IPv6 In The Real World: The IPv6-Enabled Website

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Enabling IPv6 for the Website

- Networking
- Operating System
- Web Server
- Statistics
- IPv6 Forum IPv6-Enabled Program
Networking

• Requirements:
  – Basic transit connectivity to the Internet using IPv6
    • Available from many providers.
    • Using a tunnel broker is NOT recommended for a web site, but can be used if there is no other option.
  – IPv6 globally routable static address
    • Generally, this should be provided by the IPv6 network transit provider.
Operating System

• Lots of options here.
  – Window Server 2003/2008
  – Linux
  – *BSD (Darwin, OS X)
  – *Solaris
  – AIX
  – HP-UX
  – Android (?) – dunno if you’d want to run a web server here.
Web Server

- Lots of options here, too.
  - Apache Web Server
    - The classic open source server
  - nginx
    - A newcomer from Russia
  - Lighttpd
    - A small memory footprint open source server
  - Zeus
    - A commercial server for hosting large numbers of web sites on a single server
  - IIS
    - For Windows
Choices for this discussion

- IPv6 Static Address: 2610:40:401::2/64
  - IPv6 Default Route: 2610:40:401::1
- System Characteristics:
  - Processors: 4 CPU Xeon 2.4Ghz
  - Memory: 4GB
  - Disk: 2 250Gb SATA
  - Ethernet card: Intel PRO/1000 (em0)
- Operating System: FreeBSD 7.3-RELEASE
- Apache 2.2 Web Server
Setup Network/OS

• Configure the operating system:
  – Add to /etc/rc.conf file:
    • ipv6_defaultrouter="2610:40:401::1"
    • ipv6_enable="YES"
    • ipv6_ifconfig_em0="2610:40:401::2 prefixlen 64"

• Load new settings:
  – The simple thing to do here is reboot.
Install Web Server

- Become root user
- Install from FreeBSD Ports Collection
  - Use `portsnap fetch` to get the latest batch. Next, `portsnap extract` to expand and put into place in `/usr/ports` directory.
- Install from `/usr/ports/www/apache22`
  - From the shell, use `cd /usr/ports/www/apache22`
  - Then, `make install`
Start Web Server

- Add to /etc/rc.conf file:
  - apache22_enable="YES"
- No further changes are required for IPv6.
- Startup server.
  - At shell, run `/usr/local/etc/rc.d/apache22 start`.
- Verify server is running.
  - At shell, run `netstat -a | grep http`.
  - If running, output should contain this:
    ```
tcp46      0      0   *.http     *.*                  LISTEN
5/24/10
```
Statistics

• How much IPv6 traffic has been seen on this site?
IPv6-Enabled Program

• The IPv6Forum has a program through which you can promote your website’s capability to respond via IPv6.
Thank you!

- Questions or comments – See me at the break or drop me an email at stan@txv6tf.org.