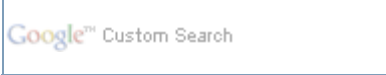


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# Netkiller FreeBSD 手札

netkiller Neo Chan

<[openunix\(at\)163\(dot\)com](mailto:openunix(at)163(dot)com)>

修订版本 2008-5-24

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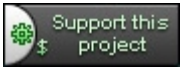


文档出处: <http://netkiller.sourceforge.net/> | <http://netkiller.github.com>

文档最近一次更新于 Thu Dec 1 12:44:48 UTC 2011

下面是我多年积累下来的经验总结，整理成文档供大家参考:

- |  |   |  |   |
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| <a href="#">Netkiller Architect 手札</a> | <a href="#">Netkiller Linux 手札</a>      | <a href="#">Netkiller Developer 手札</a> | <a href="#">Netkiller Database 手札</a>     |
| <a href="#">Netkiller Debian 手札</a>    | <a href="#">Netkiller CentOS 手札</a>     | <a href="#">Netkiller FreeBSD 手札</a>   | <a href="#">Netkiller Shell 手札</a>        |
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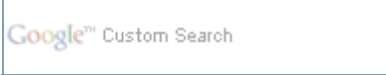
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## 1. 内容简介

当前文档档容比较杂，涉及内容广泛。

慢慢我会将其中章节拆成新文档.

文档内容简介:

- 1. Network
- 2. Security
- 3. Web Application
- 4. Database
- 5. Storage And Backup/Restore
- 6. Cluster
- 7. Developer

### 1.1. Audience(读者对象)

This book is intended primarily for Linux system administrators who are familiar with the following activities:

Audience

- 1. Linux system administration procedures, including kernel configuration
- 2. Installation and configuration of cluster, such as load balancing, High Availability,
- 3. Installation and configuration of shared storage networks, such as Fibre Channel SANs
- 4. Installation and configuration of web server, such as apache, nginx, lighttpd, tomcat/resin ...

本文档的读者对象:

文档面向有所有读者。您可以选读您所需要的章节,无需全篇阅读,因为有些章节不一定对你有

用,用得着就翻来看看,暂时用不到的可以不看.

大体分来读者可以分为几类:

1. 架构工程师
2. 系统管理员
3. 系统支持,部署工程师

不管是谁,做什么的,我希望通过阅读这篇文档都能对你有所帮助。

## 1.2. 写给读者

欢迎提出宝贵的建议,如有问题请到 [邮件列表](#) 讨论

为什么写这篇文章

有很多想法,工作中也用不到所以未能实现,所以想写出来,和大家分享.有一点写一点,写得也不好,只要能看懂就行,就当学习笔记了.

开始零零碎碎写过一些文档,也向维基百科供过稿,但维基经常被ZF封锁,后来发现sf.net可以提供主机存放文档,便做了迁移。并开始了我的写作生涯。

这篇文档是作者8年来对工作的总结,是作者一点一滴的积累起来的,有些笔记已经丢失,所以并不完整。

因为工作太忙整理比较缓慢。目前的工作涉及面比较窄所以新文档比较少。

我现在花在技术上的时间越来越少,兴趣转向摄影,无线电。也想写写摄影方面的心得体会。

写作动力:

曾经在网上看到外国开源界对中国的评价,中国人对开源索取无度,但贡献却微乎其微.这句话一直记在我心中,发誓要为中国开源事业做我仅有的一点微薄贡献

另外写文档也是知识积累,还可以增加在圈内的影响力.

人跟动物的不同,就是人类可以把自己学习的经验教给下一代人.下一代在上一代的基础上再创新,不断积累才有今天.

所以我把自己的经验写出来,可以让经验传承

没有内容的章节:

目前我自己一人维护所有文档,写作时间有限,当我发现一个好主题就会加入到文档中,待我有时间再完善章节,所以你会发现很多章节是空无内容的.

文档目前几乎是流水帐式的写作,维护量很大,先将就着看吧.

我想到哪写到哪,你会发现文章没一个中心,今天这里写点,明天跳过本章写其它的.

文中例子绝对多,对喜欢复制然后粘贴朋友很有用,不用动手写,也省时间.

理论的东西,网上大把,我这里就不写了,需要可以去网上查.

我爱写错别字,还有一些是打错的,如果发现请指正.

文中大部分试验是在Debian/Ubuntu/Redhat AS上完成.

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2. 作者简介



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## 2. 作者简介

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陈景峰 (イウ リム ヒム)

Nickname: netkiller | English name: Neo chen | Nippon name: ちんけいほう (音訳) | Korean name:  
| Thailand name:

IT民工, UNIX like Evangelist, 业余无线电爱好者 (呼号: BG7NYT), 户外运动以及摄影爱好者。

《PostgreSQL实用实例参考》, 《Postfix 完整解决方案》, 《Netkiller Linux 手札》的作者

2001年来深圳进城打工,成为一名外来务工者.

2002年我发现不能埋头苦干,埋头搞技术是不对的,还要学会"做人".

2003年这年最惨,公司拖欠工资16000元,打过两次官司2005才付清.

2004年开始加入[分布式计算](#)团队,[目前成绩](#)

2004-10月开始玩户外和摄影

2005-6月成为中国无线电运动协会会员

2006年单身生活了这么多年,终于找到归宿.

2007物价上涨,金融危机,休息了4个月 (其实是找不到工作)

2008终于找到英文学习方法, , 《Netkiller Developer 手札》, 《Netkiller Document 手札》

2008-8-8 08:08:08 结婚,后全家迁居湖南省常德市

2009 《Netkiller Database 手札》,年底拿到C1驾照

2010对电子打击乐产生兴趣,计划学习爵士鼓

2011 职业生涯路上继续打怪升级

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G Talk: 很少开  
网易泡泡: 很少开

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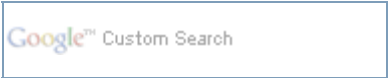
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## 1. Using the Packages System

### 1.1. PACKAGESROOT / PKG\_PATH 环境变量

```
setenv PACKAGESROOT ftp://ftp.freebsdchina.org
pkg_add -r libxml2 gmake autoconf262

export PKG_PATH=ftp://ftp.freebsd.org/pub/FreeBSD/8.2/packages/i386/
pkg_add mysql-server php5-fastcgi php5-gd-5.2.6-no_x11 lighttpd-1.4.19p3 nginx
pecl-APC
```

### 1.2. Installing a Package

```
# pkg_add -r lsof
```

### 1.3. Managing Packages

```
# pkg_info
libiconv-1.13.1_1    A character set conversion library
libxml2-2.7.7       XML parser library for GNOME
lighttpd-1.4.26_3   A secure, fast, compliant, and very flexible Web Server
pcre-8.02           Perl Compatible Regular Expressions library
php5-5.3.2_1        PHP Scripting Language
pkg-config-0.23_1   A utility to retrieve information about installed libraries
spawn-fcgi-1.6.3    spawn-fcgi is used to spawn fastcgi applications
```

```
freebsd0# pkg_version
libiconv                =
libxml2                 =
lighttpd                =
pcre                    =
php5                    =
pkg-config              =
spawn-fcgi              =

# pkg_version -v
libiconv-1.13.1_1       = up-to-date with port
```

libxml2-2.7.7	=	up-to-date	with	port
lighttpd-1.4.26_3	=	up-to-date	with	port
pcre-8.02	=	up-to-date	with	port
php5-5.3.2_1	=	up-to-date	with	port
php5-ctype-5.3.2_1	=	up-to-date	with	port
php5-dom-5.3.2_1	=	up-to-date	with	port
php5-extensions-1.4	=	up-to-date	with	port
php5-filter-5.3.2_1	=	up-to-date	with	port
php5-hash-5.3.2_1	=	up-to-date	with	port
php5-iconv-5.3.2_1	=	up-to-date	with	port
php5-json-5.3.2_1	=	up-to-date	with	port
php5-pdo-5.3.2_1	=	up-to-date	with	port
php5-pdo_sqlite-5.3.2_1	=	up-to-date	with	port
php5-posix-5.3.2_1	=	up-to-date	with	port
php5-session-5.3.2_1	=	up-to-date	with	port
php5-simplexml-5.3.2_1	=	up-to-date	with	port
php5-sqlite-5.3.2_1	=	up-to-date	with	port
php5-tokenizer-5.3.2_1	=	up-to-date	with	port
php5-xml-5.3.2_1	=	up-to-date	with	port
php5-xmlreader-5.3.2_1	=	up-to-date	with	port
php5-xmlwriter-5.3.2_1	=	up-to-date	with	port
pkg-config-0.23_1	=	up-to-date	with	port
spawn-fcgi-1.6.3	=	up-to-date	with	port
sqlite3-3.6.23.1_1	=	up-to-date	with	port

### 1.4. Deleting a Package

```
# pkg_delete php5-5.3.2_1
```

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## 2. Updating and Upgrading FreeBSD

### 2.1. update

```
freebsd# rehash
freebsd# freebsd-update fetch
Looking up update.FreeBSD.org mirrors... 3 mirrors found.
Fetching public key from update5.FreeBSD.org... done.
Fetching metadata signature for 8.0-RELEASE from update5.FreeBSD.org... done.
Fetching metadata index... done.
Fetching 2 metadata files... done.
Inspecting system... done.
Preparing to download files... done.
Fetching 35 patches.....10....20....30.. done.
Applying patches... done.

The following files will be updated as part of updating to 8.0-RELEASE-p3:
/boot/kernel/ip_mroute.ko
/boot/kernel/ip_mroute.ko.symbols
/boot/kernel/kernel
/boot/kernel/kernel.symbols
/boot/kernel/krpc.ko
/boot/kernel/krpc.ko.symbols
/boot/kernel/nfsclient.ko
/boot/kernel/nfsclient.ko.symbols
/boot/kernel/zfs.ko
/boot/kernel/zfs.ko.symbols
/etc/mtree/BSD.var.dist
/lib/libzpool.so.2
/libexec/ld-elf.so.1
/usr/bin/dig
/usr/bin/host
/usr/bin/nslookup
/usr/bin/nsupdate
/usr/lib/libopie.a
/usr/lib/libopie.so.6
/usr/lib/libssl.a
/usr/lib/libssl.so.6
/usr/lib/libzpool.a
/usr/sbin/dnssec-dsfromkey
/usr/sbin/dnssec-keyfromlabel
/usr/sbin/dnssec-keygen
/usr/sbin/dnssec-signzone
/usr/sbin/freebsd-update
/usr/sbin/jail
/usr/sbin/lwresd
/usr/sbin/named
/usr/sbin/named-checkconf
/usr/sbin/named-checkzone
/usr/sbin/named-compilezone
/usr/sbin/ntpd
/usr/sbin/rndc-confgen
/usr/share/man/man2/mount.2.gz
/usr/share/man/man2/nmount.2.gz
/usr/share/man/man2/unmount.2.gz
/var/db/freebsd-update
/var/db/mergemaster.mtree

freebsd# freebsd-update install
Installing updates... done.
```

### 2.2. upgrade

```
freebsd# freebsd-update upgrade -r 8.1-RELEASE
```

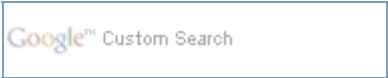
### 2.3. update ports

update your port tree by typing following commands:

```
# portsnap fetch
# portsnap update
```







## 3. ports

### 3.1. install

```
# cd /usr/ports/lang/php5
# make install
```

reinstall

```
# make reinstall
```

### 3.2. remove

```
# make deinstall
```

如果用make install clean 安装，请用 pkg\_delete 卸载

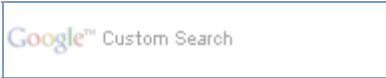
### 3.3. config menu

```
# cd /usr/ports/lang/php5
# make config
# make install
```



## Chapter 2. editors

```
# pkg_add -r vim
```



## Chapter 3. FreeBSD 开机启动

将开机运行脚本写入

```
/etc/rc.local
```

将关机前运行脚本写入

```
/etc/rc.shutdown.local
```

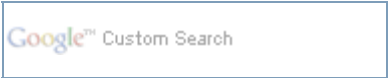
测试

```
/etc/rc.d/local start  
/etc/rc.d/local stop
```



# Chapter 4. Date

```
# date -v -1d +%Y%m%d
20060326
# date -v -1m +%Y%m%d
20060227
# date -v -1y +%Y%m%d
20050327
```



# Chapter 5. shell

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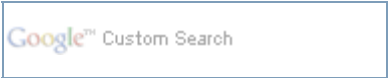
## 1. Bash

install bash

```
freebsd# cd /usr/ports/shells/bash
freebsd# make install clean
```

change shell

```
$ chsh -s /usr/local/bin/bash
Password:
chsh: user information updated
$ exit
```



## 2. zsh

```
freebsd# pkg_add -r zsh
freebsd# chsh -s /usr/local/bin/zsh
```

### 2.1. 初始化 zsh

```
# compinstall -Uz compinit
# compinit
# compinstall
```

### 2.2. prompt

zsh prompt colors:

```
autoload colors; colors
export
PS1="%B[%{$fg[red]}%]%n%{$reset_color}%b@%B%{$fg[cyan]}%m%b%{$reset_color%}:%~%B]%b"
"
```



# Chapter 6. Users and Basic Account Management

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- [1. su - root](#)
- [2. profile](#)
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  - [2.2. Changing user information](#)
- [3. passwd file](#)

## 1. su - root

add a user to wheel group

```
freebsd# grep 'wheel' /etc/group
wheel:*:0:root,neo
```





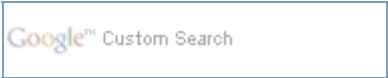
## 2. profile

### 2.1. shell

```
Finally, change your account to use zsh as your default shell
FreeBSD users:
# chpass -s /usr/local/bin/zsh
```

### 2.2. Changing user information

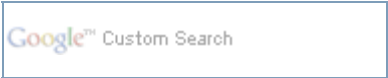
```
#Changing user information for neo.
Shell: /usr/local/bin/zsh
Full Name: Neo Chen
Office Location:
Office Phone:
Home Phone:
Other information:
```



### 3. passwd file

```
freebsd 不能直接改/etc/passwd 需要使用 vipw, 否则不生效

# vipw
```



# Chapter 7. Network

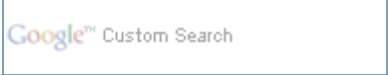
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- [7. Route](#)

```
vi /etc/rc.conf
```

## 1. DHCP

```
hostname="freebse.example.com"
ifconfig_em0="DHCP"
```



## 2. IP Address

```
hostname="freebse.example.com"
ifconfig_em0="inet 192.168.3.71  netmask 255.255.255.0"
defaultrouter="192.168.3.1"
```



### 3. alias

```
[root@freebsd0:~] ifconfig bce0 alias 172.16.1.81 netmask 255.255.255.0
[root@freebsd0:~] ifconfig bce0
bce0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> metric 0 mtu 1500
options=c01bb<RXCSUM,TXCSUM,VLAN_MTU,VLAN_HWTAGGING,JUMBO_MTU,VLAN_HWCSUM,TSO4,VLAN_HWTSO,I
    ether 00:22:19:5f:52:0b
    inet 172.16.1.27 netmask 0xffffffff broadcast 172.16.1.255
    inet 172.16.1.81 netmask 0xffffffff broadcast 172.16.1.255
    media: Ethernet autoselect (100baseTX <full-duplex>)
    status: active

vim /etc/rc.conf
ifconfig_bce0_alias0="inet 172.16.1.81 netmask 255.255.255.0"
```



## 4. Default Gateway

```
defaultrouter="192.168.3.1"
```



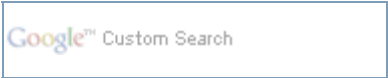
# 5. DNS

```
freebse# cat /etc/resolv.conf
domain example.com
nameserver 202.96.134.133
```

4. Default Gateway

[Home](#)

6. netstart

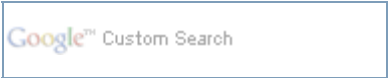


## 6. netstart

restart network

```
/etc/netstart
```





## 7. Route

route table

```
netstat -nr
```

Default Routes

```
freebsd# route add default 172.16.0.254
add net default: gateway 172.16.0.254
```

添加静态路由

```
route add 172.16.3.0/24 172.16.1.240
```

编辑/etc/rc.conf使上面命令开机时执行

```
static_routes="static1"
route_static1="-net 172.16.3.0/24 172.16.1.240"
```



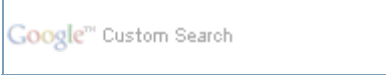
# Chapter 8. Debug

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## 1. lsof - list open files

```
[root@freebsd:~] pkg_add -r lsof
Fetching ftp://ftp.freebsd.org/pub/FreeBSD/ports/amd64/packages-8.1-
release/Latest/lsof.tbz... Done.
```



# Part II. File System

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## Chapter 9. ZFS

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1. 初始化

```
echo "zfs_enable=YES" >> /etc/rc.conf
echo 'daily_status_zfs_enable="YES"' >> /etc/periodic.conf

freebsd# vi /etc/rc.conf
zfs_enable="YES"

freebsd# /etc/rc.d/zfs faststart
```



## 2. Creating a Basic Filesystem

```
# zpool create tank c0t0d0
# zfs create tank/fs

# mkfile 100m /tank/fs/foo
# df -h /tank/fs
Filesystem      size  used  avail capacity  Mounted on
tank/fs          80G   100M   80G      1%      /tank/fs

# zpool create tank c0t0d0 c1t0d0
```



### 3. Creating a Storage Pool

#### 3.1. Mirrored Pool

```
# zpool create tank mirror c0t0d0 c0t0d1
```

```
freebsd# zpool create tank mirror ad1 ad3
freebsd# zpool status tank
  pool: tank
  state: ONLINE
  scrub: none requested
config:

    NAME      STATE    READ  WRITE CKSUM
    tank      ONLINE      0     0     0
      mirror  ONLINE      0     0     0
        ad1   ONLINE      0     0     0
        ad3   ONLINE      0     0     0

errors: No known data errors
```

#### 3.2. RAID-Z Pool

```
freebsd# zpool create zfs raidz ad1 ad3
freebsd# zpool status zfs
  pool: zfs
  state: ONLINE
  scrub: none requested
config:

    NAME      STATE    READ  WRITE CKSUM
    zfs      ONLINE      0     0     0
      raidz1  ONLINE      0     0     0
        ad1   ONLINE      0     0     0
        ad3   ONLINE      0     0     0

errors: No known data errors
```

#### 3.3. Querying Pool Status

You can see that your pool was successfully created by using the zpool list command:

```
freebsd# zpool list
NAME      SIZE  USED  AVAIL    CAP  HEALTH  ALTROOT
zfs       3.97G  234K  3.97G    0%  ONLINE  -
```

#### 3.4. Destroying Pools

Pools are destroyed by using the zpool destroy command. This command destroys the pool even if it contains mounted datasets.

```
# zpool destroy tank
```

Destroying a Pool With Faulted Devices

```
# zpool destroy tank
cannot destroy 'tank': pool is faulted
use '-f' to force destruction anyway
# zpool destroy -f tank
```





## 4. Creating a Filesystem Hierarchy

### 4.1. Creating a Filesystem

```
freebsd# zfs create zfs/www
freebsd# mount
/dev/ad0s1a on / (ufs, local)
devfs on /dev (devfs, local, multilabel)
/dev/ad0s1e on /tmp (ufs, local, soft-updates)
/dev/ad0s1f on /usr (ufs, local, soft-updates)
/dev/ad0s1d on /var (ufs, local, soft-updates)
zfs on /zfs (zfs, local)
zfs/www on /zfs/www (zfs, local)
```

```
freebsd# zfs set compression=gzip zfs/www
```

### 4.2. Setting Quotas

we want to give bonwick a quota of 10 Gbytes

```
# zfs set quota=10G tank/home/bonwick
```

### 4.3. Setting Reservations

```
# zfs set reservation=5G tank/home/moore
# zfs get reservation tank/home/moore
NAME                PROPERTY          VALUE                SOURCE
tank/home/moore     reservation       5.00G                local
```

### 4.4. Querying Filesystem Information

```
freebsd# zfs list
NAME      USED  AVAIL  REFER  MOUNTPOINT
tank      97.5K  1.95G   18K    /tank
tank/neo  18K   1.95G   18K    /tank/neo
```

### 4.5. Renaming a Filesystem

```
# zfs rename tank/home/maybee tank/ws/maybee
```

### 4.6. Destroying a Filesystem

```
# zfs destroy tank/home/tabriz
```

```
# zfs destroy tank/home/ahrens
cannot unmount 'tank/home/ahrens': Device busy

# zfs destroy -f tank/home/ahrens
```

```
# zfs destroy -r tank/home/schrock
cannot destroy 'tank/home/schrock': filesystem has dependant clones
use '-R' to destroy the following datasets:
tank/clones/schrock-clone
```

```
# zfs destroy -R tank/home/schrock
```

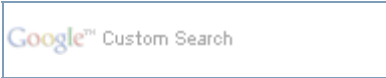
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5. zfs mount/umount



## 5. zfs mount/umount

Legacy mount points must be managed through legacy tools. An attempt to use ZFS tools result in an error.

```
# zfs mount pool/home/billm
cannot mount 'pool/home/billm': legacy mountpoint
use mount(1M) to mount this filesystem
# mount -F zfs tank/home/billm
```

### 5.1. Temporary Mount Properties

```
# zfs mount -o ro tank/home/perrin
# zfs mount -o remount,noatime tank/home/perrin
# zfs get atime tank/home/perrin
NAME                PROPERTY          VALUE          SOURCE
tank/home/perrin atime              off            temporary
```

### 5.2. Mounting File Systems

mount

```
freebsd# zfs mount zfs/www
freebsd# mount
/dev/ad0s1a on / (ufs, local)
devfs on /dev (devfs, local, multilabel)
/dev/ad0s1e on /tmp (ufs, local, soft-updates)
/dev/ad0s1f on /usr (ufs, local, soft-updates)
/dev/ad0s1d on /var (ufs, local, soft-updates)
zfs on /zfs (zfs, local)
zfs/www on /zfs/www (zfs, local)
```

The -a option can be used to mount all ZFS managed filesystems. Legacy managed filesystems are not mounted.

```
# zfs mount -a
```

### 5.3. Unmounting File Systems

umount

```
freebsd# zfs umount /zfs/www
freebsd# mount
/dev/ad0s1a on / (ufs, local)
devfs on /dev (devfs, local, multilabel)
/dev/ad0s1e on /tmp (ufs, local, soft-updates)
/dev/ad0s1f on /usr (ufs, local, soft-updates)
/dev/ad0s1d on /var (ufs, local, soft-updates)
zfs on /zfs (zfs, local)
```

### 5.4. Legacy Mount Points

```
freebsd# zfs set mountpoint=/tank tank
freebsd# zfs mount -a
freebsd# mount
/dev/ad0s1a on / (ufs, local)
devfs on /dev (devfs, local, multilabel)
/dev/ad0s1e on /tmp (ufs, local, soft-updates)
/dev/ad0s1f on /usr (ufs, local, soft-updates)
/dev/ad0s1d on /var (ufs, local, soft-updates)
```

```
tank on /tank (zfs, local)
```

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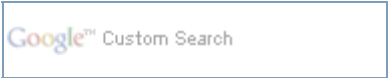
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6. Sharing ZFS File Systems



## 6. Sharing ZFS File Systems

### 6.1. Controlling Share Semantics

```
freebsd# zfs set sharenfs=on zfs/www
```

### 6.2. Unsharing Filesystems

```
freebsd# zfs unshare zfs/www
```

This command unshares the zpool filesystem. To unshare all ZFS filesystems on the system, run:

```
freebsd# zfs unshare -a
```

### 6.3. Sharing Filesystems

```
freebsd# zfs share zfs/www
```

You can also share all ZFS filesystems on the system:

```
# zfs share -a
```

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## 7. Device Management

### 7.1. Adding Devices to a Pool

```
# zpool add scoop mirror c0t1d0 c1t1d0
```

### 7.2. Onlining and Offlining Devices

#### 7.2.1. Taking a Device Offline

```
# zpool offline tank c0t0d0  
bringing device 'c0t0d0' offline
```

#### 7.2.2. Bringing a Device Online

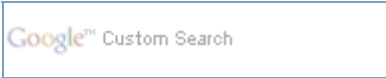
```
# zpool online tank c0t0d0  
bringing device 'c0t0d0' online
```

### 7.3. Replacing Devices

You can replace a device in a storage pool by using the `zpool replace` command.

```
# zpool replace tank c0t0d0 c0t0d1
```

In the above example, the previous device, `c0t0d0`, is replaced by `c0t0d1`.



8. I/O Statistics

freebsd#	zpool	iostat				
		capacity	operations		bandwidth	
pool	used	avail	read	write	read	write
-----	-----	-----	-----	-----	-----	-----
tank	73.5K	1.98G	0	2	119	2.10K

freebsd#	zpool	iostat				
		capacity	operations		bandwidth	
pool	used	avail	read	write	read	write
-----	-----	-----	-----	-----	-----	-----
tank	73.5K	1.98G	0	2	119	2.10K

freebsd#	zpool	iostat	tank	2		
		capacity	operations		bandwidth	
pool	used	avail	read	write	read	write
-----	-----	-----	-----	-----	-----	-----
tank	73.5K	1.98G	0	1	84	1.48K
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0
tank	73.5K	1.98G	0	0	0	0

8.1. Virtual Device Statistics

freebsd#	zpool	iostat	-v			
		capacity	operations		bandwidth	
pool	used	avail	read	write	read	write
-----	-----	-----	-----	-----	-----	-----
tank	73.5K	1.98G	0	0	45	824
mirror	73.5K	1.98G	0	0	45	824
ad1	-	-	0	0	1.12K	9.04K
ad3	-	-	0	0	778	9.04K
-----	-----	-----	-----	-----	-----	-----

freebsd#	zpool	iostat	-v	tank	5		
		capacity	operations		bandwidth		
pool	used	avail	read	write	read	write	
-----	-----	-----	-----	-----	-----	-----	
tank	124K	1.98G	0	0	12	367	
mirror	124K	1.98G	0	0	12	367	
ad1	-	-	0	0	297	773	
ad3	-	-	0	0	270	773	
-----	-----	-----	-----	-----	-----	-----	

		capacity	operations		bandwidth		
pool	used	avail	read	write	read	write	
-----	-----	-----	-----	-----	-----	-----	
tank	124K	1.98G	0	0	0	0	
mirror	124K	1.98G	0	0	0	0	
ad1	-	-	0	0	0	0	
ad3	-	-	0	0	0	0	
-----	-----	-----	-----	-----	-----	-----	





## 9. Health Status

### 9.1. Basic Health Status

```
freebsd# zpool status -x
all pools are healthy
freebsd#
```

### 9.2. Detailed Health Status

```
freebsd# zpool status -x
all pools are healthy
freebsd# zpool status -v tank
pool: tank
state: ONLINE
scrub: none requested
config:

    NAME            STATE        READ  WRITE CKSUM
    tank            ONLINE       0     0     0
      mirror        ONLINE       0     0     0
        ad1         ONLINE       0     0     0
        ad3         ONLINE       0     0     0

errors: No known data errors
```



## 10. Storage Pool Migration

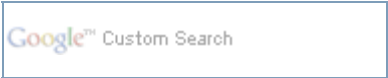
### 10.1. Exporting a Pool

```
# zpool export tank
```

```
# zpool export tank
cannot unmount '/export/home/eschrock': Device busy
# zpool export -f tank
```

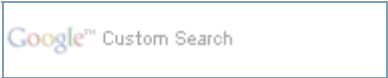
### 10.2. Importing Pools

```
# zpool import tank
```



# 11. Querying Properties

freebsd# zfs get all tank			
NAME	PROPERTY	VALUE	SOURCE
tank	type	filesystem	-
tank	creation	Sat Jun 19 17:49 2010	-
tank	used	98.5K	-
tank	available	1.95G	-
tank	referenced	19K	-
tank	compressratio	1.00x	-
tank	mounted	yes	-
tank	quota	none	default
tank	reservation	none	default
tank	recordsize	128K	default
tank	mountpoint	/tank	default
tank	sharenfs	off	default
tank	checksum	on	default
tank	compression	off	default
tank	atime	on	default
tank	devices	on	default
tank	exec	on	default
tank	setuid	on	default
tank	readonly	off	default
tank	jailed	off	default
tank	snapdir	hidden	default
tank	aclmode	groupmask	default
tank	aclinherit	restricted	default
tank	canmount	on	default
tank	shareiscsi	off	default
tank	xattr	off	temporary
tank	copies	1	default
tank	version	3	-
tank	utf8only	off	-
tank	normalization	none	-
tank	casesensitivity	sensitive	-
tank	vscan	off	default
tank	nbmand	off	default
tank	sharesmb	off	default
tank	refquota	none	default
tank	refreservation	none	default
tank	primarycache	all	default
tank	secondarycache	all	default
tank	usedbysnapshots	0	-
tank	usedbydataset	19K	-
tank	usedbychildren	79.5K	-
tank	usedbyrefreservation	0	-



## 12. Backing Up and Restoring ZFS Data

### 12.1. Backing Up a ZFS Snapshot

```
# zfs backup tank/dana@111505 > /dev/rmt/0
# zfs backup pool/fs@snap | gzip > backupfile.gz
```

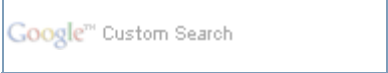
### 12.2. Restoring a ZFS Snapshot

```
# zfs backup tank/gozer@111105 > /dev/rmt/0
.
.
.
# zfs restore tank/gozer2@today < /dev/rmt/0
# zfs rename tank/gozer tank/gozer.old
# zfs rename tank/gozer2 tank/gozer
```

```
# zfs rollback tank/dana@111505
cannot rollback to 'tank/dana@111505': more recent snapshots exist
use '-r' to force deletion of the following snapshots:
tank/dana@now
# zfs rollback -r tank/dana@111505
# zfs restore tank/dana < /dev/rmt/0
```

### 12.3. Remote Replication of a ZFS File System

```
# zfs backup tank/neo@today | ssh newsys zfs restore sandbox/restfs@today
```



## 13. ZFS Snapshots and Clones

### 13.1. ZFS Snapshots

filesystem@snapname, volume@snapname

#### 13.1.1. Creating ZFS Snapshots

The following example creates a snapshot of tank/neo that is named friday.

```
freebsd# zfs snapshot tank/neo@friday
```

#### 13.1.2. Destroying ZFS Snapshots

Snapshots are destroyed by using the zfs destroy command.

```
# zfs destroy tank/home/ahrens@friday
```

#### 13.1.3. Renaming ZFS Snapshots

```
# zfs rename tank/home/cindys@111205 pool/home/cindys@today
```

#### 13.1.4. Displaying and Accessing ZFS Snapshots

```
freebsd# zfs list -t snapshot
NAME                USED  AVAIL  REFER  MOUNTPOINT
tank/neo@friday      0      -    18K    -
```

#### 13.1.5. Rolling Back to a Snapshot

```
# zfs rollback pool/home/ahrens@tuesday
cannot rollback to 'pool/home/ahrens@tuesday': more recent snapshots exist
use '-r' to force deletion of the following snapshots:
pool/home/ahrens@wednesday
pool/home/ahrens@thursday
# zfs rollback -r pool/home/ahrens@tuesday
```

### 13.2. ZFS Clones

#### 13.2.1. Creating a Clone

```
# zfs clone pool/ws/gate@yesterday pool/home/ahrens/bug123

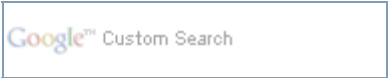
# zfs snapshot projects/newproject@today
# zfs clone projects/newproject@today projects/teamA/tempuser
# zfs set sharenfs=on projects/teamA/tempuser
# zfs set quota=5G projects/teamA/tempuser
```

#### 13.2.2. Destroying a Clone

ZFS clones are destroyed with the zfs destroy command.

```
# zfs destroy pool/home/ahrens/bug123
```

Clones must be destroyed before the parent snapshot can be destroyed.



# 14. Emulated Volumes

```
# zfs create -V 5gb tank/vol
```



# Chapter 10. Network Communication

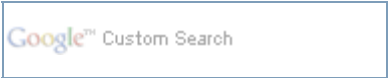
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  - [2.1. rsyncd.conf](#)
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- [4. NTPD](#)
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## 1. wget

```
freebsd1# pkg_add -r wget
```





## 2. rsync

```
pkg_add -r rsync

# cd /usr/ports/net/rsync
# make install clean
```

### 2.1. rsyncd.conf

/usr/local/etc/rsyncd.conf

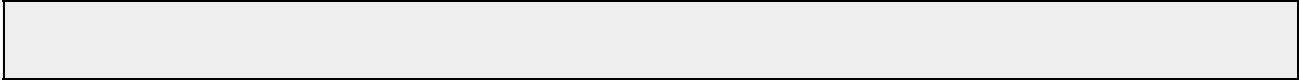
```
/usr/local/etc/rc.d/rsyncd start
Starting rsyncd.

sockstat | grep rsync
root      rsync      60491 3  dgram  -> /var/run/logpriv
root      rsync      60491 4  tcp6    *:873
root      rsync      60491 5  tcp4    *:873

#vi /etc/rc.conf //加入以下内容
rsyncd_enable="YES"
```



### 3. curl

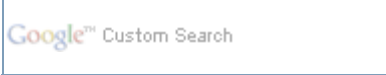




## 4. NTPD

FreeBSD NTPD

```
ntpd_enable="YES"
ntpdate_enable="YES"
```



## 5. SNMP

```
cd /usr/ports/net-mgmt/net-snmp
make install
```

```
pkg_add -r net-snmp

cp /usr/local/share/snmp/snmpd.conf.example /usr/local/etc/snmp/snmpd.conf

vim /etc/rc.conf

snmpd_enable="YES"
snmpd_flags="-a"
snmpd_confifile="/usr/local/etc/snmp/snmpd.conf"
snmptrapd_enable="YES"
snmptrapd_flags="-a -p /var/run/snmptrapd.pid"
```

```
#####
#
# snmpd.conf:
#   An example configuration file for configuring the ucd-snmp snmpd agent.
#
#####
#
# This file is intended to only be as a starting point.  Many more
# configuration directives exist than are mentioned in this file.  For
# full details, see the snmpd.conf(5) manual page.
#
# All lines beginning with a '#' are comments and are intended for you
# to read.  All other lines are configuration commands for the agent.
#####
# Access Control
#####

# As shipped, the snmpd demon will only respond to queries on the
# system mib group until this file is replaced or modified for
# security purposes.  Examples are shown below about how to increase the
# level of access.

# By far, the most common question I get about the agent is "why won't
# it work?", when really it should be "how do I configure the agent to
# allow me to access it?"
#
# By default, the agent responds to the "public" community for read
# only access, if run out of the box without any configuration file in
# place.  The following examples show you other ways of configuring
# the agent so that you can change the community names, and give
# yourself write access to the mib tree as well.
#
# For more information, read the FAQ as well as the snmpd.conf(5)
# manual page.

####
# First, map the community name "public" into a "security name"

#       sec.name  source          community
com2sec notConfigUser  default      public

####
# Second, map the security name into a group name:

#       groupName  securityModel securityName
group   notConfigGroup v1          notConfigUser
group   notConfigGroup v2c          notConfigUser

####
# Third, create a view for us to let the group have rights to:

# Make at least snmpwalk -v 1 localhost -c public system fast again.
#       name      incl/excl      subtree      mask(optional)
view   systemview included      .1.3.6.1.2.1.1
view   systemview included      .1.3.6.1.2.1.25.1.1

####
```

```

# Finally, grant the group read-only access to the systemview view.

#      group          context sec.model sec.level prefix read  write  notif
#access notConfigGroup ""      any      noauth  exact  systemview none none
access  notConfigGroup ""      any      noauth  exact  all none none

# -----

# Here is a commented out example configuration that allows less
# restrictive access.

# YOU SHOULD CHANGE THE "COMMUNITY" TOKEN BELOW TO A NEW KEYWORD ONLY
# KNOWN AT YOUR SITE.  YOU *MUST* CHANGE THE NETWORK TOKEN BELOW TO
# SOMETHING REFLECTING YOUR LOCAL NETWORK ADDRESS SPACE.

##      sec.name  source          community
#com2sec local    localhost      COMMUNITY
#com2sec mynetwork NETWORK/24    COMMUNITY

##      group.name sec.model  sec.name
#group MyRWGroup  any        local
#group MyROGroup  any        mynetwork
#
#group MyRWGroup  any        otherv3user
#...

##      incl/excl subtree          mask
view all    included  .1          80

## -or just the mib2 tree-

#view mib2    included  .iso.org.dod.internet.mgmt.mib-2 fc

##      context sec.model sec.level prefix read  write  notif
#access MyROGroup ""      any      noauth  0      all    none  none
#access MyRWGroup ""      any      noauth  0      all    all   all

#####
# Sample configuration to make net-snmpd RFC 1213.
# Unfortunately v1 and v2c don't allow any user based authentication, so
# opening up the default config is not an option from a security point.
#
# WARNING: If you uncomment the following lines you allow write access to your
# snmpd daemon from any source! To avoid this use different names for your
# community or split out the write access to a different community and
# restrict it to your local network.
# Also remember to comment the syslocation and syscontact parameters later as
# otherwise they are still read only (see FAQ for net-snmp).
#

# First, map the community name "public" into a "security name"
#      sec.name          source          community
#com2sec notConfigUser  default          public

# Second, map the security name into a group name:
#      groupName      securityModel  securityName
#group notConfigGroup v1          notConfigUser
#group notConfigGroup v2c          notConfigUser

# Third, create a view for us to let the group have rights to:
# Open up the whole tree for ro, make the RFC 1213 required ones rw.
#      name          incl/excl  subtree mask(optional)
#view roview        included    .1
#view rwview        included    system.sysContact
#view rwview        included    system.sysName
#view rwview        included    system.sysLocation
#view rwview        included
interfaces.ifTable.ifEntry.ifAdminStatus
#view rwview        included    at.atTable.atEntry.atPhysAddress
#view rwview        included    at.atTable.atEntry.atNetAddress
#view rwview        included    ip.ipForwarding
#view rwview        included    ip.ipDefaultTTL
ip.ipRouteTable.ipRouteEntry.ipRouteDest
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteIfIndex
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMetric1
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMetric2
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMetric3
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMetric4
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteType
#view rwview        included    ip.ipRouteTable.ipRouteEntry.ipRouteAge
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMask
#view rwview        included
ip.ipRouteTable.ipRouteEntry.ipRouteMetric5
#view rwview        included
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaIfIndex
#view rwview        included
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaPhysAddress

```

```

#view      rwview      included
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaNetAddress
#view      rwview      included
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType
#view      rwview      included
tcp.tcpConnTable.tcpConnEntry.tcpConnState
#view      rwview      included
egp.egpNeighTable.egpNeighEntry.egpNeighEventTrigger
#view      rwview      included      snmp.snmpEnableAuthenTraps

# Finally, grant the group read-only access to the systemview view.
#      group      context sec.model sec.level prefix read  write  notif
#access notConfigGroup ""      any      noauth      exact  roview rwview none

#####
# System contact information
#

# It is also possible to set the sysContact and sysLocation system
# variables through the snmpd.conf file:

syslocation Unknown (edit /etc/snmp/snmpd.conf)
syscontact Root <root@localhost> (configure /etc/snmp/snmp.local.conf)

# Example output of snmpwalk:
# % snmpwalk -v 1 localhost -c public system
# system.sysDescr.0 = "SunOS name sun4c"
# system.sysObjectID.0 = OID: enterprises.ucdavis.ucdSnmpAgent.sunos4
# system.sysUpTime.0 = Timeticks: (595637548) 68 days, 22:32:55
# system.sysContact.0 = "Me <me@somewhere.org>"
# system.sysName.0 = "name"
# system.sysLocation.0 = "Right here, right now."
# system.sysServices.0 = 72

# -----

#####
# Process checks.
#
# The following are examples of how to use the agent to check for
# processes running on the host. The syntax looks something like:
#
# proc NAME [MAX=0] [MIN=0]
#
# NAME: the name of the process to check for. It must match
#       exactly (ie, http will not find httpd processes).
# MAX: the maximum number allowed to be running. Defaults to 0.
# MIN: the minimum number to be running. Defaults to 0.
#
# Examples (commented out by default):
#
# Make sure mountd is running
#proc mountd

# Make sure there are no more than 4 ntalkds running, but 0 is ok too.
#proc ntalkd 4

# Make sure at least one sendmail, but less than or equal to 10 are running.
#proc sendmail 10 1

# A snmpwalk of the process mib tree would look something like this:
#
# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.2
# enterprises.ucdavis.procTable.prEntry.prIndex.1 = 1
# enterprises.ucdavis.procTable.prEntry.prIndex.2 = 2
# enterprises.ucdavis.procTable.prEntry.prIndex.3 = 3
# enterprises.ucdavis.procTable.prEntry.prNames.1 = "mountd"
# enterprises.ucdavis.procTable.prEntry.prNames.2 = "ntalkd"
# enterprises.ucdavis.procTable.prEntry.prNames.3 = "sendmail"
# enterprises.ucdavis.procTable.prEntry.prMin.1 = 0
# enterprises.ucdavis.procTable.prEntry.prMin.2 = 0
# enterprises.ucdavis.procTable.prEntry.prMin.3 = 1
# enterprises.ucdavis.procTable.prEntry.prMax.1 = 0
# enterprises.ucdavis.procTable.prEntry.prMax.2 = 4
# enterprises.ucdavis.procTable.prEntry.prMax.3 = 10
# enterprises.ucdavis.procTable.prEntry.prCount.1 = 0
# enterprises.ucdavis.procTable.prEntry.prCount.2 = 0
# enterprises.ucdavis.procTable.prEntry.prCount.3 = 1
# enterprises.ucdavis.procTable.prEntry.prErrorFlag.1 = 1
# enterprises.ucdavis.procTable.prEntry.prErrorFlag.2 = 0
# enterprises.ucdavis.procTable.prEntry.prErrorFlag.3 = 0
# enterprises.ucdavis.procTable.prEntry.prErrMsg.1 = "No mountd process
running."
# enterprises.ucdavis.procTable.prEntry.prErrMsg.2 = ""
# enterprises.ucdavis.procTable.prEntry.prErrMsg.3 = ""
# enterprises.ucdavis.procTable.prEntry.prErrFix.1 = 0
# enterprises.ucdavis.procTable.prEntry.prErrFix.2 = 0
# enterprises.ucdavis.procTable.prEntry.prErrFix.3 = 0
#
# Note that the errorFlag for mountd is set to 1 because one is not
# running (in this case an rpc.mountd is, but thats not good enough),

```

```

# and the ErrorMessage tells you what's wrong. The configuration
# imposed in the snmpd.conf file is also shown.
#
# Special Case: When the min and max numbers are both 0, it assumes
# you want a max of infinity and a min of 1.
#

# -----

#####
# Executables/scripts
#
#
# You can also have programs run by the agent that return a single
# line of output and an exit code. Here are two examples.
#
# exec NAME PROGRAM [ARGS ...]
#
# NAME:      A generic name.
# PROGRAM:   The program to run. Include the path!
# ARGS:      optional arguments to be passed to the program

# a simple hello world

#exec echotest /bin/echo hello world

# Run a shell script containing:
#
# #!/bin/sh
# echo hello world
# echo hi there
# exit 35
#
# Note: this has been specifically commented out to prevent
# accidental security holes due to someone else on your system writing
# a /tmp/shtest before you do. Uncomment to use it.
#
#exec shelltest /bin/sh /tmp/shtest

# Then,
# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.8
# enterprises.ucdavis.extTable.extEntry.extIndex.1 = 1
# enterprises.ucdavis.extTable.extEntry.extIndex.2 = 2
# enterprises.ucdavis.extTable.extEntry.extNames.1 = "echotest"
# enterprises.ucdavis.extTable.extEntry.extNames.2 = "shelltest"
# enterprises.ucdavis.extTable.extEntry.extCommand.1 = "/bin/echo hello world"
# enterprises.ucdavis.extTable.extEntry.extCommand.2 = "/bin/sh /tmp/shtest"
# enterprises.ucdavis.extTable.extEntry.extResult.1 = 0
# enterprises.ucdavis.extTable.extEntry.extResult.2 = 35
# enterprises.ucdavis.extTable.extEntry.extOutput.1 = "hello world."
# enterprises.ucdavis.extTable.extEntry.extOutput.2 = "hello world."
# enterprises.ucdavis.extTable.extEntry.extErrFix.1 = 0
# enterprises.ucdavis.extTable.extEntry.extErrFix.2 = 0

# Note that the second line of the /tmp/shtest shell script is cut
# off. Also note that the exit status of 35 was returned.

# -----

#####
# disk checks
#
# The agent can check the amount of available disk space, and make
# sure it is above a set limit.

# disk PATH [MIN=100000]
#
# PATH:  mount path to the disk in question.
# MIN:   Disks with space below this value will have the Mib's errorFlag set.
#        Default value = 100000.

# Check the / partition and make sure it contains at least 10 megs.

#disk / 10000

# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.9
# enterprises.ucdavis.diskTable.dskEntry.diskIndex.1 = 0
# enterprises.ucdavis.diskTable.dskEntry.diskPath.1 = "/" Hex: 2F
# enterprises.ucdavis.diskTable.dskEntry.diskDevice.1 = "/dev/dsk/c201d6s0"
# enterprises.ucdavis.diskTable.dskEntry.diskMinimum.1 = 10000
# enterprises.ucdavis.diskTable.dskEntry.diskTotal.1 = 837130
# enterprises.ucdavis.diskTable.dskEntry.diskAvail.1 = 316325
# enterprises.ucdavis.diskTable.dskEntry.diskUsed.1 = 437092
# enterprises.ucdavis.diskTable.dskEntry.diskPercent.1 = 58
# enterprises.ucdavis.diskTable.dskEntry.diskErrorFlag.1 = 0
# enterprises.ucdavis.diskTable.dskEntry.diskErrorMsg.1 = ""

# -----

#####
# load average checks

```

```

#
# load [1MAX=12.0] [5MAX=12.0] [15MAX=12.0]
#
# 1MAX:    If the 1 minute load average is above this limit at query
#          time, the errorFlag will be set.
# 5MAX:    Similar, but for 5 min average.
# 15MAX:   Similar, but for 15 min average.

# Check for loads:
#load 12 14 14

# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.10
# enterprises.ucdavis.loadTable.laEntry.loadaveIndex.1 = 1
# enterprises.ucdavis.loadTable.laEntry.loadaveIndex.2 = 2
# enterprises.ucdavis.loadTable.laEntry.loadaveIndex.3 = 3
# enterprises.ucdavis.loadTable.laEntry.loadaveNames.1 = "Load-1"
# enterprises.ucdavis.loadTable.laEntry.loadaveNames.2 = "Load-5"
# enterprises.ucdavis.loadTable.laEntry.loadaveNames.3 = "Load-15"
# enterprises.ucdavis.loadTable.laEntry.loadaveLoad.1 = "0.49" Hex: 30 2E 34 39
# enterprises.ucdavis.loadTable.laEntry.loadaveLoad.2 = "0.31" Hex: 30 2E 33 31
# enterprises.ucdavis.loadTable.laEntry.loadaveLoad.3 = "0.26" Hex: 30 2E 32 36
# enterprises.ucdavis.loadTable.laEntry.loadaveConfig.1 = "12.00"
# enterprises.ucdavis.loadTable.laEntry.loadaveConfig.2 = "14.00"
# enterprises.ucdavis.loadTable.laEntry.loadaveConfig.3 = "14.00"
# enterprises.ucdavis.loadTable.laEntry.loadaveErrorFlag.1 = 0
# enterprises.ucdavis.loadTable.laEntry.loadaveErrorFlag.2 = 0
# enterprises.ucdavis.loadTable.laEntry.loadaveErrorFlag.3 = 0
# enterprises.ucdavis.loadTable.laEntry.loadaveErrMsg.1 = ""
# enterprises.ucdavis.loadTable.laEntry.loadaveErrMsg.2 = ""
# enterprises.ucdavis.loadTable.laEntry.loadaveErrMsg.3 = ""

# -----

#####
# Extensible sections.
#

# This alleviates the multiple line output problem found in the
# previous executable mib by placing each mib in its own mib table:

# Run a shell script containing:
#
# #!/bin/sh
# echo hello world
# echo hi there
# exit 35
#
# Note:  this has been specifically commented out to prevent
# accidental security holes due to someone else on your system writing
# a /tmp/shtest before you do.  Uncomment to use it.
#
# exec .1.3.6.1.4.1.2021.50 shelltest /bin/sh /tmp/shtest

# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.50
# enterprises.ucdavis.50.1.1 = 1
# enterprises.ucdavis.50.2.1 = "shelltest"
# enterprises.ucdavis.50.3.1 = "/bin/sh /tmp/shtest"
# enterprises.ucdavis.50.100.1 = 35
# enterprises.ucdavis.50.101.1 = "hello world."
# enterprises.ucdavis.50.101.2 = "hi there."
# enterprises.ucdavis.50.102.1 = 0

# Now the Output has grown to two lines, and we can see the 'hi
# there.' output as the second line from our shell script.
#
# Note that you must alter the mib.txt file to be correct if you want
# the .50.* outputs above to change to reasonable text descriptions.

# Other ideas:
#
# exec .1.3.6.1.4.1.2021.51 ps /bin/ps
# exec .1.3.6.1.4.1.2021.52 top /usr/local/bin/top
# exec .1.3.6.1.4.1.2021.53 mailq /usr/bin/mailq

# -----

#####
# Pass through control.
#

# Usage:
#   pass MIBOID EXEC-COMMAND
#
# This will pass total control of the mib underneath the MIBOID
# portion of the mib to the EXEC-COMMAND.
#
# Note:  You'll have to change the path of the passtest script to your
# source directory or install it in the given location.
#
# Example:  (see the script for details)
#           (commented out here since it requires that you place the
#           script in the right location. (its not installed by default))
#
# pass .1.3.6.1.4.1.2021.255 /bin/sh /usr/local/local/passtest

```



```
# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.255
# enterprises.ucdavis.255.1 = "life the universe and everything"
# enterprises.ucdavis.255.2.1 = 42
# enterprises.ucdavis.255.2.2 = OID: 42.42.42
# enterprises.ucdavis.255.3 = Timeticks: (363136200) 42 days, 0:42:42
# enterprises.ucdavis.255.4 = IPAddress: 127.0.0.1
# enterprises.ucdavis.255.5 = 42
# enterprises.ucdavis.255.6 = Gauge: 42
#
# % snmpget -v 1 localhost public .1.3.6.1.4.1.2021.255.5
# enterprises.ucdavis.255.5 = 42
#
# % snmpset -v 1 localhost public .1.3.6.1.4.1.2021.255.1 s "New string"
# enterprises.ucdavis.255.1 = "New string"
#

# For specific usage information, see the man/snmpd.conf.5 manual page
# as well as the local/passtest script used in the above example.

# Added for support of bcm5820 cards.
pass .1.3.6.1.4.1.4413.4.1 /usr/bin/ucd5820stat

#####
# Further Information
#
# See the snmpd.conf manual page, and the output of "snmpd -H".
```

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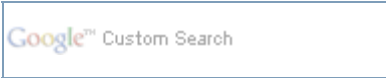
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6. Network Manager



# 6. Network Manager

http://www.panabit.com/



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Chapter 11. Lighttpd

# Chapter 11. Lighttpd

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## 1. install lighttpd

```
# cd /usr/ports/www/  
# pkg_add -r lighttpd
```

/etc/rc.conf

```
[root@freebsd ~]# echo lighttpd_enable=\"YES\" >> /etc/rc.conf  
  
[root@freebsd ~]# cat /etc/rc.conf  
lighttpd_enable=\"YES\"
```

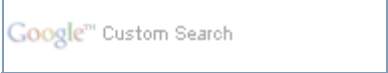
```
fastcgi.server          = ( ".php" =>  
                           ( "localhost" =>  
                             (   
                               "socket" => "/tmp/php-fastcgi.socket",  
                               "bin-path" => "/usr/local/bin/php-cgi"  
                             )  
                           )  
                           )
```

```
server.document-root    = "/www/htdocs/"  
server.errorlog          = "/www/logs/lighttpd.error.log"  
accesslog.filename      = "/www/logs/access.log"  
  
chown -R www:www /www/  
# touch /www/logs/lighttpd.error.log  
# chown www:www /www/logs/lighttpd.error.log
```

start

```
freebsd0# /usr/local/etc/rc.d/spawn-fcgi start  
Starting spawn_fcgi.  
spawn-fcgi: child spawned successfully: PID: 79056  
freebsd0# /usr/local/etc/rc.d/spawn-fcgi stop  
Stopping spawn_fcgi.  
Waiting for PIDS: 79056.  
freebsd0# /usr/local/etc/rc.d/spawn-fcgi start  
Starting spawn_fcgi.  
spawn-fcgi: child spawned successfully: PID: 79084  
freebsd0# /usr/local/etc/rc.d/spawn-fcgi restart  
Stopping spawn_fcgi.  
Starting spawn_fcgi.  
spawn-fcgi: child spawned successfully: PID: 79109  
  
# /usr/local/etc/rc.d/lighttpd start  
Starting lighttpd.
```





## 2. install php5

```
# pkg_add -r php5
# pkg_add -r php5-extensions
# pkg_add -r php5-curl
# pkg_add -r php5-mcrypt
# pkg_add -r php5-mbstring

# pkg_add -r php5-mysql
# pkg_add -r php5-gd

# pkg_add -r php5-zlib
# pkg_add -r php5-zip
```



### 3. xcache

```
# portsnap fetch update
# cd /usr/ports/www/xcache
# make install clean
```

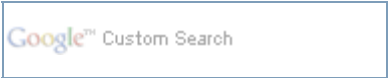
Enable xache

```
# cp /usr/local/share/examples/xcache/xcache.ini /usr/local/etc/php/
# cd /usr/local/etc/php/
# vi xcache.ini
```

Type the following command to restart lighttpd

```
# /usr/local/etc/rc.d/lighttpd restart
```





## 4. Zend Optimizer

```
# cd /usr/ports/devel/ZendOptimizer/  
# make  
# cd /usr/ports/devel/ZendOptimizer/work/ZendOptimizer-*  
# ./install-tty
```

不要选择apache

php.ini

```
# vi /usr/local/etc/php.ini  
  
[Zend]  
zend_extension_manager.optimizer=/usr/local/Zend/lib/Optimizer-3.3.0  
zend_extension_manager.optimizer_ts=/usr/local/Zend/lib/Optimizer_TS-3.3.0  
zend_optimizer.version=3.3.0a  
zend_extension=/usr/local/Zend/lib/ZendExtensionManager.so  
zend_extension_ts=/usr/local/Zend/lib/ZendExtensionManager_TS.so
```

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```
pkg_add -r nginx

location / {
    root    /usr/local/www/nginx;
    index   index.html index.htm;
}

location ~ /\.php$ {
    root            html;
    fastcgi_pass     127.0.0.1:9000;
    fastcgi_index    index.php;
    fastcgi_param    SCRIPT_FILENAME
/usr/local/www/nginx$fastcgi_script_name;
    include          fastcgi_params;
}
```

## 1. port install

```
# cd /usr/ports/www/nginx
```

```
# make install

HTTP_MODULE
HTTP_REWRITE_MODULE
HTTP_STATUS_MODULE
```

## 1.1. php

ports 安装 php-fpm 适合 php-5.2.10, 高于这个版本请跳过这节, 采用编译安装。

```
# cd /usr/ports/lang/php5
# make install
```

extensions

```
# cd /usr/ports/lang/php5-extensions/
# make install
# ln -s /usr/local/etc/php.ini-production /usr/local/etc/php.ini
```

php-fpm - FastCGI Process Manager

homepage: <http://php-fpm.org/downloads/freebsd-port/>

```
# tar xvzf php-5.2.10-fpm-0.5.13.tar.gz --directory=/usr/ports/lang
x php5-fpm/
x php5-fpm/files/
x php5-fpm/Makefile
x php5-fpm/distinfo
x php5-fpm/pkg-descr
x php5-fpm/pkg-plist
x php5-fpm/files/php-fpm.sh.in
x php5-fpm/files/patch-scripts::phpize.in
x php5-fpm/files/patch-TSRM_threads.m4
x php5-fpm/files/patch-Zend::zend.h
x php5-fpm/files/patch-Zend_zend_list.c
x php5-fpm/files/patch-Zend_zend_list.h
x php5-fpm/files/patch-ext_standard_array.c
x php5-fpm/files/patch-ext_standard_basic_functions.c
x php5-fpm/files/patch-ext_standard_dns.h
x php5-fpm/files/patch-ext_standard_image.c
x php5-fpm/files/patch-php.ini-dist
x php5-fpm/files/patch-php.ini-recommended
x php5-fpm/files/patch-main::php_config.h.in
x php5-fpm/files/patch-main_SAPI.c
x php5-fpm/files/patch-acinclude.m4
x php5-fpm/files/patch-configure.in

# cd /usr/ports/lang/php5-fpm/ && make install
```

### 1.1.1. php-fpm

```
Unix user of processes
<value name="user">www</value>

Unix group of processes
<value name="group">www</value>
```

## 1.2. /etc/rc.conf

```
vim /etc/rc.conf
php_fpm_enable="YES"
nginx_enable="YES"
```

## 1.3. /usr/local/etc/nginx/nginx.conf

```
ee /usr/local/etc/nginx/nginx.conf

    location / {
        root    /www;
        index   index.html index.htm index.php;
```

```
}

location ~ /\.php$ {
    root            html;
    fastcgi_pass     127.0.0.1:9000;
    fastcgi_index    index.php;
    fastcgi_param    SCRIPT_FILENAME    /www$fastcgi_script_name;
    include          fastcgi_params;
}
```

## 1.4. start

```
/usr/local/etc/rc.d/php-fpm start
/usr/local/etc/rc.d/nginx start
```

---

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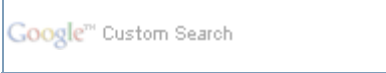
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2. 编译安装 php 与 php-fpm



## 2. 编译安装 php 与 php-fpm

### Tip

PHP 5.3.3 后续版本已经集成php-fpm 不需要打补丁再安装.

### 2.1. php-5.2.x

<http://php-fpm.org/downloads/>

```
[root@freebsd1:~] cd /usr/src/
[root@freebsd1:/usr/src]

wget http://php-fpm.org/downloads/php-5.2.14-fpm-0.5.14.diff.gz
wget http://www.php.net/get/php-5.2.14.tar.gz/from/cn.php.net/mirror

[root@freebsd1:/usr/src] tar zxf php-5.2.14.tar.gz

gzip -cd php-5.2.14-fpm-0.5.14.diff.gz | patch -d php-5.2.14 -p1

[root@freebsd1:/usr/src] cd php-5.2.14

./configure --prefix=/usr/local/php-5.2.14 \
--with-config-file-path=/usr/local/php-5.2.14/etc \
--enable-fastcgi --enable-fpm \
--with-curl \
--with-gd \
--with-jpeg-dir=/usr/lib64 \
--with-iconv \
--with-mcrypt \
--with-zlib \
--with-pear \
--with-xmllrpc \
--with-openssl \
--with-mysql \
--with-mysqli \
--with-pdo-mysql \
--enable-zip \
--enable-sockets \
--enable-soap \
--enable-mbstring \
--enable-magic-quotes \
--enable-inline-optimization \
--enable-xml \
--enable-ftp

make && make install
```

配置php.ini与php-fpm.conf

```
cp php.ini-dist /usr/local/php-5.2.14/etc/php.ini
/usr/local/php-5.2.14/etc/php.ini

include_path = ".:www/includes:/usr/local/php-5.2.14/lib/php"

vim /usr/local/php-5.2.14/etc/php-fpm.conf

    <value name="owner">www</value>
    <value name="group">www</value>

<value name="user">www</value>
<value name="group">www</value>

/usr/local/php-5.2.14/sbin/php-fpm start
```

2.2. php-5.3.x

```
安装zlib
=====
./configure
make test
make install

安装gd
=====
cd /usr/ports/graphic/gd
make install

安装libpng
=====
cd /usr/ports/graphics/png
make install
=====

安装jpeg
=====
cd /usr/ports/graphics/jpeg
make install
=====

安装freetype
=====
cd /usr/ports/print/freetype
make install
```

```
./configure --prefix=/usr/local/php-5.3.5 \
--with-config-file-path=/usr/local/php-5.3.5/etc \
--with-config-file-scan-dir=/usr/local/php-5.3.5/etc/conf.d \
--enable-fpm \
--with-fpm-user=www \
--with-fpm-group=www \
--with-pear \
--with-curl \
--with-gd \
--with-jpeg-dir \
--with-png-dir \
--with-freetype-dir \
--with-iconv \
--with-mcrypt \
--with-mhash \
--with-zlib \
--with-xmlrpc \
--with-xsl \
--with-openssl \
--with-mysql \
--with-mysqli \
--with-pdo-mysql \

--disable-debug \
--enable-zip \
--enable-sockets \
--enable-soap \
--enable-mbstring \
--enable-magic-quotes \
--enable-inline-optimization \
--enable-memory-limit
--enable-xml \

--enable-ftp \
--enable-exif \
--enable-wddx \
--enable-bcmath \
--enable-calendar \
--enable-sqlite-utf8 \
--enable-shmop \
--enable-dba \
--enable-sysvsem \
--enable-sysvshm \
--enable-sysvmsg

make
make install
```

php.ini

```
include_path=./usr/local/php-5.3.5/lib/php
```

php-fpm.conf

```
cp /usr/local/php-5.3.5/etc/php-fpm.conf.default /usr/local/php-5.3.5/etc/php-fpm.conf
```

```
cp /usr/src/php-5.3.5/sapi/fpm/init.d.php-fpm /usr/local/etc/rc.d/php-fpm
chmod +x /usr/local/etc/rc.d/php-fpm

vim /usr/local/php-5.3.5/etc/php-fpm.conf
pid = run/php-fpm.pid

user = www
group = www

pm.start_servers = 20
pm.min_spare_servers = 5
pm.max_spare_servers = 35
```

---

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### 3. worker\_processes

worker\_processes = CPU 数量





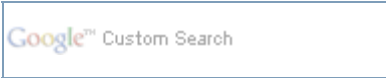
## 4. events

```
events {
    worker_connections 4096;
}
```



## 5. 可用的全局变量

```
$args
$content_length
$content_type
$document_root
$document_uri
$host
$http_user_agent
$http_cookie
$limit_rate
$request_body_file
$request_method
$remote_addr
$remote_port
$remote_user
$request_filename
$request_uri
$query_string
$scheme
$server_protocol
$server_addr
$server_name
$server_port
$uri
```



## 6. http 配置

### 6.1. X-Forwarded-For

```
real_ip_header X-Forwarded-For;
```

### 6.2. server

#### 6.2.1. VirtualHost (虚拟主机)

```
# cat /etc/nginx/conf.d/images.conf
server {
    listen      80;
    server_name images.example.com;

    #charset koi8-r;
    access_log  /var/log/nginx/images.access.log  main;

    location / {
        root    /www/images;
        index   index.html index.htm;
    }

    #error_page  404              /404.html;

    # redirect server error pages to the static page /50x.html
    #
    error_page   500 502 503 504  /50x.html;
    location = /50x.html {
        root    /usr/share/nginx/html;
    }

    # proxy the PHP scripts to Apache listening on 127.0.0.1:80
    #
    #location ~ /\.php$ {
    #    proxy_pass http://127.0.0.1;
    #}

    # pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000
    #
    #location ~ /\.php$ {
    #    root           html;
    #    fastcgi_pass   127.0.0.1:9000;
    #    fastcgi_index  index.php;
    #    fastcgi_param  SCRIPT_FILENAME  /scripts$fastcgi_script_name;
    #    include        fastcgi_params;
    #}

    # deny access to .htaccess files, if Apache's document root
    # concurs with nginx's one
    #
    #location ~ /\.ht {
    #    deny  all;
    #}
}
```

绑定多个域名

```
server_name  images.example.com img1.example.com img2.example.com;
```

使用通配符匹配

```
server_name *.example.com
server_name www.*;
```

正则匹配

```
server_name ~^(.+)\.example\.com$;
server_name ~^(www\.)?(.+)$;
```

### 6.2.2. location

```
location / {
    root    /www;
    index   index.html index.htm;
}
```

### 6.3. expires

```
#图片类资源缓存5天, 并且不记录请求日志
location ~ .*\. (ico|gif|jpg|jpeg|png|bmp|swf)$
{
    expires      5d;
    access_log   off;
}

#css/js 缓存一天, 不记录请求日志
location ~ .*\. (js|css)?$
{
    expires      1d;
    access_log   off;
}
```

```
location ~
.*\. (htm|html|gif|jpg|jpeg|png|bmp|swf|ioc|rar|zip|txt|flv|mid|doc|ppt|pdf|xls|mp3|wma)$

{
    expires      30d;
}
location ~ .*\. (js|css)?$
{
    expires      1h;
}
```

```
location ~* \. (js|css|jpg|jpeg|gif|png|swf)$ {
    if (-f $request_filename) {
        expires      1h;
        break;
    }
}

location ~ .*\. (gif|jpg|jpeg|png|bmp|swf|ico)$ {
    expires      30d;
    access_log   off;
}

location ~ .*\. (js|css)?$ {
    expires      30d;
    access_log   off;
}
```

### 6.4. access

```
#防止access文件被下载
location ~ /\.ht {
    deny  all;
}
```

```
location ~ ^/upload/.*\.php$
{
    deny all;
}

location ~ ^/static/images/.*\.php$
{
    deny all;
}
```

```
location ~ /\.ht {
    deny all;
}

location ~ .*\. (sqlite|sq3)$ {
    deny all;
}
```

```
}

```

6.5. autoindex

```
# vim /etc/nginx/sites-enabled/default

location / {
    autoindex on;
}
```

```
# /etc/init.d/nginx reload
Reloading nginx configuration: nginx.
```

6.6. ssi

```
http {
    ssi on;
}

location / {
    ssi on;
    ssi_silent_errors on;
    ssi_types text/shtml;
}
```

6.7. rewrite

Rewrite Flags  
last - 基本上都用这个Flag。  
break - 中止Rewirte, 不在继续匹配  
redirect - 返回临时重定向的HTTP状态302  
permanent - 返回永久重定向的HTTP状态301

文件及目录匹配, 其中:  
-f和!-f用来判断是否存在文件  
-d和!-d用来判断是否存在目录  
-e和!-e用来判断是否存在文件或目录  
-x和!-x用来判断文件是否可执行

正则表达式全部符号解释  
~ 为区分大小写匹配  
~\* 为不区分大小写匹配  
!~和!~\* 分别为区分大小写不匹配及不区分大小写不匹配  
(pattern) 匹配 pattern 并获取这一匹配。所获取的匹配可以从产生的 Matches 集合得到, 在VBScript 中使用 SubMatches 集合, 在JScript 中则使用 \$0...\$9 属性。要匹配圆括号字符, 请使用 \"' 或 '\\'\"。  
^ 匹配输入字符串的开始位置。  
\$ 匹配输入字符串的结束位置。

```
server {
    listen 80;
    server_name www.example.com example.com ;
    if ($host = "example.com" )
    {
        rewrite ^/(.*)$ http://www.example.com/$1 permanent;
    }
    if ($host != "www.example.com" )
    {
        rewrite ^/(.*)$ http://www.example.com/$1 permanent;
    }
}
```

```
location ~* \.(js|css|jpg|jpeg|gif|png|swf)$ {
    if (!-f $request_filename){
        rewrite /(.*?) http://images.example.com/$1;
    }
}
```

```
if ($host ~ '(.)\.static\.example\.com' ) {
    set $subdomain $1;
    rewrite "^(.*)$" /$subdomain/$1;
}
```

6.8. gzip

```
gzip on;
gzip_min_length 1000;
gzip_buffers 4 8k;
gzip_types text/plain application/x-javascript text/css text/html
application/xml;

gzip on;
gzip_http_version 1.0;
gzip_disable "MSIE [1-6].";
gzip_types text/plain application/x-javascript text/css text/javascript;
```

### 6.9. Cache

```
add_header Nginx-Cache "HIT from www.example.com";
or
add_header Nginx-Cache "$upstream_cache_status from www.example.com";
```

### 6.10. stub\_status

```
location /nginx_status {
    stub_status on;
    access_log on;
    allow 127.0.0.1;
    deny all;
}
```

### 6.11. server\_tokens

```
http {
    ...
    server_tokens off;
    ...
}
```

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## 7. Proxy

```
# cat /etc/nginx/nginx.conf

#user  nobody;
worker_processes  4;

#error_log  logs/error.log;
#error_log  logs/error.log  notice;
#error_log  logs/error.log  info;

#pid        logs/nginx.pid;

events {
    worker_connections  40960;
    use epoll;
}

http {
    include        mime.types;
    default_type   application/octet-stream;

    #log_format  main  '$remote_addr - $remote_user [$time_local] "$request" '
    #                  '$status $body_bytes_sent "$http_referer" '
    #                  '"$http_user_agent" "$http_x_forwarded_for"';

    #access_log  logs/access.log  main;

    access_log  /dev/null;

    sendfile        on;
    #tcp_nopush     on;

    #keepalive_timeout  0;
    keepalive_timeout  65;

    #gzip  on;

    upstream backend{
    #        server 172.16.0.6:80;
        server 10.0.0.68:80;
        server 10.0.0.69:80;
    }

    server {
        listen      80;
        server_name localhost;

        #charset koi8-r;

        #access_log  logs/host.access.log  main;

        #
        location / {
            root      html;
            index      index.html index.htm;
        }

        access_log  /dev/null;
        error_log   /dev/null;

        location / {
            # proxy_pass $scheme://$host$request_uri;
            # proxy_set_header Host $http_host;

            # proxy_buffers 256 4k;
            # proxy_max_temp_file_size 0;

            # proxy_connect_timeout 30;

            # proxy_cache_valid 200 302 10m;
            # proxy_cache_valid 301 1h;
            # proxy_cache_valid any 1m;

            proxy_pass      http://backend;
```

```
    proxy_redirect      off;
    proxy_set_header    Host      $host;
#    proxy_set_header    X-Real-IP $remote_addr;
#    proxy_set_header    X-Forwarded-For $proxy_add_x_forwarded_for;
    client_max_body_size 10m;
    client_body_buffer_size 128k;
    proxy_connect_timeout 30;
    proxy_send_timeout   30;
    proxy_read_timeout   30;
    proxy_buffer_size     4k;
    proxy_buffers          256 4k;
    proxy_busy_buffers_size 64k;
    proxy_temp_file_write_size 64k;
    tcp_nodelay on;
}

#error_page 404                /404.html;

# redirect server error pages to the static page /50x.html
#
error_page 500 502 503 504    /50x.html;
location = /50x.html {
    root    html;
}
}
```

### 7.1. request\_filename + proxy\_pass

如果文件不存在，那么去指定的节点上寻找

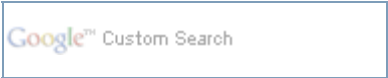
```
location / {
    root    /www;
    proxy_intercept_errors on;
    if (!-f $request_filename) {
        proxy_pass http://172.16.1.1;
        break;
    }
}

location / {
    root    /www/images;
    proxy_intercept_errors on;
    if (!-f $request_filename) {
        proxy_pass http://172.16.1.2;
        break;
    }
}
```

---

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# Chapter 13. Apache

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[1. install](#)

## 1. install

```
# cd /usr/ports/www/  
# pkg_add -r apache
```

# Chapter 14. mysql

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[1. install](#)

## 1. install

## 1. install

```
freebsd# pkg_add -r mysql51-server
freebsd# /usr/local/bin/mysql_install_db
freebsd# chown -R mysql /var/db/mysql
```

/etc/rc.conf

```
freebsd# vi /etc/rc.conf
mysql_enable="YES"
```

start

```
freebsd# /usr/local/etc/rc.d/mysql-server start
Starting mysql.
```

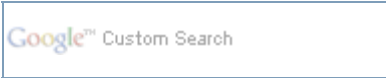
set password

```
freebsd# /usr/local/bin/mysqladmin -u root password 'chen'
```

```
freebsd# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.1.39 FreeBSD port: mysql-server-5.1.39

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```



# Chapter 15.

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[1.1. Apache](#)

[1.2. Lighttpd](#)

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## 1. cronolog

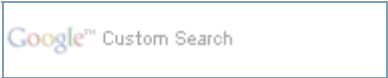
```
cd /usr/ports/sysutils/cronolog/  
make install clean
```

### 1.1. Apache

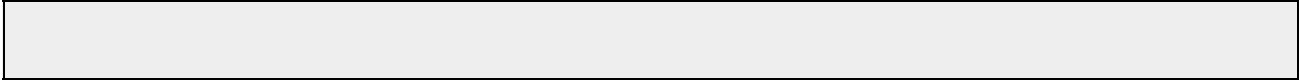
```
CustomLog "|/usr/local/sbin/cronolog /data/log/domain/%Y%m%d.log" combined  
CustomLog "|/usr/local/sbin/cronolog /var/log/www/%Y%m%d_access_log" combined
```

### 1.2. Lighttpd

```
accesslog.filename = "| /usr/local/sbin/cronolog  
/var/log/lighttpd/%Y/%m/%d/access.log"
```



## 2. logrotate



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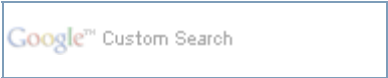


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- [1. Memcache](#)
- [2. PHP Memcache](#)

## 1. Memcache

```
cd /usr/ports/databases/memcached; make install clean
```

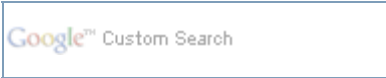
```
vi /etc/rc.conf
# start memcached
memcached_enable="YES"
```

你也可不使用vi，使用下面命令快速添加

```
echo "memcached_enable=\"YES\"" >> /etc/rc.conf
```

Memcache

```
/usr/local/etc/rc.d/memcached start
```

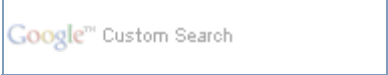


## 2. PHP Memcache

```
cd /usr/ports/databases/pecl-memcache; make install clean
```

确认Memcache是否安装成功

```
cat /usr/local/etc/php/extensions.ini | grep memcache  
  
php -m | grep memcache  
memcache
```



# Chapter 17. MySQL

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[1. Installation](#)

## 1. Installation

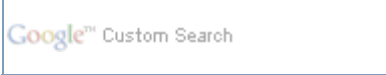
```
pkg_add -r mysql55-server
pkg_add -r mysql55-client
pkg_add -r mysql55-scripts

/usr/local/bin/mysql_install_db
chown -R mysql /var/db/mysql/
chgrp -R mysql /var/db/mysql/
/usr/local/bin/mysqld_safe -user=mysql &
/usr/local/bin/mysqladmin -u root password 'newpassword'

mysql_enable="YES"
```

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## Chapter 18. FAQ

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[1. Linux用户使用FreeBSD，问FreeBSD ulimit怎么设置？](#)

### 1. Linux用户使用FreeBSD，问FreeBSD ulimit怎么设置？

首先说明FreeBSD默认Shell是csh没有ulimit命令，但C Shell有limit命令。如果你想使用ulimit命令可以安装Bourne shell， Bash， Zsh

limit,ulimit比较

```
[neo@freebsd:~] limit
cputime      unlimited
filesize     unlimited
datasize     32768MB
stacksize    512MB
coredumpsize unlimited
memoryuse    unlimited
memorylocked unlimited
maxproc      5547
descriptors  65536
sockbufsize  unlimited
vmemorysize  unlimited
NPTS         unlimited
SWAP         unlimited

[neo@freebsd:~] env | grep SHELL
SHELL=/usr/local/bin/zsh

[neo@freebsd:~] ulimit -a
-t: cpu time (seconds)      unlimited
-f: file size (blocks)      unlimited
-d: data seg size (kbytes)   33554432
-s: stack size (kbytes)     524288
-c: core file size (blocks)  unlimited
-m: resident set size (kbytes) unlimited
-l: locked-in-memory size (kb) unlimited
-u: processes               5547
-n: file descriptors        65536
-N 9: socket buffer size (kb) unlimited
-v: virtual memory size (kb) unlimited
-N 11:                      unlimited
-N 12:                      unlimited

在Freebsd上，你能使用sysctl命令：
```

以 nofile - max number of open files 为例， limit、 ulimit、 sysctl实现同样的功能。

```
csh% limit descriptors unlimited
或者
csh% limit descriptors 4096

sh$ ulimit -n unlimited
或者
sh$ ulimit -n 4096

sysctl kern.maxfiles=65536
sysctl kern.maxfilesperproc=65536
```

写入配置文件 sysctl.conf

```
[neo@freebsd:~] cat /etc/sysctl.conf
# $FreeBSD: src/etc/sysctl.conf,v 1.8.34.1.4.1 2010/06/14 02:09:06 kensmith Exp
#
# This file is read when going to multi-user and its contents piped thru
# ``sysctl'' to adjust kernel values.  ``man 5 sysctl.conf'' for details.
```



```
#
# Uncomment this to prevent users from seeing information about processes that
# are being run under another UID.
#security.bsd.see_other_uids=0

#vm.pmap.shpgperproc: 2000
#vm.pmap.pv_entry_max: 13338058
kern.ipc.shm_use_phys=1
kern.maxfiles=65536
kern.maxfilesperproc=65536
kern.ipc.somaxconn=2048

[neo@freebsd:~] /etc/rc.d/sysctl reload

[neo@freebsd:~] sysctl -a | grep maxfiles
kern.maxfiles: 65536
kern.maxfilesperproc: 65536
```

---

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Chapter 17. MySQL

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