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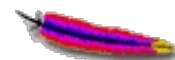
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Apache IPv6 Configuration: Dual Stacked IPv4 & IPv6 Virtual Hosts

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How do I configure Apache IPv6 networking under UNIX / Linux / BSD operating systems? How do I configure httpd IPv6 and IPv4 under RHEL / CentOS / Fedora / Debian / Ubuntu Linux?



[1]

You need to update httpd.conf file with the Listen directive. It instructs Apache to listen to only specific IPv4 and IPv6 addresses or ports. By default it responds to requests on all IP interfaces including IPv4 and IPv6 addresses. Our sample setup is as follows:

1. cyberciti.biz has address 74.86.48.99
2. cyberciti.biz has IPv6 address 2607:f0d0:1002:11::4

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httpd.conf configuration remains same under UNIX / BSD and Linux operating systems.



[8]

Linux Apache IPv6 Configuration

Open httpd.conf, enter:



[9]

```
# vi httpd.conf
```

To make the server accept connections on 74.86.48.99 and port 80, use:

```
Listen 74.86.48.99:80
```

IPv6 addresses must be surrounded in square brackets and port 80, use

```
Listen [2607:f0d0:1002:11::4]:80
```

Save and close the file. [Restart / reload Apache](#) ^[10].

```
# service httpd restart
```

Verify Apache Is Working In Dual Stack Mode

Use netstat command as follows:

```
# netstat -tulpn | grep :80 [11]
```

Sample Outputs:

```
tcp        0      0 74.86.48.99:80      0.0.0.0:*           LISTEN      445
tcp        0      0 2607:f0d0:1002:11::4:80 :::*                LISTEN      445
```

Configure iptables to Allow Access to the Web Server Via IPv6

The default Ip6tables configuration does not allow inbound access to the HTTP (80) and HTTPS (443) ports used by the web server. This modification allows that access, while keeping other ports on the server in their default protected state. Edit /etc/sysconfig/ip6tables (IPv6 firewall configuration file under CentOS / RHEL / Fedora).

```
# vi /etc/sysconfig/ip6tables
```

Add the following lines, ensuring that they appear before the final LOG and DROP lines for the RH-Firewall-1-INPUT chain:

```
-A RH-Firewall-1-INPUT -m tcp -p tcp --dport 80 -j ACCEPT
```

Add the following if you have configured HTTPS port:

```
-A RH-Firewall-1-INPUT -m tcp -p tcp --dport 443 -j ACCEPT
```

Save and close the file. [Restart firewall](#) ^[12], enter:

```
# service ip6tables restart
```

Dual Stacked IPv4 and IPv6 Virtual Hosts Configurations

You need to update [httpd.conf as follows](#) ^[13] for dual stacked httpd virtual hosting:

```
#IPv4 configuration
<VirtualHost 74.86.48.99>
  ServerAdmin webmaster@cyberciti.com
  DocumentRoot /home/httpd/cyberciti.biz/http
  ServerName cyberciti.biz
  ServerAlias www.cyberciti.biz
  ErrorLog logs/cyberciti.biz-error_log
  TransferLog logs/cyberciti.biz-access_log
  ErrorLog "/home/httpd/cyberciti.biz/logs/error.log"
  CustomLog "/home/httpd/cyberciti.biz/logs/access.log" common
  ScriptAlias /cgi-bin/ "/home/httpd/cyberciti.biz/cgi-bin/"

# For php5 fastcgi add +ExecCGI
<Directory "/home/httpd/cyberciti.biz/http">
  Options -Indexes FollowSymLinks +ExecCGI
  AllowOverride AuthConfig FileInfo
  AddHandler php5-fastcgi .php
  Action php5-fastcgi /cgi-bin/php.fcgi
  Order allow,deny
  Allow from all
</Directory>

# Default cgi-bin perms
<Directory "/home/httpd/cyberciti.biz/cgi-bin">
  AllowOverride None
  Options None
  Order allow,deny
  Allow from all
</Directory>
</VirtualHost>

# Ipv6 config, note down log files
<VirtualHost [2607:f0d0:1002:11::4]>
  ServerAdmin webmaster@cyberciti.com
  DocumentRoot /home/httpd/cyberciti.biz/http
  ServerName cyberciti.biz
  ServerAlias www.cyberciti.biz
  ErrorLog logs/cyberciti.biz-error_log
  TransferLog logs/cyberciti.biz-access_log
  ErrorLog "/home/httpd/cyberciti.biz/logs/ipv6.error.log"
  CustomLog "/home/httpd/cyberciti.biz/logs/ipv6.access.log" common
  ScriptAlias /cgi-bin/ "/home/httpd/cyberciti.biz/cgi-bin/"
```

```
# For php5 fastcgi add +ExecCGI
<Directory "/home/httpd/cyberciti.biz/http">
Options -Indexes FollowSymLinks +ExecCGI
AllowOverride AuthConfig FileInfo
AddHandler php5-fastcgi .php
Action php5-fastcgi /cgi-bin/php.fcgi
Order allow,deny
Allow from all
</Directory>

# Default cgi-bin perms
<Directory "/home/httpd/cyberciti.biz/cgi-bin">
AllowOverride None
Options None
Order allow,deny
Allow from all
</Directory>
</VirtualHost>
```

Save and close the file. [Restart Apache web](#) ^[14] server:

```
# service httpd restart
```

A Note About BSD PF Firewall

You need to update [/etc/pf.conf](#) ^[15] as follows under OpenBSD / FreeBSD operating systems:

```
# define Ipv6 ips
apache_ipv6 = "{ 2607:f0d0:1002:11::4 }"
# Open port 80
pass in on $ext_if inet6 proto tcp from any to $apache_ipv6 port http keep state
# Open port 443
pass in on $ext_if inet6 proto tcp from any to $apache_ipv6 port https keep state
```

Save and close the file. [Reload pf firewall](#) ^[16]:

```
# /etc/rc.d/pf reload
```

OR

```
# /sbin/pfctl -nf /etc/pf.conf && /sbin/pfctl -f /etc/pf.conf
```

Additional Resources

Further resources should be consulted for more extensive configuration guidance, especially if particular applications need to be secured:

- [Red Hat / CentOS: Chroot Apache 2 Web Server](#) ^[17]
- [FreeBSD Configure Apache PHP with mod_fastcgi Module](#) ^[18]
- [Red Hat / CentOS Apache 2 FastCGI PHP Configuration](#) ^[13]
- [Apache FastCGI / mod_fastcgi PHP fcgi Script](#) ^[19]
- See all our Apache related [FAQs](#) ^[1] and [tutorials](#) ^[20] published on the nixCraft.
- [Apache Core Features](#) ^[21]

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URL to article: <http://www.cyberciti.biz/faq/ipv6-apache-configuration-tutorial/>

URLs in this post:

- [1] Image: <http://www.cyberciti.biz/faq/category/apache/>
- [2] Apache IPv6 Configuration: **#step1**
- [3] Verify Apache Is Working In Dual Stack Mode: **#step2**
- [4] Configure iptables to Allow Access to the Web Server: **#step3**
- [5] Dual Stacked IPv4 and IPv6 Virtual Hosts Configurations: **#step4**
- [6] A Note About BSD PF Firewall: **#step5**
- [7] Additional Resources: **#resources**
- [8] Image: <http://www.cyberciti.biz/faq/category/freebsd/>
- [9] Image: <http://www.cyberciti.biz/faq/category/linux/>
- [10] Restart / reload Apache: <http://www.cyberciti.biz/faq/restart-httpd/>
- [11] netstat -tulpn | grep :80: <http://www.cyberciti.biz/tips/linux-display-open-ports-owner.html>
- [12] Restart firewall: <http://www.cyberciti.biz/faq/howto-rhel-linux-open-port-using-iptables/>
- [13] httpd.conf as follows: <http://www.cyberciti.biz/tips/rhel-centos-fedora-apache2-fastcgi-php-configuration.html>
- [14] Restart Apache web: <http://www.cyberciti.biz/faq/star-stop-restart-apache2-webserver/>
- [15] /etc/pf.conf: <http://bash.cyberciti.biz/firewall/pf-firewall-script/>
- [16] Reload pf firewall: <http://www.cyberciti.biz/faq/freebsd-openbsd-reset-pf-firewall-automatically/>
- [17] Red Hat / CentOS: Chroot Apache 2 Web Server: <http://www.cyberciti.biz/tips/chroot-apache-under-rhel-fedora-centos-linux.html>
- [18] FreeBSD Configure Apache PHP with mod_fastcgi Module: http://www.cyberciti.biz/faq/freebsd-apache-php-mod_fastcgi-tutorial/
- [19] Apache FastCGI / mod_fastcgi PHP fcgi Script: http://bash.cyberciti.biz/web-server/apache-fastcgi-mod_fastcgi-php-script/
- [20] tutorials: <http://www.cyberciti.biz/tips/category/apache>
- [21] Apache Core Features: <http://httpd.apache.org/docs/2.2/mod/core.html>