

com edu info
me.uk : org biz // mobi
//.us .com.mx : name.my
travel .com.mx : name.my

About UDomain.NET

- Founded in 1998
- Domain registration and portal management
- Providing 90+ types of gTLD and ccTLD
- Managing over 20,000 domain names
- Registrar of .hk domain

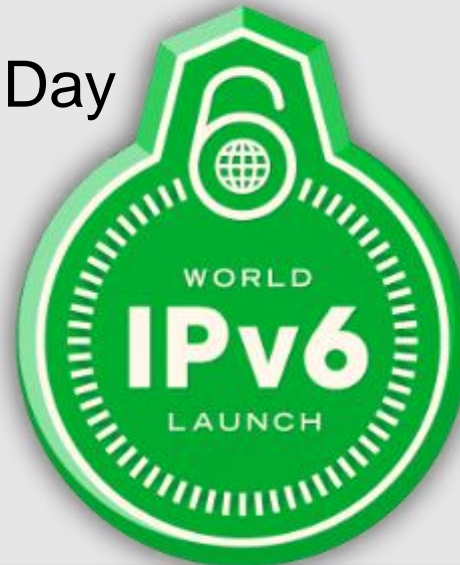


Mission today: IPv6 Deployment Sharing of UDomain.net

- Why deploy IPv6?
- Our Path to IPv6?
- Where are we now? How many clients
- Roadmap

Why IPv6?

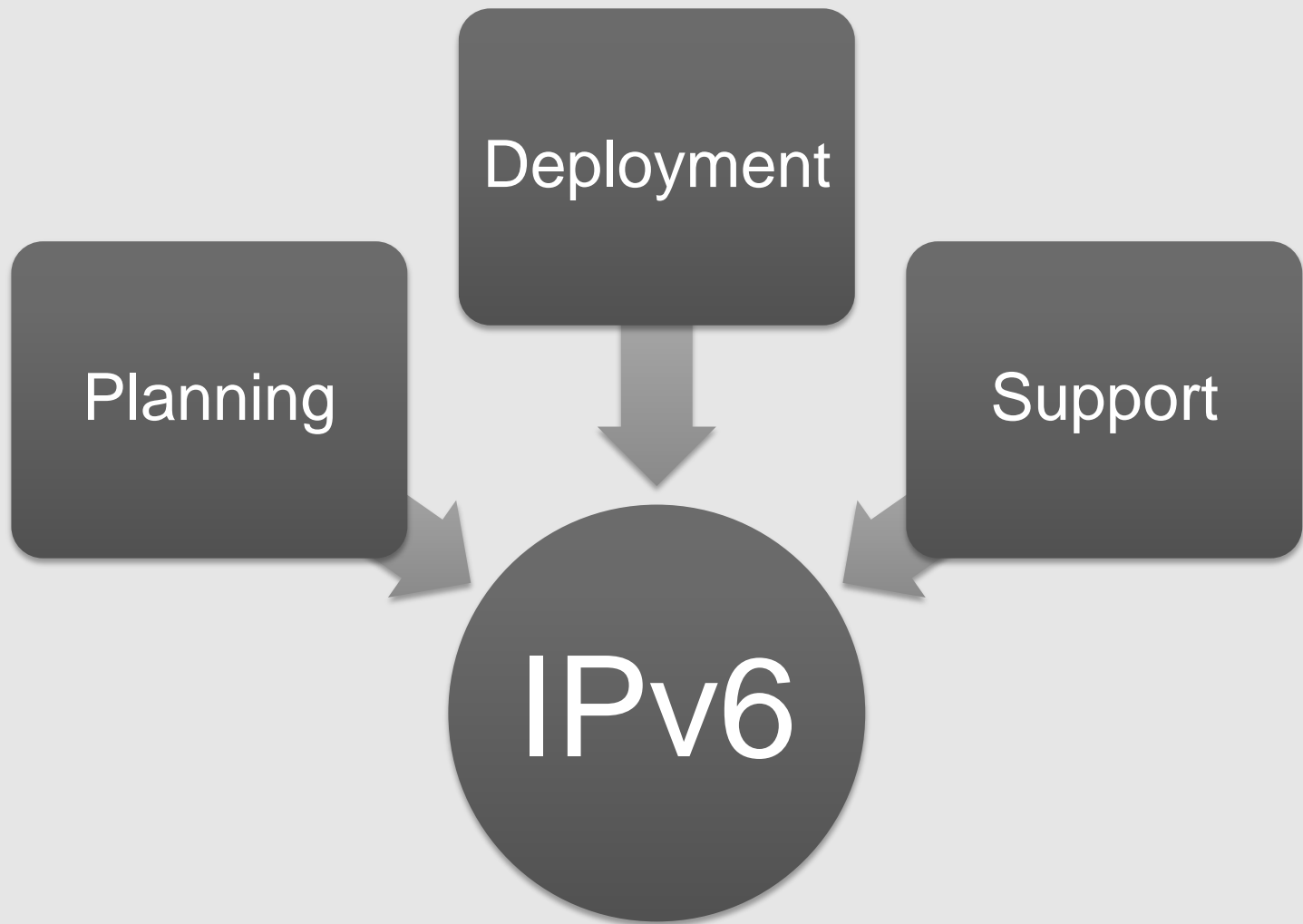
- Invited by Charles Mok
- BUT push by Top Management
- Had limited time to join the Test Flight on June 8-2011 as World IPv6 Day



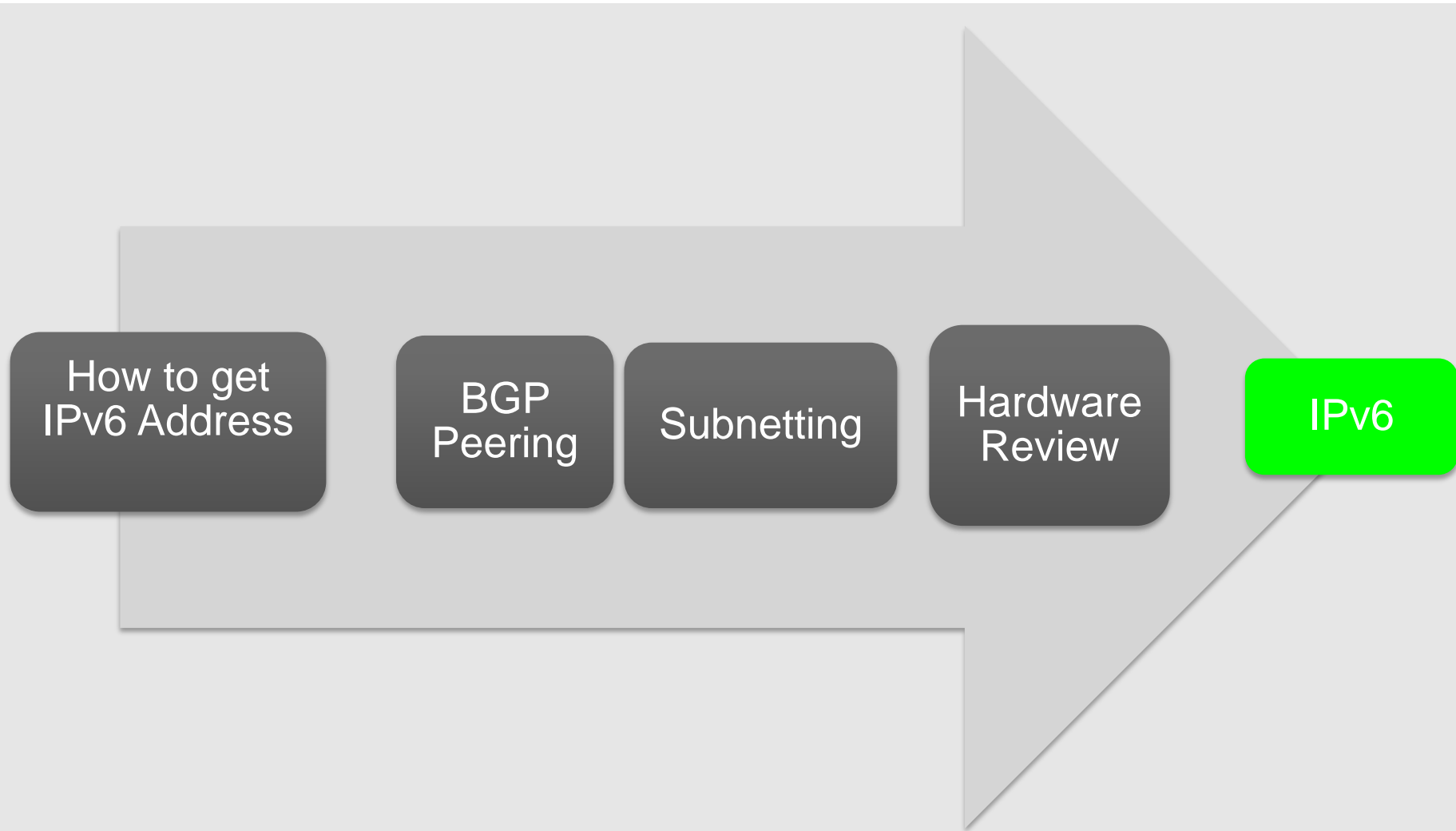
Why IPv6?

- So we only got 3 months for whole deployment!

Our Path to deploy IPv6: Critical Factor



Our Path to deploy IPv6 - Planning



Planning – How to get the IPv6 Address

- Existing IP address using web site & name address are assigned by the collocation provider.

```
inetnum:          117.18.96.0 - 117.18.127.255
netname:           HKCIX
descr:            - HKCIX -
descr:            Hongkong Commercial Internet Exchange
country:          HK
admin-c:          IX2-AP
tech-c:           IX2-AP
mnt-by:           APNIC-HM
mnt-lower:        MAINT-HKCIX-AP
mnt-routes:       MAINT-HKCIX-AP
status:           ALLOCATED PORTABLE
remarks:          -+-+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
remarks:          This object can only be updated by APNIC hostmasters.
remarks:          To update this object, please contact APNIC
remarks:          hostmasters and include your organisation's account
remarks:          name in the subject line.
remarks:          -+-+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
mnt-irt:           IRT-HKCIX-HK
changed:           hm-changed@apnic.net 20070608
changed:           hm-changed@apnic.net 20091020
source:           APNIC
```


Planning – How to get the IPv6 Address

- So where can get the IP Address?
 - By collocation provider? Data Center
 - By HKIRC
 - Or by your own? Signup become APNIC member

Planning – How to get the IPv6 Address

- As our group is existing APNIC member
- Get the address via APNIC– One Click to IPv6



Distributing IPv6 addresses

Getting an IPv6 block is the first step in your transition, and the process is very simple.

Kickstart IPv6 - one click to IPv6

Our Path to deploy IPv6 - Planning

**How to get
IPv6 Address**

BGP
Peering

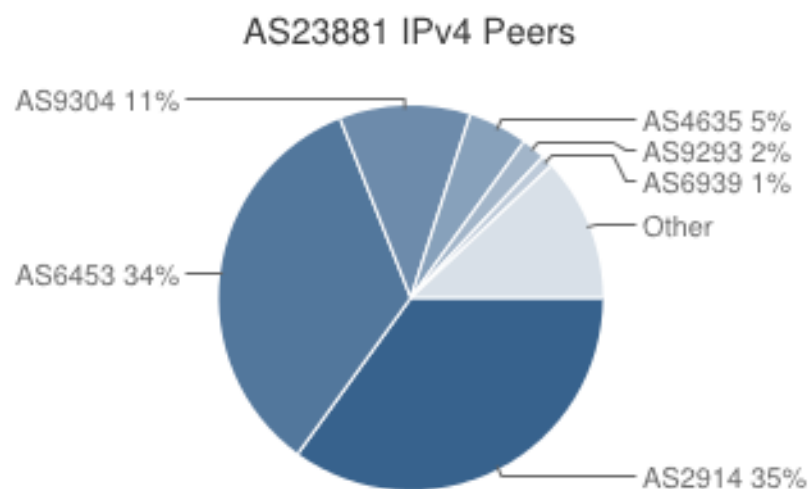
Subnetting

Hardware
Review

IPv6

Planning – BGP Peering with Upstream Provider

- Our Existing Upstream Provider



ASN	Name
AS2914	NTT America, Inc.
AS6453	Tata Communications
AS9304	Hutchison Global Communications
AS4635	Hong Kong Internet Exchange--Route Server 1
AS9293	Arcstar-hk Route server
AS6939	Hurricane Electric, Inc.

Planning – BGP Peering with Upstream Provider

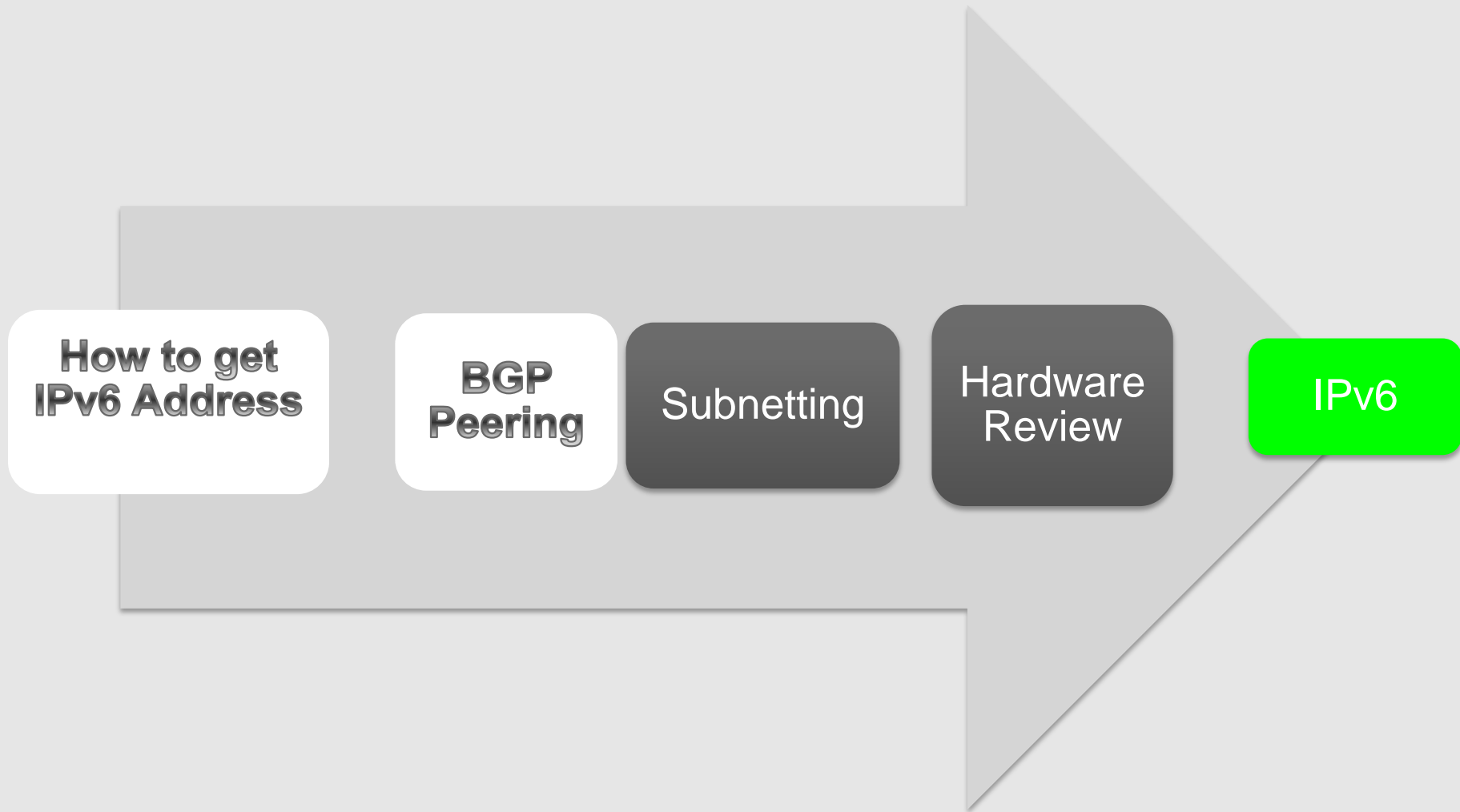
- Any charges for deploy IPv6?
 - Thank you for support IPv6



Planning – BGP Peering with Upstream Provider

- Different Transit Provider have different route advertisement policy
 - Some accept /48
 - Some accept /64

Our Path to deploy IPv6 - Planning



Planning – Subnetting

- We got /32 IPv6 Block from APNIC
 - /32 = 79,228,162,514,264,337,593,543,950,336 Address
- How to design subnetting?
 - For Network Device: /29 & /30
 - For User allocation IPv4 /26? /27? /28

Planning – Subnetting

- For IPv6

- Network Device

CIDR Subnet	Nos. of IPs
/127	2
/126	4

- For user Block

CIDR Subnet	Nos. of IPs
Business - /48	1,208,925,819,614,629,174,706,176
Residential- /64	18,446,744,073,709,551,616

Our Path to deploy IPv6 - Planning

**How to get
IPv6 Address**

**BGP
Peering**

Subnetting

**Hardware
Review**

IPv6

Infrastructure & Hardware Review- 1

- During 2012, we undergo Network Revamp project
 - Support High throughput & low latency network
 - VPLS & IPv6 ready

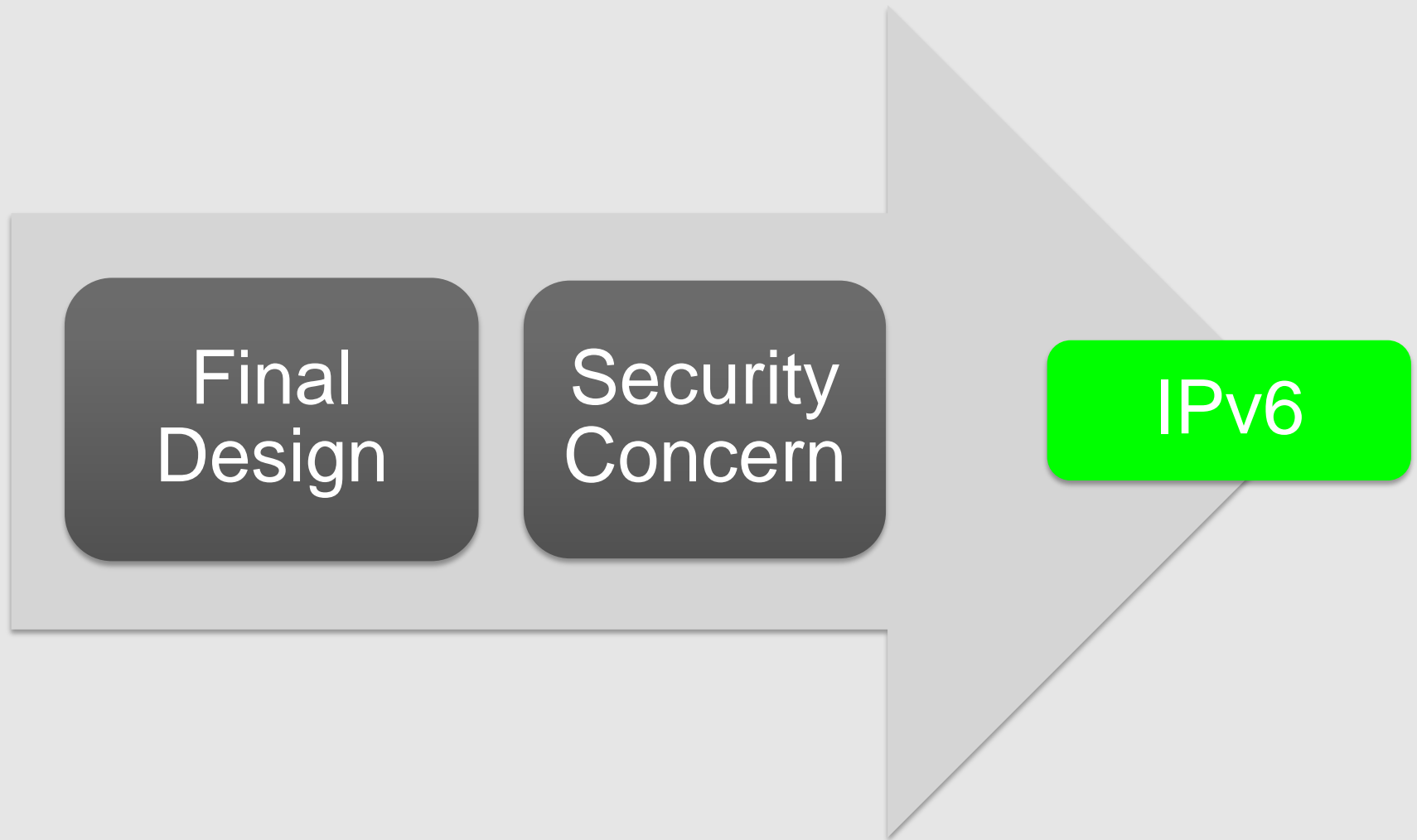


Infrastructure & Hardware Review- 2

- UDomain Network infrastructure

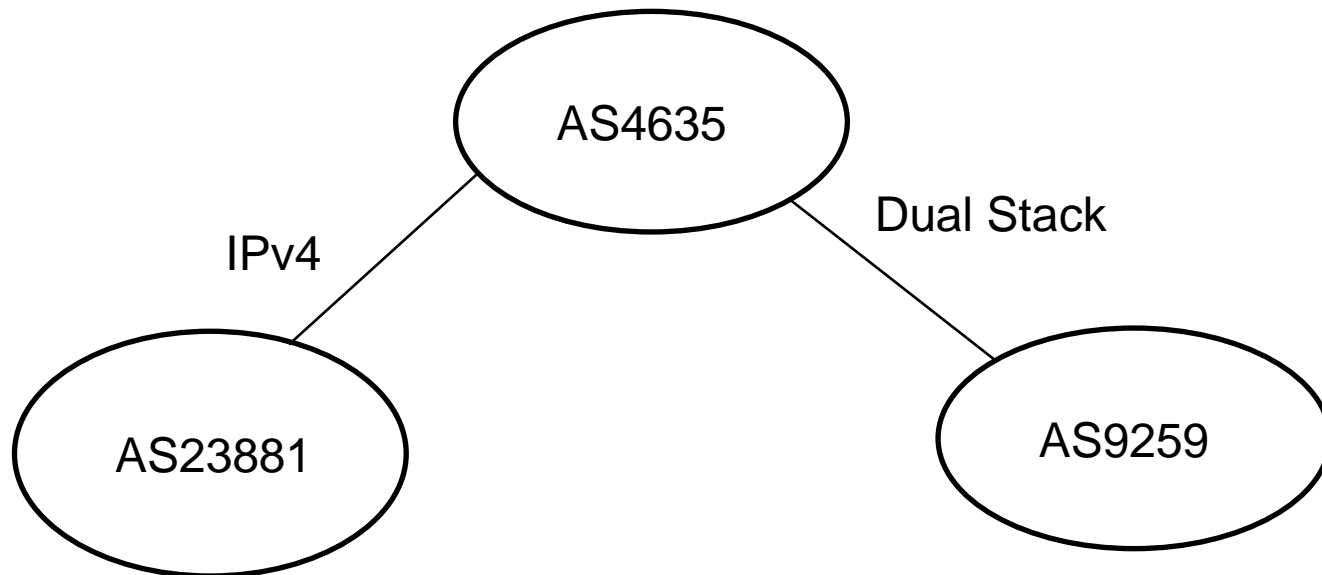


Our Path to deploy IPv6 – Implementation



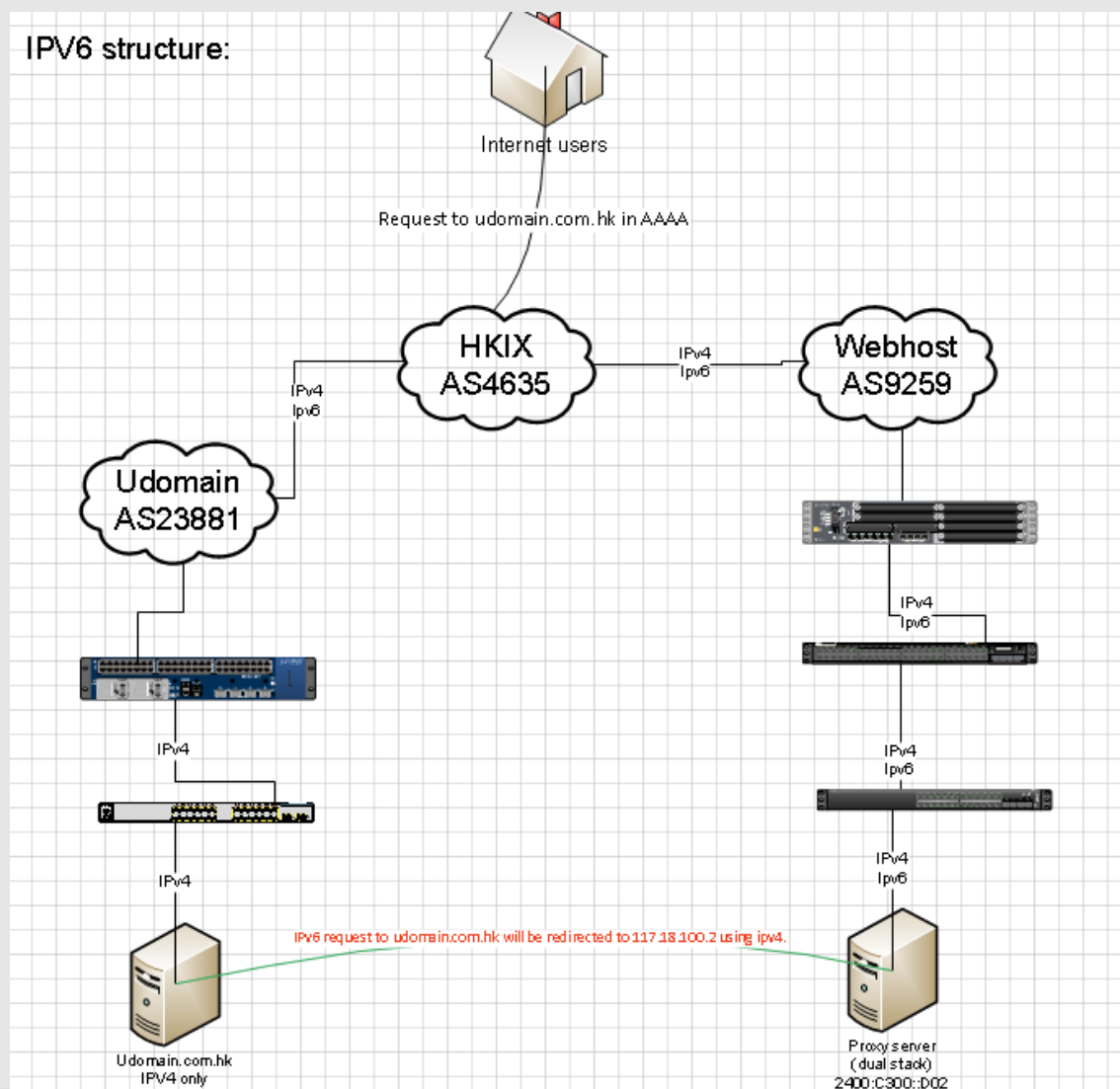
Implementation – Phase 1

- Decide to make our Network become Dual Stack network by two Phases.



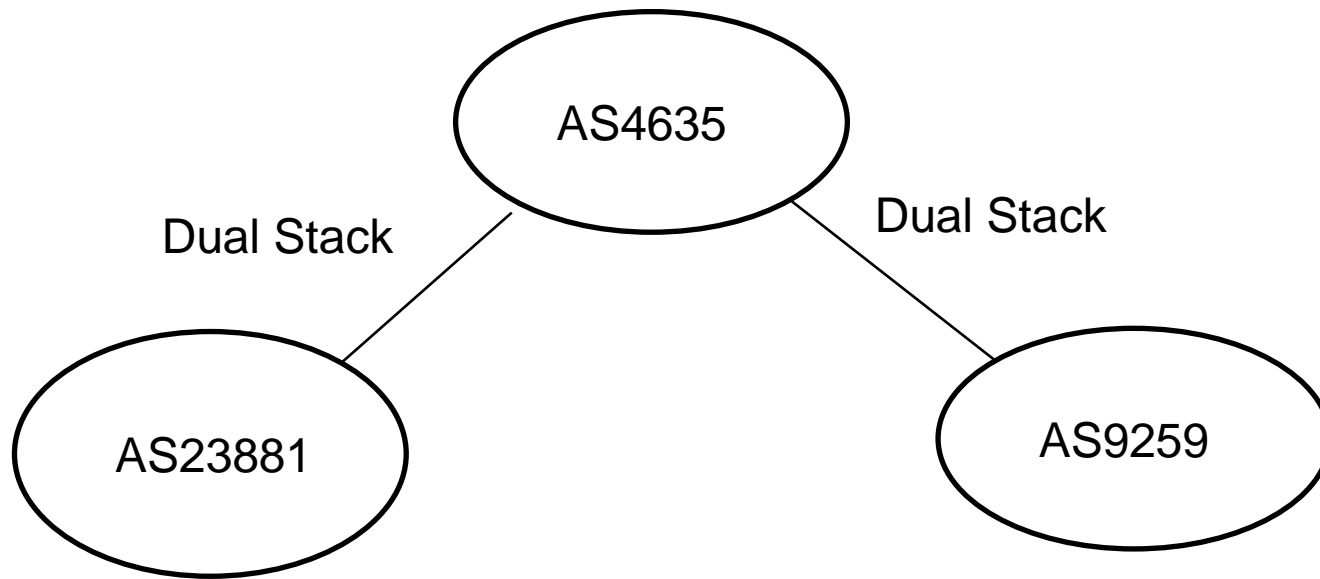
Implementation – Phase 1

- Reverse Web proxy to pass the Web Test.

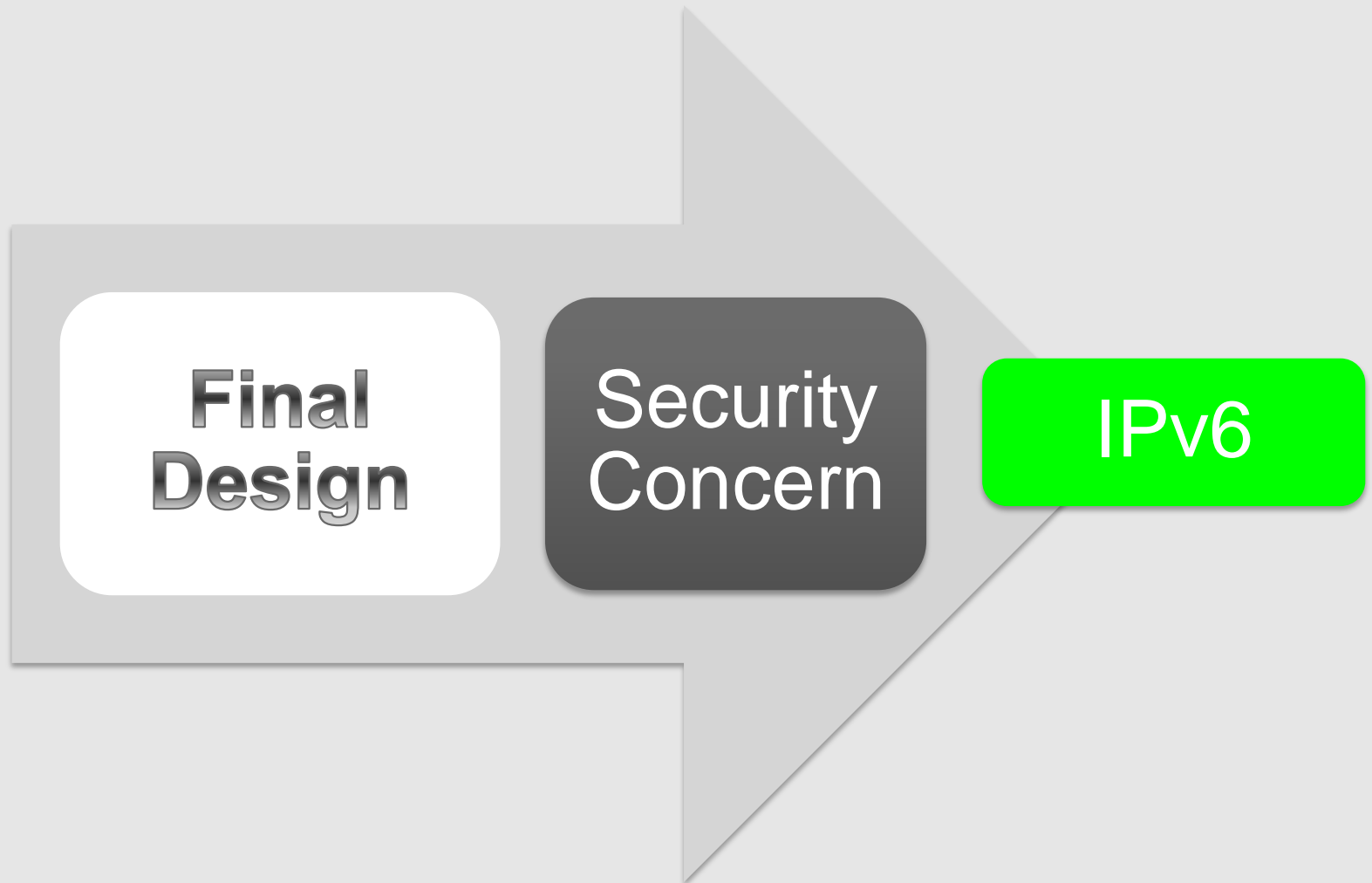


Implementation – Phase 2

- On 2013.



Our Path to deploy IPv6 – Implementation



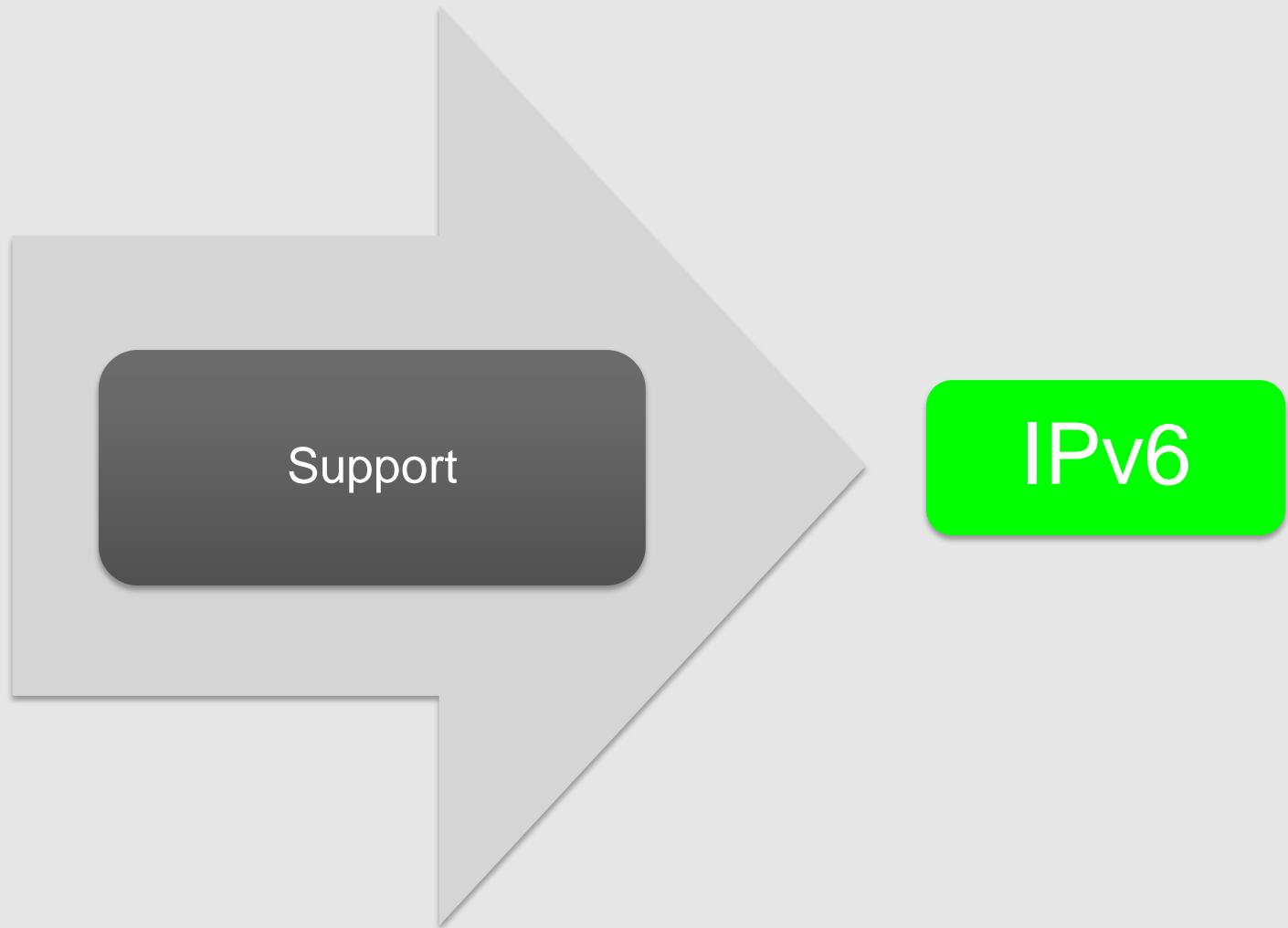
Review: Security Concern

- Currently 150 vulnerabilities known in CVE
 - Including Router OS, BIND..etc

<https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=IPv6>

- DNS always targeted attack service
- DDoS mitigation device not yet ready for IPv6

Support:



Support:

- Network Engineers don't have experiences to deploy and test IPv6 Network
- System Engineer is even more reluctant to deploy IPv6 service



Support:

- Training Provider:



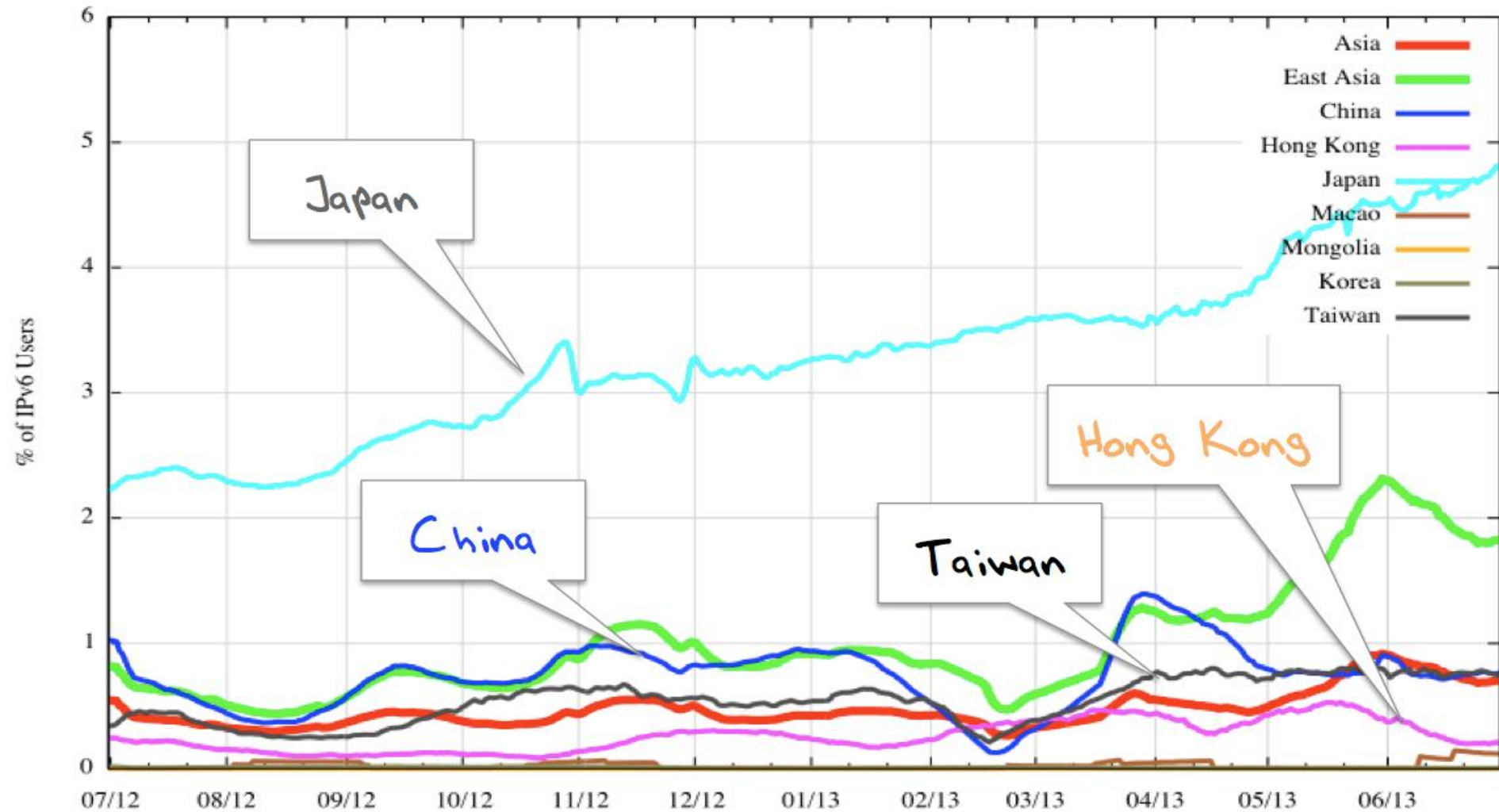
Review on Usage

- How many clients using IPv6 DNS service now?
- How many clients asking for Dual stack collocation service?

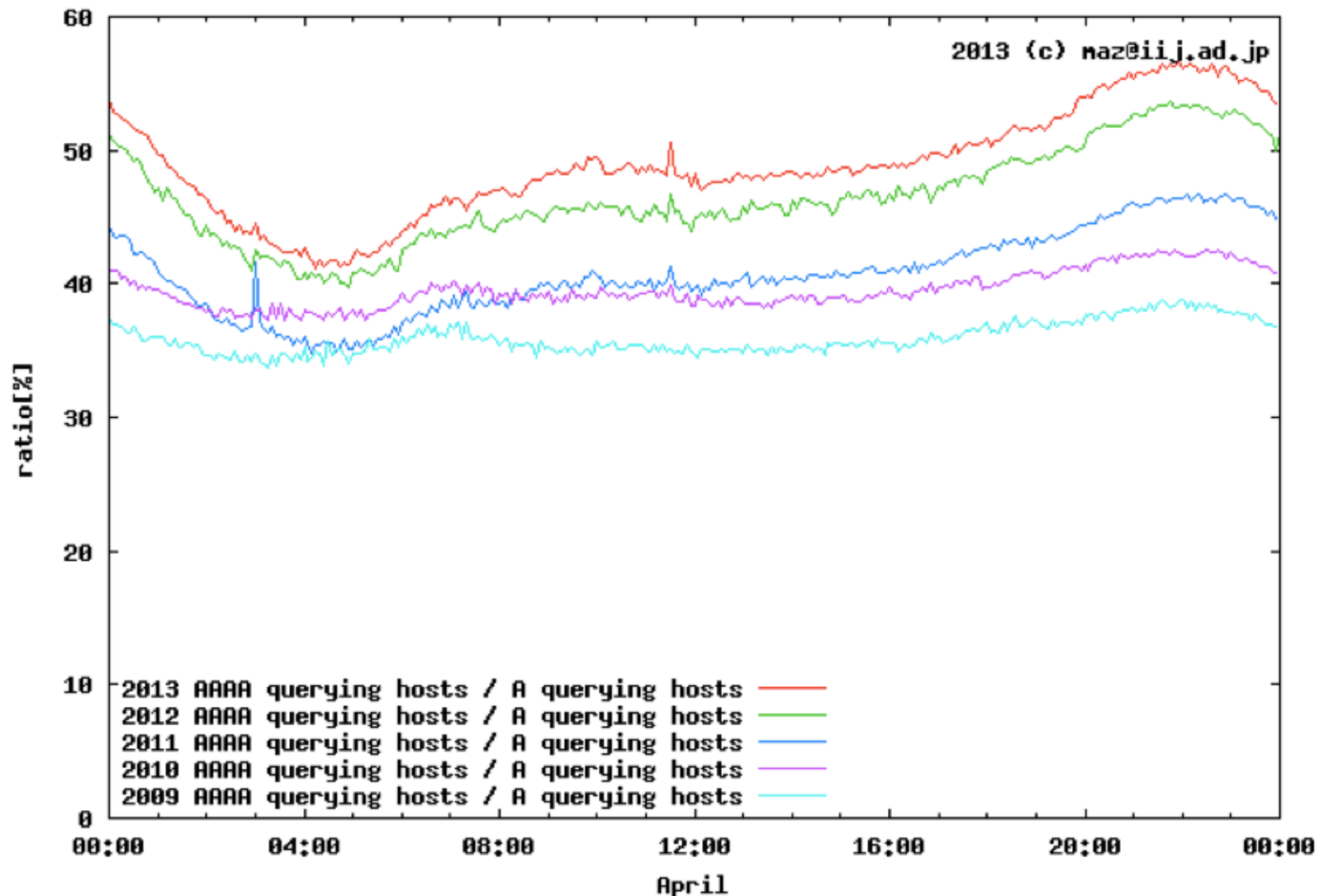


APNIC report – update as of June 2013

IPv6 Preferred in Asia - by SubRegion



Japan querying sources hosts – AAAA vs A



CNNIC querying statistics – v4 vs v6



Queries Change of V4 and V6

IPv4 Query (QPH)

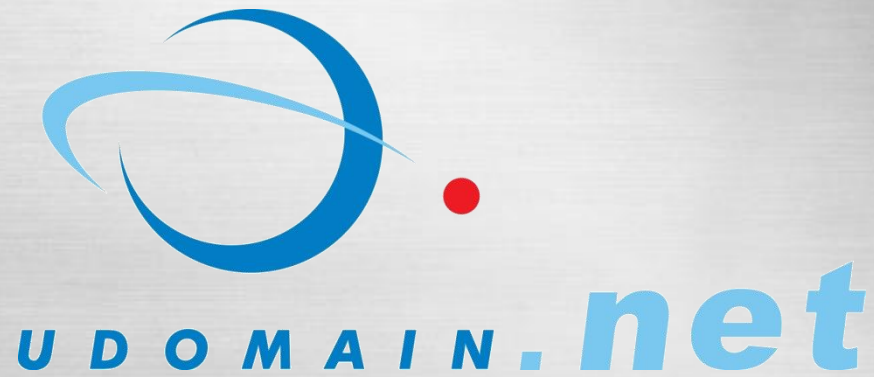


IPv6 Query (QPH)



Road Map of UDomain.net 2013 - 2014

- Free DNS record Hosting to existing client.
- Free web site hosting for IPv6
- DNSSEC



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