

**BIS Perspective  
on the likely IPv4/IPv6 Migration,  
and the Way Ahead with 6UK**

**6::UK**

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*with thanks to Jim Reid, 6UK*



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# Introduction – what we are going to look at

- Problem
  - Business needs
  - Public policy considerations
- What BIS has done so far
- What is happening next

## IPv4 is running out...

- IANA runs out of /8s in 2011
  - RIRs run out of IPv4 blocks in 2012
- What comes next?
  - Lots more address translation
  - Likely market in IPv4 address space
  - Widespread IPv6 adoption/migration
- Probably a combination of all 3

## Public Policy Considerations

- What is optimum long term solution?
- Impact on national competitiveness - can UK organisations get enough address space?
- Convergence trends: telephony/TV
- Fairness of any emerging market solutions
  - Consumer confidence, competition issues, etc.
- How best to achieve a transition to IPv6?
  - Least user/institution costs & confusion

## Difficult decisions

- Negligible IPv6 deployment and usage to date
- Almost no IPv6 content, so few users/applications
- Few users/applications because little IPv6 content
- IPv6 perceived as being “experimental”
  - Hardly any mass-market CPE supports IPv6
  - Limited number of ISPs offer IPv6 connectivity

# BIS Workshops – Outcomes 1

- Industry soundings in workshops
- Mixed:
  - Some saw little business justification for IPv6
    - No killer app or customer/user demand
  - First mover advantage for some others
  - General wait and see attitude
    - “Drivers for IPv6 won’t emerge until lack of IPv4 starts to hurt”
- Have an “IPv6-ready” mark for CPE?

## BIS Workshops – Outcomes 2

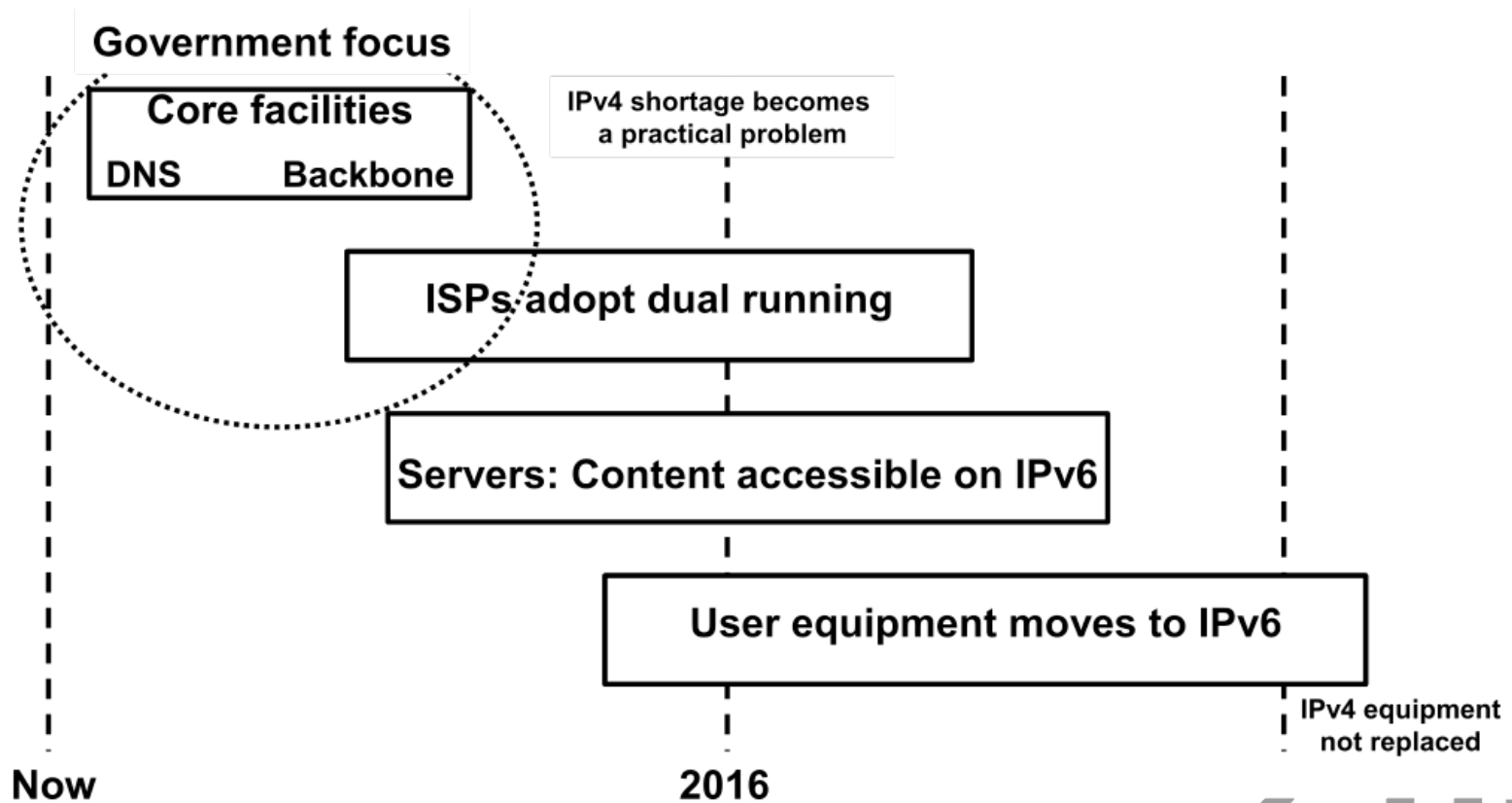
- No real surprises....
  - Not much usage of IPv6
  - Awareness of IPv4 run-out largely confined to ISPs and telcos
  - More education and awareness needed
  - Focus of IPv6 uptake is avoiding future problems
- Need to raise awareness, suggest migration paths, educate, encourage IPv6 adoption and so on - so that all happens together in cost effective way



## A Possible Migration Plan

- Focus on the core of the network and build out to the edge:
  - IXes, major carriers, backbone routers, etc.
  - “Important” DNS servers
  - Key web and mail servers
    - Open question: how to get more IPv6 content?
  - Regional and local ISPs
    - Organisations and end users

# Tentative Timeline



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## General Principles that evolved - 1

- It is a long term issue and Government isn't going to fund an IPv4-IPv6 migration
- Migration/transition activity should begin at the core of the Internet and gradually move outwards
  - Intention is to remove bottlenecks and blockages inhibiting market-led uptake of IPv6
  - Organisations can deploy IPv6 when they are ready
    - Needs suitable products and services in the market

## General Principles that evolved - 2

- Migration/transition activity should be market-led
  - Up to service & equipment providers to offer IPv6 solutions commercially
    - Assumes core infrastructure is IPv6 ready
  - Organisations deploy IPv6 when it suits them
  - Public sector uptake will proceed in tandem with UK industry/business
- BIS will work with governments and others to identify migration milestones

## UK AND IPv6

- Difficult to measure take up of IPv6 – very small amount of data uses it
- UK sits around the EU average take up on most measures of IPv6 readiness
- UK is in top 4 of EU states for amount of IPv6 traffic (still less than 1%)
- UK is working on extensive rollout of superfast broadband + we are introducing smart metering  
⇒ IPv6 is the best long term way of underpinning these needs, if we can get it universal and cost effective



## What is 6UK?

- Not for profit membership association
- Seed funding from UK government - BIS
- Objectives:
  - Promote uptake of IPv6 and raise awareness about the IPv4 run-out
  - Provide a clearing house for information sharing, case studies, migration plans, advice, tools, etc.
- Aspiration is to get UK business (and other Internet users) IPv6-capable before IPv4 runs out

The logo for 6UK, featuring a large grey '6' followed by two red dots and the letters 'UK' in a bold, grey, sans-serif font.

## What is 6UK for?

- Raise awareness through education and outreach
  - Targeted training (largely for IT management)
  - Presence at trade events
  - Promotional activities & workshops
  - Forum to exchange knowledge & experiences
    - Special Interest Groups?
    - Procurement panels
- Creative commons licence for 6UK material

The logo for 6:UK, featuring a large grey number '6' followed by a colon and the letters 'UK' in a bold, sans-serif font. The colon is composed of four small red squares arranged in a 2x2 grid.

## The journey begins

- Launch event in London with personal attendance by Vint Cerf in November 2010
- Members starting to join
- Join us at [www.6uk.org.uk](http://www.6uk.org.uk)

