In the face of depletion: IPv4 Cost

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What's scary?

- NANOG attendees and Speedos
- Peter C. Job Roulette
- IPv4 Address Depletion

Today

- Addresses are “cheap”
- Supply exceeds current demand
- /20 is a typical allocation
- Averaged pre-depletion cost of v4 addresses for most and from an ICANN recognized RIR today is $1.52 YRC

Approaching v4 Depletion

- The IANA and the RIR system **will** exhaust in 2011
- Demand will exceed supply
- Non RIR address acquisition will begin in earnest
- Prices will RISE

  - **Market cost of a market IPv4 address: ~$4.00**
  - **Increase over RIR cost: 263% [1]**

V4 Depletion

- Traditional channels of IPv4 will mostly disappear
- Cost of an IP address at depletion is **UNKNOWN**
- **Impact to network costs and general COGS is UNKNOWN**

IPv4 Cost Worksheet

V4 Address Costs			Martin Hannigan	martin@theicelandguy.com
FX Euro	1.37067	FX Yuan	9.15608	
Cost Dollar	$ 4.00	FX Sterling	0.8662	FX AS OF 05 OCT 2010
Cap Cost	10%	FX Yen	114.25	
Diff	5%			

Size	Addr Count	Cost Dollars	Cost Euros	Cost Sterling	Cost Yuan	Cost Yen
/32	1	$ 4.00	5.48	3.46	36.62	457.00
/31	2	$ 8.00	10.97	6.93	73.25	914.00
/30	4	$ 16.00	21.93	13.86	146.50	1,828.00
/29	8	$ 32.00	43.86	27.72	292.99	3,656.00
/28	16	$ 64.00	87.72	55.44	585.99	7,312.00
/27	32	$ 128.00	175.45	110.87	1,171.98	14,624.00
/26	64	$ 256.00	350.89	221.75	2,343.96	29,248.00
/25	128	$ 512.00	701.78	443.49	4,687.91	58,496.00
/24	256	$ 1,024.00	1,403.57	886.99	9,375.83	116,992.00
/23	512	$ 2,048.00	2,807.13	1,773.98	18,751.65	233,984.00
/22	1,024	$ 4,096.00	5,614.26	3,547.96	37,503.30	467,968.00
/21	2,048	$ 8,192.00	11,228.53	7,095.91	75,006.61	935,936.00
/20	4,096	$ 16,384.00	22,457.06	14,191.82	150,013.21	1,871,872.00
/19	8,192	$ 32,768.00	44,914.11	28,383.64	300,026.43	3,743,744.00
/18	16,384	$ 65,536.00	89,828.23	56,767.28	600,052.86	7,487,488.00
/17	32,768	$ 131,072.00	179,656.46	113,534.57	1,200,105.72	14,974,976.00
/16	65,536	$ 262,144.00	359,312.92	227,069.13	2,400,211.44	29,949,952.00
/15	131,072	$ 524,288.00	718,625.83	454,138.27	4,800,422.87	59,899,904.00
/14	262,144	$ 1,048,576.00	1,437,251.67	908,276.53	9,600,845.74	119,799,808.00
/13	524,288	$ 2,097,152.00	2,874,503.33	1,816,553.06	19,201,691.48	239,599,616.00
/12	1,048,576	$ 4,194,304.00	5,749,006.66	3,633,106.12	38,403,382.97	479,199,232.00
/11	2,097,152	$ 8,388,608.00	11,498,013.33	7,266,212.25	76,806,765.94	958,398,464.00
/10	4,194,304	$ 16,777,216.00	22,996,026.65	14,532,424.50	153,613,531.87	1,916,796,928.00
/9	8,388,608	$ 33,554,432.00	45,992,053.31	29,064,849.00	307,227,063.75	3,833,593,856.00
/8	16,777,216	$ 67,108,864.00	91,984,106.62	58,129,698.00	614,454,127.49	7,667,187,712.00

Planning to avoid costs…

- What business model works for acquisition?
- How do you not spend too much?
- When does it make sense to stop buying addresses and do v6 “for real” instead?
  - When you decide to do v6 for real, you may still need to buy addresses for transition

What's scary?

- The unknown future cost of IPv4

V4 DEPLETION OFFICE POOL

MONTHS \ COST	900	200	600	500	0	300	800	400	700	100
12										
18										
6										
4										
14										
2										
0										
8										
16										
10										

References

- 1. The next step for IPv4 by Remco van Mook http://www.ripe.net/ripe/meetings/ripe-57/presentations/van_Mook-2007-08_v3.pdf