

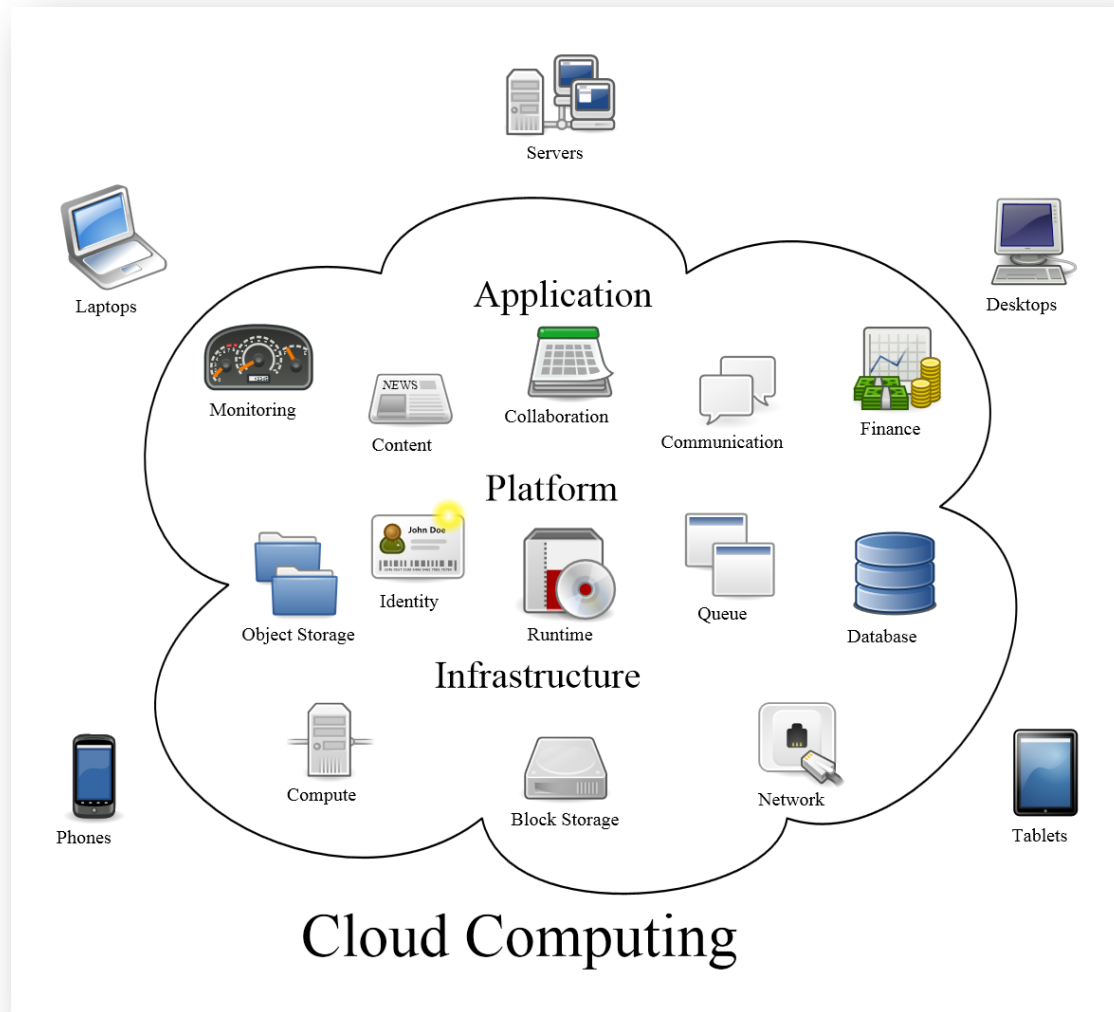
Cloud Providers that Support IPv6

John Vail
East Carolina University
Department of Technology Systems

Transition Planning

- Synergies can be created when an organization includes both cloud migration and IPv6 in their strategic and tactical planning.
- When the two technologies are analyzed together decisions can be made that would optimize both technologies that might not otherwise be apparent if the two technologies were planned for independently.

The Cloud



Clouds are Varied

Public

- Applications, storage, and other resources are made available by a service provider

Private

- Infrastructure operated solely for a single organization
 - Managed and hosted internally
 - or
 - Managed and hosted by a third-party

Hybrid

- Uses elements from the public and private cloud models

Clouds are Varied

Infrastructure as a Service (IaaS)

- Outsourcing technology to support operations
 - Servers
 - Storage
 - Networking components
- Service provider owns, houses, and maintains the technology

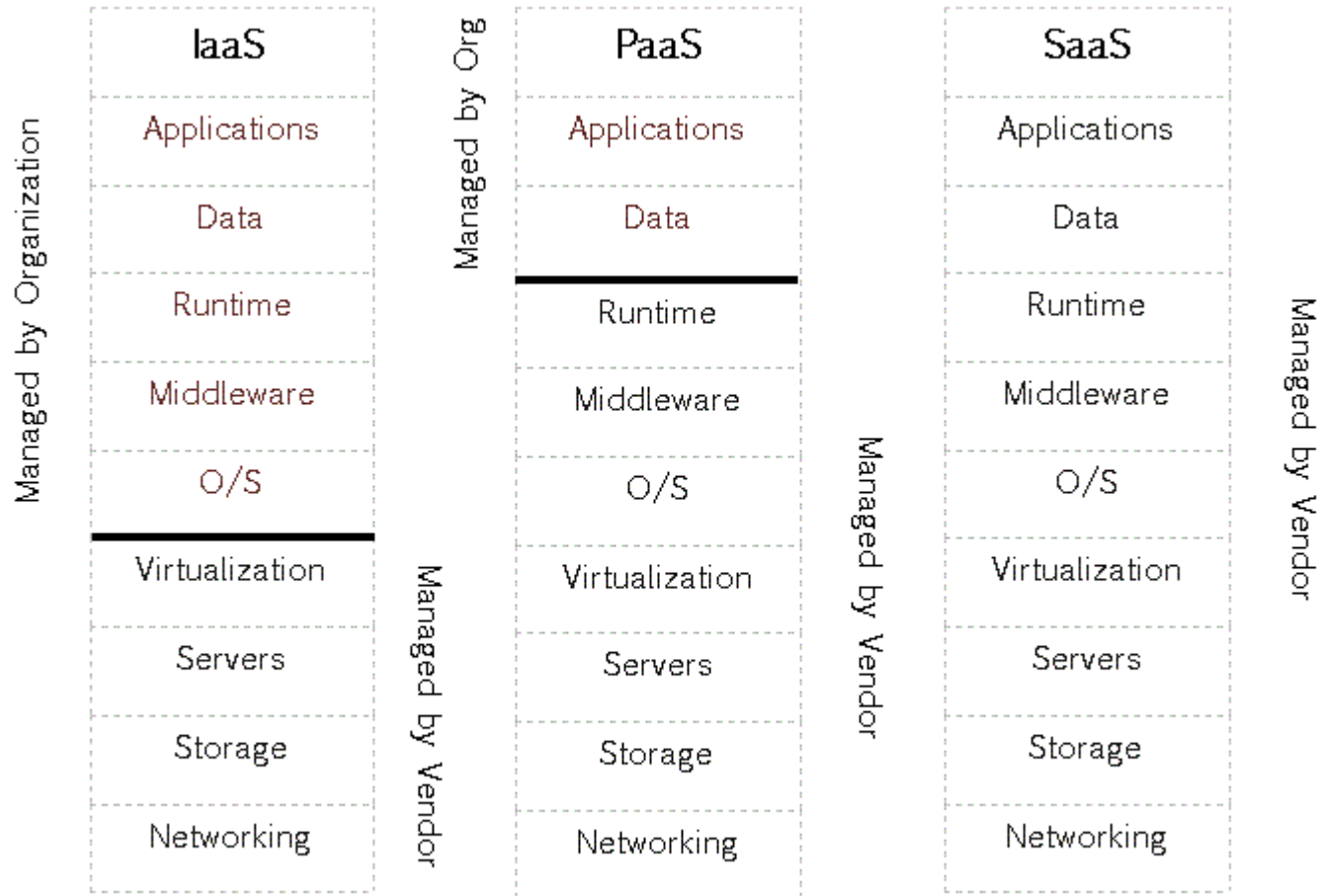
Platform as a Service (PaaS)

- Customers are not responsible for
 - Operating system upkeep (patches, etc.)
 - Integration middleware

Software as a Service (SaaS)

- Everything from the applications to the networking involved is controlled by the service provider

IaaS, PaaS, & SaaS Diagram



Technologies Whose Time has Come

- IPv6 has been around since 1998
- Cloud has been around since 1999



Methodology

Research Question

- Which Cloud Service Providers provide native Ipv6 access

First Step

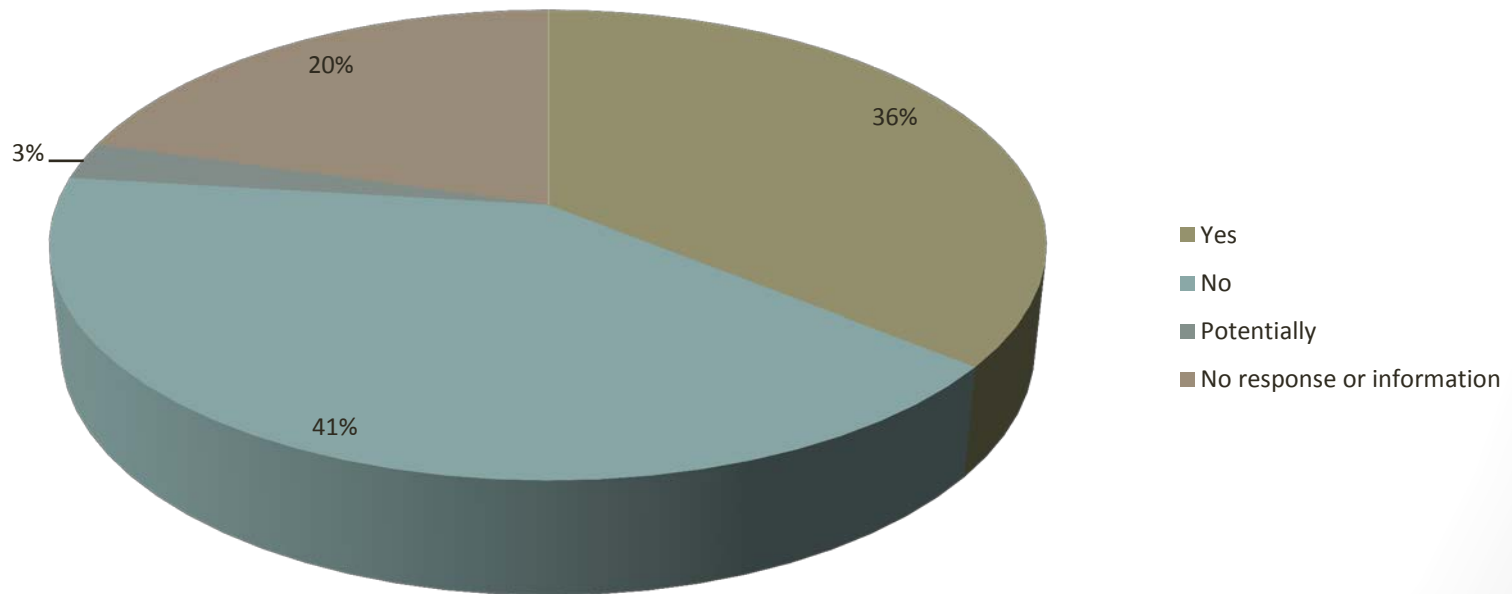
- Define & Identify Cloud Service Providers

Second Step

- Check Cloud Service Providers web sites for affirmation of their IPV6 connectivity
- If the information could not be found online, the Cloud Service Providers were contacted to inquire whether or not their cloud based solutions were available natively via IPv6

Results

Public Clouds IPv6 Accessable

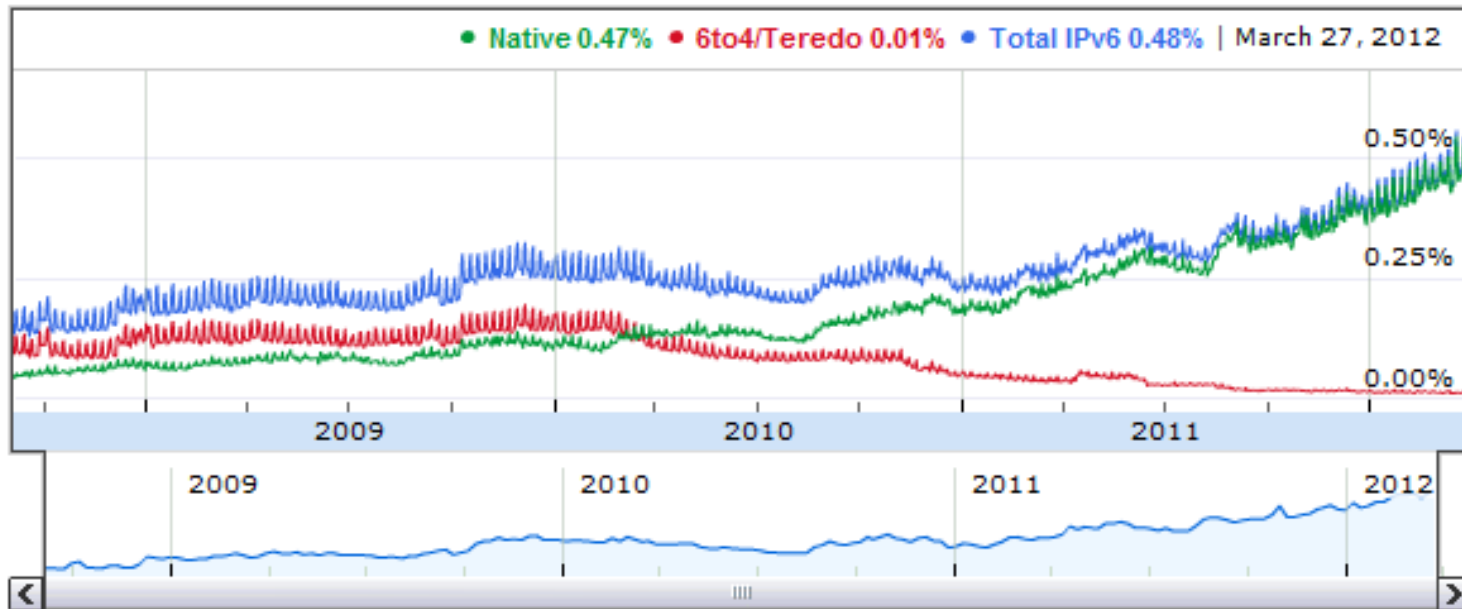


Clouds that are IPv6 Accessible

Of the thirty-nine (39) cloud service providers researched:

- **Fourteen** (thirty-six percent) confirmed that they **are accessible** at this point in time to allow organizations to connect to their cloud based services natively via IPv6
- **Sixteen** (forty-one percent) confirmed that they **are not accessible** at this point in time
- **One** is considered as a **potential** since they are utilizing whitelisting...
- **Eight** (twenty percent) did not respond to email or phone inquiries or did not have the information readily available on the World Wide Web

IPv6 Connectivity of Google Users



<http://www.google.com/intl/en/ipv6/statistics/>

Clouds that are IPv6 Accessible

- Bluelock (IaaS), providing Enterprise Cloud Computing, Hybrid Cloud Computing, and Private Cloud Computing; and is classified as a leader in Gartner's Magic Quadrant. Their URL is <http://www.bluelock.com/cloud-hosting/>.
- Brightbox (IaaS), based in the United Kingdom, provides Cloud Servers that are directly accessible via IPv6. Their URL is <http://brightbox.com/>.

Clouds that are IPv6 Accessible

- Cloudflare (PaaS), secures and optimizes web sites. Their URL is [http:// www.cloudflare.com/](http://www.cloudflare.com/).
- Dropbox (IaaS), offers storage and collaboration services. Their URL is [http:// www.dropbox.com/](http://www.dropbox.com/).

Clouds that are IPv6 Accessible

- HP (IaaS, PaaS, and SaaS), offers private, public, and hybrid clouds; and is offering a private beta: HP Cloud Compute and HP Cloud Object Storage. Their URLs are <http://hpcloud.com/> & <http://www8.hp.com/us/en/business-solutions/solution.html?compURI=1079449> .
- NTT Communications (IaaS), offers (among other services) data center services, managed private networks, and managed IT services. Their URL is [http:// www.us.ntt.com/en/](http://www.us.ntt.com/en/).

Clouds that are IPv6 Accessible

- Oxygen Cloud (IaaS), offers secure access to storage, file synchronization, and file sharing using Android, iOS, or Windows operating systems. Their URL is <http://www.oxygencloud.com/>.
- Rackspace (IaaS and PaaS), provides a fully managed public cloud, on-demand storage & content delivery, and Cloud Sites – a managed PaaS; and is classified as a visionary in Gartner's Magic Quadrant. Their URL is <http://rackspace.com/cloud/>.

Clouds that are IPv6 Accessible

- Softlayer (IaaS), offers dedicated server hosting and cloud server hosting; and is classified as a visionary in Gartner's Magic Quadrant. Their URL is <http://www.Softlayer.com>.
- Tata Communications (IaaS), offers (among other services) data center services, content delivery services, and voice over internet protocol services; and is classified as a niche player in Gartner's Magic Quadrant. Their URL is <http://www.tatacommunications.com/>.

Clouds that are IPv6 Accessible

- Virtacore Systems (IaaS), offers public, hybrid, and private clouds; and is classified as a niche player in Gartner's Magic Quadrant. Their URL is [http:// virtacore.com/](http://virtacore.com/).
- Windows Azure (PaaS), offers a platform as a service. Their URL is [http:// www.windowsazure.com/](http://www.windowsazure.com/).

Clouds that are IPv6 Accessible

- Windstream (IaaS), offers public, private and hybrid clouds, as well as storage. Their URL is <http://www.windstream.com/>.
- And XO Communications (IaaS and PaaS), which offers (among other services) online data backup and cloud storage services, web site and email hosting services, and voice over internet protocol services. Their URL is [http:// www.xo.com/](http://www.xo.com/).

Resources

- <http://www.internetsociety.org/internet/internet-51/history-internet/brief-history-internet>
- http://en.wikipedia.org/wiki/Internet_protocol_suite
- http://en.wikipedia.org/wiki/TCP/IP_model
- http://compnetworking.about.com/od/basicnetworkingconcepts/l/blbasics_osimod.htm
- <http://classes.design.ucla.edu/Spring06/161A/projects/camile/arpanet/index.html>

Questions?