
FreeBSD VPS v3
New Feature Supplement

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Introducing Multiple IP Addresses

By default, your private server is assigned a single Internet Protocol (IP) address. For some customers, a FreeBSD Virtual Private Server, version three (*VPS v3*) which is configured to utilize a single, base IP address provides all they need. However, you can now assign additional IP addresses. And you can now assign additional IP addresses for both new and existing servers.

How Multiple IP Addresses Work with Other Features

In order to provide support for the new multiple IP address feature, your server includes support for the following other features which are also compatible with assigning multiple IP addresses:

- Apache Hypertext Transfer Protocol (HTTP) Secure Server
- Dedicated Secure Socket Layer (SSL) Certificates
- Shared SSL Certificates
- Multiple SSL Certificates (on a standard port)
- Secure File Transfer Protocol (FTP)
- Post Office Protocol (POP) over SSL
- POP email encryption
- Internet Message Access Protocol (IMAP) email encryption
- Sendmail mail transfer agent (MTA)

Overview of the New Multiple IP Address Feature

With the introduction of this new feature, you can assign additional IP addresses for your VPS v3 server. There is a monthly fee to associate each IP address with your account and the addresses are available individually, without any kind of bundling required. Following are the additional number of IP addresses, for each FreeBSD VPS v3 plan:

- **VPS v3 Basic** – You can now assign 4 additional IP addresses to your VPS v3 Basic server. This is in addition to the base IP address for a maximum of 5 IP addresses.
- **VPS v3 Pro** – You can now assign 9 additional IP addresses to your VPS v3 Pro Plus server. This is in addition to the base IP address for a maximum of 10 IP addresses.
- **VPS v3 Pro Plus** – You can now assign 19 additional IP addresses to your VPS v3 Pro Plus server. This is in addition to the base IP address for a maximum of 20 IP addresses.

Potential Uses for Multiple IP Addresses

With this release, you can use the new multiple IP address feature to specify more than one unique SSL certificates. This enables groups of customers to utilize the features offered by your server without visibility or compromise to other groups of customers. Following are some examples of groups who might require access to the same server but also require the separate, distinct authentication of unique SSL certificates:

- Internal employees, including administrators, who require access to an organization's intranet features
- External clients, vendors, and contractors who require access to an organization's intranet or other Web content and features

- The public which requires unfettered access to some portions of your organization's Web site but not to others
- Customers who require access to retail e-commerce features
- Sales representatives who require access to wholesale e-commerce features
- Managers who require access to e-commerce (or other) statistics
- Customers who are located in regions where a unique pricing or taxation structures apply
- Customers you wish to offer products under several distinct brands

How Your Server Utilizes Multiple IP Addresses

Once you configure your server to utilize multiple IP addresses, you can utilize a link from the account information interface. For accounts which utilize domains managed under the terms of `secure.net` name servers, you can manage Domain Name Service (DNS) for domains associated with the additional IP addresses. If you are a reseller, you can do this from the Reseller Backroom. In general, the services bind to all IP addresses. However, Apache and SSL recognize and operate using a specific IP address.

Overview of Configuring Multiple IP Addresses

The following provides an overview checklist of the tasks you must perform in order to utilize support for Multiple IP addresses.

- Set up DNS for additional IP addresses.
- Set domains for DNS services.
- Assign each IP addresses to a virtual host.
- Install a SSL certificate for a virtual host.

Overview of this Document

This document provides you with the information you need to understand, get started, and utilize additional IP addresses provisioned for your FreeBSD VPS v3 account. This document provides an update to the following print-ready customer documentation which is included, at no cost, as a feature of your FreeBSD VPS v3 server:

- *FreeBSD VPS v3 Getting Started Guide*
- *FreeBSD VPS v3 Release Notes*
- *FreeBSD VPS v3 Technical Overview* (available only through the Backroom)

There are also Web site resources such as a FreeBSD VPSv3 Documentation Library and Frequently-Asked Questions (FAQ).

This document includes the following sections:

- “Managing Subhosts and Certificates” on page 3.
- “Known Issues, Cautions, and Warnings” on page 6.

Managing Subhosts and Certificates

Prior to the introduction of support for multiple IP addresses, your FreeBSD VPS v3 server enabled configuration of multiple Web sites and domains in addition to the main domain of the server. (or *hostname*). The hostname and subhosts were associated with the single, base IP address for the account. You may have placed the Web content for your hostname in the `/usr/local/apache2/htdocs` directory. You may also have configured a custom hostname during the order process. To assist with the process of configuring and testing your server, all VPS v3 servers receive a temporary domain name (or *temp domain*) which resolves to your VPS v3 server. Use this domain if the custom hostname is temporarily inaccessible or does not yet resolve to your server. Other domains or sites hosted by your server are called *subhosts*. This section explains adding, removing, and configuring subhosts with the additional consideration of multiple IP addresses.

Because a standard, default VPS v3 server supports just one IP address, you can only associate one SSL certificate with the standard SSL port (443) for the Web server. You can, however, configure your Web server to use the Apache Listen directive to monitor other ports for SSL requests, and associate other certificates with these different ports. Doing this requires you to indicate the port number in the Universal Resource Locator (URL). With the addition of support for multiple IP addresses, this non-standard type of configuration is no longer necessary for those who purchase the use of additional IP addresses.

New and Updated Command-line Utilities

The assistance provided by the `vaddhost` command-line utility continues with the addition of prompts to enable you to associate a subhost with the base IP address or another IP address associated with your account. A command-line utility, `vaddcert`, is added to enable you to install certificates for different domains which can now utilize different IP addresses.

Note: To execute the `vaddhost` and `vaddcert` commands or to edit to the `httpd.conf` file, as instructed in the following sections, you must verify you are the root user. You can become the root user by typing `su -` at the command line and supplying the root user password. Also, you can press `ctrl+c` to exit the `vaddhost` or the `vaddcert` process at any time. This immediately cancels `vaddhost` and any subhost configuration entered during the `vaddhost` process is lost.

Adding a Subhost

The hostname or subhost typically consists of the top-level domain (*example.com*) only instead of a *canonical* name such as *www.example.com*. Canonical names are usually added as secondary domains or aliases. With the assistance of a command-line utility, you can configure subhosts (and canonical variations) to comply with the Apache `VirtualHost` directive. The Apache software looks for `VirtualHost` entries in the following file:

```
/usr/local/apache2/conf/httpd.conf
```

The `vaddhost` command assists you as you create a subhost configuration `VirtualHost` tags in your Apache configuration file. While the configuration task is presented in three sections you must complete all of the steps to complete the configuration of the subhost which complies with the Apache `VirtualHost` directive.

From your server's command-line interface, follow these steps to begin configuring the subhost. After you have completed these steps, you will have specified the domain and administrator:

Note: Throughout the following steps, the system periodically displays the list of domains, canonical variations, and IP addresses for verification.

1. Type `vaddhost` and press **Enter**. Instructions and information for `vaddhost` will

display during this step and throughout the vaddhost process.

2. Type the domain for the subhost (such as *example.com*), any secondary domains (such as *www.example.com* or *store.example.com*), and any other domains used for this subhost, pressing **Enter** after each. The first domain entered will be the `ServerName` (or *main domain*) for the subhost. Additional variations will be aliases that point to the main domain.
(Or press **Enter** without any text after providing all variations to move to the next step. The system displays the list of domains and variations for verification.)
3. Type the username of the administrative user for the subhost and press **Enter**. This user should be the owner of the Web site files and folders; otherwise the Web server will not be able to load the site.
4. Verify the information and type **y** and press **Enter** to continue.
(Or type **n** and press **Enter** to input the username again.)
5. Type the IP address with which you wish to associate the subhost and press **Enter**.
(Press **Enter** prior to typing an IP address to see a list of available IP addresses.)
6. If the listings of domains, canonical variations, and IP addresses are correct, type **y** and press **Enter**.
(Or, type **n** and press **Enter** to input the information again.)

Administrative Email and Document Root settings

After you have added a subhost, continue the configuration and specify administrative email as well as document root (or *Web directory*) settings. Follow these steps from the command line:

1. Type the email address of the subhost administrator and press **Enter**.
2. Verify the information and type **y** and press **Enter** to continue.
(If the information is incorrect, type **n** and press **Enter** to input the address correctly.)
3. Type the path for the subhost Web directory, or document root, on the server. The `vaddhost` command simplifies this step and provides a recommended path for you. You can press **Enter** without typing a path to select this default and create a subhosted directory in the home directory of the user specified in the previous step.
4. Verify the information, type **y** and press **Enter** to continue.
(If the information is incorrect, type **n** and press **Enter** to input the path correctly.)

Log and cgi-bin settings

After you have configured administrative email and document root settings, specify log and Common Gateway Interface Binaries (*cgi-bin*) settings. Follow these steps from the command line:

1. Select an option for the subhost transfer log and press **Enter**.
2. Verify the information, type **y**, and press **Enter** to continue.
(Or type **n** and press **Enter** to choose the transfer log configuration again.)
3. Select an option for the subhost error log and press **Enter**.
4. Verify the information, type **y**, and press **Enter** to continue.
(Or type **n** and press **Enter** to choose the error log configuration again.)
5. Select an option for the subhost `cgi-bin` and press **Enter**. This will enable the subhost to execute scripts and programs.
6. Verify the information and type **y** and press **Enter** to continue.
(Or type **n** and press **Enter** to choose the `cgi-bin` configuration again.)
7. The system will display the `VirtualHost` entry to be added to the `httpd.conf` file

for confirmation. Type **y** and press **Enter** to add the entry to the `httpd.conf` file. (Or type **n** and press **Enter** to halt the `vaddhost` process.)

8. If you typed **y** to accept the entry, type **y** and press **Enter** to restart the Web server and complete the subhost addition.

Assigning a New SSL Certificate

This release offers a new command-line utility (`vaddcert`) which enables you to assign a new SSL certificate to a host. Follow these steps to use `vaddcert` to assign a new SSL certificate.

1. Select the host to which the new SSL certificate will be assigned.
If the host is not listed, check the Apache configuration to verify that another SSL certificate is not previously assigned to the IP address and port. Also verify that the host's `SSEngine` directive is set to 'on'.
2. Enter the file path of the SSL certificate file to be installed.
3. Enter the file path of the SSL certificate key file to be installed.
The following lines will be added to Apache configuration for `ServerName`.
`example.securesites.net`
`SSLCertificateFile /usr/local/apache2/conf/ssl2.crt`
`SSLCertificateKeyFile /usr/local/apache2/conf/ssl2.key`
4. If the information is correct, press **y** to continue.
5. Press **y** to restart Apache now.
A `Syntax OK` message is displayed.

Going Beyond the Basics

You may configure a subhost further by editing the `VirtualHost` entries for the subhost in the `/usr/local/apache2/conf/httpd.conf` file. Execute the `restart_apache` command from the command line after editing the file to restart the Web server and make the changes effective. In addition, refer to the FreeBSD VPS v3 customer documentation for information about using the full range of features for your server.

Known Issues, Cautions, and Warnings

Following are descriptions of known issues, cautions, and warnings which may apply to the new feature described in this document.

Your Responsible Use of IP Addresses

Note: FreeBSD VPS v3 supports IP version four (IP v4) and is available in the San Jose, California and Sterling, Virginia datacenters located in the United States.

All IP addresses are on loan from a Regional Internet Registry (RIR). The number of the IP addresses on loan can vary and is solely based on the requirements you demonstrate and document at the time you request them. Your name and justification for utilizing each IP address may be disclosed to certain registries, including, but not limited to, the American Registry of Internet Numbers (ARIN). For more information refer to the ARIN Web site (<http://www.arin.net/index.shtml>). The ARIN Web site includes a Search WHOIS feature.

The guidelines regarding your responsible use of IP addresses are offered with guidance from various Internet Engineering Task Force (IETF) documentation as well as the regional registries. The guidelines are subject to change in the future. For example, ordering systems for additional IP addresses will be updated to ease the burden of disclosing and demonstrating your requirement to use an IP address. All future updates to the policies and procedures will be based upon the following guidelines:

- **Conservation** – The objective distribution of globally unique IP address space according to the operational needs of customers. No stockpiling designed to maximize the utilization of IP address space is acceptable.
- **Registration** – ARIN requires information on which entity is using an IP address. This information includes: your name, company name (if a business), postal address, email address, IP address, and telephone number.
- **Routability** – The distribution of globally unique IP address space in a hierarchical manner, which permits scalability in the internet routing table.

Configure Provisioned IP Addresses Only

Caution: When configuring your subhosts and certificates, do not specify different IP addresses than the ones associated with your server. If you do, your subhosts and certificates will not function. This is true of any IP addresses, even those you might see displayed as unused IP addresses for the subnet of your server. Your server will not function with any other IP addresses and you will not be able to see information about any aspect of the data traffic associated with any other IP addresses.

The FreeBSD operating system supports a standard, UNIX command which enables you to see the status of network interfaces for your server. Use the command for diagnostic and configuration tasks. For example, if you issue `ifconfig` command without any additional argument, all of the currently active interfaces are displayed. If you issue the command with the additional argument of `-a`, all of the interfaces, including inactive ones are displayed. Beyond the simple display of interfaces, the command includes additional arguments which enable you to specify IP addresses for each of the network interfaces. If you do specify another address in error, the remedy is to log into your server as root and use the `ifconfig` command to specify a correct, provisioned IP addresses. For more details about the `ifconfig` command, refer to the FreeBSD operating system *Man Pages*.

CPX: Control Panel and Multiple IP Addresses

With this release, you can configure Multiple IP Address settings with the assistance of the command-line interface your server offers. The ability to utilize the CPX: Control Panel to configure multiple IP address features is coming soon.