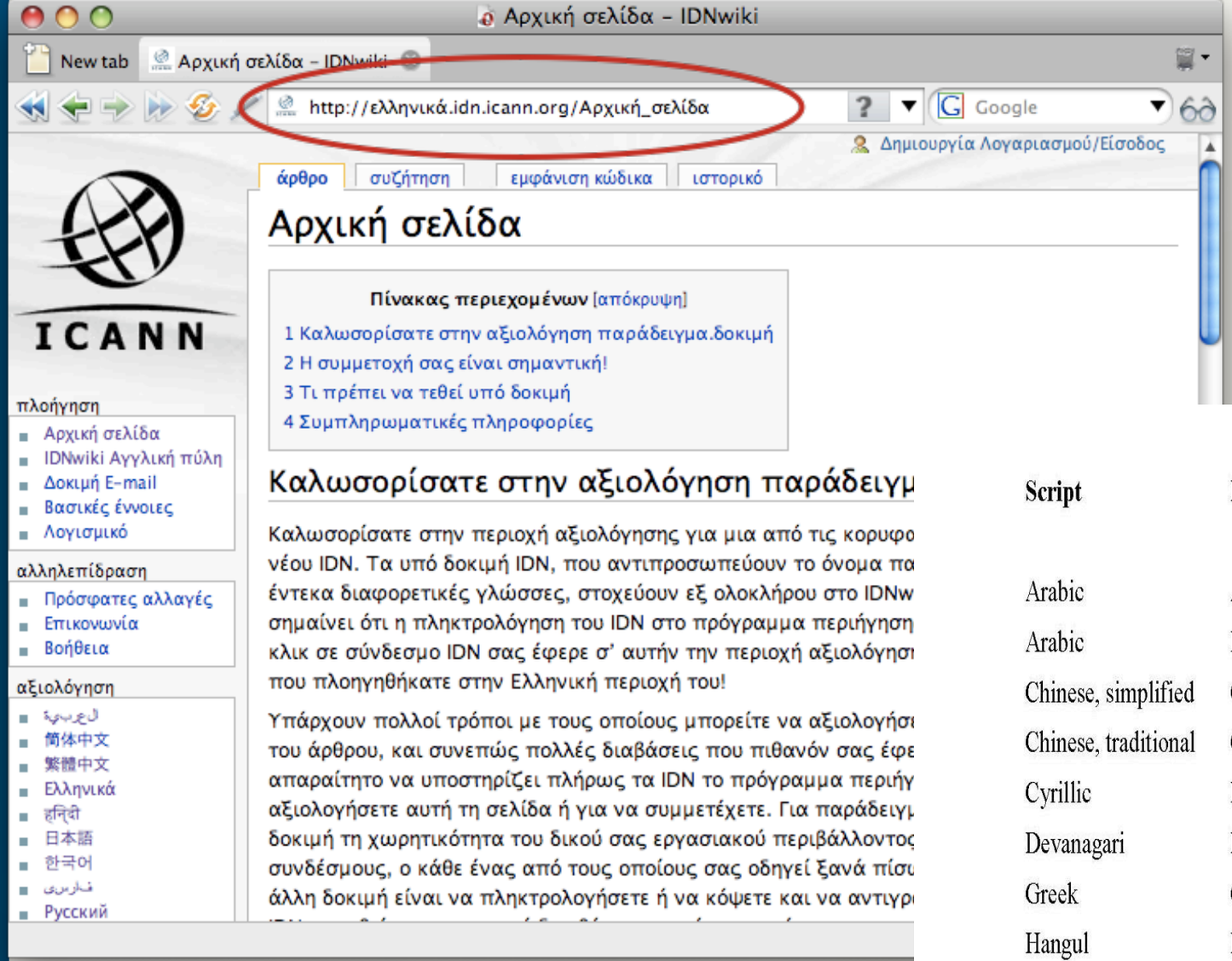

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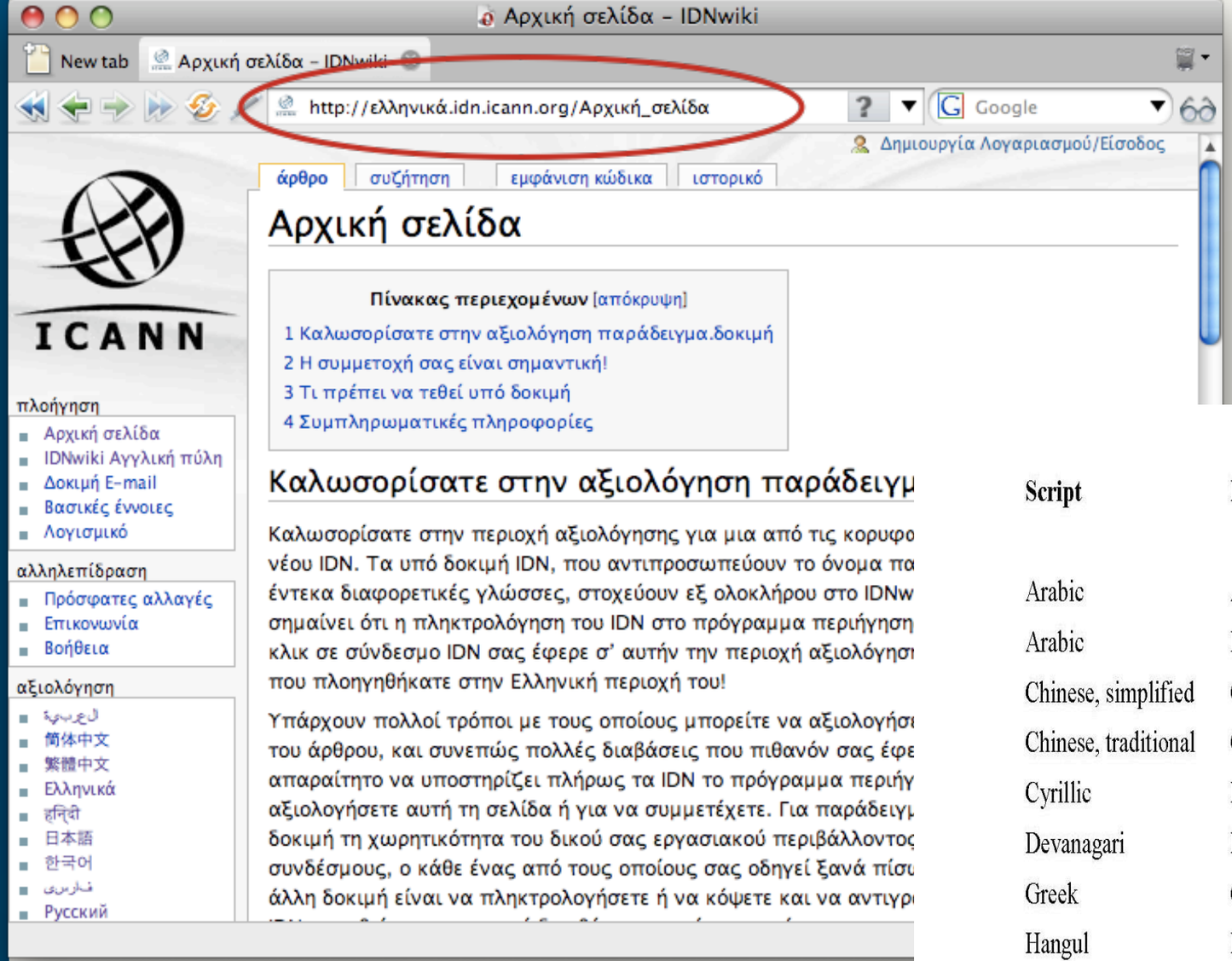

45,000 page views on 1st day

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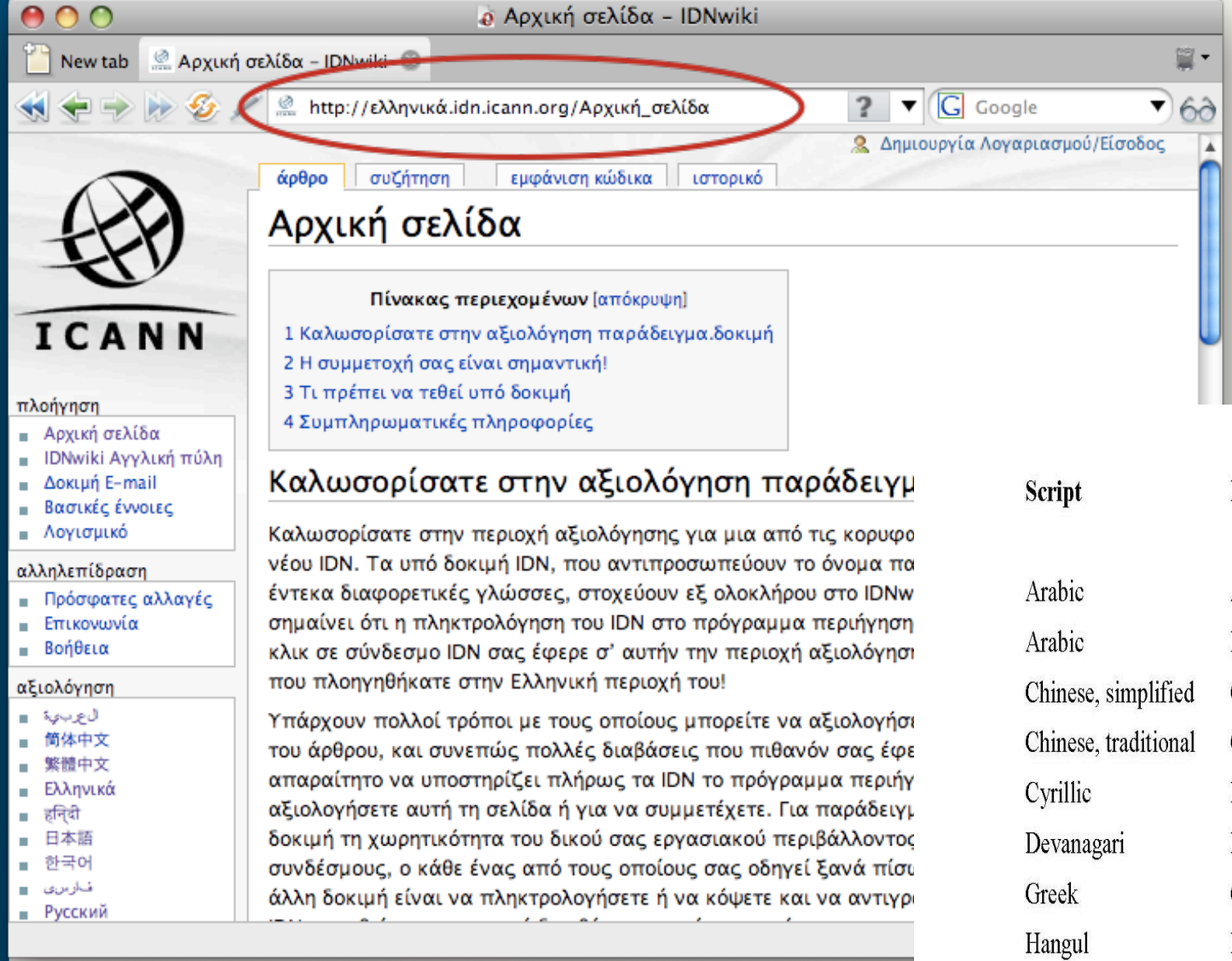

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Almost 500,000 page views so far

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IDNwiki test results

- Browsers work but need tweaking
- Word & PDF keep formatting and URL links OK
- E-mail
  - formatting lost but functionality remains
  - protocol support in development
  - draft-ietf-eai-framework-05.txt
  - http://www.icann.org/topics/idn/

TLD Allocation Policies & Processes

- ccTLDs match the ISO3166 list
- New gTLDs introduced by application
- Neither fits IDNs well
- ICANN staff does **not** set policies

Planned
IDN timeline

Planned IDN timeline

July 2008

ccNSO Fast Track delivers a limited number of IDN "ccTLDs"

Planned
IDN timeline

Planned IDN timeline

Q3 2008

GNSO Fast Track Applicants able to submit expressions of interest in IDN "gTLDs"

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IDN timeline

Planned IDN timeline

2013

Long-term Policy for IDN TLDs policy agreed and in operation

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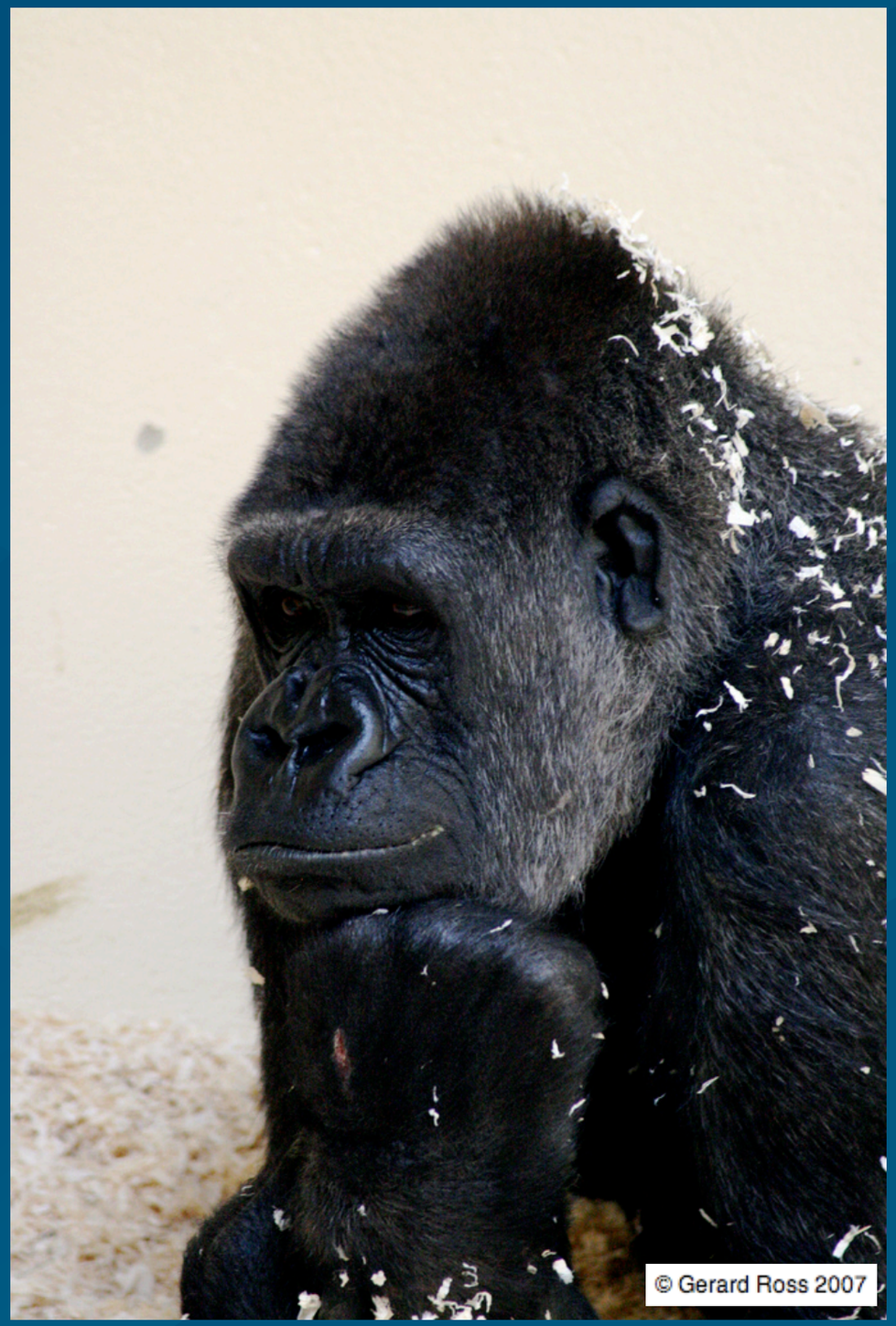
Questions & Answers