Crafting an FTP Hook for Fishing in MarFS

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Objective

- Provide an FTP-based data transfer tool that ensures users can read and write data from Archive storage to a file system of their choice. This will require a daemon that can read and write from a MarFS file system, as well as other Posix file systems.

MarFS

- MarFS is a file system that has been used to implement Campaign Storage

- Ensures a high level of data integrity through an erasure coding + checksum implementation

ProFTPD (PR)

- Open Source (https://github.com/proftpd/proftpd)

- Compatible with Unix-like systems and Microsoft Windows FTP clients

- Configured through a singular main configuration file

- Offers users component flexibility through individual modules.

- Simple*

* Marketed as

Simplicity

- Easy to build from source
  1. ./configure
  2. make
  3. make install

- **mod_auth.c**
- **mod_auth_file.c**
- **mod_auth_pam.c**
- **mod_auth_unix.c**
- **mod_cap.c**
- **mod_core.c**
- **mod_ctrls.c**
- **mod_delay.c**
- **mod_dso.c**
- **mod_facl.c**

- **mod_facts.c**
- **mod_ident.c**
- **mod_lang.c**
- **mod_log.c**
- **mod_ls.c**
- **mod_memcache.c**
- **mod_redis.c**
- **mod_rlimit.c**
- **mod_site.c**
- **mod_xfer.c**

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- Server type

- Port Number

- User and Group

```
# This is a basic ProFTPD configuration file (rename it to
# 'proftpd.conf' for actual use.  It establishes a single server
# and a single anonymous login.  It assumes that you have a user/group
# "nobody" and "ftp" for normal operation and anon.

ServerName                      "ProFTPD Default Installation"
ServerType                      standalone
DefaultServer                   on

# Port 21 is the standard FTP port.
Port                            21

# Umask 022 is a good standard umask to prevent new dirs and files
# from being group and world writable.
Umask                           022

# To prevent DoS attacks, set the maximum number of child processes
# to 30.  If you need to allow more than 30 concurrent connections
# at once, simply increase this value.  Note that this ONLY works
# in standalone mode, in inetd mode you should use an inetd server
# that allows you to limit maximum number of processes per service
# (such as xinetd).
MaxInstances                    30

# Set the user and group under which the server will run.
User                            nobody
Group                           nogroup

# To cause every FTP user to be "jailed" (chrooted) into their home
# directory, uncomment this line.
#DefaultRoot ~

# Normally, we want files to be overwriteable.
<Directory />
  AllowOverwrite                on
</Directory>
```

Modifying The Configuration

- Alternative installation of ProFTPD
  1. ./configure --enable-openssl --with-modules=mod_radius
  2. make
  3. make install

```
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# (such as xinetd).
MaxInstances            30

# Set the user and group under which the server will run.
User                    JordanTheFisherman
Group                   GoneFishinGroup

# To cause every FTP user to be "jailed" (chrooted) into their home
# directory, uncomment this line.
#DefaultRoot ~


# Allowing for RADIUS Authentication

RadiusEngine        on
RadiusAuthServer    server[:port] shared-secret [timeout]
```

```
module sample_module = {
  /* Always NULL */
  NULL, NULL,

  /* Module API version (current version: 2.0) */
  0x20,

  /* Module name */
  "sample",

  /* Module configuration handler table */
  sample_conftab,

  /* Module command handler table */
  sample_cmdtab,

  /* Module authentication handler table */
  NULL,

  /* Module initialization function */
  sample_init,

  <font color=green>/* Session initialization function */
  sample_sess_init

  /* Module version */
  "sample/1.0"
};
```

Questions?