

目录

- [目录](#)
- [架构](#)
 - [配置centos\(2\)主机DHCP服务](#)
 - [1、修改网卡配置文件](#)
 - [2、Vmware配置](#)
 - [3、安装DHCP](#)
 - [4、更改配置文件](#)
 - [5、启动服务](#)
 - [6、配置客户机](#)
 - [配置centos \(2\) 主机DNS服务](#)
 - [1、安装](#)
 - [2、修改主配置文件](#)
 - [3、编辑区域配置文件](#)
 - [4、编辑数据配置文件](#)
 - [5、启动](#)
 - [6、修改客户机DNS](#)
 - [7、修改DNS服务端的防火墙配置](#)
 - [代理 \(squid\)](#)
 - [RAID10](#)
 - [为centos5添加硬盘](#)
 - [部署磁盘阵列](#)
 - [NFS](#)
 - [安装](#)
 - [创建共享目录](#)
 - [启动服务](#)
 - [配置客户机centos3、centos4](#)
 - [SMB](#)
 - [创建用户和用户组](#)
 - [创建文件夹](#)
 - [创建用户确定初始密码](#)
 - [修改配置文件](#)
 - [禁止用户登录](#)
 - [脚本](#)
 - [配置客户机SMB](#)
 - [Apache](#)
 - [Wordpress](#)

- [Mysql](#)
 - [Mysql安装](#)
 - [MySQL每日备份](#)
- [代理服务器haproxy](#)
- [奖励部分](#)
 - [PhpMyadmin](#)
 - [自动更新黑名单脚本\(for Squid\)](#)
 - [Add a secondary Front server and setup a DNS-RoundRobin to feed these frontal servers](#)
 - [修改DNS配置文件](#)
 - [修改wordpress的wp_options数据表](#)
 - [演示](#)

架构

服务	ip	hostname	解释
DHCP & DNS	172.16.250.3	centos2	
NFS客户机 & 阿帕奇	172.16.250.9	centos3	
NFS客户机 & 阿帕奇	172.16.250.103	centos4	
NFS服务 & SMB	172.16.250.7	centos5	
NFS客户机 & SMB客户机	172.16.250.5	centos6	笔记本
NFS客户机 & MySQL	172.16.250.10	cenyos7	
NFS客户机 & 前端	172.16.250.4	cenyos8	

配置centos(2)主机DHCP服务

1、修改网卡配置文件

```
vim /etc/sysconfig/network-scripts/ifcfg-ens160
```

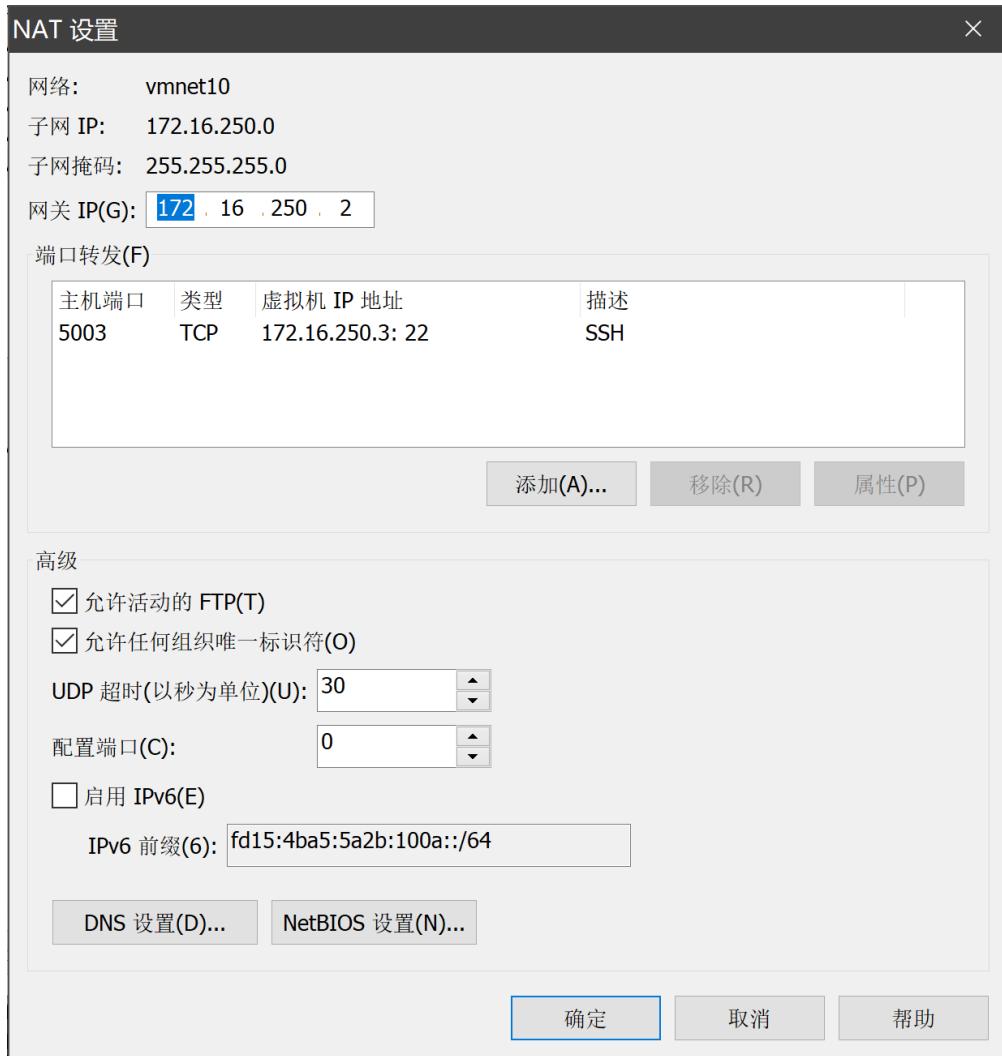
```
TYPE=Ethernet
PROXY_METHOD=none
```

```
BROWSER_ONLY=no
BOOTPROTO=static
DEFROUTE=yes
IPV4_FAILURE_FATAL=no
IPV6INIT=yes
IPV6_AUTOCONF=yes
IPV6_DEFROUTE=yes
IPV6_FAILURE_FATAL=no
IPV6_ADDR_GEN_MODE=stable-privacy
NAME=ens160
UUID=9c191f9f-60b0-4af4-a11b-b5f852fb8df2
DEVICE=ens160
ONBOOT=yes
IPADDR=172.16.250.3
NETMASK=255.255.255.0
GATEWAY=172.16.250.2
DNS1=8.8.8.8
```

2、Vmware配置

配置网关为：172.16.250.2

配置端口转发



3、安装DHCP

```
yum -y install dhcp-server.x86_64
```

4、更改配置文件

```
authoritative;
#
# ## Use this to send dhcp log messages to a different log file (you also
# ## have to hack syslog.conf to complete the redirection).
#log-facility local7;
#
# ## No service will be given on this subnet, but declaring it helps the
# ## DHCP server to understand the network topology.
```

```
#  
# subnet 10.152.187.0 netmask 255.255.255.0 {  
# }  
#  
# ## This is a very basic subnet declaration.  
subnet 172.16.250.0 netmask 255.255.255.0 {  
    range 172.16.250.4 172.16.250.254;  
    option routers 172.16.250.2;      #随DHCP分发的默认网关  
    option domain-name-servers 8.8.8.8;    #随DHCP分发的DNS  
    option domain-name "test.cn";  
    option broadcast-address 172.16.250.255;  
    default-lease-time 600;  
    max-lease-time 7200;  
}
```

5、启动服务

```
systemctl start dhcpcd  
systemctl enable dhcpcd  
systemctl status dhcpcd
```

6、配置客户机

```
TYPE=Ethernet  
BOOTPROTO=dhcp  
DEFROUTE=yes  
PEERDNS=yes  
PEERROUTES=yes  
IPV4_FAILURE_FATAL=no  
IPV6INIT=yes  
IPV6_AUTOCONF=yes  
IPV6_DEFROUTE=yes  
IPV6_PEERDNS=yes  
IPV6_PEERROUTES=yes  
IPV6_FAILURE_FATAL=no  
IPV6_ADDR_GEN_MODE=stable-privacy  
ONBOOT=yes  
GATEWAY=172.16.250.3      #这里要设置成DHCP服务器的ip地址
```

```
NETMASK=255.255.255.0
```

```
DNS1=8.8.8.8
```

重新从dhcp服务器申请ip

```
sudo dhclient -v
```

修改默认网关

```
route add default gw 172.16.250.2
```

配置centos (2) 主机DNS服务

1、安装

```
yum install bind-chroot
```

2、修改主配置文件

把第11行和第17行的地址均修改为any，分别表示服务器上的所有IP地址均可提供DNS域名解析服务，以及允许所有人对本服务器发送DNS查询请求

```
vim /etc/named.conf
```

往options块内添加一条选项

```
forwarders { IP; };
```

IP填转发的服务器地址，重启named服务即可

3、编辑区域配置文件

```
zone "ahrs. lan" IN {  
    type master;  
    file "ahrs. lan. zone";  
    allow-update { none; };  
};
```

```
zone "ahrs. com" IN {  
    type master;  
    file "ahrs. com. zone";  
    allow-update { none; };  
};
```

4、编辑数据配置文件

从/var/named目录中复制一份正向解析的模板文件（named.localhost），然后把域名和IP地址的对应数据填写数据配置文件中并保存。

```
cd /var/named/
```

ahrs.com.zone

```
$TTL 1D  
@ IN SOA ahrs. com. root. ahrs. com. (  
                                0      ; serial  
                                1D     ; refresh  
                                1H     ; retry  
                                1W     ; expire  
                                3H )   ; minimum  
NS      @  
        A      172.16.250.4  
www    IN A      172.16.250.4
```

ahrs.lan.zone

```
$TTL 1D  
@ IN SOA ahrs. lan. root. ahrs. lan. (  
                                0      ; serial  
                                1D     ; refresh  
                                1H     ; retry
```

```
        1W      ; expire  
        3H )    ; minimum  
NS      @  
A      172.16.250.4  
www    IN A 172.16.250.4
```

```
[root@centos2 /var/named]# nslookup  
> www.ahrs.com  
Server:      172.16.250.3  
Address:      172.16.250.3#53  
  
Name:  www.ahrs.com  
Address: 172.16.250.4
```

5、启动

```
systemctl restart named  
systemctl enable named
```

6、修改客户机DNS

```
vim /etc/resolv.conf
```

7、修改DNS服务端的防火墙配置

```
firewall-cmd --add-service=dns
```

代理 (squid)

配置服务端

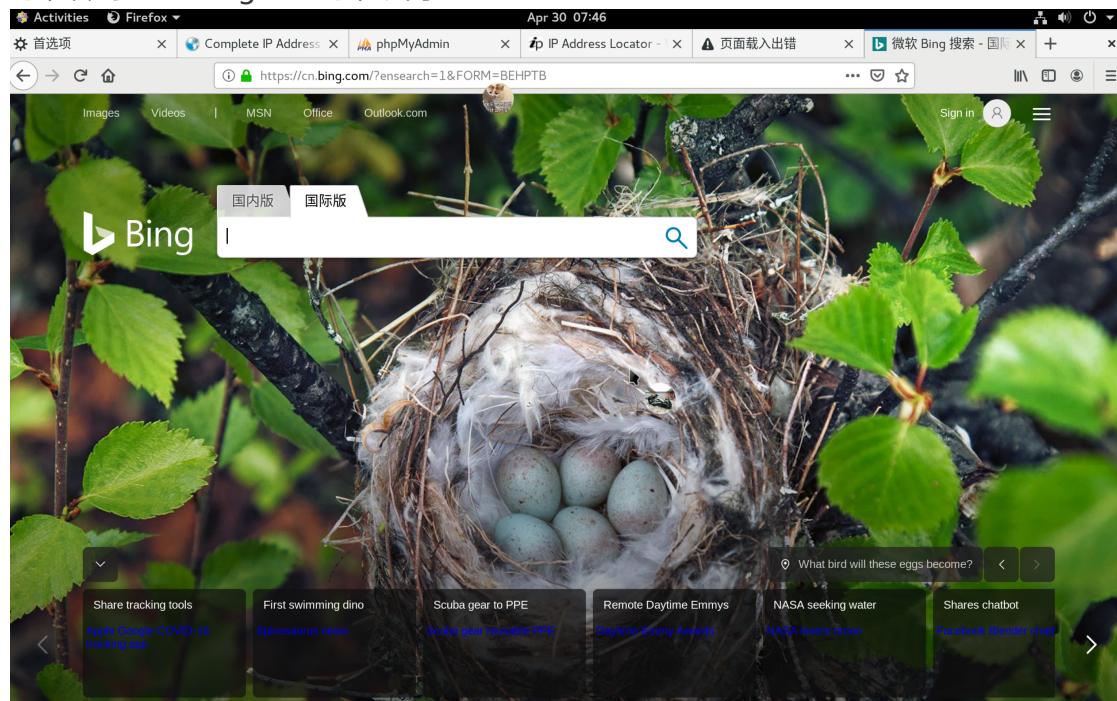
```
vim /etc/squid/squid.conf
```

```
acl block_sites url_regex "/etc/squid/audio-video/domains"
http_access allow all
```

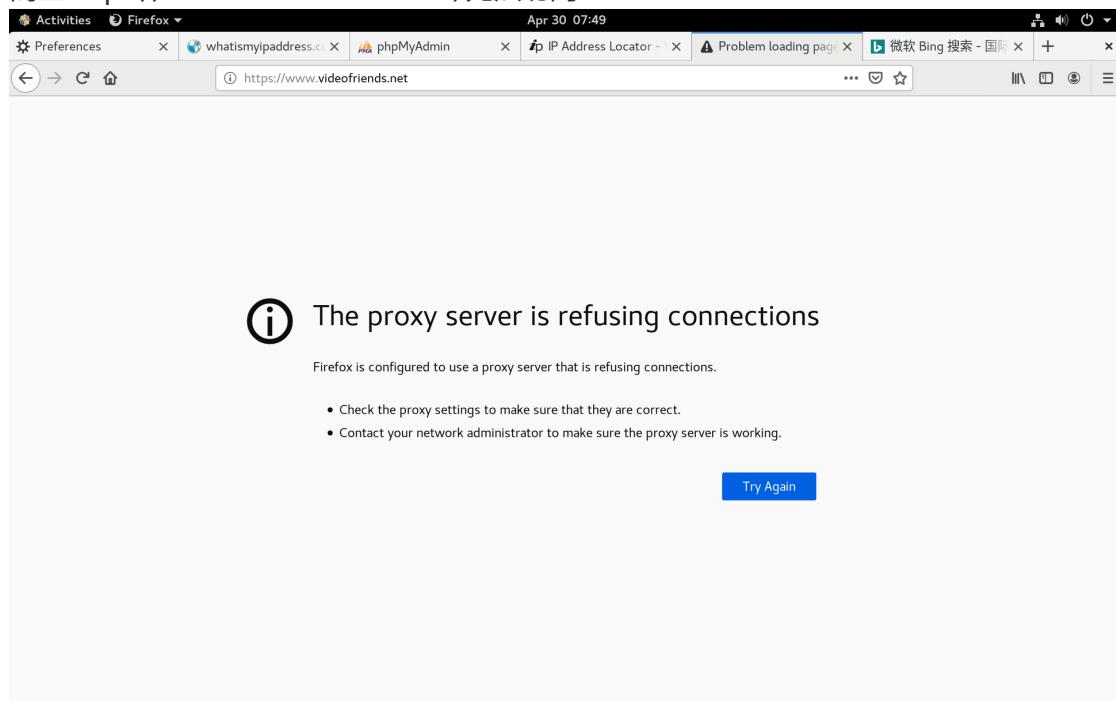
客户端



可以看到www.bing.com可以访问

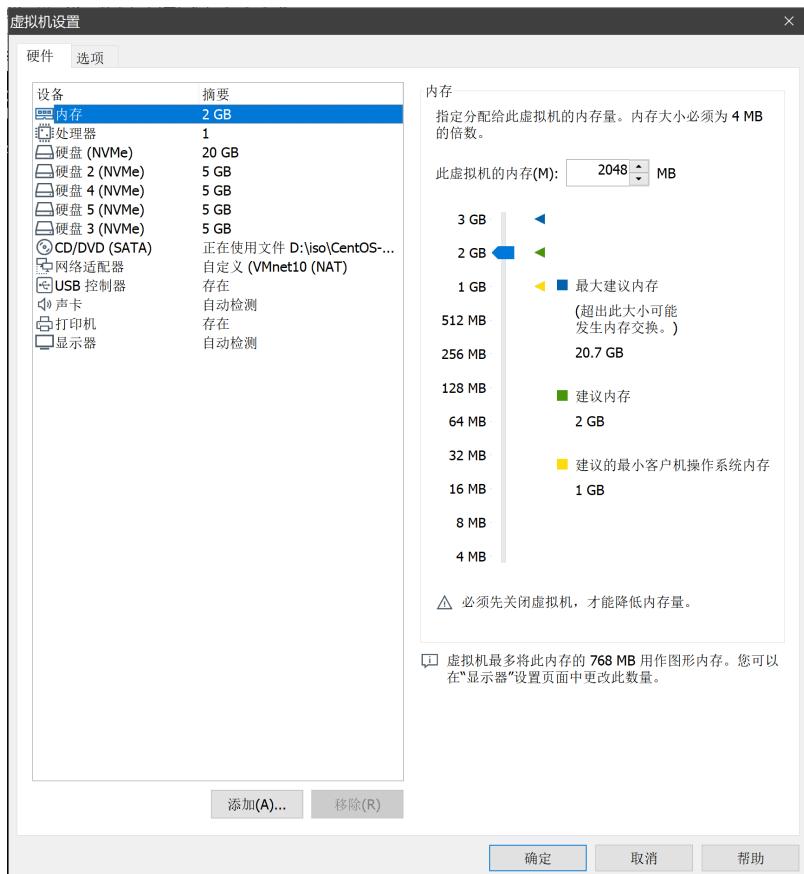


而且https://www.videofriends.net/无法访问



RAID10

为centos5添加硬盘



部署磁盘阵列

```
mdadm -Cv /dev/md0 -a yes -n 4 -l 10 /dev/nvme0n2 /dev/nvme0n3 /dev/nvme0n4
/dev/nvme0n5
```

```
mkfs.ext4 /dev/md0
```

```
mount /dev/md0 /RAID
```

```
[root@centos5/]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        886M    0  886M   0% /dev
tmpfs          904M    0  904M   0% /dev/shm
tmpfs          904M  8.7M  895M   1% /run
tmpfs          904M    0  904M   0% /sys/fs/cgroup
/dev/mapper/cl-root  17G  1.9G  16G  11% /
/dev/nvme0n1p1  976M 139M  771M  16% /boot
tmpfs          181M    0  181M   0% /run/user/0
/dev/md0       9.8G  37M  9.3G   1% /RAID
```

```
echo "/dev/	md0  /RAID  ext4  defaults  0  0"  >> /etc/fstab
```

NFS

安装

```
yum install nfs-utils
```

创建共享目录

```
[root@centos5 /]# mkdir /nfsfile  
[root@centos5 /]# chmod -Rf 777 /nfsfile/
```

启动服务

```
systemctl restart rpcbind  
systemctl enable rpcbind  
systemctl start nfs-server  
systemctl enable nfs-server
```

配置客户机centos3、centos4

```
mount -t nfs 172.16.250.7:/nfsfile /nfsfile
```

并且写入/etc/fstab

SMB

创建用户和用户组

```
[root@centos5 /nfsfile]# groupadd Accounting  
[root@centos5 /nfsfile]# groupadd HR  
[root@centos5 /nfsfile]# groupadd IT
```

```
[root@centos5 /nfsfile]# useradd -d /home/germaine -g Accounting germaine  
[root@centos5 /nfsfile]# id germaine  
uid=1000(germaine) gid=1000(Accounting) groups=1000(Accounting)  
[root@centos5 /nfsfile]# useradd -d /home/michel -g HR michel  
[root@centos5 /nfsfile]# id michel  
uid=1001(michel) gid=1001(HR) groups=1001(HR)  
[root@centos5 /nfsfile]# useradd -d /home/paul -g IT paul  
[root@centos5 /nfsfile]# id paul  
uid=1002(paul) gid=1002(IT) groups=1002(IT)  
[root@centos5 /nfsfile]# useradd -d /home/mathieu -g IT mathieu  
[root@centos5 /nfsfile]# id mathieu  
uid=1003(mathieu) gid=1002(IT) groups=1002(IT)
```

User	Group
germaine	Accounting
michel	HR
paul	IT
mathieu	IT

创建文件夹

```
[root@centos5 /home]# mkdir hr  
[root@centos5 /home]# chown -R michel:HR hr/  
  
[root@centos5 /home]# mkdir accounting  
[root@centos5 /home]# chown -R germaine:Accounting accounting/
```

创建用户确定初始密码

```
pdredit -a -u germaine  
pdredit -a -u michel  
pdredit -a -u paul  
pdredit -a -u mathieu
```

修改配置文件

在 /etc/samba/smb.con 添加如下内容

```
[germaine]  
path = /home/germaine  
browseable = yes  
writable = yes  
valid users = germaine  
[michel]  
path = /home/michel  
browseable = yes  
writable = yes  
valid users = michel  
[paul]  
path = /home/paul  
browseable = yes  
writable = yes  
valid users = paul  
[mathieu]  
path = /home/mathieu  
browseable = yes  
writable = yes  
valid users = mathieu  
  
[hr]  
path = /home/hr  
browseable = yes  
writable = yes  
valid users = @IT, @HR  
  
[accounting]  
path = /home/accounting  
browseable = yes
```

```
writable = yes  
valid users = @IT, @Accounting
```

禁止用户登录

```
germaine:x:1000:1000::/home/germaine:/bin/false  
michel:x:1001:1001::/home/michel:/bin/false
```

脚本

```
#!/bin/bash  
passwd=`mkpasswd -l 9 -s 1`  
echo "${passwd}"  
  
printf "${passwd}\n${passwd}\n" | sudo -A smbpasswd $1 -s
```

执行：

```
[root@centos5 /]# ./passwdchange.sh germaine
```

配置客户机SMB

安装

```
yum install samba-client.x86_64
```

连接SMB

```
smbclient //172.16.250.7/germaine -U germaine
```

如连接其他目录，将会失败

```
[root@centos6 /]# smbclient //172.16.250.7/mathieu -U germaine  
Enter SAMBA\germaine's password:  
tree connect failed: NT_STATUS_ACCESS_DENIED
```

组连接SMB

```
[root@centos6 /]# smbclient //172.16.250.7/accounting -U paul  
Enter SAMBA\paul's password:  
Try "help" to get a list of possible commands.  
smb: \>
```

Apache

```
yum install httpd
```

```
cd /etc/httpd/conf  
vim httpd.conf
```

修改配置文件

```
DocumentRoot "/nfsfile"  
<Directory "/nfsfile">
```

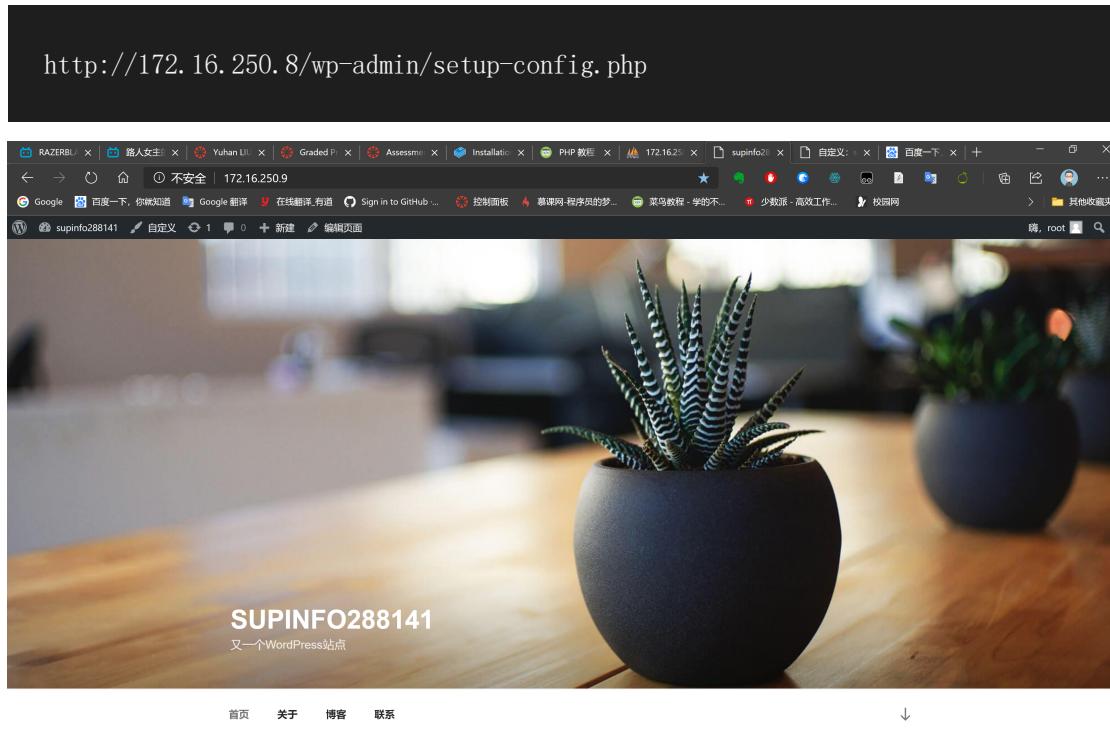
安装相关组件

```
yum -y install php  
  
yum -y install php-common php-cli php-gd php-pdo php-devel  
  
yum -y install php-xml php-json php-mysqlnd php-bcmath
```

Wordpress

访问

<http://172.16.250.8/wp-admin/setup-config.php>



wordpress负载均衡

打开数据库，找到wp_options表单

1. 修改url为haproxy前端地址
1 siteurl http://172.16.250.4 yes
2. 修改url为haproxy前端地址
36 home http://172.16.250.4 yes

Mysql

Mysql安装

```
yum install mysql-server
```

```
systemctl enable mysqld.service
```

```
update user set host='%' where user='root';
```

MySQL每日备份

脚本：

```
#!/bin/bash
#删除90天前数据

find /nfsfile/backup -mtime +90 -name "*.*" -exec rm -rf {} \;

mysqldump -uroot -p"liuyuhan" --single-transaction wordpress >
/nfsfile/backup/wordpress_`date +%Y%m%d`.dump
```

```
crontab -e
```

```
30 0 * * * /backup.sh
```

代理服务器haproxy

```
yum install haproxy
```

修改配置文件/etc/haproxy/haproxy.cfg

```
global
    maxconn      10000
    stats socket /var/run/haproxy.stat mode 600 level admin
    log          127.0.0.1 local0
    user         root
    group        root
    chroot       /var/empty
    daemon

defaults
    mode          http
    log           global
    option        httplog
    option        dontlognull
    monitor-uri  /monitoruri
    maxconn      8000
    timeout client 30s
```

```
stats uri      /admin/stats
option prefer-last-server
retries       2
option redispatch
timeout connect 5s
timeout server  5s

# The public 'www' address in the DMZ
frontend public
    bind          *:80 name clear
    #bind         192.168.1.10:443 ssl crt /etc/haproxy/haproxy.pem
    #use_backend static if { hdr_beg(host) -i img }
    #use_backend static if { path_beg /img /css   }
    default_backend static

# The static backend backend for 'Host: img', /img and /css.
backend static
    balance     roundrobin
    server      statsrv1 172.16.250.9:80 check inter 1000
    server      statsrv2 172.16.250.103:80 check inter 1000
```

奖励部分

PhpMyadmin

打开libraries/config.default.php，对下面三行进行修改：

```
$cfg['Servers'][$i]['host'] = '172.16.250.10';
$cfg['Servers'][$i]['port'] = '3306';

$cfg['Servers'][$i]['user'] = 'root';
$cfg['Servers'][$i]['password'] = 'liuyuhan';
```

在浏览器打开

<http://172.16.250.9/phpMyAdmin/index.php>

The screenshot shows the phpMyAdmin configuration page. On the left, there's a sidebar with a tree view of databases: information_schema, mysql, performance_schema, sys, and wordpress. The main area has tabs for常规设置 (General Settings) and 外观设置 (Appearance Settings). The General Settings tab shows the server connection details: host is 172.16.250.10, port is 3306, and the character set is utf8mb4_unicode_ci. The Appearance Settings tab shows the language is Chinese simplified and the theme is pmahomme. To the right, there are two panels: '数据库服务器' (Database Server) which lists MySQL server details like version 8.0.17, and '网站服务器' (Web Server) which lists Apache 2.4.37 and PHP 7.2.11. At the bottom right is the 'phpMyAdmin' footer with links to documentation and support.

自动更新黑名单脚本(for Squid)

Add a secondary Front server
and setup a DNS-RoundRobin
to feed these frontal servers

修改DNS配置文件

vim /etc/named.conf

```
multiple-cnames yes;
rrset-order {
    class IN type ANY name "*" order cyclic;
};
```

vim /var/named/ahrs.com.zone

```
$TTL 1D
@      IN SOA  ahrs. com. root. ahrs. com. (
                                0          ; serial
```

```
        1D      ; refresh
        1H      ; retry
        1W      ; expire
        3H )    ; minimum

NS      @@
A      172.16.250.4
www    IN A      172.16.250.4
          IN A      172.16.250.130
```

vim /var/named/ahrs.lan.zone

```
$TTL 1D
@      IN SOA  ahrs. lan. root. ahrs. lan. (
          0      ; serial
          1D     ; refresh
          1H     ; retry
          1W     ; expire
          3H )   ; minimum

NS      @@
A      172.16.250.4
www    IN A      172.16.250.4
          IN A      172.16.250.130
```

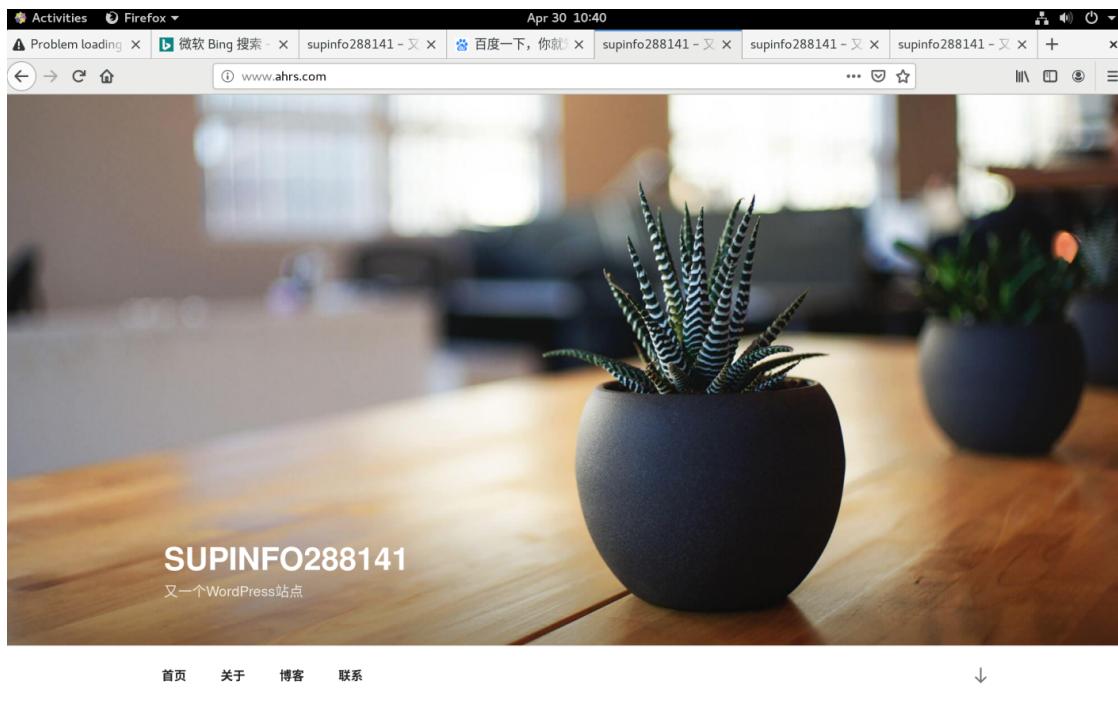
修改wordpress的wp_options数据表

<input type="checkbox"/> 编辑 复制 删除	1 siteurl	http://www.ahrs.com yes
<input type="checkbox"/> 编辑 复制 删除	2 home	http://www.ahrs.com yes

演示

当关闭172.16.250.4的haproxy.service 服务

仍然能够通过域名www.ahrs.com来访问到172.16.250.130的haproxy.service 服务



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