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OMB 2014 IPv6 Milestone Requirements

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OMB IPv6 2014 Milestone

The 2010 OMB Transition to IPv6 memo states that :

> *"In order to facilitate timely and effective IPv6 adoption, agencies shall: Upgrade internal client applications that communicate with public Internet servers and supporting enterprise networks to operationally use native IPv6 by the end of FY 2014"*

The IPv6 Transition objectives to be completed by the end of FY 2014 (September 30, 2014) are as follows:

- Internal Client Applications that communicate with public Internet servers must support IPv6,
- Enterprise networks must support IPv6,
- Must operationally use native IPv6.

2014 Target Explained*

- The intent of the 2014 requirement is to ensure that public IPv6-enabled network services that are provided external to an agency, are accessible to USG users residing in their agency enterprise networks.

- The definitions of what is meant by “public” are the same. That is, in this case, the same service that an USG client/application is trying to access, is available to everyone on the Internet.

- The agency clients applications, host operating systems, and supporting networking infrastructure should be IPv6-enabled such that it is possible to establish native IPv6 end-to-end communication between client applications and the external IPv6-enabled public servers/services.

*Source: Federal IPv6 FAQs 11/4/2011

Examples of Impacted Applications

Typical examples of client applications that access public Internet servers/services include*:

- External web (browsers),
- Email (mail user agents),
- DNS (resolvers),
- Host operating systems,
- Messaging and social media applications that access publicly available network servers are also within scope.

*Source: Federal IPv6 FAQs 11/4/2011

2014 Bottom Line*

- If there is an IPv6-enabled external network service that is currently available to all users of the public Internet, that service must be available to an Agency network user who only has IPv6 capabilities.

- This does not override agency policies that might restrict employee access to such services.
  - However: If such a service is permissible to access using IPv4, it must be possible to access the same service using IPv6.

*Source: Federal IPv6 FAQs 11/4/2011

2014 – Where to Start?

- Agency Specific 2014 Definition
  - Tailor definition to your agency (with buy-in)
  - Be specific (systems, services, etc.)
  - Can be broad or narrow in scope
- Success Metrics
  - What is expected?
  - When is it expected?
  - How will it be measured?
- Specific Requirements
  - Detailed & Technical
  - Based on agency approach
- Make Execution Progress *(Most Important!)*
  - Cannot plan forever
  - Need quick wins & experience
  - Generate momentum

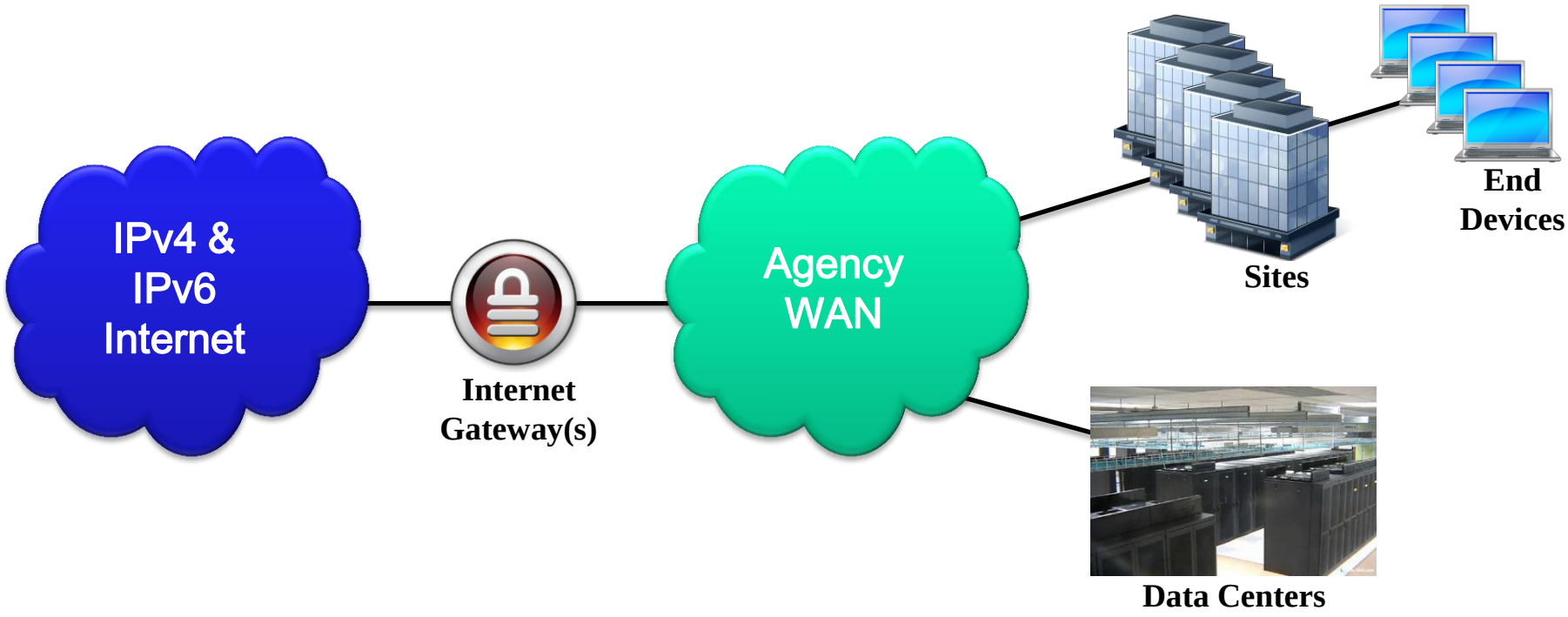
"Mission Thread" Approach

What operational IPv6 capabilities are required for a simple service such as web browsing?

- ✓ OS
- ✓ Application(s)
- ✓ Addresses
- ✓ Network Connectivity
- ✓ Routing
- ✓ DNS
- ✓ Security
- ✓ Network Management
- ✓ Internet

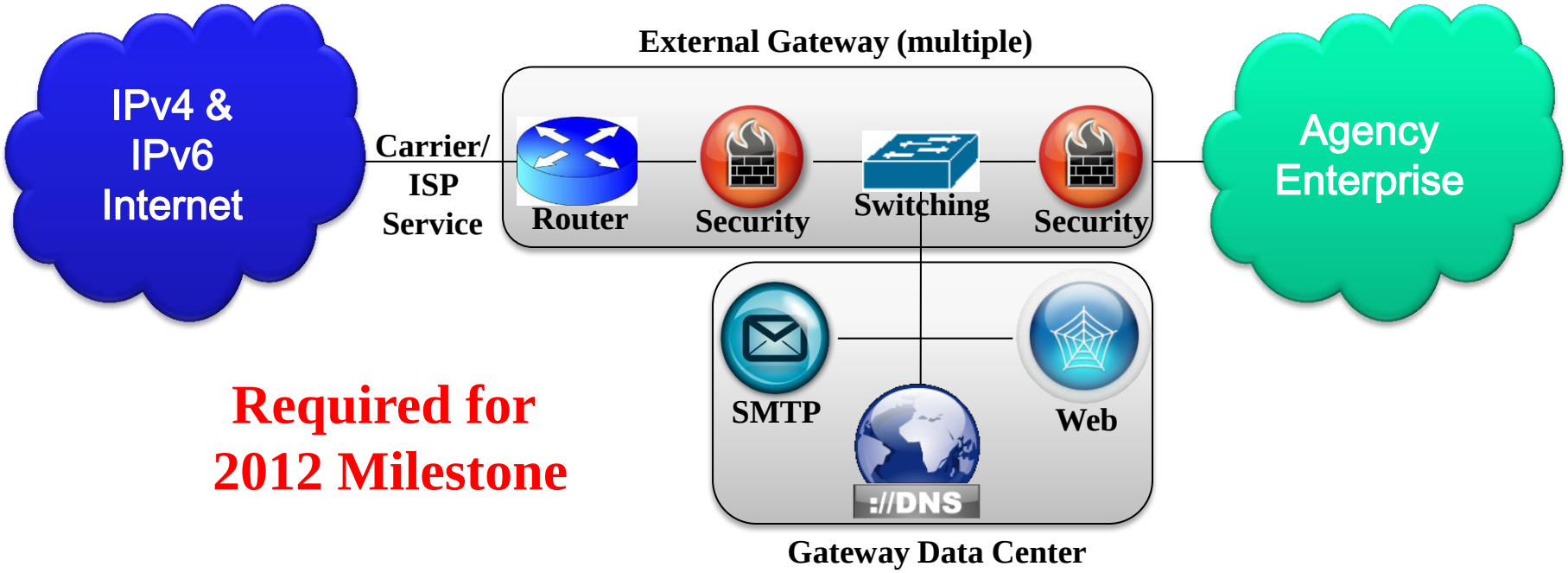
Example Enterprise Connectivity

- Network Connectivity
- Addressing
- Routing
- DNS
- Data Centers
- Mail
- Security
- Network Management
- Transition Mechanisms
- Applications/Services
- End Devices
- Pilots



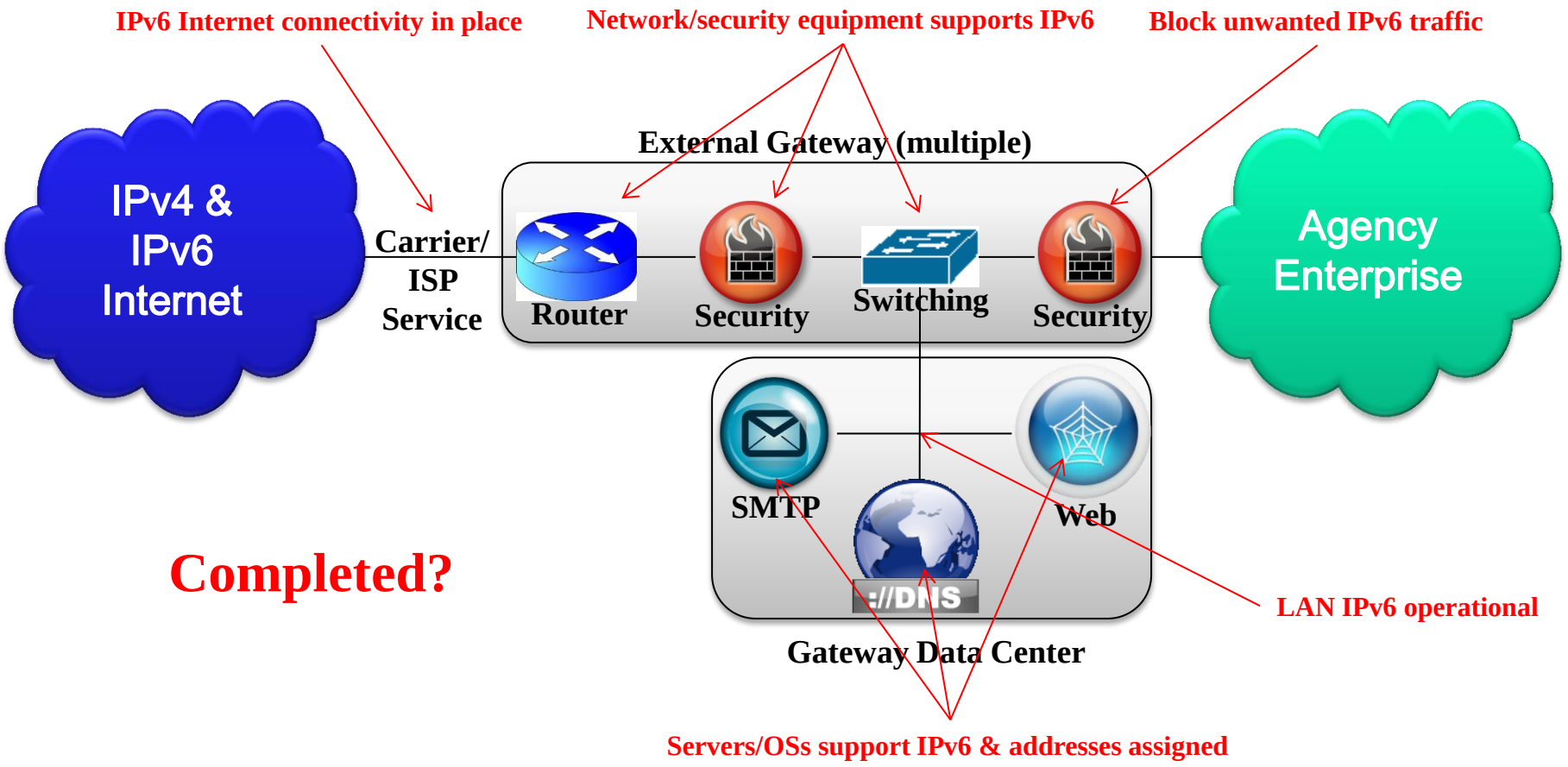
Example Internet Gateway Architecture

- Addressing
- Routing
- Connectivity
- Web
- DNS
- Mail
- Security
- Network Management
- Transition Mechanisms



Required for 2012 Milestone

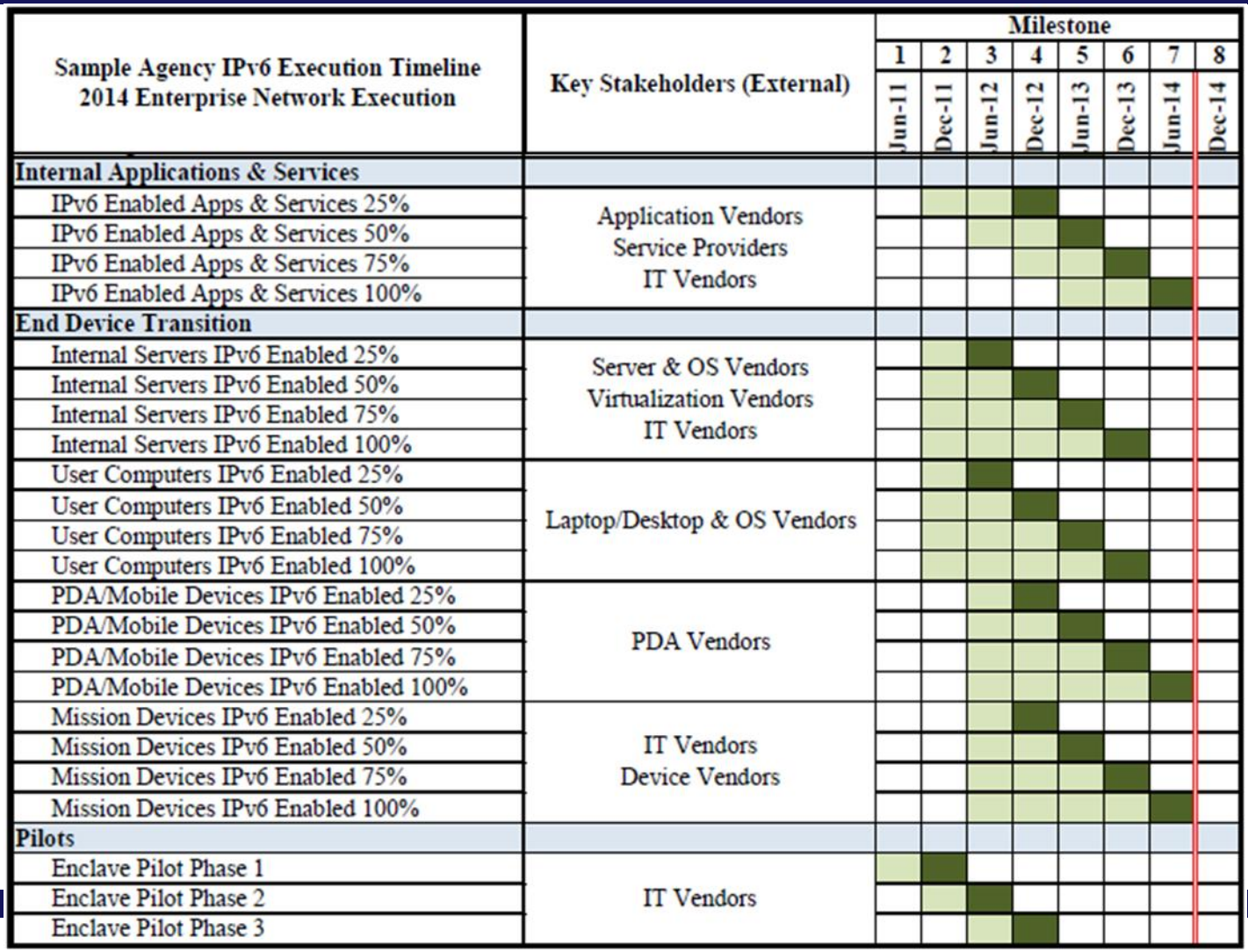
Ensuring Gateway Connectivity



Sample 2014 Execution Timeline

Sample Agency IPv6 Execution Timeline 2014 Enterprise Network Execution	Key Stakeholders (External)	Milestone							
		1	2	3	4	5	6	7	8
		Jun-11	Dec-11	Jun-12	Dec-12	Jun-13	Dec-13	Jun-14	Dec-14
Network Connectivity									
Core/Backbone Network	Networx or other Carriers Router Vendors								
Infrastructure Routers 25%									
Infrastructure Routers 50%									
Infrastructure Routers 100%									
Addressing									
Internal IPv6 Addresses Allocated	ARIN DCHPv6 Vendors								
DHCPv6 Enabled 25%									
DHCPv6 Enabled 50%									
DHCPv6 Enabled 100%									
Routing									
Core/Backbone Network Routing	Networx or other Carriers Router Vendors								
Infrastructure Routing 25%									
Infrastructure Routing 50%									
Infrastructure Routing 100%									
Domain Name Services (DNS)									
Internal DNS IPv6 Enabled	DNS Vendors								
Data Centers									
Data Center 1 IPv6 Enabled	Networx or other Carriers Router Vendors IT Vendors Service Providers								
Data Center 2 IPv6 Enabled									
Data Center 3 IPv6 Enabled									
Data Center 4 IPv6 Enabled									
Mail									
Exchange IPv6 Enabled	Mail Vendors								

Sample 2014 Execution Timeline Cont.



Sample Agency IPv6 Execution Timeline 2014 Enterprise Network Execution	Key Stakeholders (External)	Milestone 1 Jun-11	2 Dec-11	3 Jun-12	4 Dec-12	5 Jun-13	6 Dec-13	7 Jun-14	8 Dec-14
Internal Applications & Services									
IPv6 Enabled Apps & Services 25%	Application Vendors Service Providers IT Vendors								
IPv6 Enabled Apps & Services 50%									
IPv6 Enabled Apps & Services 75%									
IPv6 Enabled Apps & Services 100%									
End Device Transition									
Internal Servers IPv6 Enabled 25%	Server & OS Vendors Virtualization Vendors IT Vendors								
Internal Servers IPv6 Enabled 50%									
Internal Servers IPv6 Enabled 75%									
Internal Servers IPv6 Enabled 100%									
User Computers IPv6 Enabled 25%	Laptop/Desktop & OS Vendors								
User Computers IPv6 Enabled 50%									
User Computers IPv6 Enabled 75%									
User Computers IPv6 Enabled 100%									
PDA/Mobile Devices IPv6 Enabled 25%	PDA Vendors								
PDA/Mobile Devices IPv6 Enabled 50%									
PDA/Mobile Devices IPv6 Enabled 75%									
PDA/Mobile Devices IPv6 Enabled 100%									
Mission Devices IPv6 Enabled 25%	IT Vendors Device Vendors								
Mission Devices IPv6 Enabled 50%									
Mission Devices IPv6 Enabled 75%									
Mission Devices IPv6 Enabled 100%									
Pilots									
Enclave Pilot Phase 1	IT Vendors								
Enclave Pilot Phase 2									
Enclave Pilot Phase 3									

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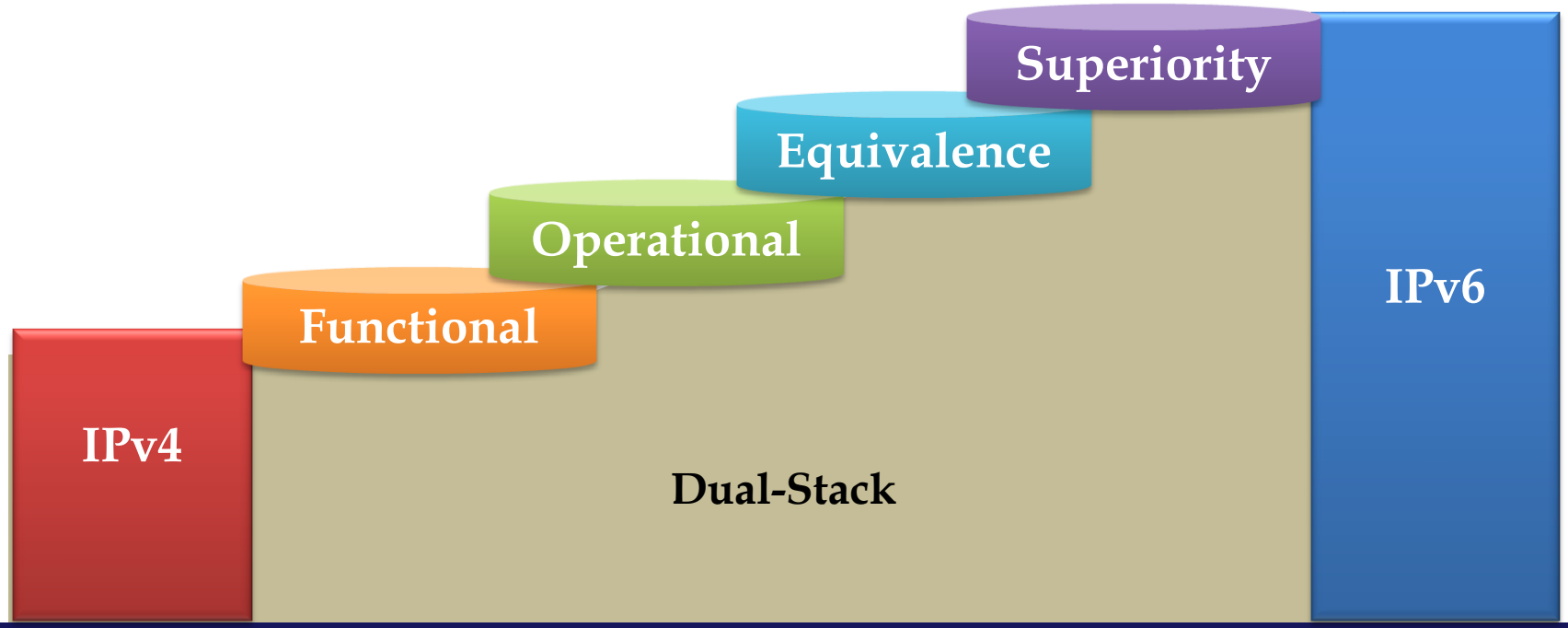
IPv6 Levels of Implementation



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Other Considerations for 2014 and Beyond

- Translation & Tunneling
- Services/Systems not covered by 2012/2014 Milestones
  - External
    - Telecommuter
    - Mission Services
  - Internal
    - Applications
    - Devices
- When to dual-stack everything
- IPv6-only testing
- IPv6-only environments
- Turning IPv4 off

Questions

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(IPv6 Enabled)

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