Making Virtual Mail users
in Mac OS X 10.5.x/10.4.x Server

```
-----------------------------------------------------------------
DISCLAIMER: The author(s) claim(s) no responsibility for any
damage that may occur from the use of any information found here
or found on links followed from this document. The author(s)
will take credit for the good stuff though.

All items and/or companies mentioned on this and other pages are
or may be trademarks, registered trademarks, or service marks of
the respective companies or individuals.
-----------------------------------------------------------------
```

0. - IMPORTANT NOTE

Unfortunately, in Mac OS X 10.5.0 (Build 9A581) and 10.5.1 Server, "Mac OS X Server-style virtual aliases" are broken. Until this gets fixed you will have to use "Postfix-Style virtual aliases". The simplest way to do this is to follow this tutorial including the chapter on "Postfix-Style virtual aliases". Although it may sound redundant, it will leave you with a setup that allows you to either keep "Postfix-Style virtual aliases" or to easily fall back onto "Mac OS X Server-style virtual aliases" once Apple issues a fix.

Mac OS X Server 10.4.x users, may choose to do as well if they wish, but don't have to.

1. - Introduction

This document provides step-by-step instructions on how to configure OS X 10.5.x/10.4.x Server's Mail Service for virtual domains and users.

NOTE: I recommend you read the whole document at least once, before implementing it.

Before continuing you should have had a look at Apple's mail service documentation which can be found here:
http://images.apple.com/server/macosx/docs/Mail_Service_Admin_v10.5.pdf
http://images.apple.com/server/pdfs/Mail_Service_v10.4.pdf

Furthermore I assume that your DNS and/or Firewall are configured properly to send and receive mail.

IMPORTANT: This document will FIRST guide you through by using "Mac OS X Server-style aliases". "Postfix-Style aliases" are added as an option. For those on 10.4.x and not afraid of the command line, I recommend going all the way through. For those on 10.5.0 see Chapter 0!

"Mac OS X Server-style aliases" avoid the command line and require no in-depth technical knowledge, but have some limitations like not being able to use Sieve scripting or some of Postfix' advanced functionality.

The foundation of Leopard's and Tiger's Mail Service is the combination of Postfix, Cyrus, Squirrelmail, Mailman, Amavisd-new, Spamassassin & ClamAV. It's a selection of very powerful Open Source solutions which allow for much more than can be done through OS X Server's Server Admin (SA) and Workgroup Manager (WGM).

2. - Why virtual users?

Virtual users allow for hosting separate domains with separate users (i.e. *john@virtual-domain1.com* is different from *john@virtual-domain2.com*).
This is substantially different from having local host aliases of the local domain, where *john@local-domain.com* would be the same as *john@localhostalias-domain.com*.

If you have several domain names which are being used by the same users, local host aliases are fine. But, if you have several domain names which are being used by different users who may even be in different companies you'll need virtual users.

3. - Let's do it

We are going to setup the mail service so that it caters to one local and two virtual domains.

We'll call them:
local-domain.com
virtual-domain1.com
virtual-domain2.com

Each domain will have 2 users called:
user1
user2

Which will result in 6 completely separate mail accounts:
user1@local-domain.com
user2@local-domain.com
user1@virtual-domain1.com
user2@virtual-domain1.com
user1@virtual-domain2.com
user2@virtual-domain2.com

Bear in mind that you will need to replace *local-domain.com*, *virtual-domain1.com*, *virtual-domain2.com* as well as the user names with your own. You will also need to make sure that the authoritative DNS for your domains is configured properly (the DNS is often with your provider and not on your server).

Also for the sake of this exercise we assume a local network in the range of:
192.168.1.0-255 (192.168.1.0/24).
Obviously, you should replace this with your actual network information.

4. - Preparing the Mail Server

Here comes a basic mail server setup. To this purpose we will use Server Admin (SA). Note: In OS X 10.5.x Server you will first need to use Server Admin to add Mail as a service. Also in OS X 10.5.x Server I assume you are using the "advanced style" setup.:

Server Admin -> Mail -> Settings -> General
Enable POP: checked
Enable IMAP: checked
Enable SMTP: checked
Allow incoming mail: checked
Domain name: *local-domain.com*
Host name: *mail.local-domain.name*

Server Admin -> Mail -> Settings -> Relay
Accept SMTP relays only from....: checked
Add: *127.0.0.1/32* (in any case)
Add: *192.168.1.0/24* (replace with your actual network IP or IP range(s))

Use these junk mail rejection servers.....: checked
Add: *zen.spamhaus.org*
Add: Any other RBLs you deem useful. Less is usually more.

Server Admin -> Mail -> Settings -> Filters
Whatever you fancy ;-)

Server Admin -> Mail -> Settings -> Advanced -> Security
SMTP: Check all you need
IMAP: Check all you need
POP: Check all you need

NOTE: Always use the strongest available authentication method. For Mail.app users, this would typically be CRAM-MD5.

5. - Adding virtual domains to Mail Service

Again, to this purpose we will use Server Admin (SA):

Server Admin -> Mail -> Settings -> Advanced -> Hosting
Local Host Aliases:
Add: localhost (if not present already)
Enable virtual hosting: checked
Locally hosted virtual domains
Add: *virtual-domain1.com*
Add: *virtual-domain2.com*

Save
Stop & Start the mail service

6. - Creating the users

First we need to create the users. To this purpose we will use Workgroup Manager (WGM).

You will notice that I have chosen naming conventions which may look cumbersome (com_virtual_domain1_user1 etc.). The advantage of this is that you will have less issues with duplicate names and can easily sort users by domain in WGM if you have many virtual domains.

Open WGM and create 6 users (Accounts) with the following detail:

local-user1:
Name: User 1
shortname: user1
Mail: enabled
Mail server: *mail.local-domain.com*
Access account: checked

local-user2:
Name: User 2
shortname: user2
Mail: enabled
Mail server: *mail.local-domain.com*
Access account: checked

virtual-user1:
Name: user1 - virtual-domain1.com
shortname: com_virtual_domain1_user1
shortname2: *user1@virtual-domain1.com*
shortname3-x: aliases for e-mail address under shortname2
Mail: enabled
Mail server: *mail.virtual-domain1.com*
Access account: checked
Allow simultaneous login...: unchecked

virtual-user2:
Name: user2 - virtual-domain1.com
shortname: com_virtual_domain1_user2
shortname2: *user2@virtual-domain1.com*
shortname3-x: aliases for e-mail address under shortname2
Mail: enabled
Mail server: *mail.virtual-domain1.com*
Access account: checked
Allow simultaneous login...: unchecked

virtual-user3:
Name: user1 - virtual-domain2.com
shortname: com_virtual_domain2_user1
shortname2: *user1@virtual-domain2.com*
shortname3-x: aliases for e-mail address under shortname2
Mail: enabled
Mail server: *mail.virtual-domain2.com*
Access account: checked
Allow simultaneous login...: unchecked

virtual-user4:
Name: user2 - virtual-domain2.com
shortname: com_virtual_domain2_user2
shortname2: *user2@virtual-domain2.com*
shortname3-x: aliases for e-mail address under shortname2
Mail: enabled
Mail server: *mail.virtual-domain2.com*
Access account: checked
Allow simultaneous login...: unchecked

7. - A few explanations about virtual users in WGM

Name: In the case of virtual hosting, its main purpose is for you as the system administrator to easily find your user data.

Shortname(s): Why did I use 2 shortnames? Good question. The way Leopard and Tiger are configured it would have been enough to just use *user1@virtual-domain1.com*. There are however a few limitations doing it this way, especially if in the future you decide to dig into the depths of Postfix or you decide to migrate your setup to a different Unix. So it is safer to have a first shortname that doesn't contain any fancy characters and/or references to an a-mail address. Furthermore you will have less issues with duplicate names and can easily sort users by domain in WGM if you have many virtual domains. At the same time you maintain "meaningful" log-in names for your users.

Mailserver: Again you could just use the same DNS records for all domains. However if you come across the need to split domains between different CPUs, you'll be glad you did it this way.

Allow simultaneous login: Optional, but it is safer to uncheck it for pure mail users.

If you have many domains, it's also a good idea to create a Group in WGM for each domain and assign it to the domain's users. Makes your life easier.

8. - Why did I decide on this kind of setup?

Some might think there are a few unnecessary extra steps in this setup. Especially compared to Apple's documentation. They are right and wrong at the same time.

The main reason is that I have learned that it pays going the extra mile. With this setup, if your load increases, you'll be able to distribute domains to different servers. Also, once you're not happy with just using WGM and SA you can easily enhance your configuration and/or move users out of WGM to a SQL database for example.

9. - Are we done yet?

Yes and no.
Yes, because if you followed all the steps correctly you now have a basic setup that works. You can receive and send e-mail for local and virtual users. Try it!
Yes, because we have done everything we can by using SA and WGM.

No, because there are a few more things we can do. But not by using SA and WGM anymore. You can get by, by using the Finder and a text editor (plain text editor like BBEdit or SubEthaEdit. Do not use Word!!!), but ideally use Terminal.

IMPORTANT NOTE: Unfortunately, in Mac OS X 10.5.0 Server (Build 9A581), "Mac OS X Server-style virtual aliases" are broken. Until this gets fixed you will have to use "Postfix-Style virtual aliases". If you got here, you have already done the "Mac OS X Server-style virtual aliases" bit. The simplest way is to proceed to the next chapter and implement "Postfix-Style virtual aliases". Although it may sound redundant, it will leave you with a setup that allows you to either keep "Postfix-Style virtual aliases" or to easily fall back onto "Mac OS X Server-style virtual aliases" once Apple issues a fix.

Mac OS X Server 10.4.x users, may choose to do so as well if they wish, but don't have to.

10. - Moving to "Postfix-Style virtual aliases"

This chapter is optional for Mac OS X Server 10.4.x users, but currently (until Apple issues a fix) mandatory for Mac OS X Server 10.5.x users. The pros and cons have already been discussed earlier in this document.

There are several ways of implementing "Postfix-Style virtual aliases". The one discussed here, tries to stay as compatible as possible with Server Admin and WGM, while also minimising the need to use the command line.

The way Apple has implemented virtual domains (and what gets written to disk by Server Admin) is through the combination of:

```
virtual_mailbox_domains = hash:/etc/postfix/virtual_domains
virtual_alias_maps = hash:/etc/postfix/virtual,hash:/var/mailman/data/
virtual-mailman
```

where

`hash:/etc/postfix/virtual_domains`
contains the names of the virtual domains

`hash:/etc/postfix/virtual`
contains the aliases for virtual domain users

`hash:/var/mailman/data/virtual-mailman`
contains the aliases for virtual domain mailman addresses (if mailman is used at all).

While this works, it creates a few hiccups, one of them being that Mail for unknown virtual mail users gets accepted to the queue, passed on to the content-filter and only later rejected. While this may seem no big deal, it actually uses up processing power for no good reason and fills your queue with undeliverable mail and backscatter.

A better approach is the combination of either:

```
virtual_alias_domains
virtual_alias_maps
```

or

```
virtual_mailbox_domains
virtual_mailbox_maps
```

or all 4 of them.

While it would be easy to just use virtual_alias_domains instead of virtual_mailbox_domains (provided you created your virtual users the way you should) it would "break" Server Admin.

However, the purpose of this document is not to explain how virtual hosting in Postfix works. If you'd like more information see: http://www.postfix.org/VIRTUAL_README.html

So let's get back to moving to "Postfix-Style virtual aliases". Here is what needs to be done. These step-by-step instructions assume you haven't tinkered with your Mac OS X Server postfix configuration by editing /etc/postfix/main.cf. If you have, you probably know what you did and how to adapt my instructions. If not abort ;-)

1. Create a new file /etc/postfix/virtual_domains_dummy

2. In this newly created file add just 1 line containing

```
dummy.local     allow
```

3. In terminal type:

```
sudo postmap /etc/postfix/virtual_domains_dummy
```

4. Edit /etc/postfix/main.cf and change:

```
virtual_mailbox_domains = hash:/etc/postfix/virtual_domains
```

to

```
virtual_mailbox_domains = hash:/etc/postfix/virtual_domains_dummy
```

(Steps 1-4 are needed to maintain Server Admin compatibility)

5. Edit /etc/postfix/main.cf and add:

```
virtual_alias_domains = hash:/etc/postfix/virtual_domains
```

6. In /etc/postfix/main.cf make sure you have/add the following:

```
virtual_alias_maps = hash:/etc/postfix/virtual
```

or if you use mailman with virtual domains as well:

```
virtual_alias_maps = hash:/etc/postfix/virtual,hash:/var/mailman/data/
virtual-mailman
```

7. Edit /etc/postfix/virtual and add (based on the conventions used when we set up the "Mac OS X Server-style virtual aliases":

```
user1@virtual-domain1.com   com_virtual_domain1_user1
user2@virtual-domain1.com   com_virtual_domain1_user2
user1@virtual-domain2.com   com_virtual_domain2_user1
user2@virtual-domain2.com   com_virtual_domain2_user2
```

If, let's say, you need other aliases for a given user, just add them with the same syntax as above. For example you'd like to add an alias "*alias1*" for *user1@virtual-domain1.com* just add:

```
alias1@virtual-domain1.com  com_virtual_domain1_user1
```

8. In terminal type:
```
sudo postmap /etc/postfix/virtual
```

9. In terminal issue `sudo postfix reload`

10. Bonus hint: Until sure that everything works the way it should you may want to add/change the following in /etc/postfix/main.cf:

```
unknown_virtual_alias_reject_code = 450
unknown_virtual_mailbox_reject_code = 450
```

This will ensure that mail gets rejected temporarily rather then rejected permanently. Thus, increasing the chances of not losing mail while trying to figure out any configuration errors ;-) ;-)

That's it. You know have a setup which is as compatible as possible with Server Admin and WGM, while giving you all the advantages of "Postfix-style virtual aliases".

Note: The checkbox in Server Admin -> Advanced -> Hosting used to turn virtual hosting on/off will have no effect anymore. This is purely cosmetic.

11. - What else can we do now?

-If you decide to use Spam and Virus Filtering (which is strongly recommended) with virtual domains, you need to do a minor adjustment in the amavisd-new configuration file `/etc/amavisd.conf`. Otherwise only local domains will get scanned:

First, in the Finder hit Command-Shift-G and enter `/etc`
In a text editor (see above) open `amavisd.conf`

For Mac OS X 10.5.x:
Search for the parameter that reads:

```
@local_domains_maps = ( [".$mydomain"] );
```

and change it to:

```
@local_domains_maps = ( 1 );
```

For Mac OS X 10.4.x:
Search for the section that reads:

```
@local_domains_acl = ( ".$mydomain" );
```

below it add this line:

```
@local_domains_maps = ( 1 );
```

Save.
Stop and Start Mail Services

-You could also further strengthen your Postfix configuration. To this purpose see my tutorial "Frontline spam defense for Mac OS X Server"

12. - What do my users need to know?

Not much really. Besides the standard info they would need to know for any kind of mail service (like the incoming and outgoing server address), you need to make sure they understand that, as virtual domain users, they have to login with their full shortname/e-mail address.

Username: user1 and password will not work or fetch the wrong mailbox (unless the user is a local domain user). For virtual domain users, *user1@virtual-domain1.com* and password is the way to go.

Furthermore, we have configured the mail service for better security.

In order to be able to send mail, your users will have to authenticate. Again, using *user1@virtual-domain1.com* and password. If the mail client supports it (Mail.app does) you can request that CRAM-MD5 be used for higher security. Your Outlook and Outlook Express users will need to settle with plain authentication.

Incoming POP can be authenticated with clear and APOP authentication, while incoming IMAP can deal with clear, plain, login and CRAM-MD5.

If you have set up a webserver and webmail, your users will be using SquirrelMail to read/send their e-mail. Again *user1@virtual-domain1.com* and password is required. SquirrelMail by default will authenticate in clear. You can change this behavior, but you will need to use Terminal.

That's all folks.
Hope this helps.
Have fun,
Alex

Doc. Version 2.0.1, 11.9.2008
Athanasios Alexandrides
Lugano, Switzerland
tutorials -at- topicdesk.com

Content contributions:
Dale Walsh
Jeff Johnson (jdj -at- mac.com)
