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FTPサーバの導入

MA-E3xx では `sshd` がインストールされていますので、セキュアなファイル転送として SFTP プロトコルが利用できます。
組み込み機器などで、どうしても FTP プロトコルしか使用できないというような場合のため FTPサーバを導入方法を紹介します。

セットアップ

導入可能なFTPサーバ

Ubuntu Linux に用意されている FTPサーバのパッケージを検索してみます。

```
user1@plum:~$ sudo apt-cache search ftpd
[sudo] password for user1:
tftpd-hpa - HPA's tftp server
vsftpd - lightweight, efficient FTP server written for security
atftpd - advanced TFTP server
auth2db-filters - Auth2db defaults filters pack
ccze - A robust, modular log coloriser
fail2ban - ban hosts that cause multiple authentication errors
ftp-ssl - The FTP client with SSL or TLS encryption support
ftpd - File Transfer Protocol (FTP) server
ftpd-ssl - FTP server with SSL encryption support
gadmin-proftpd - GTK+ configuration tool for proftpd
gadmin-proftpd-dbg - GTK+ configuration tool for proftpd debug package
gadmintools - GTK+ server administration tools (meta-package)
gosa-plugin-pureftpd - pureftpd plugin for G0sa?
gosa-plugin-pureftpd-schema - LDAP schema for G0sa? pureftpd plugin
heimdal-servers - Heimdal Kerberos - server programs
inetutils-ftp - File Transfer Protocol server
libnet-tftpd-perl - Perl extension for Trivial File Transfer Protocol Server
muddleftpd - A flexible and efficient FTP daemon
mysqmail-pure-ftp-log - real-time logging system in MySQL - Pure-FTPd traffic-logger
nordugrid-arc-gridftp - ARC GridFTP server
owftpd - FTP daemon providing access to 1-Wire networks
prelude-lml - Security Information Management System [ Log Agent ]
proftpd-basic - Versatile, virtual-hosting FTP daemon - binaries
proftpd-dev - Versatile, virtual-hosting FTP daemon - development files
proftpd-doc - Versatile, virtual-hosting FTP daemon - documentation
proftpd-mod-autohost - ProFTPD module mod_autohost
proftpd-mod-case - ProFTPD module mod_case
proftpd-mod-clamav - ProFTPD module mod_clamav
proftpd-mod-dnsbl - ProFTPD module mod_dnsbl
```

```
proftpd-mod-fsync - ProFTPD module mod_fsync
proftpd-mod-geoip - Versatile, virtual-hosting FTP daemon - GeoIP module
proftpd-mod-ldap - Versatile, virtual-hosting FTP daemon - LDAP module
proftpd-mod-msg - ProFTPD module mod_msg
proftpd-mod-mysql - Versatile, virtual-hosting FTP daemon - MySQL module
proftpd-mod-odbc - Versatile, virtual-hosting FTP daemon - ODBC module
proftpd-mod-pgsql - Versatile, virtual-hosting FTP daemon - PostgreSQL
module
proftpd-mod-sqlite - Versatile, virtual-hosting FTP daemon - SQLite3 module
proftpd-mod-tar - ProFTPD module mod_tar
proftpd-mod-vroot - ProFTPD module mod_vroot
pure-ftpd - Secure and efficient FTP server
pure-ftpd-common - Pure-FTPd FTP server (Common Files)
pure-ftpd-ldap - Secure and efficient FTP server with LDAP user
authentication
pure-ftpd-mysql - Secure and efficient FTP server with MySQL user
authentication
pure-ftpd-postgresql - Secure and efficient FTP server with PostgreSQL user
authentication
pureadmin - Gtk graphic front-end for PureFTPd
pyftpd - ftp daemon with advanced features
python-pyftplib - Python FTP server library
tcllib - Standard Tcl Library
tftpd - Trivial file transfer protocol server
twoftpd - a simple secure efficient FTP server (programs)
twoftpd-run - a simple secure efficient FTP server
uec-provisioning-tftpd - the UEC Provisioning TFTP server
yasat - simple stupid audit tool
user1@plum:~$
```

TFTP¹⁾も検索されてしまっていますが、有名なFTPサーバとして、下記が導入できるようです。

- [ProFTPD](#) - Highly configurable GPL-licensed FTP server software
- [Pure-FTPd](#) - Secure and efficient FTP server
- [vsftpd](#) - Probably the most secure and fastest FTP server for UNIX-like systems.

“the most secure”, “fastest” という謳い文句が魅力的なので `vsftpd` を導入してみます。

vsftpd の導入

`apt-get` コマンドでインストールします。

```
user1@plum:~$ sudo apt-get install vsftpd
[sudo] password for user1:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
```

```
vsftpd
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 99.8 kB of archives.
After this operation, 298 kB of additional disk space will be used.
Get:1 http://ports.ubuntu.com/ubuntu-ports/ trusty-updates/main vsftpd armhf
3.0.2-1ubuntu2.14.04.1 [99.8 kB]
Fetched 99.8 kB in 1s (53.9 kB/s)
Preconfiguring packages ...
Selecting previously unselected package vsftpd.
(Reading database ... 17590 files and directories currently installed.)
Preparing to unpack .../vsftpd_3.0.2-1ubuntu2.14.04.1_armhf.deb ...
Unpacking vsftpd (3.0.2-1ubuntu2.14.04.1) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up vsftpd (3.0.2-1ubuntu2.14.04.1) ...
vsftpd start/running, process 1398
Processing triggers for ureadahead (0.100.0-16) ...
localepurge: Disk space freed in /usr/share/locale: 0 KiB
localepurge: Disk space freed in /usr/share/man: 0 KiB

Total disk space freed by localepurge: 0 KiB

user1@plum:~$
```

これでインストールできました。プロセスが立ち上がっているか確認してみます。

```
user1@plum:~$ ps ax|grep vsftp
1398 ?        Ss          0:00 /usr/sbin/vsftpd
1446 pts/1    S+          0:00 grep --color=auto vsftp
user1@plum:~$
```

どのポートでlistenしているか確認してみます。

```
user1@plum:~$ netstat -l -4 -t
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 *:ftp                   *:*                     LISTEN
tcp        0      0 *:domain                *:*                     LISTEN
tcp        0      0 *:ssh                   *:*                     LISTEN
tcp        0      0 *:50040                 *:*                     LISTEN
tcp        0      0 *:sunrpc                 *:*                     LISTEN
tcp        0      0 *:http                  *:*                     LISTEN
user1@plum:~$
```

“ftp” (TCP/21) で listen していることがわかります。

接続確認

別の機器から□FTPで接続してみます。

```
user1@plum:~$ ftp 192.168.253.35
Connected to 192.168.253.35.
220 (vsFTPd 3.0.2)
Name (192.168.253.35:user1): user1
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> quit
221 Goodbye.
user1@plum:~$
```

接続できることが確認できました。

設定

apt-get コマンドで導入することで、とりあえず使用することができるようになりました。
しかし、このままですと、インターネットに接続した場合、世界中のどこからでもアクセスできるようになってしまい、セキュリティ上問題があります。
インターネットに接続して利用する場合□Firewall を設定し、アドレスなどで接続を制限することを強くお勧めします。

vsftpd の設定

Ubuntu の vsftpd の設定ファイルは、/etc/vsftpd.conf です。

内容についてのドキュメント

は、<http://manpages.ubuntu.com/manpages/trusty/en/man5/vsftpd.conf.5.html> になります。

デフォルトでは、下記のように設定されています。

```
# Example config file /etc/vsftpd.conf
#
# The default compiled in settings are fairly paranoid. This sample file
# loosens things up a bit, to make the ftp daemon more usable.
# Please see vsftpd.conf.5 for all compiled in defaults.
#
# READ THIS: This example file is NOT an exhaustive list of vsftpd options.
# Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
# capabilities.
#
#
# Run standalone? vsftpd can run either from an inetd or as a standalone
# daemon started from an initscript.
```

```
listen=YES
#
# Run standalone with IPv6?
# Like the listen parameter, except vsftpd will listen on an IPv6 socket
# instead of an IPv4 one. This parameter and the listen parameter are
# mutually
# exclusive.
#listen_ipv6=YES
#
# Allow anonymous FTP? (Disabled by default)
anonymous_enable=NO
#
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
#write_enable=YES
#
# Default umask for local users is 077. You may wish to change this to 022,
# if your users expect that (022 is used by most other ftpd's)
#local_umask=022
#
# Uncomment this to allow the anonymous FTP user to upload files. This only
# has an effect if the above global write enable is activated. Also, you
# will
# obviously need to create a directory writable by the FTP user.
#anon_upload_enable=YES
#
# Uncomment this if you want the anonymous FTP user to be able to create
# new directories.
#anon_mkdir_write_enable=YES
#
# Activate directory messages - messages given to remote users when they
# go into a certain directory.
dirmessage_enable=YES
#
# If enabled, vsftpd will display directory listings with the time
# in your local time zone. The default is to display GMT. The
# times returned by the MDTM FTP command are also affected by this
# option.
use_localtime=YES
#
# Activate logging of uploads/downloads.
xferlog_enable=YES
#
# Make sure PORT transfer connections originate from port 20 (ftp-data).
connect_from_port_20=YES
#
# If you want, you can arrange for uploaded anonymous files to be owned by
# a different user. Note! Using "root" for uploaded files is not
# recommended!
```

```
#chown_uploads=YES
#chown_username=whoever
#
# You may override where the log file goes if you like. The default is shown
# below.
#xferlog_file=/var/log/vsftpd.log
#
# If you want, you can have your log file in standard ftpd xferlog format.
# Note that the default log file location is /var/log/xferlog in this case.
#xferlog_std_format=YES
#
# You may change the default value for timing out an idle session.
#idle_session_timeout=600
#
# You may change the default value for timing out a data connection.
#data_connection_timeout=120
#
# It is recommended that you define on your system a unique user which the
# ftp server can use as a totally isolated and unprivileged user.
#nopriv_user=ftpsecure
#
# Enable this and the server will recognise asynchronous ABOR requests. Not
# recommended for security (the code is non-trivial). Not enabling it,
# however, may confuse older FTP clients.
#async_abor_enable=YES
#
# By default the server will pretend to allow ASCII mode but in fact ignore
# the request. Turn on the below options to have the server actually do
# ASCII
# mangling on files when in ASCII mode.
# Beware that on some FTP servers, ASCII support allows a denial of service
# attack (DoS) via the command "SIZE /big/file" in ASCII mode. vsftpd
# predicted this attack and has always been safe, reporting the size of the
# raw file.
# ASCII mangling is a horrible feature of the protocol.
#ascii_upload_enable=YES
#ascii_download_enable=YES
#
# You may fully customise the login banner string:
#ftpd_banner=Welcome to blah FTP service.
#
# You may specify a file of disallowed anonymous e-mail addresses.
# Apparently
# useful for combatting certain DoS attacks.
#deny_email_enable=YES
# (default follows)
#banned_email_file=/etc/vsftpd.banned_emails
#
# You may restrict local users to their home directories. See the FAQ for
# the possible risks in this before using chroot_local_user or
# chroot_list_enable below.
```



```
#chroot_local_user=YES
#
# You may specify an explicit list of local users to chroot() to their home
# directory. If chroot_local_user is YES, then this list becomes a list of
# users to NOT chroot().
# (Warning! chroot'ing can be very dangerous. If using chroot, make sure
# that
# the user does not have write access to the top level directory within the
# chroot)
#chroot_local_user=YES
#chroot_list_enable=YES
# (default follows)
#chroot_list_file=/etc/vsftpd.chroot_list
#
# You may activate the "-R" option to the builtin ls. This is disabled by
# default to avoid remote users being able to cause excessive I/O on large
# sites. However, some broken FTP clients such as "ncftp" and "mirror"
# assume
# the presence of the "-R" option, so there is a strong case for enabling
# it.
#ls_recurse_enable=YES
#
# Customization
#
# Some of vsftpd's settings don't fit the filesystem layout by
# default.
#
# This option should be the name of a directory which is empty. Also, the
# directory should not be writable by the ftp user. This directory is used
# as a secure chroot() jail at times vsftpd does not require filesystem
# access.
secure_chroot_dir=/var/run/vsftpd/empty
#
# This string is the name of the PAM service vsftpd will use.
pam_service_name=vsftpd
#
# This option specifies the location of the RSA certificate to use for SSL
# encrypted connections.
rsa_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
# This option specifies the location of the RSA key to use for SSL
# encrypted connections.
rsa_private_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
```

1)

http://ja.wikipedia.org/wiki/Trivial_File_Transfer_Protocol

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