Binding

Configuring Apache to listen on specific addresses and ports.

Topics

See also

- Virtual Hosts[1]
- DNS Issues[2]

Overview

Related Modules	Related Directives
core	VirtualHost
mpm_common	Listen

When Apache starts, it binds to some port and address on the local machine and waits for incoming requests. By default, it listens to all addresses on the machine. However, it needs to be told to listen on specific ports, or to listen on only selected addresses, or a combination. This is often combined with the Virtual Host feature which determines how Apache responds to different IP addresses, hostnames and ports.

The `Listen` directive tells the server to accept incoming requests only on the specified port or address-and-port combinations. If only a port number is specified in the `Listen` directive, the server listens to the given port on all interfaces. If an IP address is given as well as a port, the server will listen on the given port and interface. Multiple Listen directives may be used to specify a number of addresses and ports to listen on. The server will respond to requests from any of the listed addresses and ports.

For example, to make the server accept connections on both port 80 and port 8000, use:

```
Listen 80
Listen 8000
```

To make the server accept connections on two specified interfaces and port numbers, use

```
Listen 192.170.2.1:80
Listen 192.170.2.5:8000
```

IPv6 addresses must be surrounded in square brackets, as in the following example:

```
Listen [fe80::a00:20ff:fea7:ccea]:80
```

Special IPv6 Considerations

When APR supports IPv6, Apache will create IPv6-capable listening sockets by default (i.e., when no IP address is specified on the Listen directive). In other words, when APR supports IPv6,

Binding

```
Listen 80
```

is equivalent to

```
Listen [::]:80
```

When APR does not support IPv6,

```
Listen 80
```

is equivalent to

```
Listen 0.0.0.0:80
```

On some platforms, such as NetBSD, binding to the IPv6 wildcard address ("::") does not allow Apache to accept connections on IPv4 interfaces. In this situation, multiple Listen directives are required, as shown below:

```
Listen 0.0.0.0:80
Listen [::]:0
```

Apache does not currently detect this, so the Listen statements must be edited manually by the administrator.

How This Works With Virtual Hosts

Listen does not implement Virtual Hosts. It only tells the main server what addresses and ports to listen to. If no `<VirtualHost>` directives are used, the server will behave the same for all accepted requests. However, `<VirtualHost>` can be used to specify a different behavior for one or more of the addresses and ports. To implement a VirtualHost, the server must first be told to listen to the address and port to be used. Then a `<VirtualHost>` section should be created for a specified address and port to set the behavior of this virtual host. Note that if the `<VirtualHost>` is set for an address and port that the server is not listening to, it cannot be accessed.

URI References

[1] http://httpd.apache.org/docs-2.1/vhosts/
[2] http://httpd.apache.org/docs-2.1/dns-caveats.html