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**Virtual Server to  
Virtual Dedicated Server (VDS)  
Self Migration Process  
for VDS Administrators**

**First Edition  
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## Introduction

The shadow process for a Virtual Server to a Virtual Dedicated Server is meant to be a self-migration for users with UNIX experience. This document does not explain the differences between a Virtual Server and a Virtual Dedicated Server. However, this document steps you through the basics of how to migrate your Virtual Server to a Virtual Dedicated Server.

If you have made significant changes to your Virtual Server, this document may not be helpful.

The Virtual Server to Virtual Dedicated Server migration process takes several hours, maybe even days, depending on your knowledge of the Virtual Server and Virtual Dedicated Servers, and the amount of changes you have made to a standard Virtual Server.

When connecting to your Virtual Dedicated Server account to perform migration tasks, you will need to connect as the root user using the IP address of the shadowed account.

## Starting the Shadow Process

The Virtual Server (“old”) to Virtual Dedicated Server (“new”) migration procedure begins by submitting a request to Digital Daze customer service.

1. Log in via SSH to the Virtual Server that you wish to migrate and enter the command **sinfo**. This will provide information about the existing account.
2. Send the sinfo output in an e-mail request to [service@digitaldaze.com](mailto:service@digitaldaze.com) and specify the type of VDS account that you would like to upgrade to.
3. Customer service will provide your shadow account information, including your shadowed account’s IP address via a confirmation e-mail.

The Shadow process creates a new Virtual Dedicated Server account with same account owner (the administrative user) and a root user. The root and account owner passwords will be the same as the Virtual Server account owners. The following files and directories are created on your new Virtual Dedicated Server:

- `/.migrate` – directory
- `/.migrate/bin` – directory
- `/.migrate/accountname` – directory containing copy of file system from old account
- `/.migrate/bin/addaccounts.pl` – file for creating user accounts
- `/.migrate/bin/migratesm` – file for migrating Sendmail
- `/.migrate/bin/README` – instructions for `addaccounts.pl` and `migratesm`

## Creating Users

Your first task after the shadow process is to create your users by running the `addaccounts.pl` script. To do this:

1. SSH to your new Virtual Dedicated Server as root, using the IP address of the shadowed account. In the command line, type:

```
% cd /.migrate/bin
% ./addaccounts.pl accountname
```

where “accountname” is your old Virtual Server account owner.

This script creates all the user accounts that were on the old server and their home directories at `/home/username` on the new server, with FTP and mail access and no shell access. Users with FTP and mail access will be added to the `ftp` and `mail` groups respectively, and each user will have a group created for them. The quota for each user remains as it was. If you want to grant shell access to a user, run the `pw` command. An example follows:

```
% pw usermod joe -s /bin/csh
```

2. To check the amount of disk space being used by a specific user on your server, type:

```
% quota username
```

where “username” is the name of your user

## Adding Virtual Hosts and Other Apache Changes

After you have added the users, re-create the Virtual Hosts that you are hosting. In the past Virtual Hosts were generally stored in the `vhosts` directory on the Virtual Server. For Virtual Dedicated Server we *strongly* suggest that you associate each Virtual Host with a user and put the Virtual Host site under that user’s home directory. For example, if you have a Virtual Host for `test2.com` and bob owns that site you would want to add the site to user bob’s home directory.

You cannot simply copy over the `httpd.conf` file or the `VirtualHost` blocks of the `httpd.conf` file. The format for each is completely different between a Virtual Server and a Virtual Dedicated Server. You will need to run `vaddhost` again for each Virtual Host.

An example follows of how to add a Virtual Host with the best settings.

1. Connect to your Virtual Dedicated Server using SSH and type `vaddhost`.
2. Proceed through the script, supplying the requested information. Press Enter to accept the [default values].
  - a. The user who is to be associated with the virtual host (subhosted domain). (Example: bob)
  - b. Type `y` or press Enter if the information is correct.
  - c. Type the hostname (i.e. `example.com`) and press Enter.
  - d. Type `www.` and the same domain name you just typed, and press Enter. (i.e. `www.example.com`)
  - e. Press Enter once more to move to the next step.
  - f. Type `y` or press Enter if the hostname information is correct.
  - g. Type the e-mail address of the Web site administrator and press Enter. The default value is `webmaster@domain.name`. If accepted, the e-mail address of the Web site administrator becomes `webmaster@example.com`.
  - h. Press Enter, then type the document root for this user.

(example: /home/joe/www/example.com)

- i. Press Enter to create the directory.
- j. Press Enter or type y if the information is correct.
- k. Select a location for the transfer logs.
- l. Press Enter or type y if the information is correct.
- m. Select a location for the error logs.
- n. Press Enter or type y if the information is correct.
- o. Select an option for CGI execution for this virtual host.
- p. Press Enter or type y if the information is correct.
- q. Review the virtual host entry, and Press Enter or type y if the information is correct.

Virtual Host (Subhost) information submitted in this step automatically updates the /www/conf/httpd.conf file.

3. Make any additional changes to the httpd.conf file that you may have made on your Virtual Server account. Do *not* just copy the httpd.conf file.
4. Copy the contents of each hosts htdocs directory and cgi-bin directory.
5. To copy the htdocs directory, go to the /.migrate/accountname/www/vhosts/www.test1.com/htdocs/. Type the following to copy the contents:  

```
% cd /.migrate/accountname/www/vhosts/www.test1.com/htdocs/  
% cp -rp * /home/user/www/test1.com/
```
6. To copy the cgi-bin directory, go to the /.migrate/accountname/www/vhosts/www.test1.com/cgi-bin/. Type the following to copy the contents:  

```
% cd /.migrate/accountname/www/vhosts/www.test1.com/cgi-bin/  
% cp -rp * /home/user/www/cgi-bin/
```

The log files can be copied over to the user's home directory if desired.

7. If you are using FrontPage Extensions, install these now by typing:  

```
% cd  
% vinstall frontpage
```

Be sure to install the extensions for each Virtual Host who uses FrontPage.
8. If you are using PHP you will need to it now by typing:  

```
% cd  
% vinstall php4
```

Be sure to follow the instructions thoroughly and choosing the needed components to install.
9. If you are using any other programs such as mod\_rewrite or other apache modules, you will need to install these at this time as well.

# Migrating Sendmail and Mail programs

If you are using Procmail, Spamassassin, Majordomo, or any other mail program that needs to make modifications to the `sendmail.cf` file, you need to:

1. Do a vinstall of these programs first. To see a list of available vinstalls type the following at the shell command line:
 

```
% vinstall -l
```
2. If you have made any changes to the configuration files for any of these programs, make the same changes now.
3. Additionally, if you have made any changes to your `.procmailrc` files, copy those changes to the new `.procmailrc` file as well.
4. Run the `migratesm` script located at `./migrate/bin/migratesm`. This will create your aliases, virtmaps, access, and local-host-names files as well as restart Sendmail to make the changes take effect.
5. If you have any Majordomo mailing list in the default location of `~/usr/local/majordomo/Lists/`, those lists will be copied over to the Virtual Dedicated Server default location of `/usr/local/majordomo/lists/`.
6. When the `migratesm` script has finished running, an `ALIASES_TODO` file is created with a list of mailing lists, programs, and other files that appear on the right-hand-side of the new aliases file. Examine that file to verify that those files are in the same location on your Virtual Dedicated Server as they were on Virtual Server.
7. When you have completed this, run the `migratesm` script a second time using the following syntax:

```
% migratesm -intodo
```

This will interpret the input `ALIASWS_TODO` lines as follows

- Lines beginning with a pound sign (#) are ignored
- Lines of the form "alias: Y RHS" (where the "center" field is a literal "Y") are ignored. (The "Y" means that the file named in the RHS already exists on the Virtual Dedicated Server, and doesn't need to be copied from the Virtual Server location mentioned in the RHS.)
- Lines of the form "alias: N RHS" (where the "center" field is a literal "N") cause `migratesm` to attempt to copy the file mentioned in RHS to the same location in the `<new_pod_name>` file system.
- If the copy succeeds, `migratesm` changes the "N" in the middle field to "Y" in the updated `ALIASES_TODO`.
- If the copy fails because the file does not exist in the Virtual Server directory structure, `migratesm` changes the "N" in the middle field to "N\*".
- Lines of the form "alias: N\* RHS" (where the "center" field is a literal "N" followed by an asterisk [\*]) are ignored.
- Lines of the form "--DESTDIR: /dir/name" (where the line begins with the literal string "--DESTDIR:" and is followed by the path to a Virtual Dedicated Server directory) override where files listed in subsequent line(s) are copied to. (The files listed in subsequent lines are copied from the location named in the third field of the line, to the directory listed following --DESTDIR.)
- Lines of the form "--DFLTDEST" cancel the effect of preceding --DESTDIR lines, causing the source and destination directories of subsequent lines to be the same.
- All other lines are ignored.

The migratesm script updates ALIASES\_TODO and backs up the previous copy in /etc/mail/ALIASES\_TODO.0. Additionally, if you have any Majordomo mailing list in the default location of ~/usr/local/majordomo/Lists/, those lists will be copied to the Virtual Dedicated Server default location of /usr/local/majordomo/lists/.

8. When you have finished, check the following files for errors:

- /etc/mail/aliases
- /etc/mail/virtusertable
- /etc/mail/access
- /etc/mail/local-host-names
- If you are using Majordomo /usr/local/majordomo/lists/

For additional information on how to use the migratesm script, type the following at the shell command line as a non-root user:

```
% perldoc /.migrate/bin/migratesm
```

## Vinstalling Additional Add-ons

Since your server is a new server, you will need to vinstall any additional programs that you may have installed on your Virtual Server account. There may not be a vinstall for some of the programs that you had installed in the Virtual Server account with vinstalls. If this is the case, you can install the program using the FreeBSD Ports collection. For information on how to install programs using the Ports collection, please see the FreeBSD website.

## Perl Modules

If you are using Perl and have installed modules that you use, you must install these modules on your Virtual Dedicated Server as well. The Virtual Dedicated Server no longer uses vcpm as the default method of installing Perl modules. Instead, the Virtual Dedicated Server now uses the default Perl method of installing modules. To install a module using CPAN:

1. Type the following at the shell prompt:

```
% perl -MCPAN -e shell
```

The first time you run CPAN, you will be prompted for your preferences regarding where to download your modules and other settings. For most settings, accept the default.

2. When it comes time to select your mirror preferences, just select 4 or 5 mirrors that look good to you (you don't have to know anything about them or where they are). If you are really worried about selecting the right mirrors, choose the first 5 (1 2 3 4 5).

Once you have configured your CPAN settings, you'll likely never have to do it again.

3. Once at the CPAN command line (cpan> ), to install a module type:

```
% cpan> install <Module_name>
```

This will get and install the module. To save space on your server, type the following at the CPAN command line:

```
% cpan> clean <Module_name>
```

This will delete all unnecessary files that were used during installation.

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# Migrating Databases

Only MySQL, the most popular database that is used with servers, is covered.

1. Vinstall the MySQL database by typing the following at the shell prompt:

```
% vinstall mysql
```

The vinstall will prompt you whether to install MySQL using the Ports collection or Virtual Server style. For convenience, choose the Virtual Server style of installation. This will install MySQL and start the MySQL daemon for you.

2. After MySQL is installed, change the password for the root user by typing the following at the shell prompt:

```
% mysqladmin -u root password <your-new-password-here>
```

In addition, if you have other users you will need to create the extra users at this point with their proper permissions.

3. Create the databases from the Virtual Server MySQL database. To do this, type the following at the shell prompt for each database:

```
% mysqladmin create <database-name-here>
```

4. After creating the databases, migrate your databases from MySQL. To do this, SSH into your Virtual Server using the IP address.

5. Perform a mysqldump on each database by typing the following at the shell command line:

```
% mysqldump -u username -p databasename > filename
```

where “username” and “filename” are replaced with appropriate names.

6. Type the password.

7. The name of the file should appear with all the SQL and data needed to recreate the database structure and data.

8. Copy the dump file to the Virtual Dedicated Server by typing the following:

```
% scp dumpfilename root@domainname:/root/
```

This will copy the file to the /root directory of the Virtual Dedicated Server. Do this for each database that you have.

9. SSH into your Virtual Dedicated Server and type the following to create the database structure and enter the data into the database:

```
% mysql -u username -p databasename < /root/filename
```

10. Type the password.

11. Do this for each database that you have. After you have finished this, verify that the information was imported correctly.

12. Because databases contain time sensitive material, delete the databases you just created by typing the following at the command line:

```
% mysqladmin -u [user] -p drop [database_name]
```

where username is the username of the database and databasename is the name of the database you are deleting.

1. After you have deleted the databases, you will want to recreate them again following step 3 above. However, you will not want to create the dump file or import the information from the MySQL database from the Virtual Server until you are ready to make your Virtual Dedicated Server live. For more information on how to perform a MySQL dump and import go to: <http://www.mysql.com/doc/en/index.html>

# Moving Your Custom Digital Certificate

The default digital certificate is already on your new Virtual Server. This procedure applies only to custom certificate.

1. Using FTP or another method, copy the certificate and Private Key files to the new server. Both the certificate and the key are stored in the `~/etc/` directory of the Virtual Server. The certificate should be in a file named `ssl.cert`, and the key should be in the `ssl.pk` file. If you use FTP, be sure to copy the files to the new server as ASCII files. You will need to copy them to the `/usr/local/apache/conf/` directory on the Virtual Dedicated Server.
2. It is a good idea to check your Private Key to make sure it has been decrypted. Use more or your favorite text editor to view the file. If your key has been decrypted, you should not see the following lines before the encoded elements of the key.

```
Proc-Type: 4, ENCRYPTED
DEK-Info: DES-EDE3-CBC, BCC23A5E16582F3D
```

3. If your Private Key does have those lines near the beginning, run the following command to remove the encryption.
4. Edit your `httpd.conf` file (located in the `/usr/local/apache/conf/` directory) to look for your certificate files. The following directives need to be added to the main section of your `httpd.conf` file.

```
SSLCertificateFile /usr/local/apache/conf/ssl.cert
SSLCertificateKeyFile /usr/local/apache/conf/ssl.pk
```

5. After you have added the certificate directives to your `httpd.conf` file, you need to run `restart_apache` to make Apache start using the new certificate.
6. Ensure that the new certificate is working by connecting to the domain your certificate is set up to use via HTTPS. For example, if your domain name were `www.my-domain.name`, you would type the following into your browser's location bar.

```
https://www.my-domain.name
```

7. If the page loads without any errors, find the lock icon on your browser and click on it (depending on your browser, you may need to double-click). This will bring up the certificate information, or a window that lets you view certificate information. Check to see that the certificate is using the correct domain name and has the correct information.

# Migrating Time-Sensitive Material

There are three areas requiring migration that are time sensitive:

- DNS
- Mail
- Databases

These have to be migrated with minimum downtime and without losing information. For this reason, they are migrated last. Perform the following steps precisely in order to achieve the best results.

1. SSH into your Virtual Server and add the following line to the `~/etc/hosts.allow` file using your favorite text editor.  

```
SMTP submission aol : all : twist /bin/echo "450 This server is moving its IP address!"
```

This will block all mail to your Virtual Server. All mail will be bounced with a 450 error that will tell the sending mail server to retry sending later. This way, you should not lose any mail.

2. Call or send e-mail to Digital Daze customer service requesting the DNS information for all of your domains be updated to the new IP address. You may want to contact customer service ahead of time and schedule a time in advance to reduce any possible down time.

3. While still connected to your Virtual Dedicated Server rename each user's mail folder, for example:

```
% cd /var/mail
% mv username username_new
```

Do this for every user except root, since there is no root user on the Virtual Server.

4. Copy the inbox or `/var/mail/username` for each user by typing the following:

```
% cd /var/mail
% scp accountowner@<IPofVirtualServer>:"var/mail/*" .
```

This will copy all the files in the Virtual Server's `~/var/mail` directory, which should be a list of the accounts on the Virtual Server.

5. Next, you will need to append any mail on the new Virtual Dedicated Server to mail from the Virtual Server by typing the following for each user on the server, except root.

```
% cd /var/mail
% cat username_new >> username
% rm username_new
```

6. Using your favorite file transfer tool, copy any IMAP folders from the user's home directory on the Virtual Server to the user's home directory on the Virtual Dedicated Server. You must now use the IP address of the Virtual Server instead of the domain, since the domain will now point to the Virtual Dedicated Server instead.

You will need to do this manually since there may be many different names for mail folders.

7. Migrate your databases from MySQL. To do this, SSH into your Virtual Server using the IP address.

8. Perform a `mysqldump` on each database by typing the following at the shell command line:

```
% mysqldump -u username -p databasename > filename
```

where “username” and “filename” are replaced with appropriate names.

9. Type the password.
10. The name of the file should appear with all the SQL and data needed to recreate the database structure and data.
11. Copy the dump file to the Virtual Dedicated Server by typing the following:  

```
% scp dumpfilename root@domainname:/root/
```

This will copy the file to the /root directory of the Virtual Dedicated Server. Do this for each database that you have.
12. SSH into your Virtual Dedicated Server and type the following to create the database structure and enter the data into the database:  

```
% mysql -u username -p databasename < /root/filename
```
13. Type the password.
14. Do this for each database that you have. After you have finished this, verify that the information was imported correctly.
15. After you have completed all the steps above, verify that all services are functioning properly. In addition, check with all your users to verify they have all the files they need. Also, check all Web pages to ensure they are functioning properly.