

# HowTo invite applications to use IPv4 or IPv6

## Introduction

IPv6 is not really news, but unfortunately there may still be situations where an application tries to make a particular connection using IPv6 although only IPv4 is set up usable.

The following config snippets should help to enforce a particular IP variant in dual-stack setups or situations.

## IPv4/IPv6 priorities of operating systems

Be aware that applications may ignore the following settings, or only respect them when the application is restarted.

### Linux

To have most applications use IPv4 connections, uncomment the following line in `/etc/gai.conf`:

```
precedence ::ffff:0:0/96 100
```

### MacOS, Windows

TBD.

## IPv4/IPv6 priorities of applications

Application	Command line options	Config file options	Config file names, Remarks
apt-*	<code>-o Acquire::ForceIPv4=true</code> <code>-o Acquire::ForceIPv6=true</code>	<code>Acquire::ForceIPv4 "true";</code> <code>Acquire::ForceIPv6 "true";</code>	Suggestion: <code>/etc/apt/apt.conf.d/99force-ipv4</code> apt ignores <code>gai.conf</code>
Java JVMs	<code>-Djava.net.preferIPv4Stack=[true false]</code> <code>-Djava.net.preferIPv6Addresses=[true false]</code>	<code>java.net.preferIPv4Stack = [ true   false ]</code> <code>java.net.preferIPv6Addresses = [ true   false ]</code>	<code>java.net.preferIPv*Stack</code> are actually JVM system properties
OpenSSH	<code>[ -4   -6 ]</code>	<code>AddressFamily any   inet   inet</code>	<code>/etc/ssh/ssh*_config, ~/.ssh/config</code>
Postfix		<code>inet_protocols = all   inet4   inet6</code>	<code>/etc/postfix/main.cf</code>

Probably obsolete, from 2009: Java in Ubuntu/Debian: Sometimes these JVM parameters are not enough. As documented in [Ubuntu bug 486215](#) and [Eclipse bug 298515](#) it may also be required to set `net.ipv6.bindv6only` to 0 using `/sbin/sysctl net.ipv6.bindv6only=0` respectively editing `/etc/sysctl.d/bindv6only.conf`

TBC ...