Virtual Hosting With PureFTPd And MySQL (Incl. Quota And Bandwidth Management) On Debian Squeeze

Version 1.0
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This document describes how to install a PureFTPd server that uses virtual users from a MySQL database instead of real system users. This is much more performant and allows to have thousands of ftp users on a single machine. In addition to that I will show the use of quota and upload/download bandwidth limits with this setup. Passwords will be stored encrypted as MD5 strings in the database.

For the administration of the MySQL database you can use web based tools like phpMyAdmin which will also be installed in this howto. phpMyAdmin is a comfortable graphical interface which means you do not have to mess around with the command line.

This tutorial is based on Debian Squeeze (Debian 6.0). You should already have set up a basic Debian Squeeze system.

This howto is meant as a practical guide; it does not cover the theoretical backgrounds. They are treated in a lot of other documents in the web.

This document comes without warranty of any kind! I want to say that this is not the only way of setting up such a system. There are many ways of achieving this goal but this is the way I take. I do not issue any guarantee that this will work for you!

1 Preliminary Note

In this tutorial I use the hostname server1.example.com with the IP address 192.168.0.100. These settings might differ for you, so you have to replace them where appropriate.

2 Install MySQL And phpMyAdmin

This can all be installed with one single command:

apt-get install mysql-server mysql-client phpmyadmin apache2

You will be asked these questions:

New password for the MySQL "root" user: <-- yourrootsqlpassword
Repeat password for the MySQL "root" user: <-- yourrootsqlpassword
Web server to reconfigure automatically: <-- apache2

3 Install PureFTPd With MySQL Support

For Debian there is a pre-configured pure-ftpd-mysql package available. Install it like this:

```
apt-get install pure-ftpd-mysql
```

Then we create an ftp group (ftpgroup) and user (ftpuser) that all our virtual users will be mapped to. Replace the group- and userid with a number that is free on your system:

```
groupadd -g 2001 ftpgroup
useradd -u 2001 -s /bin/false -d /bin/null -c "pureftpd user" -g ftpgroup ftpuser
```

4 Create The MySQL Database For PureFTPd

Now we create a database called pureftpd and a MySQL user named pureftpd which the PureFTPd daemon will use later on to connect to the pureftpd database:

```
mysql -u root -p

CREATE DATABASE pureftpd;
GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP ON pureftpd.* TO 'pureftpd'@'localhost'
IDENTIFIED BY 'ftpdpass';
GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP ON pureftpd.* TO
'pureftpd'@'localhost.localdomain' IDENTIFIED BY 'ftpdpass';
FLUSH PRIVILEGES;
```

Replace the string ftpdpass with whatever password you want to use for the MySQL user pureftpd. Still on the MySQL shell, we create the database table we need (yes, there is only one table!):

```
USE pureftpd;

CREATE TABLE ftpd (
User varchar(16) NOT NULL default '',
status enum('0','1') NOT NULL default '0',
Password varchar(64) NOT NULL default '',
Uid varchar(11) NOT NULL default '-1',
Gid varchar(11) NOT NULL default '-1',
Dir varchar(128) NOT NULL default '',
ULBandwidth smallint(5) NOT NULL default '0',
DLBandwidth smallint(5) NOT NULL default '0',
comment tinytext NOT NULL,
```

```
ipaccess varchar(15) NOT NULL default '*',
QuotaSize smallint(5) NOT NULL default '0',
QuotaFiles int(11) NOT NULL default 0,
PRIMARY KEY (User),
UNIQUE KEY User (User)
) TYPE=MyISAM;

quit;
```

As you may have noticed, with the quit; command we have left the MySQL shell and are back on the Linux shell.

BTW, (I'm assuming that the hostname of your ftp server system is server1.example.com) you can access phpMyAdmin under http://server1.example.com/phpmyadmin/ (you can also use the IP address instead of server1.example.com) in a browser and log in as the user pureftpd. Then you can have a look at the database. Later on you can use phpMyAdmin to administrate your PureFTPd server.

5 Configure PureFTPd

Edit /etc/pure-ftpd/db/mysql.conf. It should look like this:

```
cp /etc/pure-ftpd/db/mysql.conf /etc/pure-ftpd/db/mysql.conf_orig
cat /dev/null > /etc/pure-ftpd/db/mysql.conf
vi /etc/pure-ftpd/db/mysql.conf
```

```
MYSQLSocket      /var/run/mysqld/mysqld.sock
#MYSQLServer     localhost
#MYSQLPort       3306
MYSQLUser       pureftpd
MYSQLPassword   ftpdpass
MYSQLDatabase   pureftpd
#MYSQLCrypt md5, cleartext, crypt() or password() - md5 is VERY RECOMMENDABLE uppon cleartext
MYSQLCrypt      md5
MYSQLGetPW      SELECT Password FROM ftpd WHERE User="\L" AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MYSQLGetUID     SELECT Uid FROM ftpd WHERE User="\L" AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MYSQLGetGID     SELECT Gid FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MYSQLGetDir     SELECT Dir FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MySQLGetBandwidthUL SELECT ULBandwidth FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MySQLGetBandwidthDL SELECT DLBandwidth FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MySQLGetQTASZ   SELECT QuotaSize FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
MySQLGetQTAFS   SELECT QuotaFiles FROM ftpd WHERE User="\L"AND status="1" AND (ipaccess = "*" OR ipaccess LIKE "\R")
```

Make sure that you replace the string ftpdpass with the real password for the MySQL user pureftpd in the line MYSQLPassword! Please note that we use md5 as MYSQLCrypt method, which means we will store the users' passwords as an MD5 string in the database which is far more secure than using plain text passwords!

Then create the file /etc/pure-ftpd/conf/ChrootEveryone which simply contains the string :

echo "yes" > /etc/pure-ftpd/conf/ChrootEveryone

This will make PureFTPd chroot every virtual user in his home directory so he will not be able to browse directories and files outside his home directory.

Also create the file /etc/pure-ftpd/conf/CreateHomeDir which again simply contains the string :

echo "yes" > /etc/pure-ftpd/conf/CreateHomeDir

This will make PureFTPd create a user's home directory when the user logs in and the home directory does not exist yet.

Now we must configure PureFTPd as a standalone daemon. To do this, we open /etc/default/pure-ftpd-common and make sure that the value of the parameter STANDALONE_OR_INETD is standalone:

vi /etc/default/pure-ftpd-common

```
# Configuration for pure-ftpd
# (this file is sourced by /bin/sh, edit accordingly)

# STANDALONE_OR_INETD
# valid values are "standalone" and "inetd".
# Any change here overrides the setting in debconf.
STANDALONE_OR_INETD=standalone

# VIRTUALCHROOT:
# whether to use binary with virtualchroot support
# valid values are "true" or "false"
# Any change here overrides the setting in debconf.
VIRTUALCHROOT=false

# UPLOADSCRIPT: if this is set and the daemon is run in standalone mode,
# pure-uploadscript will also be run to spawn the program given below
# for handling uploads. see /usr/share/doc/pure-ftpd/README.gz or
# pure-uploadscript(8)

# example: UPLOADSCRIPT=/usr/local/sbin/uploadhandler.pl
UPLOADSCRIPT=

# if set, pure-uploadscript will spawn $UPLOADSCRIPT running as the
# given uid and gid
UPLOADUID=
UPLOADGID=
```

Next, we modify /etc/inetd.conf and comment out the line (if there is any):

vi /etc/inetd.conf

```
[...]
#:STANDARD: These are standard services.
#ftp    stream  tcp     nowait  root    /usr/sbin/tcpd /usr/sbin/pure-ftpd-wrapper
[...]
```

Afterwards, we restart Inetd and PureFTPd:

/etc/init.d/openbsd-inetd restart
/etc/init.d/pure-ftpd-mysql restart

1. http://twitter.com/falko