

RIPE

IPv6-only clients experience

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[an internet citizen **without a hat**]

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A dualstack network stands on its own



Source: <http://www.bestpricetoys.com/morgan-cycle-14-morgan-cruiser-bicycle-with-training-wheels-in-p/>



How good can we bike without training wheels ?



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- Content [✓]
 - <http://www.internetsociety.org/articles/google-ipv6-easy-inexpensive>



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- Content [✓]
 - <http://www.internetsociety.org/articles/google-ipv6-easy-inexpensive>
- Transit [✓*]

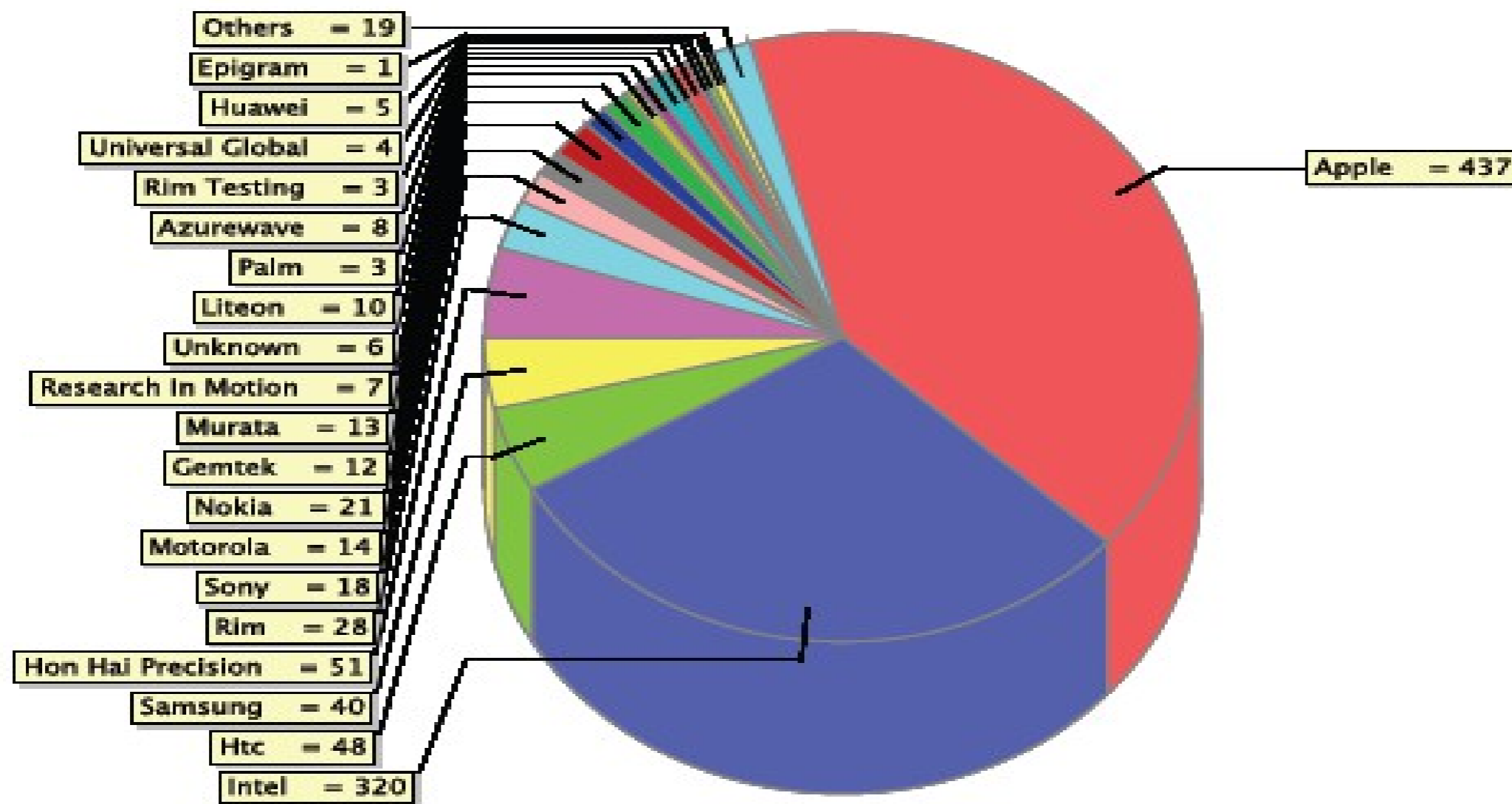


How good can we bike without training wheels ?

- Content [✓]
 - <http://www.internetsociety.org/articles/google-ipv6-easy-inexpensive>
- Transit [✓*]
- Eyeballs [?]
 - Need to have the possibility to move 10% users onto IPv6-only to talk seriously



WiFi clients: a typical HW vendor distribution



Source: Paris IPv6 World Congress 2012 NOC stats



Connecting to IPv6-only WiFi network

- MacOS X: works (if IPv4 is manually off in preferences)
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<http://www.ietf.org/id/draft-yourtchenko-ipv6-disable-ipv4-proxyarp-00.txt>



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- Android: does not work at all
- iOS 5.1: not supported but kind of works
- iOS 6.x: supported but lots of apps do not work



Android on IPv6-only WiFi

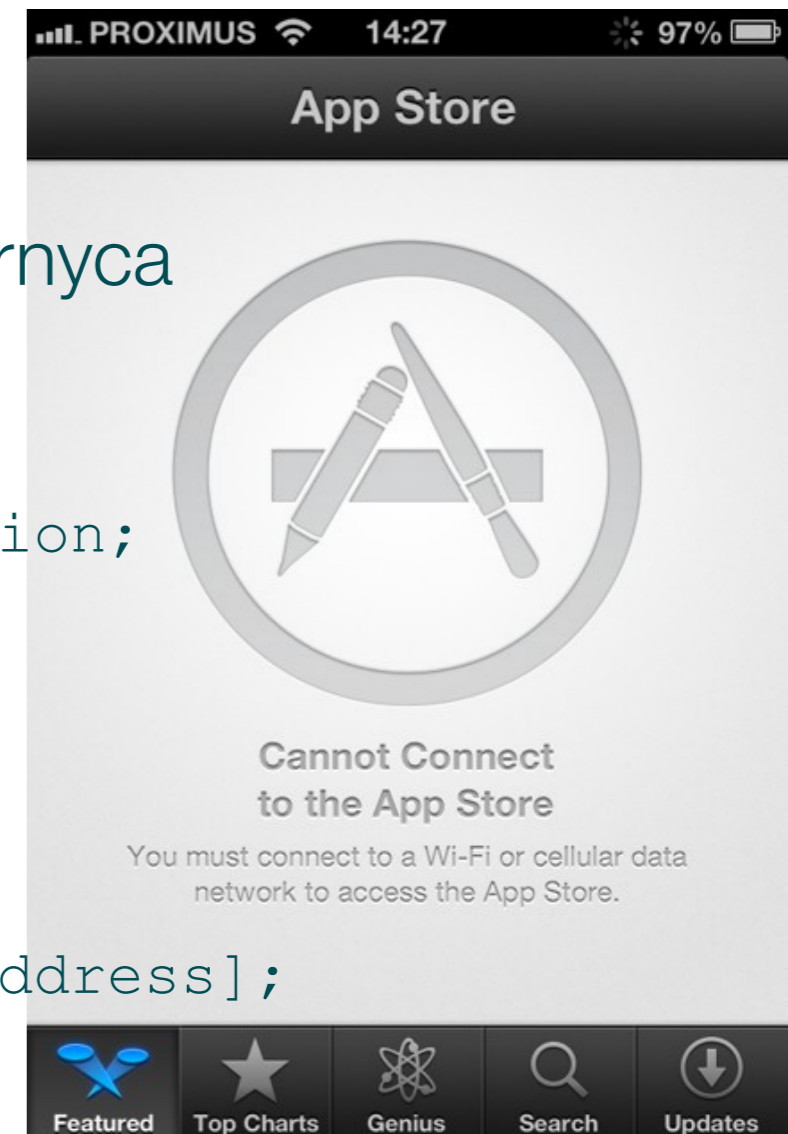
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(waiting for DHCPv6 or RDNSS)



iOS Apps Internet connectivity checks

- Specific UI when there is no internet connectivity
- “Reachability” sample: <http://preview.tinyurl.com/6lrnyca>

```
+ (Reachability*) reachabilityForInternetConnection;
{
    struct sockaddr_in zeroAddress;
    bzero(&zeroAddress, sizeof(zeroAddress));
    zeroAddress.sin_len = sizeof(zeroAddress);
    zeroAddress.sin_family = AF_INET;
    return [self reachabilityWithAddress: &zeroAddress];
}
```



- Not in current HIG at <http://preview.tinyurl.com/c42op9j> ?
- Either do it correctly in your app (please!) or not do it at all.
- Apple Bug: 12706040; 15 Nov 2012, still open..



Can we make this work ? Yes!

- Local dualstack resolver, for IPv4-DNS-dependent
 - Use IPv6 for recursive lookups (or forwarding)
- Block all other IPv4 with an ACL sending “Unreachable”
- Makes Android “work”
- Makes broken iOS apps “work”
- Makes WinXP “work”
 - Where configured for IPv6

Not “IPv6-only”
At most “IPv5 1/2”



Freedom From Training Wheels program



Source: <http://www.sfgate.com/outdoors/bikeabouttown/article/Weekend-events-for-Bay-Area-bike-lovers-3957600.php>



Takeaways: How to remove the training wheels?

- Create your own “Freedom From Training Wheels” program and start testing (and filing bugs!)
- What is required for 10% of **your** users to live with IPv6-only connectivity?



Questions?

