ZoneMinder on FreeBSD 15: Technical Install Guide

This guide covers installing ZoneMinder on FreeBSD 15 with:

- A remote MySQL/MariaDB server (`dbserver`)
- NFS storage on a ZFS dataset (`nfsserver`)

Assumptions: - You have root or sudo access on all systems - Substitute your preferred editor for `edit` in commands

1. Prerequisites & Initial Setup

1.1 Database Server: Create ZoneMinder Database

```
CREATE DATABASE zm;
CREATE USER 'zmuser'@'192.168.1.%' IDENTIFIED BY 'zmpass';
GRANT ALL PRIVILEGES ON zm.* TO 'zmuser'@'192.168.1.%';
FLUSH PRIVILEGES;
```

> Adjust `192.168.1` to your subnet as needed.

1.2 NFS Server: Create Dataset & Export

Create and export the dataset:

```
zfs create pool/zoneminder
zfs set quota=500G atime=off pool/zoneminder
echo '/pool/zoneminder -alldirs -maproot=root' >> /etc/exports
service mountd reload
```

2. ZoneMinder Server: Preparation

2.1 Test Database Connection

```
mysql -h dbserver -u zmuser -p zm
exit;
```

2.2 Test NFS Mount

```
mount -t nfs nfsserver:/pool/zoneminder /mnt
```

```
ls /mnt
umount /mnt
```

2.3 (Optional) Set up /tmp as Ramdisk

```
echo 'tmpfs /tmp  tmpfs   rw,nosuid,mode=1777    0       0' >> /etc/fstab
rm -fR /tmp/*
rm -fR /tmp/.*
mount /tmp
reboot # only if needed
```

3. Install ZoneMinder & Dependencies

```
pkg install zoneminder-php85 nginx fcgiwrap
```

3.1 Set Up Database and Storage

```
# initialize zm database
mysql -h dbserver -u zmuser -p zm <
/usr/local/share/zoneminder/db/zm_create.sql
# move data to NFS
mount nfsserver:/pool/zoneminder /mnt
mv /var/db/zoneminder/* /mnt/ # expect errors as not all permissions match
on NFS
umount /mnt
# configure NFS mount
echo 'nfsserver:/pool/zoneminder /var/db/zoneminder nfs rw,soft 0 0' >>
/etc/fstab
mount /var/db/zoneminder
chown -fR www:www /var/db/zoneminder
```

4. Configure Services

In the following, I tried to set up a copy/paste and also backing up files before changing them.

4.1 nginx

```
cd /usr/local/etc/nginx
mv nginx.conf nginx.conf.save
edit nginx.conf
```

Paste in:

```
worker_processes  1;
events {
    worker_connections  1024;
}
http {
    include       mime.types;
    default_type  application/octet-stream;
    sendfile        on;
    keepalive_timeout  65;
    server {
       listen 80;
       root /usr/local/www/zoneminder;
       index index.php;
       gzip off;
       location /cgi-bin/nph-zms {
          include fastcgi_params;
          fastcgi_param SCRIPT_FILENAME $request_filename;
          fastcgi_pass  unix:/var/run/fcgiwrap/fcgiwrap.sock;
       }
       location /zm/cache {
          alias /var/cache/zoneminder;
       }
       location /zm {
          alias /usr/local/www/zoneminder;
          location ~ \.php$ {
             if (!-f $request_filename) { return 404; }
             include fastcgi_params;
             fastcgi_param SCRIPT_FILENAME $request_filename;
             fastcgi_index index.php;
             fastcgi_pass unix:/var/run/php-fpm.sock;
          }
          location ~ \.(jpg|jpeg|gif|png|ico)$ {
             access_log off;
             expires 33d;
          }
          location /zm/api/ {
             alias /usr/local/www/zoneminder;
             rewrite ^/zm/api(.+)$ /zm/api/app/webroot/index.php?p=$1 last;
          }
       }
    }
}
```

4.2 php-fpm

```
cd /usr/local/etc/php-fpm.d/
mv www.conf www.conf.save
edit /usr/local/etc/php-fpm.d/www.conf
```

Paste in (change time zone if needed):

```
[www]
user = www
group = www
env[PATH] = /usr/local/bin:/usr/bin:/bin
pm = dynamic
pm.max_children = 5
pm.start_servers = 2
pm.min_spare_servers = 1
pm.max_spare_servers = 3
php_admin_value[date.timezone] = America/Chicago
listen.owner = www
listen.group = www
listen = /var/run/php-fpm.sock
```

4.3 ZoneMinder DB Credentials

Create `/usr/local/etc/zoneminder/03-database.conf` (do not edit `zm.conf`):

```
edit /usr/local/etc/zoneminder/03-database.conf
```

Paste in:

```
ZM_DB_TYPE=mysql
ZM_DB_HOST=dbserver
ZM_DB_NAME=zm
ZM_DB_USER=zmuser
ZM_DB_PASS=zmpass
```

5. Enable & Start Services

Do each service in turn, troubleshooting if it fails to start

5.1 nginx

```
sysrc nginx_enable="YES"
service nginx start
```

5.2 fcgiwrap

```
sysrc fcgiwrap_enable="YES"
sysrc fcgiwrap_user="www"
sysrc fcgiwrap_socket_owner="www"
sysrc fcgiwrap_flags="-c 4"
```

```
service fcgiwrap start
```

5.3 php-fpm

```
echo 'date.timezone = "America/Chicago"' > /usr/local/etc/php/timezone
sysrc php_fpm_enable="YES"
service php_fpm start
```

5.4 zoneminder

```
sysrc zoneminder_enable="YES"
service zoneminder start
```

6. Verification

Access ZoneMinder at: http://servername/zm

Recommendation: Reboot and verify all services start automatically.

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