

IPv6 Operations WG

# IPv6 and Apple

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# IPv6 at Apple

IPv6 supported for many years in OS X and iOS

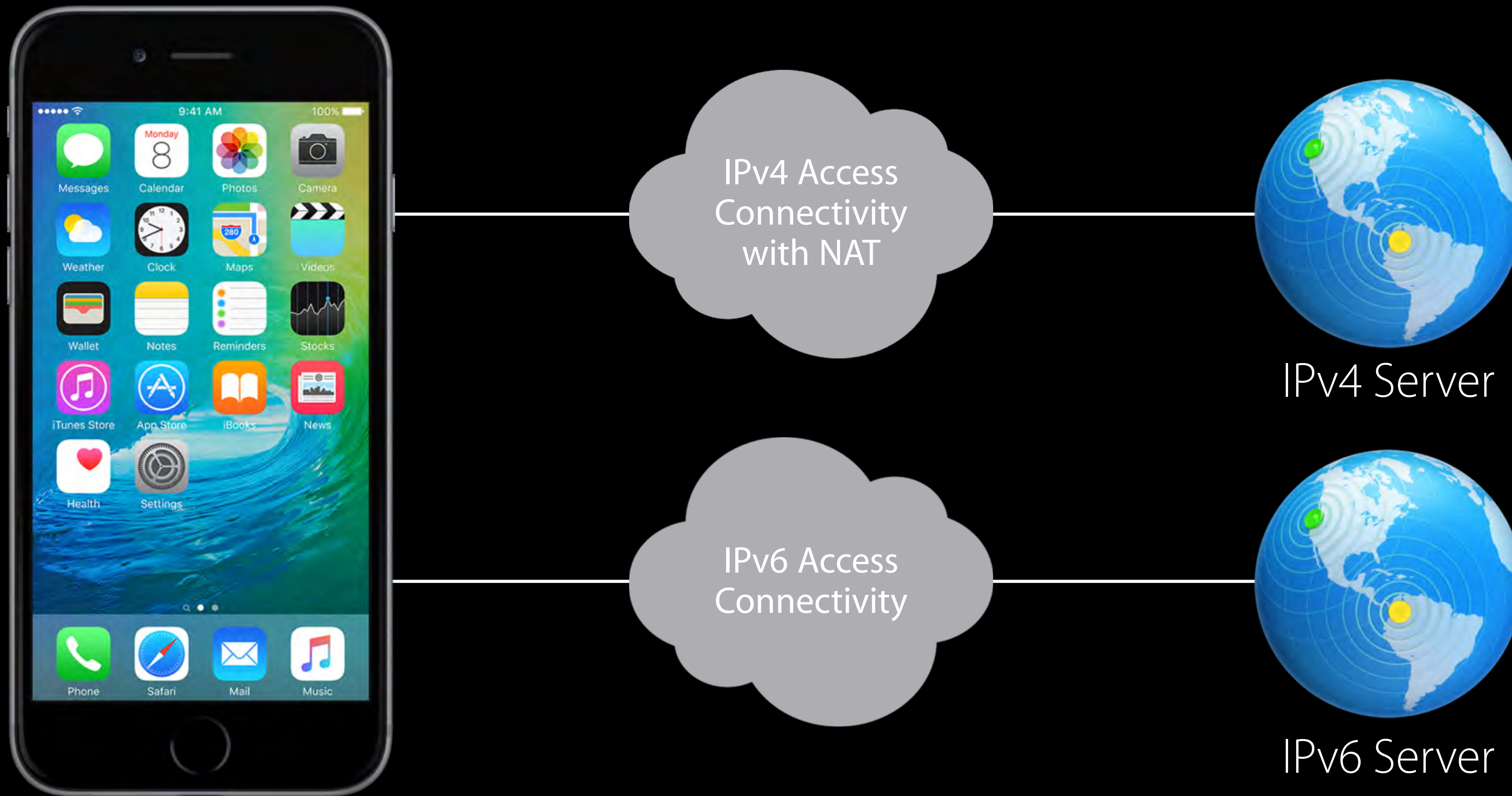
IPv6 used by Apple products (e.g., IPv6LL for configuring AirPort base stations)

IPv6 widely available internally on Ethernet and Wi-Fi networks

- SLAAC (no DHCPv6)

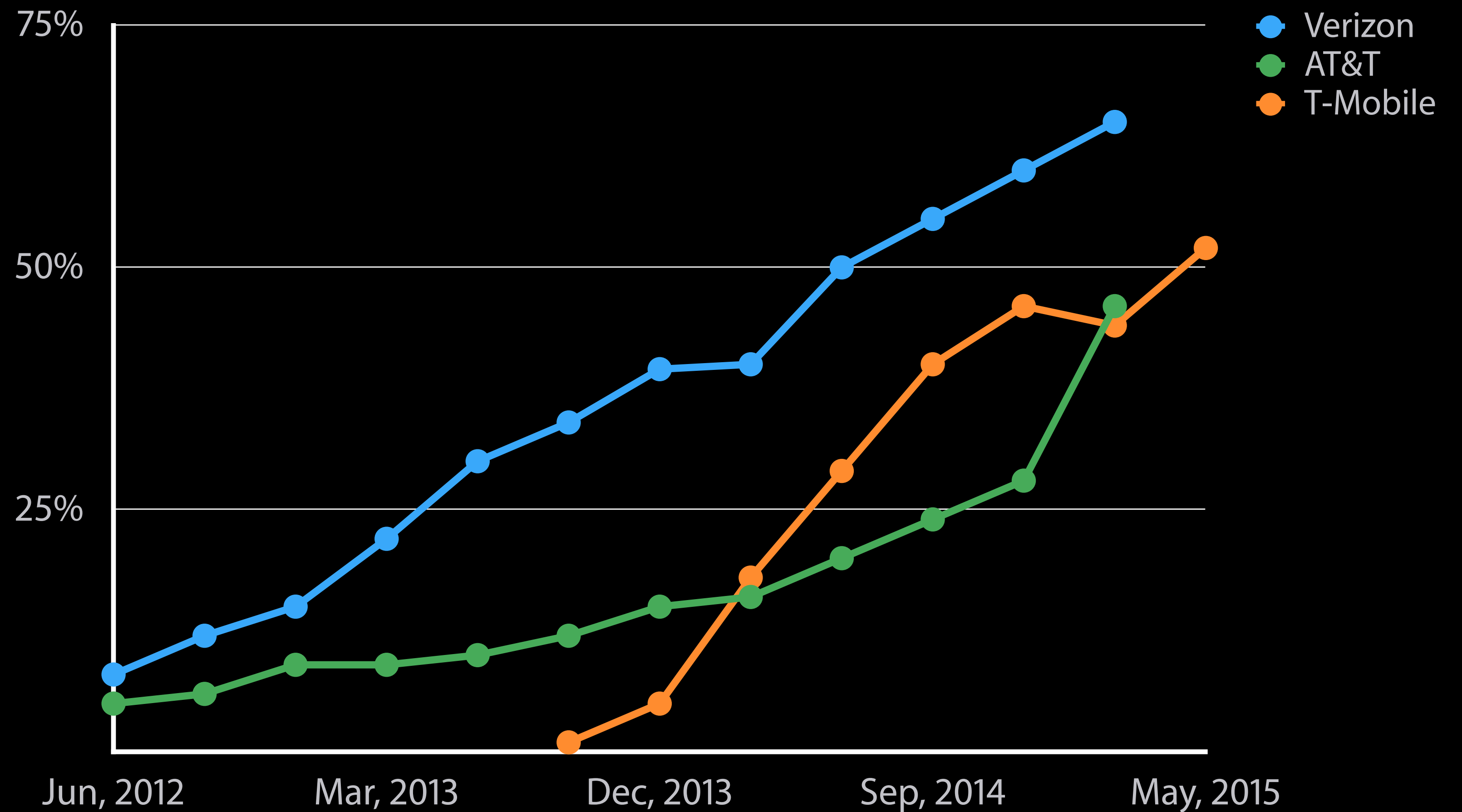
NAT64 Wi-Fi SSID available for testing in all engineering areas

# Cellular Data Network





# Cellular Data Network

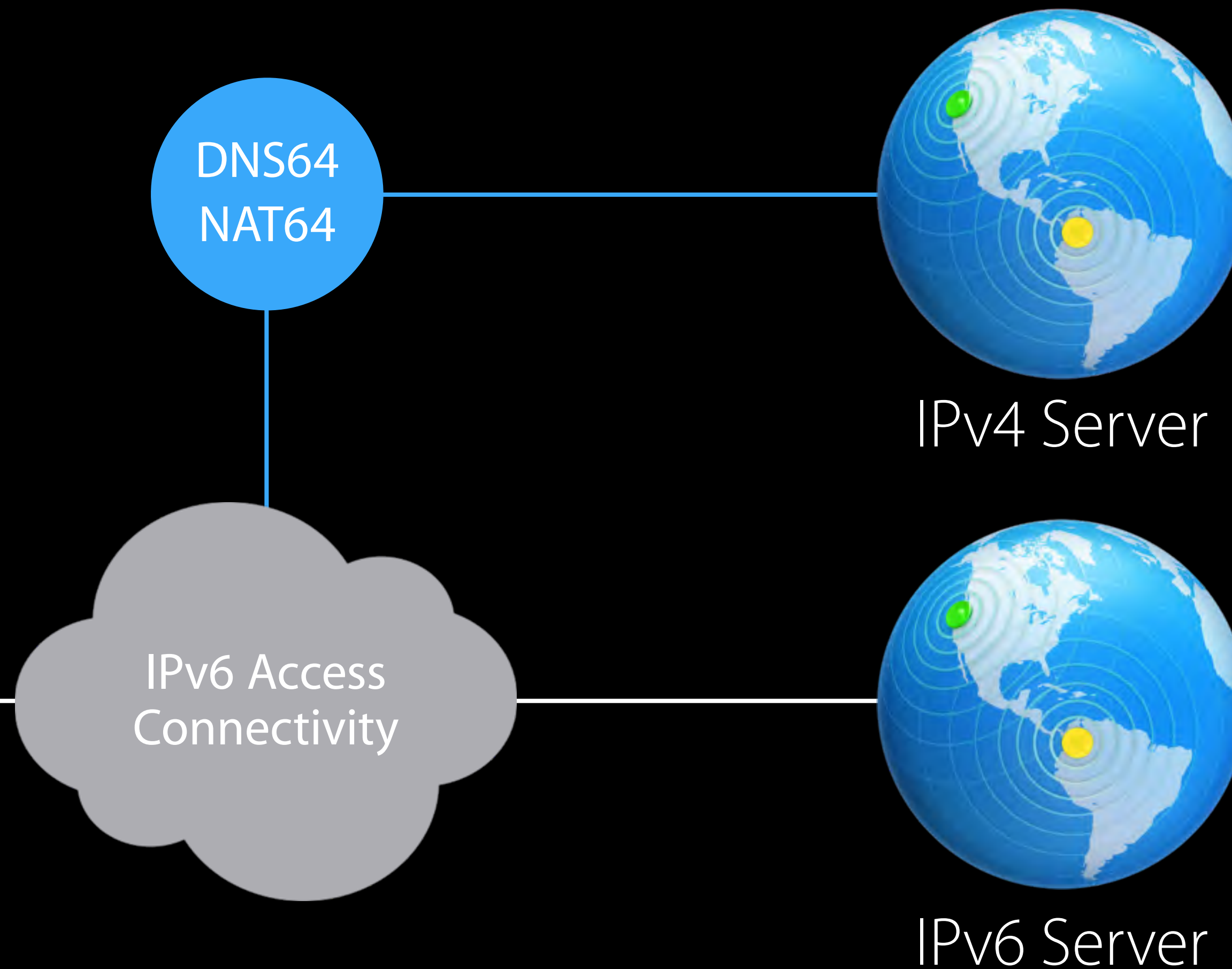




# Cellular Data Network

DNS64 synthesizes IPv6 address for IPv4 server

NAT64 performs IPv6 to IPv4 address translation



All iOS apps **MUST**  
support IPv6 natively  
and work on NAT64 networks

App submission requirement later this year

Most iOS apps are  
IPv6 compatible already

Most of the rest have  
only trivial bugs to fix

But...  
How to test?

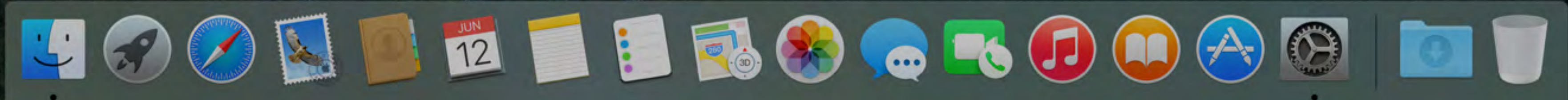


System Preferences

Search

- General
- Desktop & Screen Saver
- Dock
- Mission Control
- Language & Region
- Security & Privacy
- Spotlight
- Notifications
- CDs & DVDs
- Displays
- Energy Saver
- Keyboard
- Mouse
- Trackpad
- Printers & Scanners
- Sound
- iCloud
- Internet Accounts
- Extensions
- Network
- Bluetooth
- Sharing
- Users & Groups
- Parental Controls
- App Store
- Dictation & Speech
- Date & Time
- Startup Disk
- Time Machine
- Accessibility
- System Font

Step 1  
Option Click  
Sharing





Sharing

Computer Name: WWDC

Computers on your local network can access your computer at: WWDC.local

| On                                  | Service             |
|-------------------------------------|---------------------|
| <input type="checkbox"/>            | DVD or CD Sharing   |
| <input type="checkbox"/>            | Screen Sharing      |
| <input type="checkbox"/>            | File Sharing        |
| <input type="checkbox"/>            | Printer Sharing     |
| <input checked="" type="checkbox"/> | Remote Login        |
| <input type="checkbox"/>            | Remote Management   |
| <input type="checkbox"/>            | Remote Apple Events |
| <input type="checkbox"/>            | Internet Sharing    |
| <input type="checkbox"/>            | Bluetooth Sharing   |

Internet Sharing: Off

Internet Sharing allows other computers to share your connection to the Internet. Computers connected to AC power won't sleep while Internet Sharing is turned on.

Share your connection from: Ethernet

To computers using:

| On                                  | Ports         |
|-------------------------------------|---------------|
| <input checked="" type="checkbox"/> | Wi-Fi         |
| <input type="checkbox"/>            | Ethernet      |
| <input type="checkbox"/>            | Bluetooth PAN |
| <input type="checkbox"/>            | FireWire      |

Create NAT64 Network

Wi-Fi Options...

Step 2  
Option Click  
Internet Sharing

Step 3  
Turn on NAT64







Wi-Fi: Internet Sharing  
Turn Wi-Fi Off

NAT64 Test Network  
Channel: 11 (2.4 GHz)

Open Sharing Preferences...





# NAT64 + DNS64 Internet Sharing





# IPv6 Adoption Strategy

~~464XLAT  
( IPv4 Client + Client NAT + NAT64 )~~

IPv4 Client can only  
talk to IPv4 Servers

vs.

IPv6 Client + NAT64

IPv6 Client can also  
talk to IPv6 Servers



# NAT64 Prefix Choice?

NAT64 engine in current OS X 10.11 (El Capitan) developer seed uses 2001::/64

- Part of the reserved Teredo prefix — some software may handle this specially

Propose moving to 2001:2:a:bb1e/64

- Part of Testing/Benchmarking prefix

Feedback?

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