

Using RIPEstat for Prefix Size Filtering

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Prefix Size Distribution in RIPEstat

- Aggregated overview of delegated address space
- Filtering on “minimum allocation size”
- Identify “cut-off” thresholds
- Within RIPEstat framework (data call, embed, ...)
- Source: RIRs delegation statistic files (daily)
 - <ftp://ftp.ripe.net/pub/stats/ripenncc/delegated-ripenncc-extended-latest>
- Across all 5 RIRs

Background

- IPv4 exhaustion
- Lowering allocation sizes
- RIPE-555
- Adjust prefix length filters?
- Dynamically updated
- Available via RIPEstat

RIR Prefix Size Distribution Widget

RIPEstat Feedback

RIR Prefix Size Distribution (213.0.0.0/8)

Sizes	LACNIC	APNIC	AFRINIC	ARIN	RIPE NCC	Prefix Sum	%	Cum. Sum	Cum. %
/24	0	0	0	0	2	2	0.19%	2	0.19%
/23	0	0	0	0	1	1	0.09%	3	0.28%
/22	0	0	0	0	1	1	0.09%	4	0.37%
/21	0	0	0	0	65	65	6.01%	69	6.38%
/20	0	0	0	0	21	21	1.94%	90	8.33%
/19	0	0	13	0	631	644	59.57%	734	67.90%
/18	0	0	2	0	219	221	20.44%	955	88.34%
/17	0	0	0	0	49	49	4.53%	1004	92.88%
/16	0	0	0	0	68	68	6.29%	1072	99.17%
/15	0	0	0	0	6	6	0.56%	1078	99.72%
/14	0	0	0	0	3	3	0.28%	1081	100.00%
	0	0	15	0	1066	1081			

Data defined for
 query time: 2012-09-21 00:00:00Z
 resource: 213.0.0.0/8

[source data](#) [embed widget](#) | [permalink](#) | [info](#)

Address-Range Based (193.58.0.0/16)

RIPEstat

RIR Prefix Size Distribution (193.58.0.0/16)

Sizes	LACNIC	APNIC	AFRINIC	ARIN	RIPE NCC	Prefix Sum	%	Cum. Sum	Cum. %
/29	0	0	0	0	2	2	2.13%	2	2.13%
/28	0	0	0	0	1	1	1.06%	3	3.19%
/27	0	0	0	0	1	1	1.06%	4	4.26%
/26	0	0	0	0	1	1	1.06%	5	5.32%
/25	0	0	0	0	1	1	1.06%	6	6.38%
/24	0	0	0	0	43	43	45.74%	49	52.13%
/23	0	0	0	0	18	18	19.15%	67	71.28%
/22	0	0	0	0	16	16	17.02%	83	88.30%
/21	0	0	0	0	8	8	8.51%	91	96.81%
/20	0	0	0	0	3	3	3.19%	94	100.00%
	0	0	0	0	94	94			

Data defined for
query time: 2012-09-21 00:00:00Z
resource: 193.58.0.0/16

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All IPv4 Space (0/0)

RIPEstat Feedback

RIR Prefix Size Distribution (0.0.0.0/0)

Sizes	LACNIC	APNIC	AFRINIC	ARIN	RIPE NCC	Prefix Sum	%	Cum. Sum	Cum. %
/29	0	0	0	0	16	16	0.01%	16	0.01%
/28	0	0	0	0	18	18	0.01%	34	0.03%
/27	0	0	0	0	67	67	0.05%	101	0.08%
/26	0	0	0	0	70	70	0.06%	171	0.14%
/25	0	0	0	0	103	103	0.08%	274	0.22%
/24	1049	5989	722	21593	15267	44620	35.45%	44894	35.67%
/23	188	1842	125	3088	5874	11117	8.83%	56011	44.50%
/22	243	2892	390	4510	4202	12237	9.72%	68248	54.22%
/21	350	1688	174	2735	6927	11874	9.43%	80122	63.66%
/20	670	1878	207	4516	4748	12019	9.55%	92141	73.21%
/19	498	1717	247	3248	4989	10699	8.50%	102840	81.71%
/18	234	937	89	1658	1924	4842	3.85%	107682	85.55%
/17	206	694	44	824	1268	3036	2.41%	110718	87.97%
/16	316	1661	151	6279	3025	11432	9.08%	122150	97.05%
/15	88	621	22	436	429	1596	1.27%	123746	98.32%
/14	34	449	21	296	255	1055	0.84%	124801	99.15%
/13	11	225	15	140	132	523	0.42%	125324	99.57%
/12	14	120	6	90	64	294	0.23%	125618	99.80%
/11	21	49	4	43	28	145	0.12%	125763	99.92%
/10	0	20	0	20	11	51	0.04%	125814	99.96%
/9	1	1	0	8	1	11	<0.01%	125825	99.97%
/8	0	2	0	36	2	40	0.03%	125865	100.00%
	3923	20785	2217	49520	49420	125865			

Data defined for
 query time: 2012-09-21 00:00:00Z
 resource: 0.0.0.0/0

[source data](#) [embed widget](#) | [permalink](#) | [info](#)

IPv6 PI Range (RIPE NCC)

RIPEstat

RIR Prefix Size Distribution (2001:678::/29)

Sizes	LACNIC	APNIC	AFRINIC	ARIN	RIPE NCC	Prefix Sum	%	Cum. Sum	Cum. %
/48	0	0	0	0	932	932	95.98%	932	95.98%
/47	0	0	0	0	22	22	2.27%	954	98.25%
/46	0	0	0	0	6	6	0.62%	960	98.87%
/45	0	0	0	0	6	6	0.62%	966	99.49%
/44	0	0	0	0	2	2	0.21%	968	99.69%
/43	0	0	0	0	1	1	0.10%	969	99.79%
/42	0	0	0	0	1	1	0.10%	970	99.90%
/41	0	0	0	0	0	0	0.00%	970	99.90%
/40	0	0	0	0	1	1	0.10%	971	100.00%
	0	0	0	0	971	971			

Data defined for
query time: 2012-09-21 00:00:00Z
resource: 2001:678::/29

source data [embed widget](#) | [permalink](#) | [info](#)

<https://stat.ripe.net/widget/rir-prefix-size-distribution>

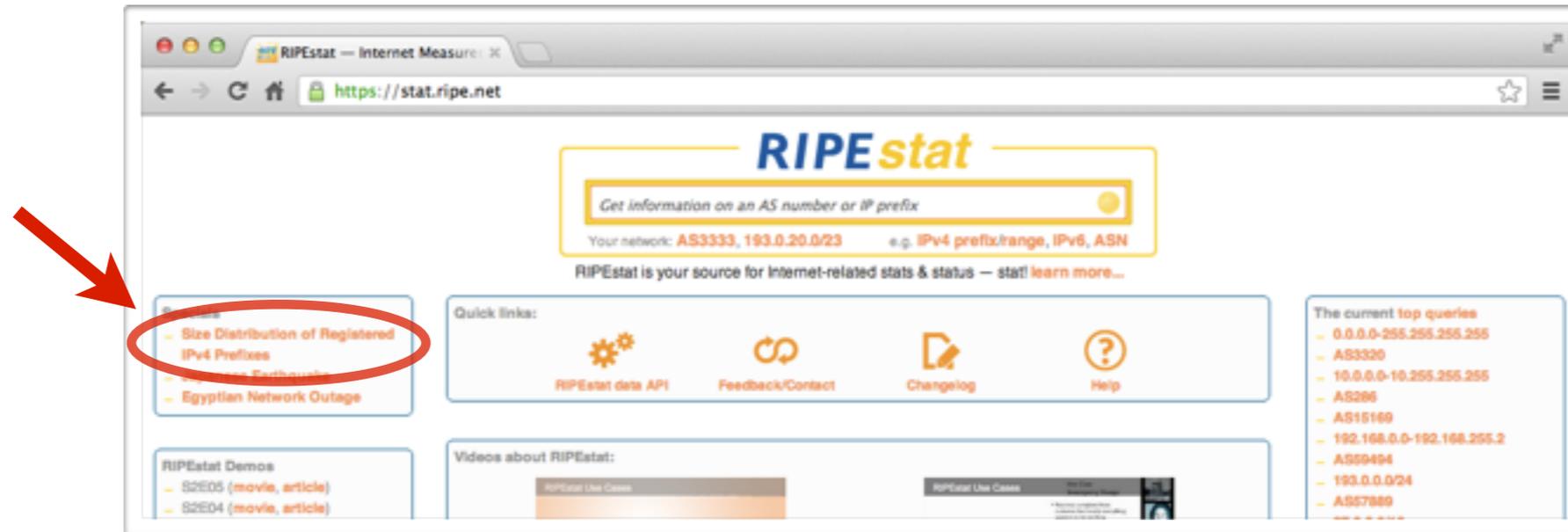
Overview Stats per /8 (IPv4)

Prefix Length

Address Space

Address Space	Prefix Length																								
	/32	/31	/30	/29	/28	/27	/26	/25	/24	/23	/22	/21	/20	/19	/18	/17	/16	/15	/14	/13	/12	/11	/10	/9	/8
192/8								12455	615	503	286	175	102	63	22	66	2	1							
193/8	12	12	21	33	48			4438	1473	985	272	156	127	26	14	110	17	5							
194/8	4	6	30	19	30			3162	1139	708	221	143	264	53	43	134	3								
195/8			16	18	23			1390	1603	542	52	14	454	63	55	127									
196/8								394	121	114	64	80	63	19	4	21	4	6							
197/8										27	6	21	30	22	8	15	4	6	10	1	2				
198/8								5202	783	444	258	204	91	53	24	86	9	8							
199/8								2914	666	1414	808	139	72	39	24	63	16	6					1		
200/8								854	157	98	200	344	223	56	38	17	2		1						1
	/32	/31	/30	/29	/28	/27	/26	/25	/24	/23	/22	/21	/20	/19	/18	/17	/16	/15	/14	/13	/12	/11	/10	/9	/8
201/8								26	6	16	30	58	67	30	50	33	5	6	1	6	1				
202/8								1476	484	461	416	729	437	69	18	19	9	9	1	1					
203/8								3011	1079	556	365	357	419	116	42	22	8	9	2						
204/8								2907	740	551	380	156	110	52	26	64	24	14							
205/8								1324	316	272	129	142	87	42	11	34	5	8	4	2	2				
206/8								620	41	114	103	178	233	80	28	87	13	13	1						
207/8								28	10	8	20	146	163	155	74	81	14	10							
208/8								1	3	943	541	72	63	64	23	30	13	6	1		1	1			
209/8									6	6	11	208	317	192	72	78	10	5							
210/8								2	5	9	36	77	143	91	61	34	14	13	4	2					
211/8													14	21	20	47	24	20	8						
212/8											18	13	933	86	73	76	2								
213/8								2	1	1	65	21	644	221	49	68	6	3							

Prefix Size Distribution in RIPEstat



<https://stat.ripe.net/specials/registered-ipv4-prefix-size-distribution>

- Compared to ‘Longest Prefix Tables’ (*RIPE-555*):
 - All 5 RIRs
 - Updated daily
 - Distribution vs Minimum
 - JSON, CSV, ...

Questions?

<https://stat.ripe.net/>
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