



IPv6 Visibility:

Making it Easy!





IPv6Now

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IPv6

The story so far...



IPv6
Now

0	1	14	15	16	19	20	21	234	235	236	239	240	241	254	255
3	2	13	12	17	18	23	22	233	232	237	238	243	242	253	252
4	7	8	11	30	29	24	25	230	231	226	225	244	247	248	251
5	6	9	10	31	28	27	26	229	228	227	224	245	246	249	250
58	57	54	53	32	35	36	37	218	219	220	223	202	201	198	197
59	56	55	52	33	34	39	38	217	216	221	222	203	200	199	196
60	61	50	51	46	45	40	41	214	215	210	209	204	205	194	195
63	62	49	48	47	44	43	42	213	212	211	208	207	206	193	192
64	67	68	69	122	123	124	127	128	131	132	133	186	187	188	191
65	66	71	70	121	120	125	126	129	130	135	134	185	184	189	190
78	77	72	73	118	119	114	113	142	141	136	137	182	183	178	177
79	76	75	74	117	116	115	112	143	140	139	138	181	180	179	176
80	81	94	95	96	97	110	111	144	145	158	159	160	161	174	175
83	82	93	92	99	98	109	108	147	146	157	156	163	162	173	172
84	87	88	91	100	103	104	107	148	151	152	155	164	167	168	171
85	86	89	90	101	102	105	106	149	150	153	154	165	166	169	170

1995

- Internet explosive growth
- Work begins on IPv6
- Only visionaries believe it will ever matter.



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2000

- The dot.com craze
- NAT
- Name Based Hosts (HTTP 1.1)
- IPv4 handling it all very nicely, thank you.

IPv6
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2005

- Alarm bells started ringing...
but despite the efforts of a few indifference and denial prevails



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2010

- only 18 blocks remain out of the original 256
- 8 consumed since Jan 2010
- 7% remain



What's next?

- 5 of 18 remaining blocks reserved
- 1 for each RIR
- Sometime in 2011 each RIR will allocate its last IPv4 address to a member



So will the sky fall in?



NO!

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What will Happen?

- IPv4 address trading
- IPv4 address recovery
- NAT my NAT: Carrier grade NAT
- Lucky I've got those spare /24's!
- IPv4 will be with us for years to come

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Phew – So we're safe!



Almost...

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Not Safe – Technology



- LTE – Long Term Evolution
- IPv6 mandatory Comcast (USA)

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Not Safe – Technology

- Limited number of session states for NAT operation
- Best case: 65,536 max number of sessions, for a single IPv4 address
- 2,000 users, for 30 sessions each

But Web2(AJAX) sites.....

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Not Safe – Technology

Yahoo top page	10-20
Googleimage search	30-60
iTunes	230-270
iGoogle	80-100
Amazon	90
YouTube	90

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Not Safe – Markets

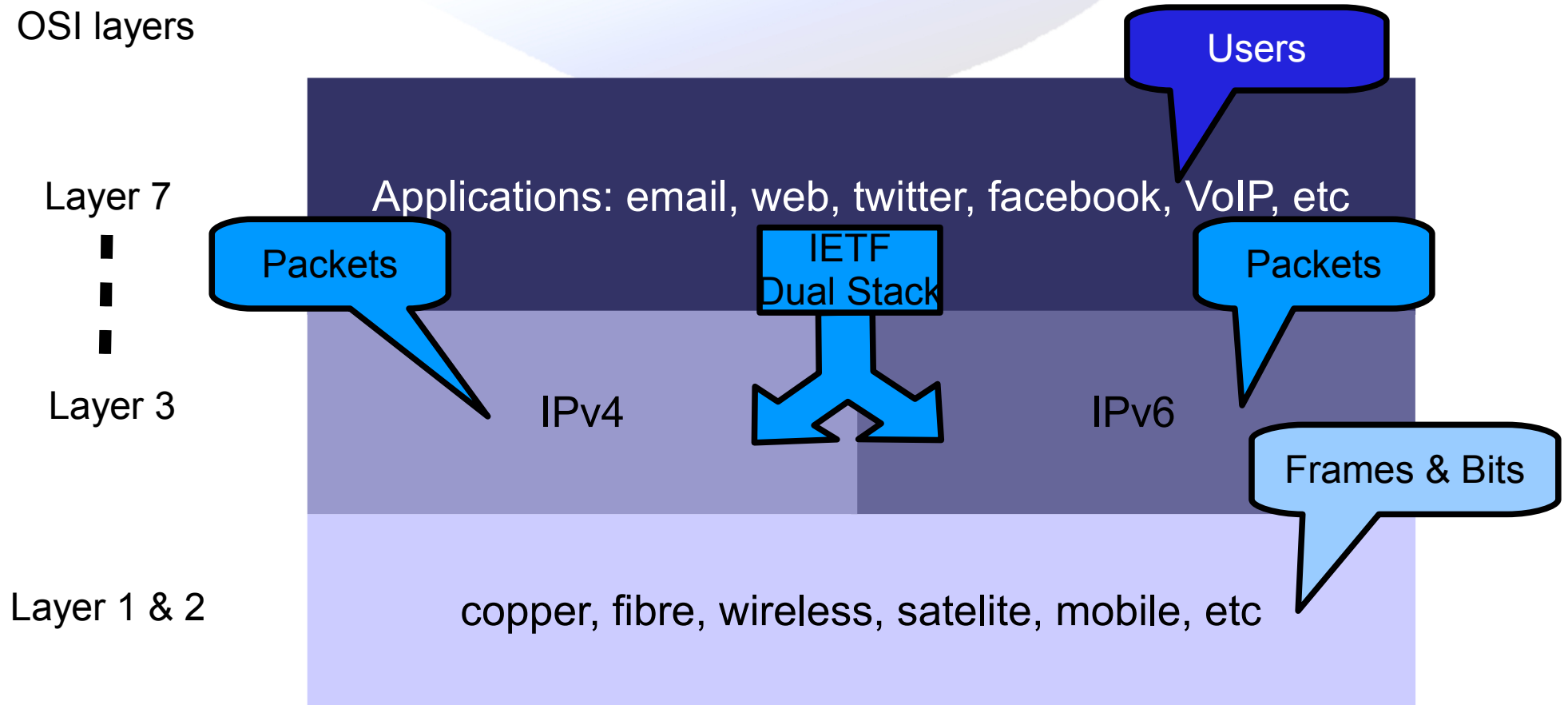


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IPv6 vs IPv4

like mixing "oil & water"

OSI layers



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IPv4 Cadastre

- Web sites: 232,839,963
- Active sites: 88,139,205

15+ years of content creation!

Netcraft.com October 2010 web survey:

<http://news.netcraft.com/archives/2010/10/12/october-2010-web-server-survey.html#more-2937>

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IPv4 Assets

- email
- security (firewalls)
- eCommerce (https)
- content links
- web stats & reports
- Underpinning all is DNS!

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IPv4 content as seen by an IPv6 only user...

looks like a broken connection!



V6 Visibility Options

- Dual Stack

or

- Layer 7 (Application Layer)

Redundancy to repair the *broken* connection



Assets to be converted

- DNS: AAAA records
- email: MX records
(what about SPF records?)
- Firewall configurations
- Content



V6 Visibility for V4

Instant6 emphasises...

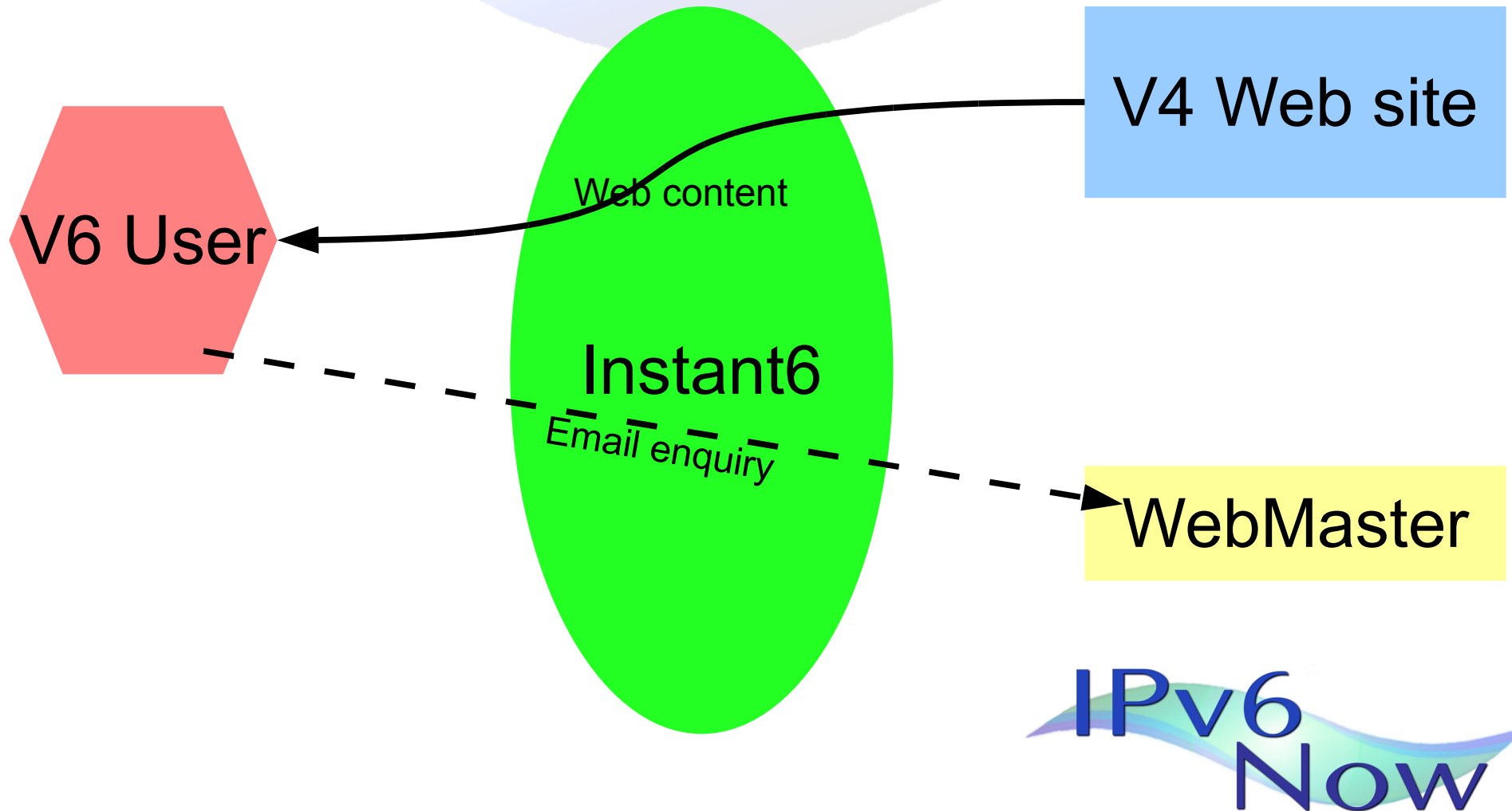
visibility of content & services

not

***conversion of network
infrastructure***

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Instant6: Application Layer Visibility



IPv6
Now

Instant6: Application Layer Visibility

- Use HTTP application facilities to retrieve v4 content for v6 user
- Use SMTP mail delivery facilities to ensure delivery of v6 mail to v4 mail user (especially the owner of a web site)
- Web Stats & Reports



Instant6: Easy Subscription

- 1. Subscribe** (Professional or No Frills/Free)
- 2. Receive IPv6 address via email**
(site is actually visible from now via raw Ipv6 address)
- 3. Update DNS**(AAAA and MX)
- 4. V6 Visible and Contactable!**



Instant6: Make it Easy!

Designed for...

Creative Web Developers

not for

Technical Network Admins

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Instant6: Make it Easy!

Does not apply to:

- Secure (https) content
- Web content from other sites
- SPF breaks SMTP!

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V6 Visibility as a Service

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Thank you

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