Superb Mini Server Documentation

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Version 0.3.2

1. Requirements

SMS.Native.CD requirements:

Any Pentium class processor 500MHz or AMD K2 and above will do, as for the RAM you will need at least 128MB (256MB recommended). You can install it on a 486 machine with 128MB RAM too, but you need to choose huge or hugel7 kernel while booting SMS install disk.

SMS.Live.CD requirements:

To boot into Live mode any Pentium class processor 500MHz or AMD K2 and above will do, as for the RAM you will need at least 128MB (256MB recommended). Booting in a slow computer with 128MB might output error with clamav-milter (needs to increase the time for loading), after you install it on disk there will be no such problem.

Don't forget that it's a server , put a descent machine on it.

2. Installation

2.1 SMS.Live.CD Installation:

Boot with SMS.LiveCD, login with username: root and password: toor, type 'sms-text-installer' and follow the instructions. After the sms-text-installer finishes, reboot and use 'netconfig' command to configure your server's hostname and domain.

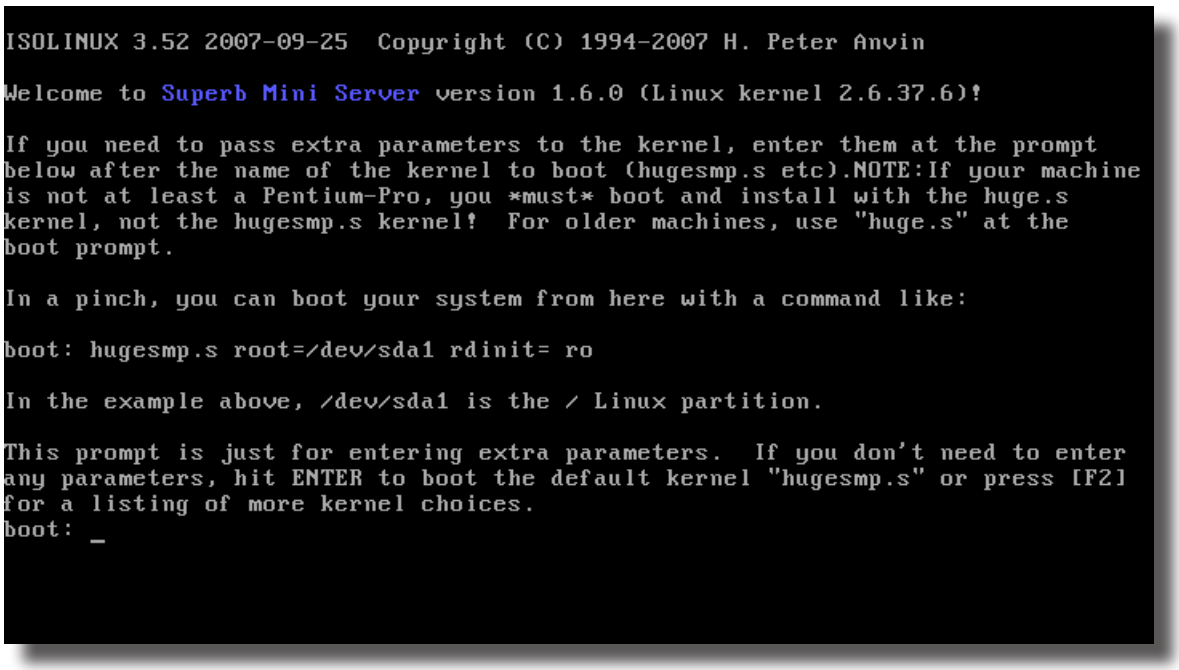
Note: Installing SMS from SMS.LiveCD is **NOT** *recommended.*

2.2 SMS.Native.CD Installation:

2.2.1 Choose Kernel

- At boot promt select your kernel from a choice of four kernels and press enter:

1. *hugesmp.s Default SMS Kernel very similar to Slackware's kernel.*
2. *huge.s Default SMS Kernel for i486 and better machines.*
3. *hugel7.s Same as hugev.s but with Layer 7 support patch.*
4. *memtest Test your memory for errors with memtest utility.*



2.2.2 Partition hard drives

- *Select your keyboard map and login as root.*
- *Before you run setup you must create your partitions with "cfdisk".*
- *For a list of partitions type*

```
root@sms:~#   cat  /proc/partitions
```

or

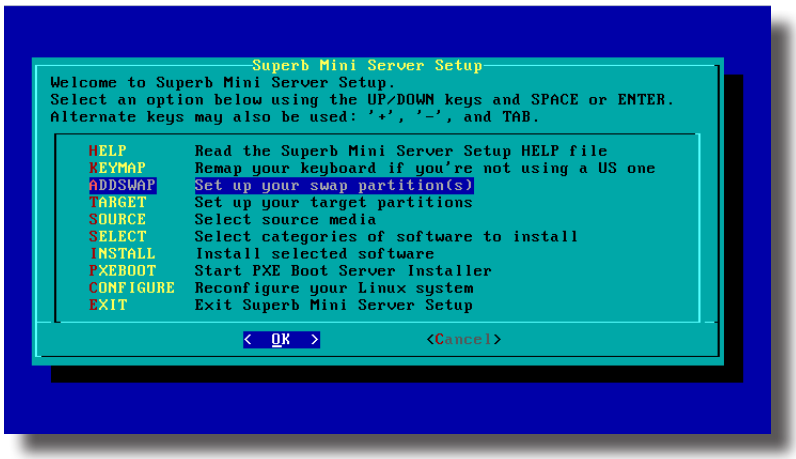
```
root@sms:~#  fdisk -l
```

- *To partition for example "/dev/sda" type*

```
root@sms:~# cfdisk /dev/sda
```

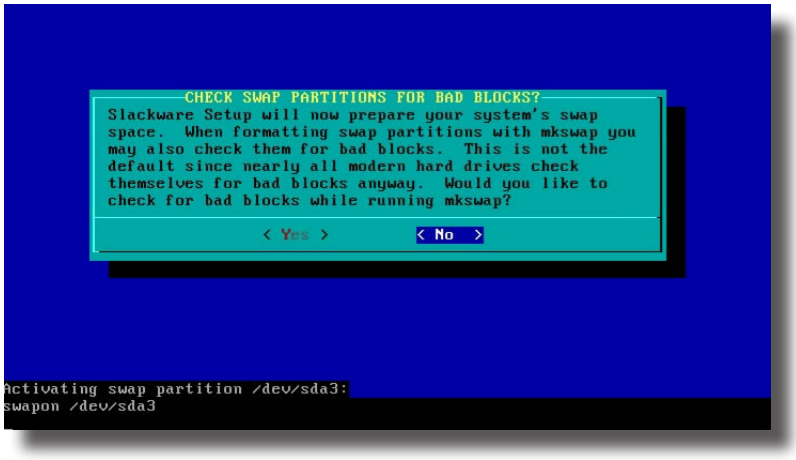
Create a boot partition 100MB in size and mark it bootable.
Create a swap partition, usually twice your RAM, but 2GB is enough.
Create the root (/) partition, at least 4GB in size.
You can create optional partitions for mount points such as /home or /usr/local.
Write the partition table to disk and exit.

2.2.3 Setup.

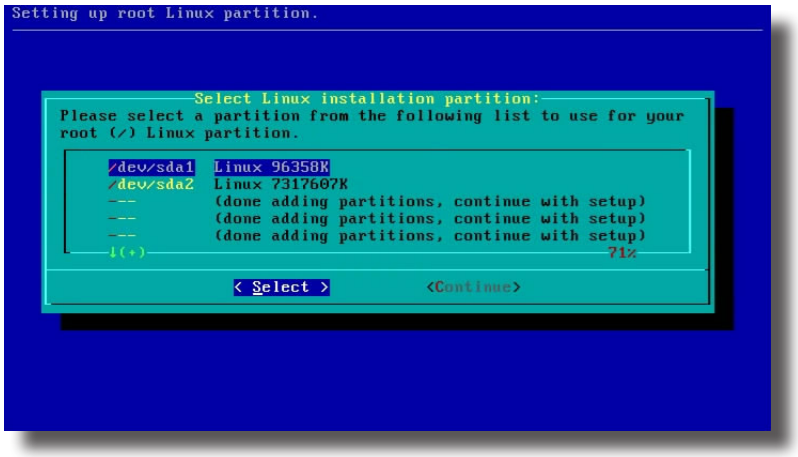


You are now ready to type "setup" and set your swap partitions

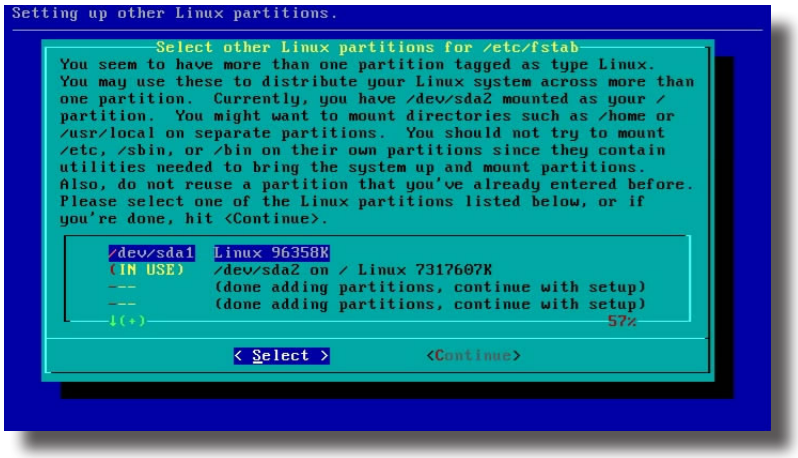
Choose you swap partitions



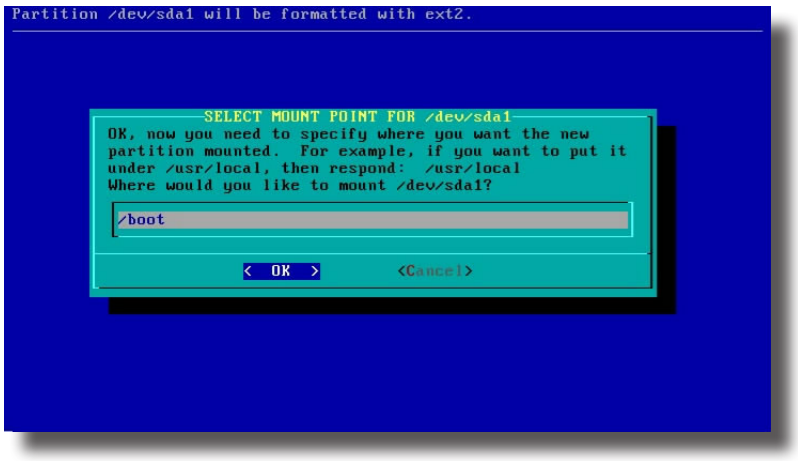
Just swapon your swap partition.
No need to check for bad blocks.



Choose your root partition and format it.

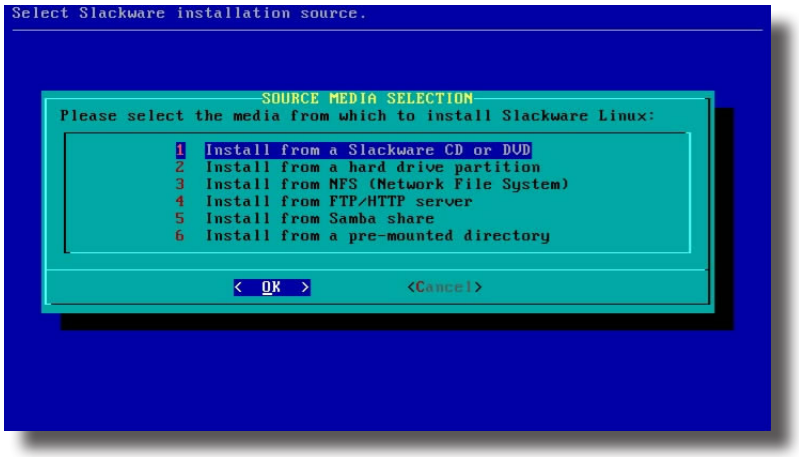


Choose your boot partition and format it as ext2 or ext3.

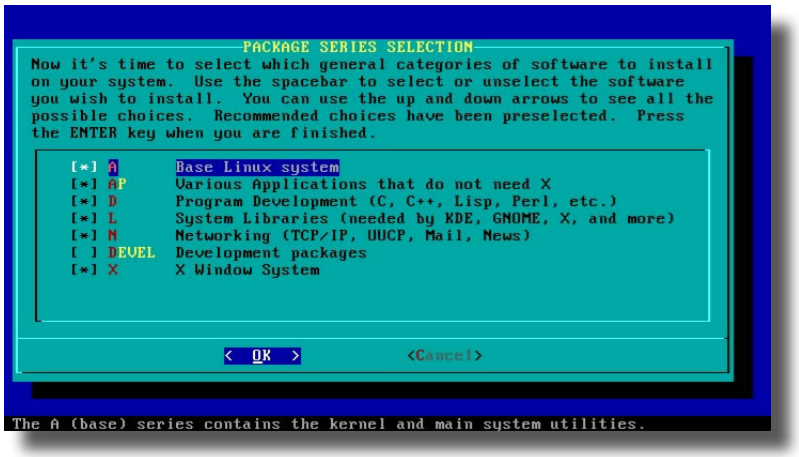


Assign the mount point

You should see something like that.

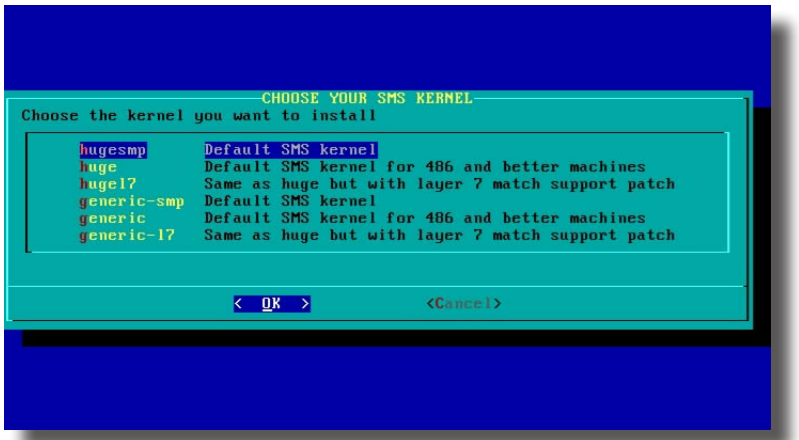


Choose your source media and follow the instructions.



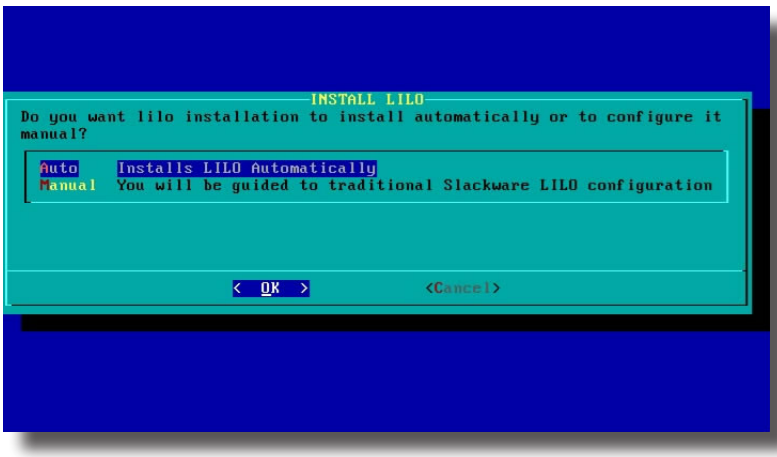
Select series of software to install. By default DEVEL series is off, if you want to select it navigate to it and press "space"

The recommended setup mode is FULL where 2.7GB+ software is installed, including DEVEL series Xorg server and KDE 3.5.10.

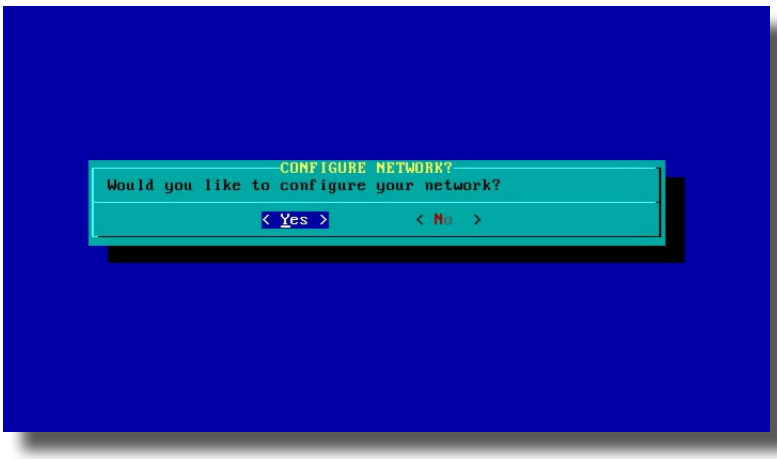


When setup finish installing packages, it will ask you to choose a kernel.
All kernels are already installed, you just have to choose from which kernel your system will boot. Huge kernels has all the serious stuff already built-in, their purpose is for installing and recovering SMS, but they are great for beginners too.
More experience users can use generic kernels. In some cases you might need an initial ram disk image (intird.gz) with filesystem or ide/sata controllers modules. generic kernels have built in support for ext2. ext3, ext4, jfs filesystems, so if you aren't using reiserfs most likely you will not have to use an initrd.gz after all.

The installer offers you to create a bootable usb stick for booting your system, if you want one just plug a usb stick and press create, or press skip to continue to install the Linux Loader (LiLo).



Lilo configuration has two options.
The first is SMS lilo installer which automatically install lilo on your chosen partitions, and second it's Slackware's lilo installer where you can create your lilo. conf from scratch.



Network configuration will use 'netconfig' script to alter your server's configuration to your new hostname & domain, including dovecot, postfix, httpd, sasl, squirrelmail, phpldapadmin except openldap. To be able to configure openldap, "/usr/libexec/slapd" must be running, so either you configure your system and on first boot you import sms.ldif with the command

ldapadd -f /etc/openldap/sms.ldif -x -D cn=Manager,dc=yourhostname,dc=yourdomain -w toor

or skip network configuration and upon reboot use "netconfig-lcd" to configure your <hostname.domain>.

Continue with the installer, selecting services that start at boot, custom screen fonts, time zone setup, default window manager for X and finally setting your root account password.
Exit the installer and reboot to your newly installed system.

2.3 SMS LVM Setup Installation:

Assuming you already create your partition map with cfdisk, something like

```
/dev/sda1   *           1          12        96358+  83  Linux
/dev/sda2              13        1957     15623212+  83  Linux
/dev/sda3            1958        2088      1052257+  82  Linux swap
```

where sda2 used for lvm setup.

1. Create physical volume

```
pvcreate /dev/sda2
```

2. Create Volume Group with name sms

```
vgcreate sms /dev/sda2
```

3. Create Logical Volume for root partition

```
lvcreate -L 8G -n root sms
```

4. Create Logical Volume for home partition with remaining space

```
lvcreate -l 100%FREE -n home sms
```

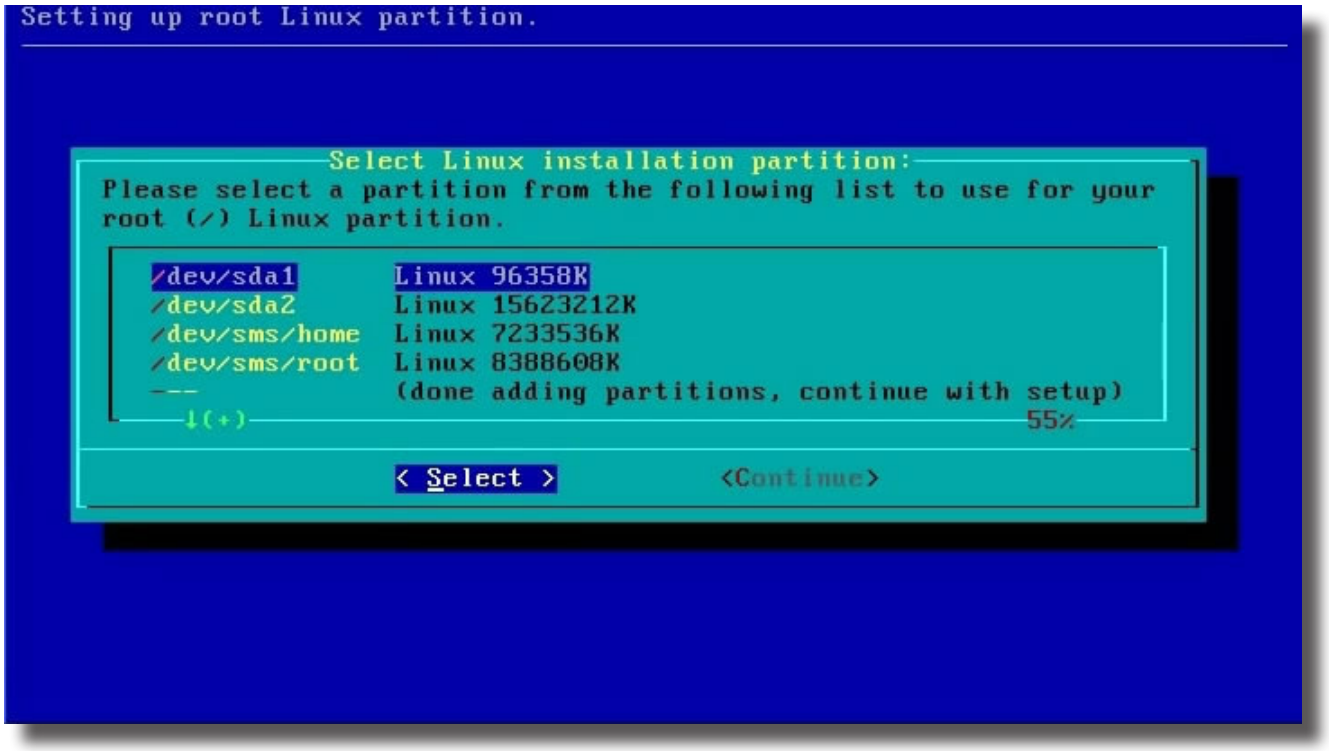
5. Scan disks for Logical Volume Groups

```
vgscan --mknodes
```

6. Activate Logical Volume Groups

```
vgchange -ay
```

Start setup and choose your swap partition as usual, and choose as root partition /dev/sms/root and for home /dev/sms/home and finally choose as boot partition /dev/sda1.
Ignore partition /dev/sda2 and continue with setup.



When it's time to choose a kernel choose a generic one, since huge kernels complains with initrd images, although they may work just fine.

When setup finish don't reboot your server, as lilo is not installed.

You need to chroot to your newly system

```
chroot /mnt
```

And edit /etc/lilo.conf to something like

```
LBA32
boot = /dev/sda
prompt
timeout = 30
compact
change-rules
reset
vga = 791
image = /boot/vmlinuz
  root = /dev/sms/root
  label = SMS
 initrd = /boot/initrd.gz
  read-only
```

The most important is to create the initrd image with

mkinitrd -c -k 2.6.35.7-smp -m ext4 -f ext4 -r /dev/sms/root -L

Where
-c clears /boot/initrd-tree and create a new one
-k your kernel
-m your modules (-m ext3,ext4,reiserfs)
-f root filesystem
-r root partition
-L add support for LVM in initrd.

SMS generic kernels have built in support for ext2 ext3 ext4 and jfs.

run lilo and ignore the warnings.
exit and reboot your server.

```
root@slackware:/# lilo
Warning: '/proc/partitions' does not match '/dev' directory structure.
    Name change: '/dev/dm-0' -> '/dev/mapper/sms-root'
Warning: Name change: '/dev/dm-1' -> '/dev/mapper/sms-home'
Added SMS *
2 warnings were issued.
root@slackware:/# _
```

2.3.1 Resizing LVM partitions.

To increase the size of a Logical Volume, let's say /home directory

```
/dev/mapper/sms-home  1.5G   36M  1.4G   3% /home
```

Assuming you have the appropriate space, check with vgdisplay <vgroupname>

```
root@sms:~# vgdisplay sms|grep Free
 Free  PE / Size       75 / 400.00 MiB
```

And continue with the command lvresize

```
root@sms:~# lvresize -L 1.6G /dev/sms/home
  Rounding up size to full physical extent 1.60 GiB
  Extending logical volume home to 1.60 GiB
  Logical volume home successfully resized
```

Now Logical Volume is resized but not filesystem, in our case ext4. To resize the filesystem use resize2fs.

```
root@sms:~# resize2fs -p /dev/sms/home
resize2fs 1.41.11 (14-Mar-2010)
Filesystem at /dev/sms/home is mounted on /home; on-line resizing required
old desc_blocks = 1, new_desc_blocks = 1
Performing an on-line resize of /dev/sms/home to 419840 (4k) blocks.
The filesystem on /dev/sms/home is now 419840 blocks long.
```

So now our /home increased by 100MB

```
/dev/mapper/sms-home  1.6G   36M  1.5G   3% /home
```

To decrease a Logical Volume you need first to unmount the partition, in our case /home.

```
root@sms:~# umount /home/
```

Optional you can use e2fsck to check the integrity of the filesystem.

Resize the filesystem with resize2fs like.

```
root@sms:~# resize2fs /dev/sms/home 1400M
resize2fs 1.41.11 (14-Mar-2010)
Resizing the filesystem on /dev/sms/home to 358400 (4k) blocks.
The filesystem on /dev/sms/home is now 358400 blocks long.
```

And continue with lvresize command.

```
root@sms:~# lvresize -L 1.4G /dev/sms/home
  Rounding up size to full physical extent 1.40 GiB
  WARNING: Reducing active logical volume to 1.40 GiB
  THIS MAY DESTROY YOUR DATA (filesystem etc.)
Do you really want to reduce home? [y/n]: y
  Reducing logical volume home to 1.40 GiB
  Logical volume home successfully resized
```

So our home decreased by 200MB.

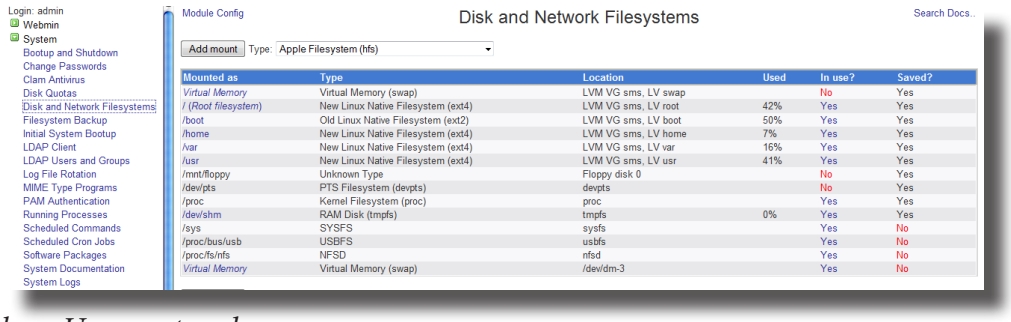
```
root@sms:~# mount /home/
/dev/mapper/sms-home  1.4G   36M  1.3G   3% /home
```

Resize filesystem tools.

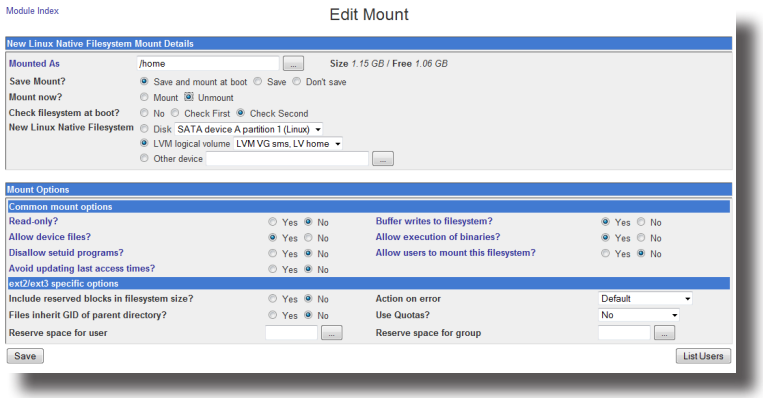
resize2fs - ext2/ext3/ext4 file system resizer
resize_reiserfs - resizer tool for the ReiserFS filesystem
xfs_growfs, xfs - expand an XFS filesystem (xfs don't support decrease)
jfs has a built-in feature in kernel's JFS driver for resizing partitions, but to increase only, not to decrease.

2.3.2 Resizing LVM partitions (Webmin).

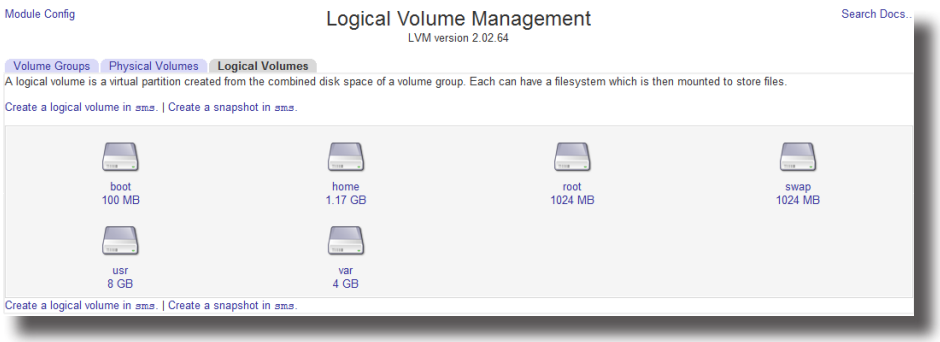
You can use Webmin to resize LVM partitions quite easily by navigating at
Webmin -> Hardware -> Logical Volume Management
To resize a volume you need to unmount it first from
Webmin -> System -> Disk and Network Filesystems

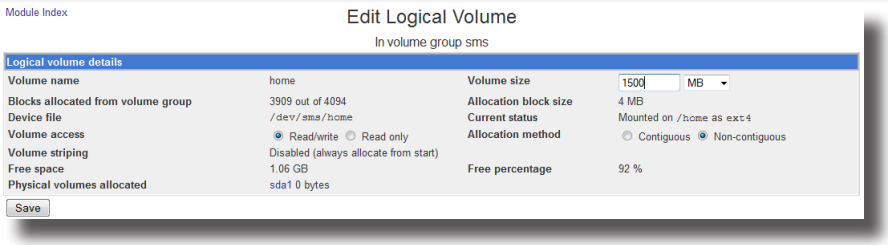


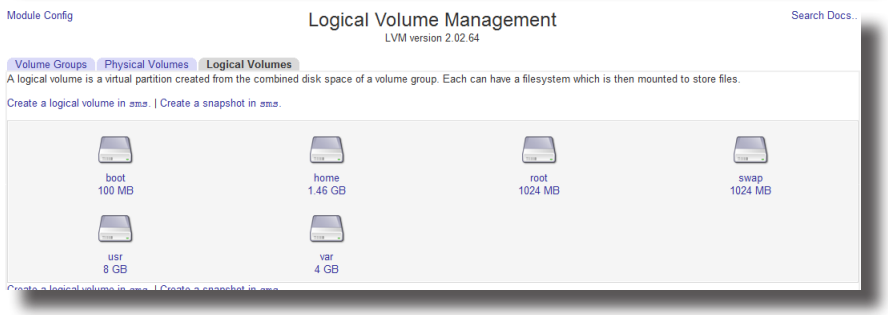
Select /home click on Unmount and press save.



Now that you unmounted home, navigate to Logical Volume Management and increase or decrease the partition







2.4 SMS RAID Setup Installation:

Here's a quick summary of the more common RAID levels:

- RAID 0: Requires 2 drives, can use more. Offers no redundancy, but improves performance by "striping", or interleaving, data between all drives. This RAID level does not help protect your data at all. If you lose one drive, all of your data will be lost.

- RAID 1: Requires 2 drives, can use more. Offers data redundancy by mirroring data across all drives. This RAID level is the simplest way to protect your data, but is not the most space-efficient method. For example, if you use 3 drives in a RAID 1 array, you gain redundancy, but you still have only 1 disk's worth of space available for use.

- RAID 5: Requires 3 drives, can use more. Offers data redundancy by storing parity data on each drive. Exactly one disk's worth of space will be used to hold parity data, so while this RAID level is heaviest on the CPU, it is also the most space efficient way of protecting your data. For example, if you use 5 drives to create a RAID 5 array, you will only lose 1 disk's worth of space (unlike RAID 1), so you will end up with 4 disk's worth of space available for use. While simple to setup, this level is not quite as straightforward as setting up RAID 1.

1. Prepare disks for RAID 1 Array (clone /dev/sda to /dev/sdb)

```
sfdisk -d /dev/sda | sfdisk /dev/sdb
```

2. Create RAID 1 Array for root partition

```
mdadm --create /dev/md0 --level 1 --raid-devices 2 /dev/sda1 /dev/sdb1
```

3. Create RAID 1 Array for swap partition

```
mdadm --create /dev/md1 --level 1 --raid-devices 2 /dev/sda2 /dev/sdb2
```

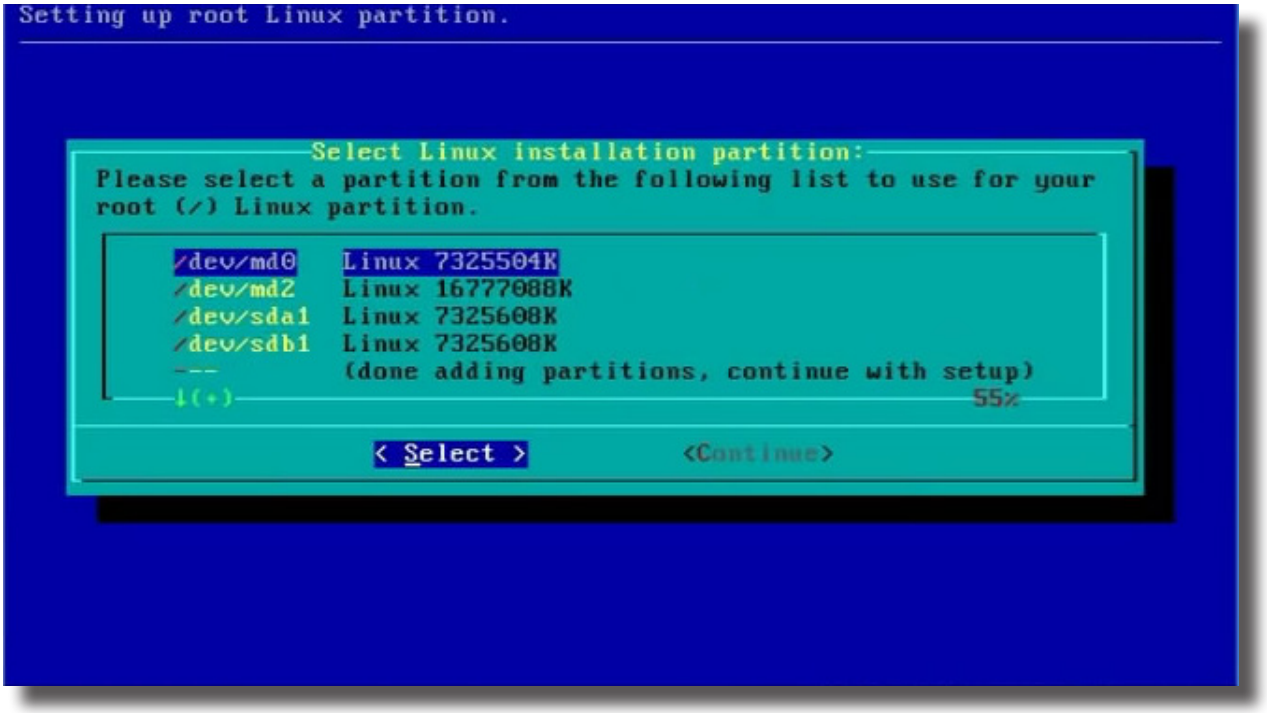
4. Setup swap area

```
mkswap /dev/md1
```

5. Create RAID 5 Array for home partition

```
mdadm --create /dev/md2 --level 5 --raid-devices 3 /dev/sdc /dev/sdd /dev/sde
```

Start setup and choose as swap partition /dev/md1, choose as root partition /dev/md0, for home /dev/md2. Ignore partition /dev/sd[ab]1 /dev/sd[ab]2 and continue with setup.



When it's time to choose a kernel choose a generic one, since huge kernels complains with initrd images, although they may work just fine.

When setup finish don't reboot your server, as lilo is not installed.

You need to chroot to your newly system

```
chroot /mnt
```

And edit /etc/lilo.conf to something like

```
append="root=/dev/md0"
raid-extra-boot = mbr-only
LBA32
boot = /dev/md0
prompt
timeout = 30
compact
change-rules
reset
vga = 791
image = /boot/vmlinuz
  root = /dev/md0
  label = SMS
 initrd = /boot/initrd.gz
  read-only
```

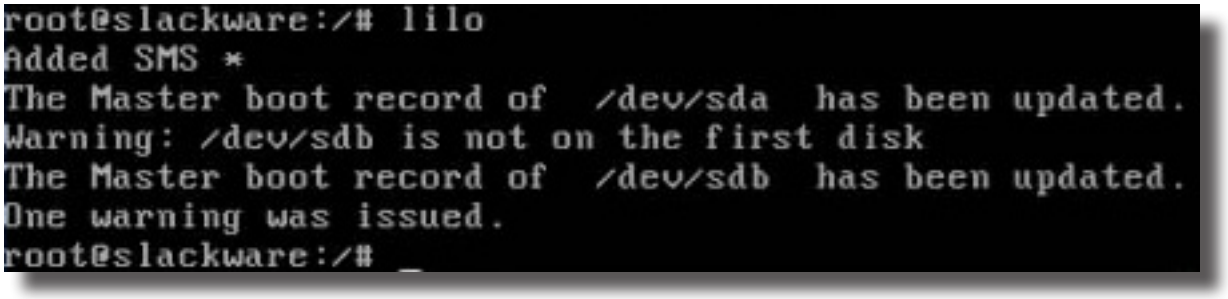
The most important is to create the initrd image with

```
mkinitrd -c -k 2.6.35.7-smp -m ext4 -f ext4 -r /dev/md0 -R
```

Where
-c clears /boot/initrd-tree and create a new one
-k your kernel
-m your modules (-m ext3,ext4,reiserfs you might need a controller)
-f root filesystem
-r root partition
-R add support for RAID in initrd.

SMS generic kernels have built in support for ext2 ext3 ext4 and jfs.

run lilo and ignore the warnings.
exit and reboot your server.



2.4.1 Using a huge kernel:

You can use a huge kernel without an initrd.bz if you like, but to recognize raid arrays at boot you need to edit /etc/rc.d/rc.S and add between udev and lvm

```
progressbar 10
# Re-assemble RAID volumes:
/sbin/mdadm -As
```

And final type to add your arrays in mdadm.conf

```
mdadm -Es >> /etc/mdadm.conf
```

2.4.2 Notification of degraded arrays:

You can add in your /etc/rc.d/rc.local

```
/sbin/mdadm -Ff /dev/md[0-9] -i /var/run/mdadm.pid
```

So by adding your mail address in /etc/mdadm.conf, you will be notified when arrays get degraded. Or you can have it all in one line

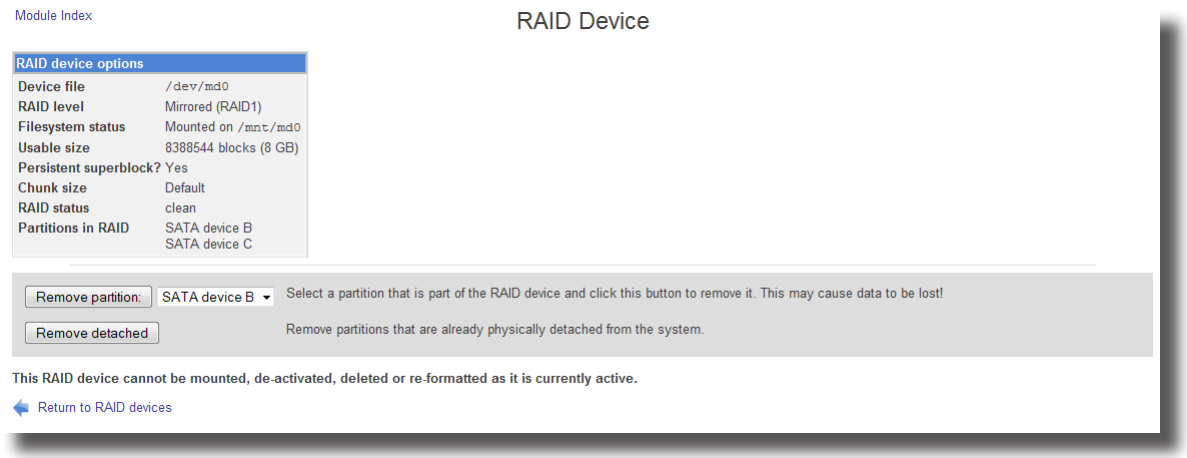
```
/sbin/mdadm -Ff /dev/md[0-9] -i /var/run/mdadm.pid -m root@locahost
```

2.4.3 RAID Status.

To check the status of your RAID arrays just do:

```
mdadm -D  /dev/md0
```

Or you can use Webmin at
Webmin -> Hardware -> Linux RAID



2.5 Upgrading SMS: 

Upgrading SMS it's not so difficult or dangerous as it may sound.
In order to upgrade SMS to latest version, most of the times requires to put you machine into single user mode level. Specifically when there is a new glibc or kernel, but it never hurts switching to single user mode every time we upgrade. You can switch to single user mode by editing /etc/inittab and change

`id:3:initdefault:` to `id:1:initdefault:`

you can also do

```
sed -e "s,id:3:initdefault:,id:1:initdefault:,g" -i /etc/inittab
```

Or a more direct approach is to press [tab] at lilo prompt and enter:

```
boot: sms 1
```

The upgrade procedure is quite simple

1. Put your machine in single user mode
2. Upgrade pkgtools and glibc-solibs before other packages
3. Use upgradepkg --install-new for the rest.
*4. Fix your *.new config files under /etc, some of them need attention*
5. Update your initrd (if you use one).
5. Don't forget to run lilo
6. Return your machine to multi-user mode

Reboot your machine and mount SMS.Native.CD

```
mount /dev/sr0 /mnt/cdrom
```

and upgrade first glibc packages from slackware/a slackware/l

```
upgradepkg /mnt/cdrom/slackware/{a,l}/glibc*
```

Tip: If your version is too old and you get errors you need to upgrade pkgtools, xz and tar from slackware/a.

Continue upgrading the rest of the packages with

```
upgradepkg --install-new /mnt/cdrom/slackware/{a,ap,d,l,n}/*.t?z
```

If you have install devel series or x-kde-addon you can upgrade them too as well.
Once you finish upgrading packages restore /etc/inittab run level to multi-user mode

```
sed -e "s,id:1:initdefault:,id:3:initdefault:,g" -i /etc/inittab
```

*In this stage you need to take care all the *.new files placed in /etc and sub directories, especially system startup scripts /etc/rc.d/rc.S /etc/rc.d/rc.M. If you are upgrading from a quite older SMS version you might want to look for applications changes e.g dovecot-1.x has it's configs in /etc/dovecot while dovecot-2.x has them in /etc/dovecot*

*Once you finish with all *.new files.*
Type 'lilo' and reboot.

2.6 Installing SMS.LiveCD to USB.

To install SMS.Live.CD ti your USB stick, just copy the contents of the ISO (boot, sms) to your usb stick and run "boot/bootinst.sh" for linux or "boot/bootinst.bat" for windows.

3. Configuration

3.1 Default passwords.

Basic setups are already being done and Superb Mini Server is ready out of the box...
Default Passwords are:
root account password is toor
administrator account password is toor
Webmin Login: admin : admin (https://[yoursmsserver]:10000)
TorrentFlux Login: admin : admin (http://[yoursmsserver[/tflux)

Samba Shares are:
Samba @ SMS path=/var/smb/samba/ (Read/write to everyone)
Faxes path=/var/spool/hylafax/recvg/ (Read/write to everyone)
TorrentFlux Downloads path=/var/smb/tflux_downloads/ (Read/write to everyone)
Placed under Workgroup = WORKGROUP

FTP Accounts are:
webftp:webftp path=/srv/httpd/htdocs/ (Read)
ftpuser:ftpuser path=/var/ftp/ (Read/write)

WebERP demo account is: admin : weberp (http://[yoursmsserver]/webERP)
PHPLdapAdmin: toor (http://[yoursmsserver]/phpldapadmin)
AvantFax: admin : password (http://[yoursmsserver[/avantfax)

3.2 Securing and optimizing your SMS server.

Well you install SMS and all working as you should. What's next?
Either your server will be online or in a local network you should secure you server, from unauthorized access.

3.2.1 Local accounts.

First action is to change the default passwords for root and administrator user.
Just type "passwd youruser" e.g. "passwd administrator"
Do the same for ftp users.
Tip: Always use complex passwords, and when adding users for mail or ftp and you are not going to use them for shell login always disable the shell e.g /bin/false or /dev/null

To change account passwords from webmin navigate to
Webmin->System->Users and Groups
Select your user and alter password.

3.2.2 MySQL.

Another mandatory action is to add a password to mysql root user, by default mysql has no root password.
To do that type "mysql -u root mysql"and set password with the command

```
mysql>  set password for root@localhost=password("yourpasword");
```

To set a root password from webmin navigate to
Webmin->Servers->MySQL Database Server->User Permissions
And change password for root and for other users as well if you want.
Tip: Don't forget to change credentials in web apps configuration files when you alter other users.

3.2.3 Webmin.

Webmin needs your attention too, since it has the power to alter your system.
Change the password of admin user and select the networks that allowed to have access to it, you can also change the port which listen to(default :10000.)

To change login password navigate at
Webmin->Webmin Users->admin
and change it's password.

To change or restrict access to webmin, navigate at
Webmin->Webmin Configuration->Ports and Addresses
and alter Port number.
Webmin->Webmin Configuration->IP Access Control
to restrict access.

3.2.4 Web Applications.

If you finished with local users, it's time to handle the web applications
TorrentFlux
WebERP
PhpLDAPAdmin
PHPMyAdmin
HTTP access (.htaccess .htpasswd)
If you are not using any of the above delete their folders or disable their login.
If you have install applications from /extra such as avantfax do the same.

3.2.5 Samba.

Increasing security you can change samba security from share to user so a login will required for accessing the shares, and add

hosts allow = 192.168.1. 127. 10.0.0.

for restricting outside networks for accessing your samba shares.

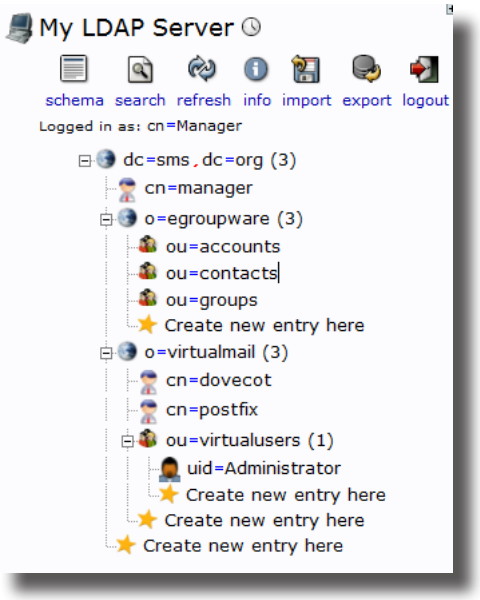
3.2.6 OpenLDAP.

Openldap needs a change of password too.
Just type "slappasswd" enter your password, copy/paste your password in slapd.conf e.g.

rootpw {SSHA}CMsEaYBDv2oO0TVpeCr0cwQVfTBm8/pJ

Don't forget to change the password for ldap entries too (by default all are "toor")
cn=Manager
cn=dovecot
cn=postfix
uid=administrator

To change passwords, login in phpldapadmin (http://<yourserver>/phpldapadmin) and you should see all the entries listed. Selecting one will show you info about entry and a field named password. Enter your new password and select it's encryption from the drop down list, for instance SSHA, and press the "Update Object" button. It will ask you to confirm changes, press once again the "Update Object" button for changes to apply.



3.2.7 Services.

You have changed all the passwords by now and you server it's secure, what about speeding and lighten our server.
For doing that you must disable the services you are not using e.g mail server or fax server or print services.
There are startup scripts run by system like rc.S and rc.M when starting, rc.6 upon shutdown or reboot, rc.K when starting in single user mode, and rc.4 when the system runs in graphical run level (KDM or XDM).
All services have a startup script placed under /etc/rc.d/ named usually like rc.<name of the service>.
To disable a service make the startup script not executable by changing it's permissions.
e.g. "chmod -x /etc/rc.d/rc.script"
In some cases such as hylafax disabling the service it's not enough.
For disabling Hylafax do:

```
chmod -x /etc/rc.d/rc.hylafax
```

remove or comment faxgetty dialup line in /etc/inittab manually or with

```
sed -e "s/d1:12345:respawn:/#d1:12345:respawn:/g" -i /etc/inittab
```

Remove hylafax cronjobs from /etc/cron.hourly & /etc/cron.daily.
Reboot your server.

For Disabling Mail System do:

```
chmod -x /etc/rc.d/{rc.postfix,rc.spamd,rc.mailscanner,rc.clamav,rc.dovecot,rc.saslauthd,rc.sqlgrey}
```

To disable openldap do:

```
chmod -x /etc/rc.d/rc.openldap
```

To disable proftpd (ftp server) do:

```
chmod -x /etc/rc.d/rc.proftpd
```

To disable CUPS (print server) do:

```
chmod -x /etc/rc.d/rc.cups
```

For disabling Samba do:

```
chmod -x /etc/rc.d/rc.samba
```

For disabling webserver (HTTPD) do:

```
chmod -x /etc/rc.d/rc.httpd
```

For disabling mysql do:

```
chmod -x /etc/rc.d/rc.mysql
```

For disabling SSH server do:

```
chmod -x /etc/rc.d/rc.sshd
```

For disabling AFP server do:

```
chmod -x /etc/rc.d/rc.atalk
```

For disabling fail2ban server (not recommended) do:

```
chmod -x /etc/rc.d/rc.fail2ban
```

Tip: For enabling/disabling services you can use "pkgtool" script, select to rerun installation scripts and select services.

You can also switch from SMS's advance mail server configuration to plain mail server (sendmail) using "sms-chooseMTA.sh" script. The script will switch mailserver from postfix to sendmail and vice versa.
For doing it manual just do

```
chmod -x /etc/rc.d/rc.postfix
chmod +x /etc/rc.d/rc.sendmail
cp /usr/sbin/sendmail    /usr/sbin.sendmail.postfix
cp /usr/sbin/sendmail.original    /usr/sbin.sendmail
postfix  stop
/etc/rc.d/rc.sendmail start
```

3.2.8 Securing and optimizing your SMS Server (GUI)

SMS has a GUI through sms_config kmdr tools to secure and optimize your server.
The GUI intended for clean installations of SMS with default passwords, although some part or all might work in older installations.
/usr/share/applications/sms_secure.kmdr is a part of sms_config.kmdr shortcut available in root's Desktop.

3.2.8.1 Manage Unix Users & Logins

Here you can alter all password and shells at once or individual for default users.
Assuming you already add password for root during installation, they are users administrator and two ftp users, webftp and ftpuser.
By checking the box "delete user" and pressing apply you delete the user(s).

If you don't want to alter anything click next.

3.2.8.2 Manage OpenLDAP Users

Here you can change passwords for openldap's root and cn=Manager which should be the same.
The method used to change password for root is the same as resetting the password so it should work for older installations too.
Also you can change password for
uid=Administrator,ou=virtualusers,o=virtualmail,dc=[yourhost],dc=[yourdomain]

If you don't want to alter anything click next.

3.2.8.3 Manage MySQL Users

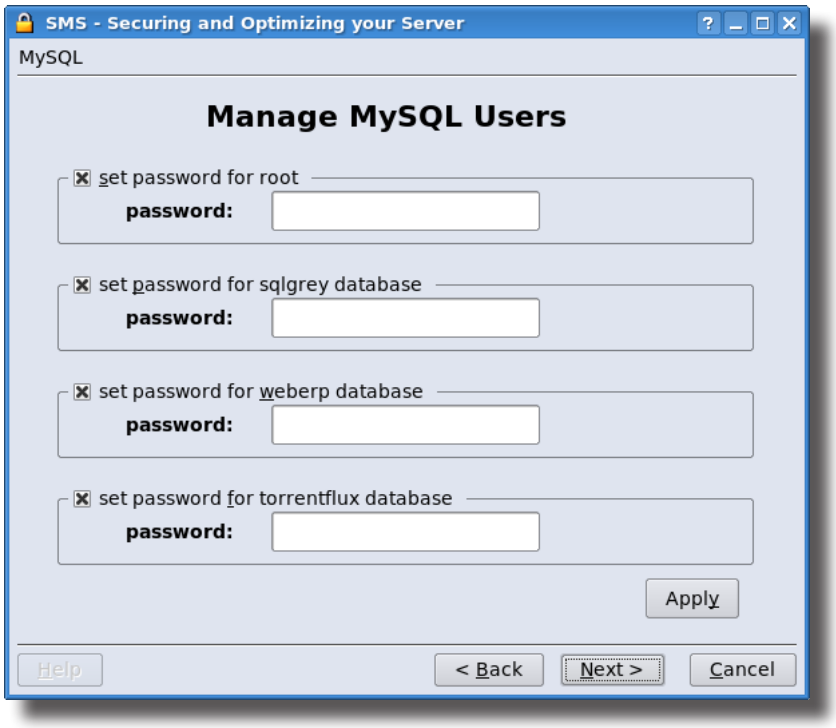
Here you can change mysql's root password and alter default database passwords for sqlgrey, weberp and torrentflux. Weberp and sqlgrey are by default disabled, unless database passwords are the defaults so they will be enabled. Changing passwords for weberp and sqlgrey update their configs too with new password.

Torrentflux's database by default runs by root, so by selecting a password, the wizard, create a user and grant privileges to him for torrentflux database, and update it's configuration.

Changing mysql's root password is mandatory, for altering weberp,sqlgrey and torrentflux databases, as it uses the new mysql's root password.
The method for changing mysql's root password is the same as resetting so it should work in older installations too.

If you don't intend to use weberp or torrentflux unchecked them, and later in the wizard, you will be prompt to delete them.

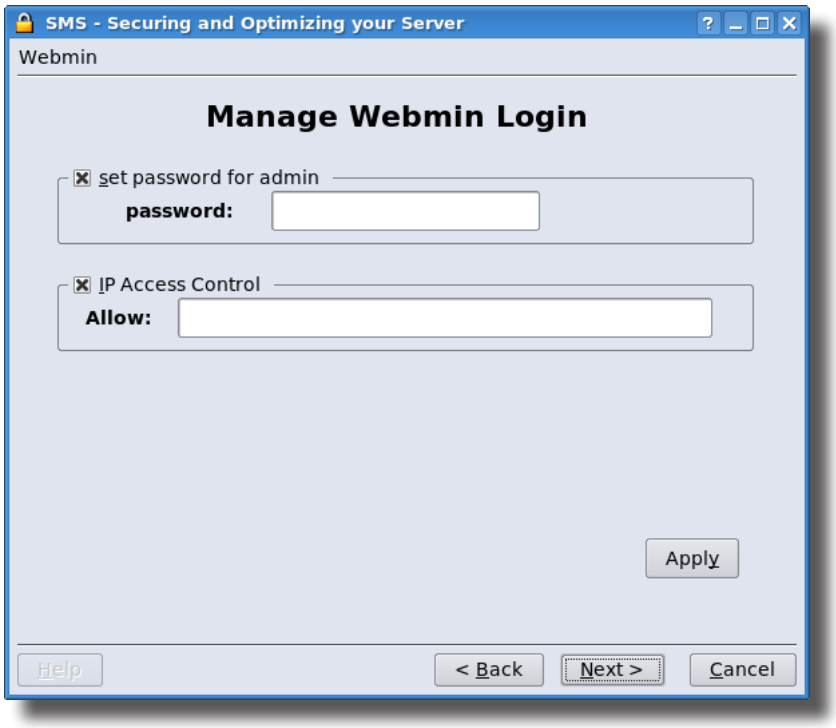
If you don't want to alter anything click next.



3.2.8.4 Manage Webmin Login

Here you can change password for default Webmin admin and restrict service to private network.
The method for changing the password is the same as resetting.
Script only look for user admin, so if have added other administrators use sms_tools for changing their passwords.

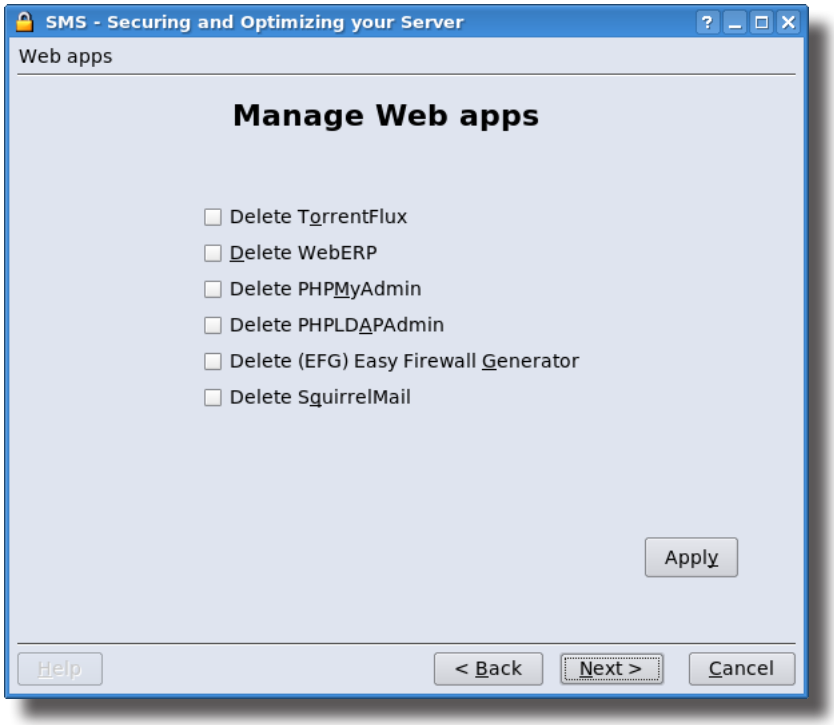
If you don't want to alter anything click next.



3.2.8.5 Manage Web apps

If you intend to not use webERP or Torrentflux check them and click apply to delete their directories and mysql databases.
You can also delete other web apps in /var/www/htdocs/ such as PHPMyAdmin, PHPLDAPAdmin, Squirrelmail and EFG (Easy Firewall Generator)/

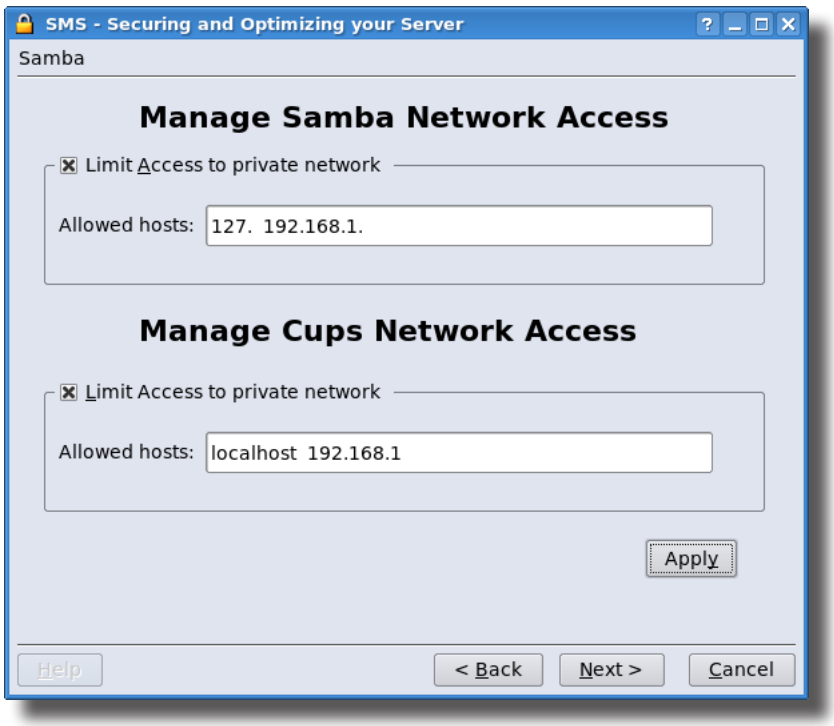
If you don't want to alter anything click next



3.2.8.6 Manage Samba & CUPS Network Access

Here you can limit access of samba shares to your private network only, by default samba listen to all subnets. This is intend to work in clean installations only or if default smb.conf is present.
CUPS is also listen to all subnets by default (Allow All), this will work only if default cupsd.conf is present.

If you don't want to alter anything click next.



3.2.8.7 Manage Services

Here you can manage which services you want to start at boot (chmod [-+]x rc.script).
Dovecot, postfix, cyrus-sasl, spamassassin, mailscanner, sqlgrey and clamav are part of Mail service.
Clamav has an option of it's own, if you intend to use it with samba.

Even if you enable some services, such as NFS or TightVNC if they aren't configured they will not run.

If you don't want to alter anything click next.

Configuration Completed

Well you don't have to do anything here, unless you want to go back.
Just click finish and reboot your server.

3.2.9 Securing and optimizing your SMS Server (CLI)

SMS has a CLI wizard through smsconfig script to secure and optimize your SMS server.
The wizard intended for clean installations of SMS with default passwords, although some part or all might work in older installations.

1. To start the wizard issue from a terminal “smsconfig secure”

```
root@sms:~# smsconfig secure

+-----------------------------------------------------+
|     SMS - Securing and Optimizing your Server       |
+-----------------------------------------------------+
| This script will help you to change all default     |
| passwords for all default users and services.       |
| Press any key to continue or (Ctrl+C) to exit.      |
+-----------------------------------------------------+
```

2. Next step the script ask you to change the password for user "administrator"

```
Changing password for administrator
Enter the new password (minimum of 5 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
```

3. Next you will be asked to disable shell access to users (that is intended for old installations too).

```
+-------------------------------+
| Manage users login:           |
+-------------------------------+
spamduser
vmail
dovecot
administrator
Do you want to disable shell access to those users? (y/n):
```

4. The next screen ask you, how to treat default ftp accounts "ftpuser" and "webftp".

```
+-------------------------------+
| Manage ftp users:             |
+-------------------------------+
(Y)Change passwords (D)Delete all ftp users (S)Skip
```

5. If openldap is running, the wizard prompt you to change passwords for openldap root and uid=administrator

```
+------------------------------+
| Manage OpenLDAP users:       |
+------------------------------+
Enter new password for OpenLDAP's root:
Enter new password for uid=Administrator,ou=virtualusers,o=virtualmail,dc=sms,dc=org:
```

6. If MySQL is running the wizard ask you to manage MySQL users. The script search config files of weberp and sqlgey and if default passwords found, it will prompt you to change those too.

```
+------------------------------+
| Manage MySQL users:          |
+------------------------------+
Enter new password for MySQL's root:
Choose password for database sqlgrey:
Choose password for database weberp:
```

7. Next the wizard prompt you to change default Webmin admin password.

```
+------------------------------+
| Manage Webmin login:         |
+------------------------------+
Choose password for admin user:
```

8. Next screen you have to choose what to do with web apps, weberp and torrentflux

```
+------------------------------+
| Manage Web apps:             |
+------------------------------+
Are you going to use Torrentflux? (y/n)
n
Are you going to use webERP? (y/n)
n
```

9. Next you have to manage samba network access, by default script search your subnet and apply it as default.

```
+----------------------------------+
| Manage Samba network access:     |
+----------------------------------+
Do you want to limit samba access to your network only [192.168.1.]? (y/n)
```

10. Well that's it, "smsconfig secure" is much simpler than sms_secure.kmdr GUI, but since you are already using a terminal, you might not need that anyway.

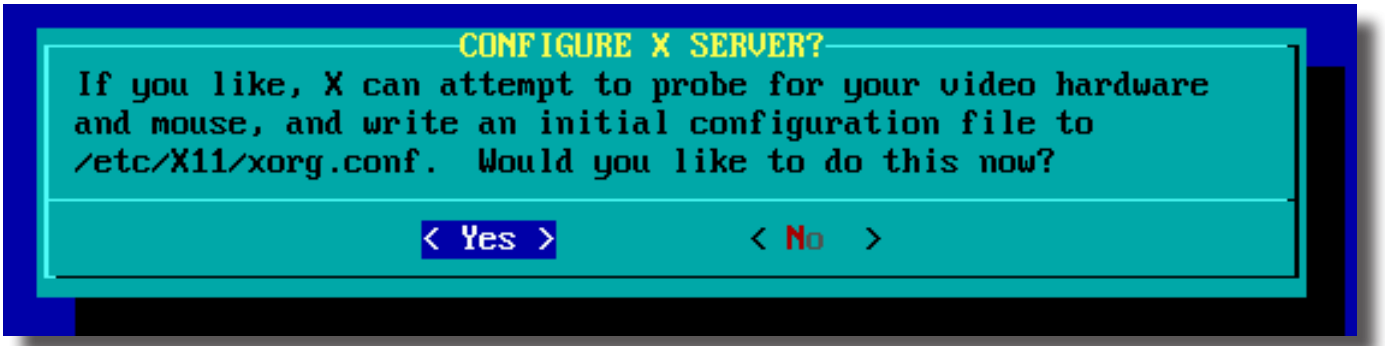
```
+------------------------------------------------+
|           Configuration completed              |
+------------------------------------------------+
```

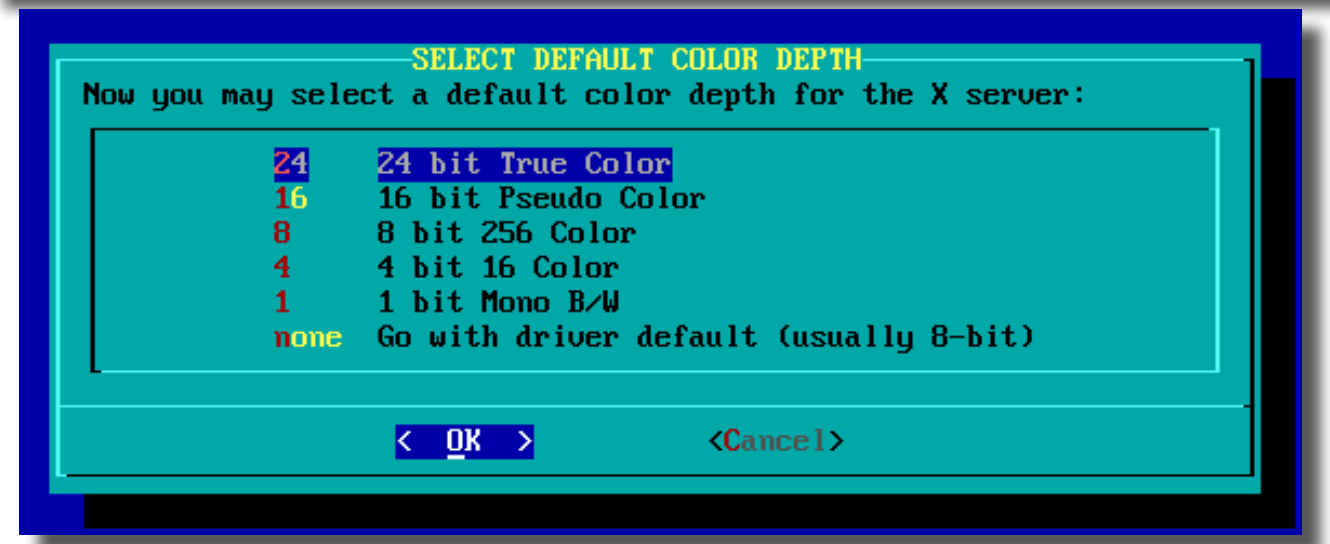
3.3 Configuring X.

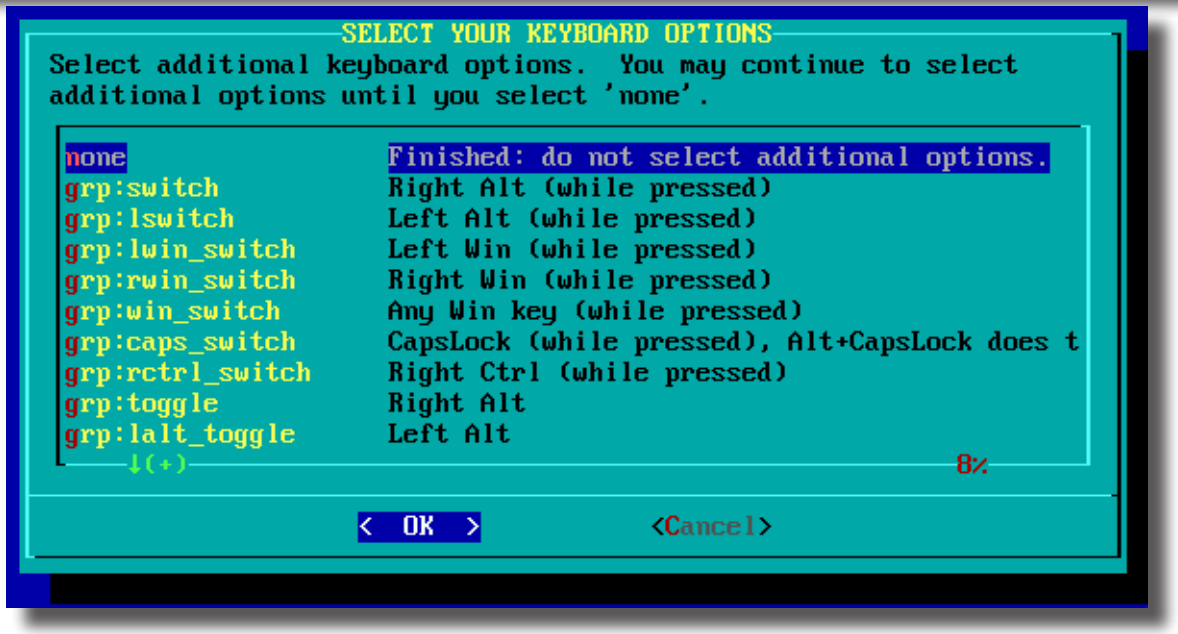
There are three ways to configure X Window system. The first is by a fully automated way through 'xconf' script. All you have to do is to type "xconf", and start "startx" to start KDE.

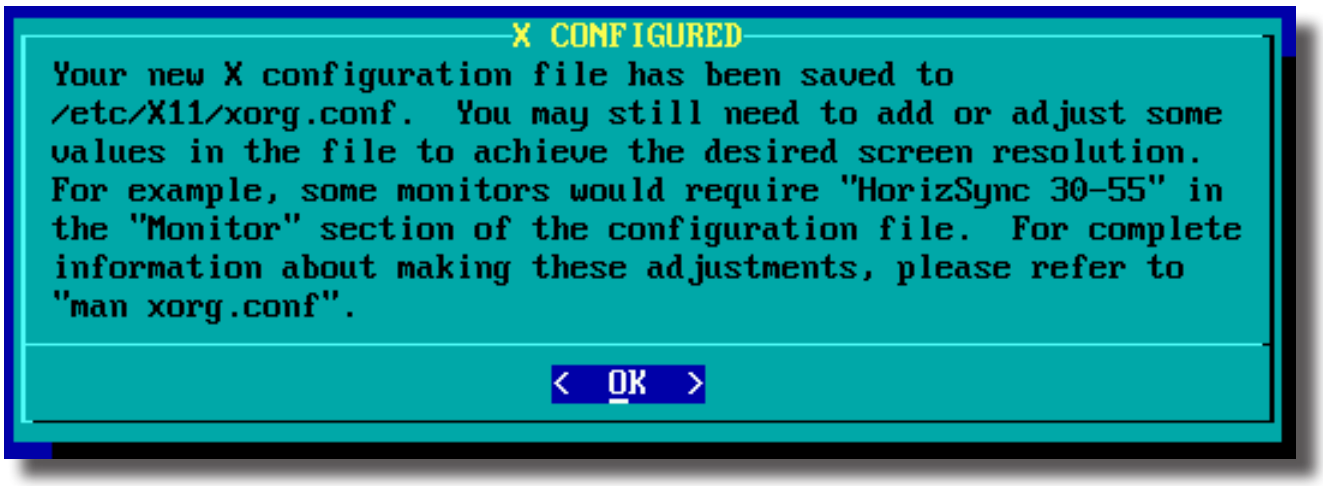
```
root@sms:~# xconf
Trying to autoconfigure Xwindow system, please wait...
creating /etc/X11/xorg.conf...
all done. Run startx now.
If you get black screen or Out-Of-Sync, hit Ctrl+Alt+NumPlus few times
root@sms:~#
```

The second way is Slackware's semi-automated way through "xorgsetup" command. Once you type "xorgsetup" you will be guided through a few steps configuration windows.

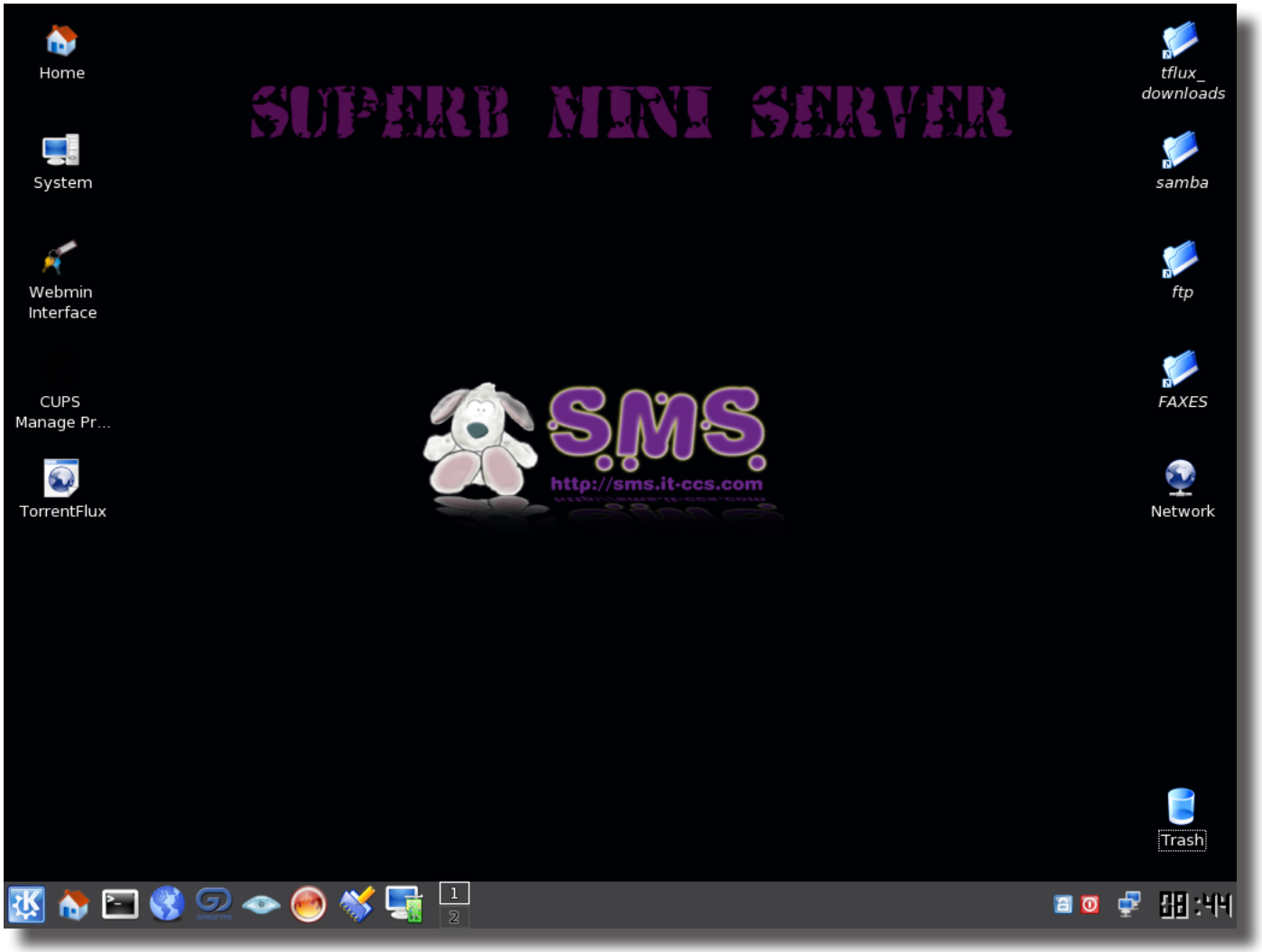








The third way is by typing "xorgconfig", a menu driven frontend with more detailed configuration, but you probably never need to run it. Once you finish with X config run "startx" to launch KDE.



4. Adding and Removing packages.

SMS uses Slackware's package management (pkgtools).

To install packages use'installpkg'

```
installpkg  package.tgz
```

To upgrade an existing package use 'upgradepkg'

```
upgradepkg  package.tgz
```

If the upgrade package has a different name you can use

```
upgradepkg  oldpackage.tgz%newpackage.tgz
```

To remove a package use 'removepkg', all installed packages have an entry in /var/log/packages/.

```
removepkg   /var/log/packages/package
```

4.1 Installing SMS extra packages.

To install development packages mount SMS.Native.CD-Install.iso or download 'slackware/devel' directory from http://sms.it-ccs.com/isos/SMS-Current/ and do

```
installpkg   slackware/devel/*.tgz
```

or you can use the tagfile and do

```
cd slackware/devel/
./install-packages
```

To install a bootsplash kernel, just do

```
installpkg   extra/bootsplash_kernels/bootsplash-kernel.tgz
```

open /etc/lilo.conf and uncomment the following lines or add them if missing

```
append = "splash = verbose"
initrd = /boot/initrd.splash   ( under label= SMS )
```

and run 'lilo' for changes to apply.

If you want to install a generic-bootsplash kernel you have to create an initrd image with your modules e.g.

```
mkinitrd -c -k 2.6.37.6-smp -m reiserfs  -f reiserfs -r /dev/sda1
```

copy your bootsplash in initrd-tree and recreate the intitrd.gz

```
cp  /boot/initrd.splash  /boot/initrd-tree/;  mkinitrd;
```

open /etc/lilo.conf and uncomment the following lines or add them if missing

```
append = "splash = verbose"
initrd = /boot/initrd.gz   ( under label= SMS )
```

and run 'lilo' for changes to apply.

4.2 slapt-get.

Another way for installing, removing, upgrading packages in SMS, is slapt-get. To use slapt-get run

slapt-get --add-keys (to install GPG key, you only need to do that once)
slapt-get -u (to update list of packages, default from http://sms.it-ccs.com/SMS-Current)
slapt-get -i <name of packages> (to install a package)
slapt-get --remove <name of packages> (to remove a package)
slapt-get --available (to get a list of available packages and a mark wether they are installed or not)
slapt-get --upgrade (to upgrade all installed packages)
slapt-get --install-set <series> (to install a set of series e.g. devel)
slapt-get --ignore-excludes (To install excluded packages specified in /etc/slapt-get/slapt-getrc)

Tip: To install devel series with slapt-get you must add "--ignore-excludes" as kernel- packages are excluded by default.*

4.3 Compile from source.

If an application you want is not available as a package, you can build it from source. To be able to compile apps you must have a full install of SMS or at least devel series.

There are sites that provide slackware packages such as slacky.eu, and linuxpackages.net. If you don't find your package on any site look for a slackbuild. Slackbuild is a script that will build your package from source to a slackware package. You can search for slackbuilds at slackbuilds.org or google for it.

Assuming there isn't a slackbuild for your package, download the source of your application and read it's documentation about building your package from source. Usually the source tarball contains a README and an INSTALL file with all the info you want for building it from source or even creating your slackbuild.
Once you untar your source, by running "./configure --help" you will get a full list of build options.

Slackware's build options that should be always the same are

```
./configure --prefix=/usr \
--sysconfdir=/etc \
--libdir=/usr/lib64 \   (if you are building a package in SMS64)
--localstatedir=/var \
--build=$ARCH-slackware-linux (where $ARCH is i486 or i686 or x86_64)
```

Also CFLAGS and CXXFLAGS , depending on your ARCH (output of `arch`) should be

```
-O2 -march=i486 -mtune=i686  (arch i486)
-O2 -march=i686 -mtune=i686 (arch i686)
-O2 -fPIC  (arch x86_64)
```

So a configure command for i486 architecture should look like

```
CFLAGS="-O2 -march=i486 -mtune=i686" \
CXXFLAGS="-O2 -march=i486 -mtune=i686" \
./configure --prefix=/usr \
--sysconfdir=/etc \
--libdir=/usr/lib \
--localstatedir=/var \
--build=i486-slackware-linux  \
--your options ...
```

And a configure command for x86_64 architecture should look like

```
CFLAGS="-O2 -fPIC " \
CXXFLAGS="-O2 -fPIC "  \
./configure --prefix=/usr \
--sysconfdir=/etc \
--libdir=/usr/lib64 \
--localstatedir=/var \
--build=x86_64-slackware-linux  \
--your options ...
```

Once the configure finish without errors, type "make" to start building your package. If all goes well and there are no errors your app is ready for installation. It's wise to create packages so you don't mess up you system.
To create the package you must install your app to a folder. To do that create a folder (e.g. /tmp/pkg) and run

```
make install DESTDIR=/tmp/pkg
```

Navigate to /tmp/pkg (cd /tmp/pkg) and use "makepkg" to create a slackware package with the command.

```
makepkg -l y -c n -p  /root/[appname]-[version]-[arch]-[buildnumber].txz
```

You package is ready for installation in your root directory, and you can install it with "installpkg"

```
installpkg  /root/ [appname]-[version]-[arch]-[buildnumber].txz
```

Tip: You can alternative try slapt-src (http://software.jaos.org/#slapt-src) a utility to make querying, retrieving, and building slackbuilds for slackware.

5. Using Superb Mini Server.

5.1.1.1 SMS Live CD.

SMS.LiveCD 's purpose is for testing and demonstrating SMS's features, although it includes a text installer, it's NOT recommended for installing SMS. Upon booting you will get a prompt to select the mode you want to boot.

Boot modes are:

Boot From Hard Disk:

Don't boot from SMS at all, but boot from hard disk (device 0x80).

Run SMS:

Run SMS normally with all servers enabled.

SMS Copy To RAM:

Run SMS the same like above, but first copy all data to RAM to get huge speed (needs >512MB)

SMS Light:

Run SMS with all servers disabled.

SMS PXE Server:

Run SMS normally, but run a PXE server at the same time. This will allow you to boot SMS on other computers over network.

SMS Cluster Master Node:

Run SMS as a Computational Cluster Master node, it will create user cluster and export it's home directory via nfs. It will start a PXE boot server for booting slave nodes.

Run Memtest utility:

Don't start SMS at all, but rather run the MemTest utility to diagnose your computer's RAM for possible errors

Boot modes use boot parameters (also known as cheatcodes) to affect the boot process. For instance boot mode "SMS Light" use cheatcode 'light', or boot mode "SMS Copy To RAM" use cheatcode 'copy2ram'. By pressing TAB over a selection you will see the command line with all the options.

5.1.1 SMS.LiveCD boot parameters (cheatcodes).

What are the boot parameters?

Boot parameters (also known as cheatcodes) are used to affect the booting process of SMS.
Some of them are common for all Linuxes, others are specific for SMS only.

How to use boot parameters?
Choose your desired menu entry and hit Tab key, which will allow you to edit the command line.
Write your desired boot argument at the end of command line.

For instance boot mode "SMS PXE Server" has the following command line (/proc/cmdline).
`/boot/vmlinuz  APPEND vga=791 initrd=/boot/initrd.gz ramdisk_size=8888 root=/dev/ram0 rw pxeboot`
So by adding boot parameter 'light' in the above command line, will start a PXE boot server with all the services disabled, and by additionally adding 'ssh' will enable SSH server only.

Available boot parameters (cheatcodes)

nocd => Don't mount any cdroms at all during the boot process.
nohd => Don't mount any harddisks at all.
nodma => Disable DMA for all CD-ROMs and disks.
toram => Copy all files (all required and optional modules) to RAM.
copy2ram => Copy all files (all required and optional modules) to RAM.
light => Disable all services.
pxeboot => Enable PXE Boot Server.
clmaster => Enable Cluster master node.
luks => Support for LUKS encrypted volumes.
smb => Enable samba file server.
nosmb => Disable samba file server.
afp => Enable AFP server.
ssh => Enable sshd server.
nossh => Disable sshd server.
ftp => Enable FTP server.
noftp => Disable FTP server.
httpd => Enable httpd web server.
nohttpd => Disable httpd web server.
ldap => Enable OpenLDAP server.
noldap => Disable OpenLDAP server.
mysql => Enable MySQL server.
nomysql => Disable MySQL server.
cups => Enable Print server.
nocups => Disable Print server.
mail => Enable SMS Mail server.
nomail => Disable SMS Mail server.
fax => Enable Fax server (hylafax).
nofax => Disable Fax server (hylafax)
debug => Enable debug mode (and start bash several times during the boot) hit Ctrl+D to continue booting.
from=path => Load SMS data from different place instead of the boot device.(from=/dev/sda1/SMS.LiveCD.iso)
changes=/path/ => Tell SMS to use a device, a file or a directory for storing changes.
changes=/sms/smssave.dat
changes=/dev/sda2/file.dat
changes=/dev/sda3/

5.1.2 SMS Config GUI Tools

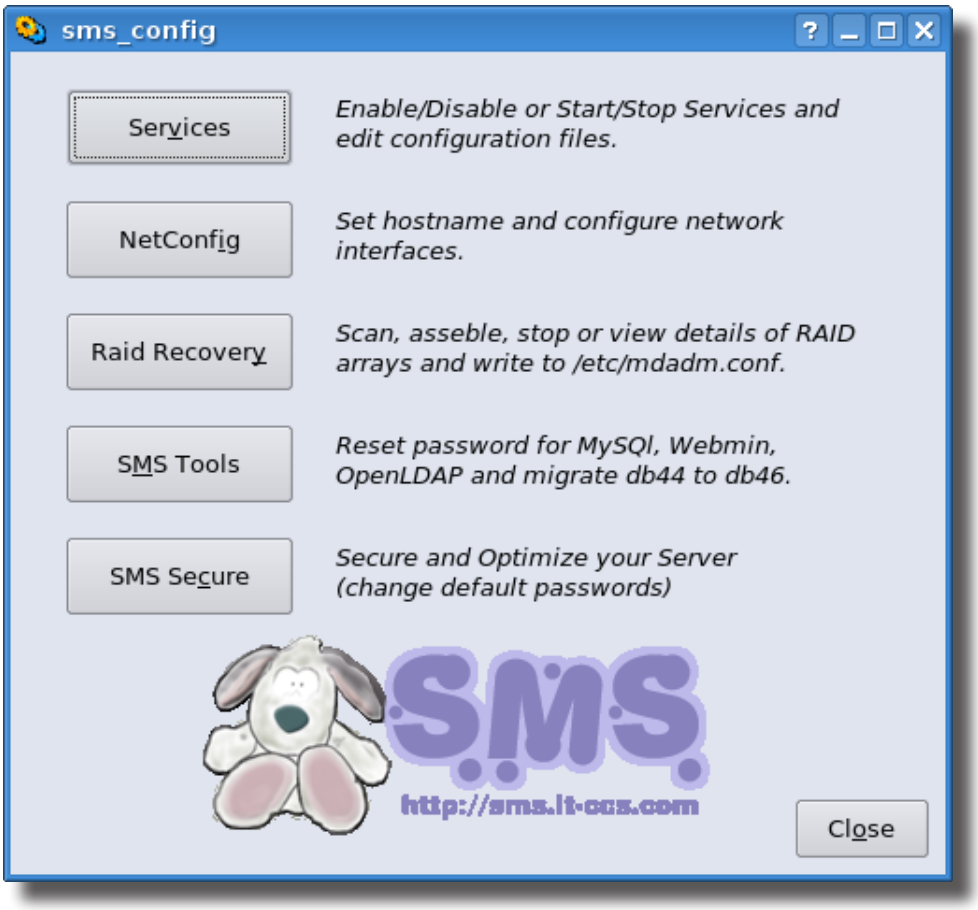
SMS have some GUI tools to make configuration easier for novice users.
Those tools are Kommander scripts (kmdr) and require x-kde-addon.
Scripts are placed in /usr/share/applications and they are part of sms-scripts package.
Kmdr-executor and libs are part of x-kde-addon package.

By default when you make a full install of SMS and login to KDE, you will find a desktop shortcut called sms_config.

With sms_config you can configure your hostname.domain ang network interfaces, manage services, resetting services and recover and manage RAID arrays.

SMS_Config

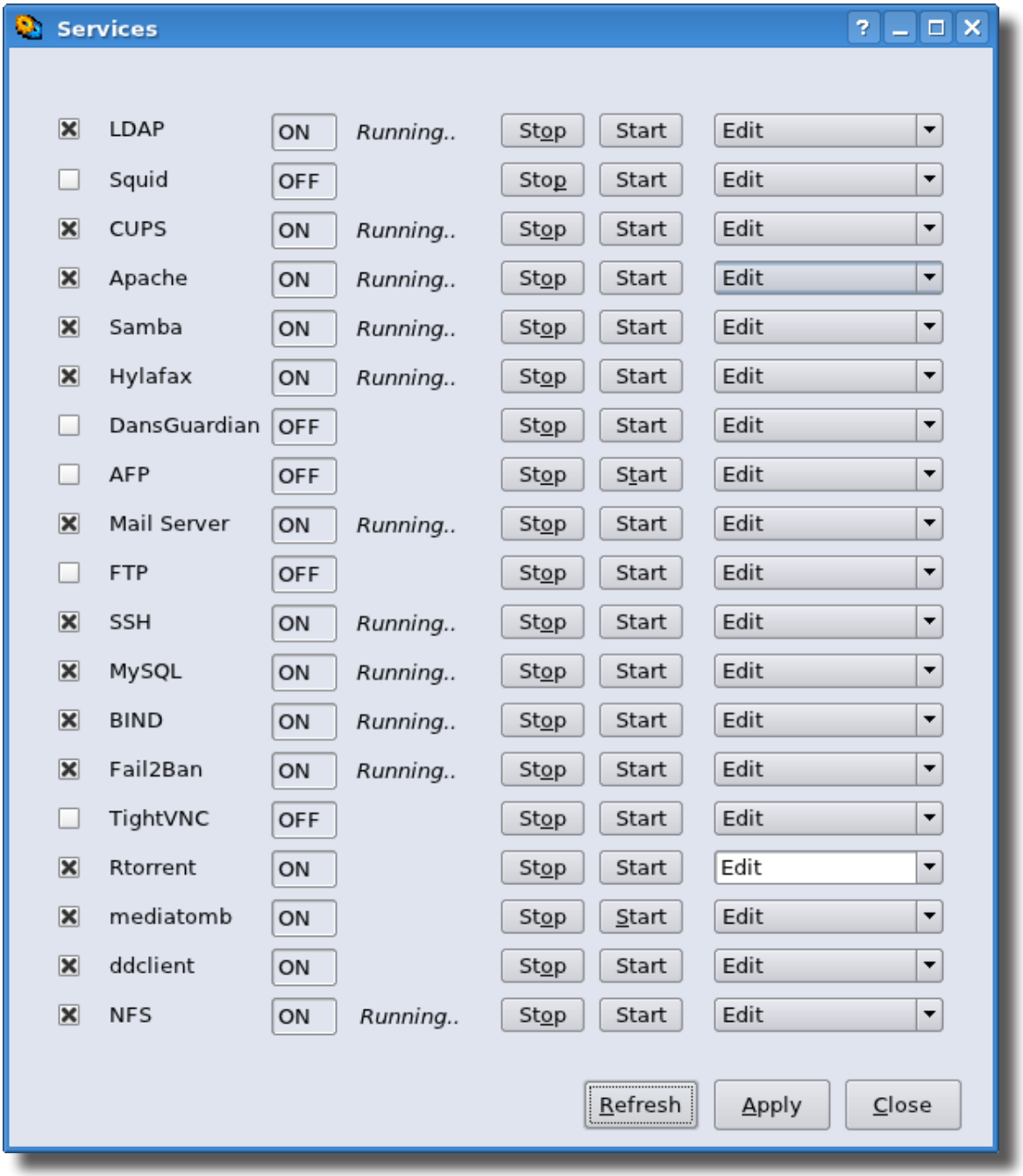
Double click the sms_config shortcut on the Desktop to open SMS Config GUI tools.



Services

First button of sms_config will open services dialog where you can see which services are enable or not (on/off) and if they are running.
You can also stop or start a service and edit configuration files of each service with kwrite.

By ticking the checkbox and clicking "Apply" you enable or disable a service (chmod +x /etc/rc.d/rc.service)
By pressing stop or start you either stop or start a service (/etc/rc.d/rc.service stop/start)
By selecting a file through drop down box you edit a configuration file with kwrite editor.



NetConfig

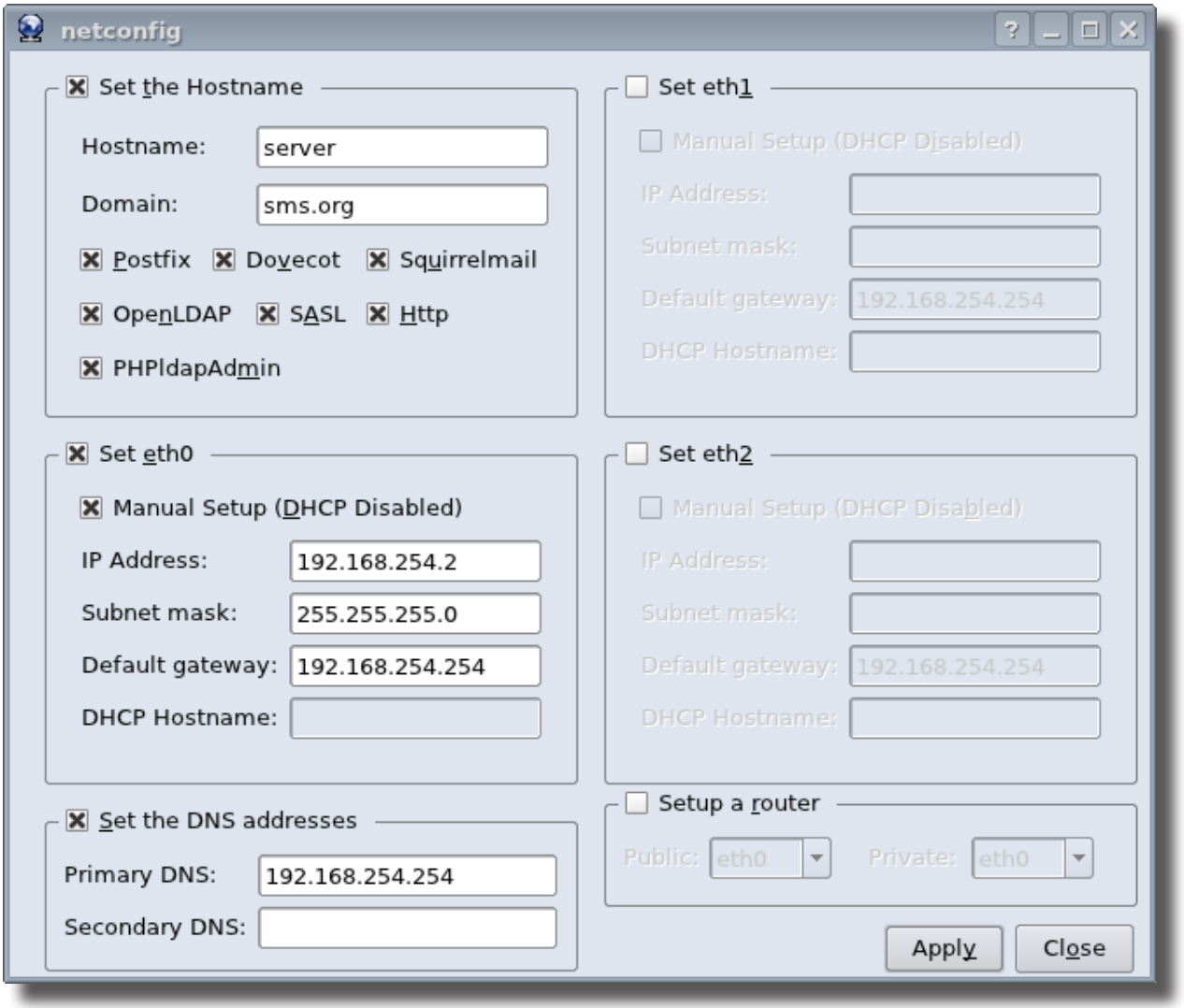
The second button of sms_config will open the netconfig dialog, which is pretty much the same as if you were running /sbin/netconfig or /sbin/netconfig-lcd, but with some extras.

Setup your hostname.domain and for which services, you want to configure your new hostname.domain.

Add your network preferences for each interface including IP Address, Subnet mask , default gateway and DNS settings.

You can also add a router configuration, by checking the appropriate checkbox and selecting which interface will be the external network (WAN) and which one will be the internal network (LAN).

If you don't want to set all options, just uncheck what you don't want.



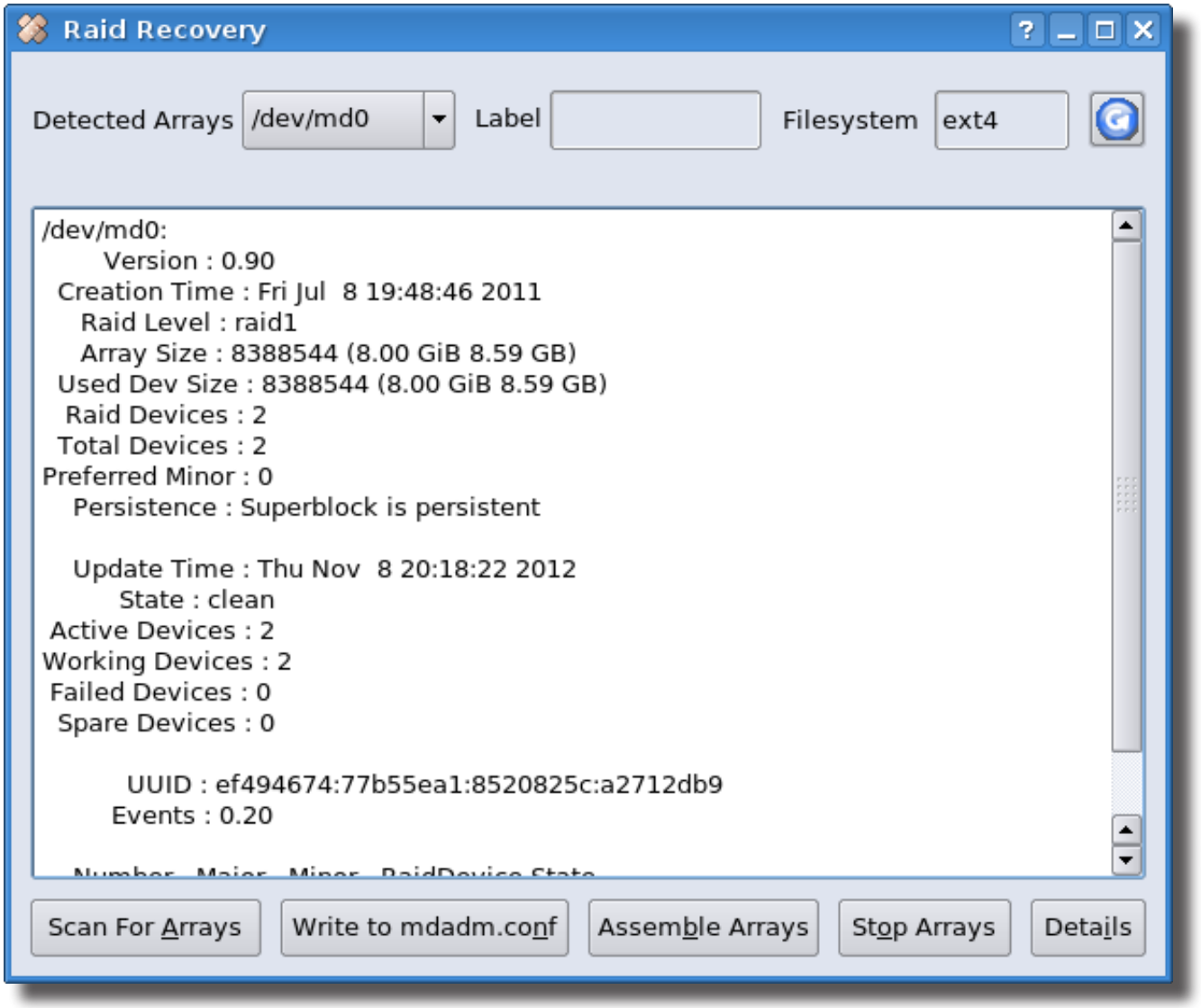
Raid Recovery

Raid recovery, is a safe GUI tool for Scan, assemble, stop, or view details about a RAID array.
Don't have any advanced options, deliberately, for not damaging a RAID array, by accident.

If a RAID array is mounted you will be warned to unmount your array before proceeding to recovery.

"Scan for arrays" search for RAID arrays and by pressing "Write to mdadm.conf" writes the information in /etc/mdadm.conf.

If a RAID array discovered you can try to assemble it be pressing "assemble arrays".
To view details of a RAID array click on "Details"



SMS Tools

SMS Tools provide an easy way to reset MySQL root password, or reset/change Webmin administrators password.
You can also migrate db44 to db46 like sms-migrate.sh and you can change/reset OpenLDAP root password.

The GUI will ask you for the old OpenLDAP's root password to change cn=Manager,dc=hostname,dc=domain, but even if you don't provide one, password will be changed whatever, since it will alter /etc/openldap/slapd.conf.

5.1.3 SMS Config CLI Tools (smsconfig)

smsconfig is a powerful CLI script for managing services, resetting passwords and performing various tasks. By typing "smsconfig" you get a help dialog about usage of the script, and information of each command.

It's usage is quite simple

smsconfig [service] [options]

```
root@sms:~# smsconfig
Usage:  /sbin/smsconfig  [services]  [options]

Services:
  asterisk, pbx                 Asterisk PBX
  avahi                         Local network service discovery
  bind                          Bind DNS server and utilities
  clamav, av                    ClamAV antivirus
  cups                          CUPS print server
  dansguardian, dguard          Web content filter
  dnsmasq                       Light DNS and DHCP server
  dovecot, imap                 Dovecot IMAP/POP server
  fail2ban, f2b                 Bans IP that makes too many password failures
  freeradius, radius            Radius protocol server
  httpd, apache, ht             Apache HTTP server
  hylafax, fax                  Hylafax FAX server
  lighttpd, lhttp               Light, fast, and secure webserver
  mailscanner                   Antivirus and antispam filter
  mysql, sql                    SQL-based relational database server
  nagios                        Nagios monitoring software
  netatalk, atalk, afp          Appletalk file and print server
  nfs                           Network File System daemon
  nginx                         Nginx [engine x] (http/imap/pop3 proxy)
  ntp                           Network Time Protocol daemon
  openldap, ldap                OpenLDAP server
  openvpn, vpn                  Secure IP tunnel daemon
  postfix, mail                 Postfix mail server
  postgresql, pgsql             Object-relational database management system
  proftpd, ftp                  FTP server
  rtorrent, rtor                RTorrent torrent client
  samba, smb                    SMB file and print server
  sasl                          Simple Authentication and Security Layer
  sendmail                      Mail transfer agent (by default disabled)
                                SMS by default use Postfix mail server
  spamassassin, spamd           Perl e-mail filter to identify spam
  squid                         Squid Web proxy server and web cache
  ssh                           SSHD Secure Shell daemon
  transmission, tmission        Transmission-daemon torrent client
  vnc, tightvnc                 VNC server
  apache-tomcat, tomcat         Java servlet container
  mediatomb                     Mediatomb UPnP Media Server
  kmotion                       Web based video surveillance solution
  varnish                       Varnish Cache, a web application accelerator
  vsftpd, sftp                  Very secure FTP Daemon
  webmin, wm                    Webmin Management.
  nss-pam-ldap, pamldap         LDAP NSS/PAM module

Options:
  start                         start the service
  stop                          stop the service
  on                            enable service (chmod +x)
  off                           disable service(chmod -x)
  status, st                    return status of the service
  config, cf                    edit configuration files

Tools:
  help, -help, --help           Display this help and exit
  version, -V                   Display version of the script
  info, sys                     Print system information
  status, all, st               Return the status of all services
  mysqlreset                    Reset MySQL root password
  webminreset                   Reset Webmin login
  ldapreset                     Reset/Change OpenLDAP password
  netconfig                     Set hostname and configure network interfaces
  router                        Set up a router
  inetd                         Edit the BSD Internet super-daemon (inetd.conf)
  secure                        Secure and Optimize your server (change default passwords)
```

smsconfig status

Status option return the status of each service, either stopped, running and it's running PID(s), disabled and N/A if service isn't installed.
So by running smsconfig status or smsconfig st or smsconfig all, you will get the status of all services.

```
root@sms:~# smsconfig status
TYPE     SERVICE          STATUS         PID(s)
Service  asterisk         [ N/A ]
Service  avahi            [ N/A ]
Service  bind             [ Running  ] [ 3569 ]
Service  clamav           [ Stopped  ]
Service  cups             [ Running  ] [ 3653 ]
Service  dansguardian     [ Disabled ]
Service  dnsmasq          [ Disabled ]
Service  dovecot          [ Running  ] [ 4145 ]
Service  fail2ban         [ Running  ] [ 4176 ]
Service  freeradius       [ N/A ]
Service  fuppes           [ N/A ]
Service  httpd            [ Running  ] [ 4004 4003 4002 4001 4000 3983 ]
Service  hylafax          [ Running  ] [ 4021 ]
Service  lighttpd         [ N/A ]
Service  mailscanner      [ Running  ] [ 4133 4156 4157 4158 4166 6593 ]
Service  mysql            [ Running  ] [ 3981 ]
Service  netatalk         [ Disabled ]
Service  nfs              [ Stopped  ]
Service  nginx            [ N/A ]
Service  ntp              [ Disabled ]
Service  openldap         [ Running  ] [ 4025 ]
Service  openvpn          [ Stopped  ]
Service  postfix          [ Running  ] [ 4111 ]
Service  postgresql       [ N/A ]
Service  proftpd          [ Running  ] [ 4194 ]
Service  rtorrent         [ N/A ]
Service  samba            [ Running  ] [ 4165 4162 ]
Service  sasl             [ Running  ] [ 3668 3667 3666 3665 3663 ]
Service  sendmail         [ Disabled ]
Service  spamassasin      [ Running  ] [ 4155 4159 4160 ]
Service  squid            [ Disabled ]
Service  ssh              [ Running  ] [ 5478 3562 ]
Service  transmission     [ N/A ]
Service  vnc              [ Disabled ]
Service  apache-tomcat    [ N/A ]
Service  mediatomb        [ N/A ]
Service  kmotion          [ N/A ]
Service  varnish          [ Disabled ]
Service  vsftpd (inetd)   [ Disabled ]
Service  nss-pam-ldap     [ N/A ]
```

Services Options

Every service has options, that you can pass in smsconfig. By typing "smsconfig [service]" you will get a list of options that are available. Common options are:

```
  start         start the service
  stop          stop the service
  on            enable service (chmod +x)
  off           disable service(chmod -x)
  status, st    return status of the service
  config, cf    edit configuration files
```

Some services have extra options like cyrus-sasl:

```
root@sms:~# smsconfig sasl
Usage:  /sbin/smsconfig sasl [option]

Options:
  start         start the service
  stop          stop the service
  on            enable service (chmod +x)
  off           disable service(chmod -x)
  status, st    return status of the service
  ldap          switch to ldap authentication
  shadow        switch to shadow authentication
  config, cf    edit configuration files
```

or vsftpd:

```
root@sms:~# smsconfig vsftpd
Usage:  /sbin/smsconfig vsftpd [option]

Options:
  start         start the vsftpd daemon (standalone mode)
  stop          stop the vsftpd daemon (standalone mode)
  on            enable service & restart inetd
  off           disable service & restart inetd
  daemon        switch to daemon (standalone mode)
  inetd         switch to inetd
  status, st    return status of the service
  config, cf    edit configuration files
```

```
root@sms:~# smsconfig sasl st
Service  sasl           [ Running  ] [ 3955 3954 3953 3952 3951 ]
root@sms:~# smsconfig vsftpd st
Service  vsftpd (inetd) [ Disabled ]
root@sms:~# smsconfig nfs st
Service  nfs            [ Stopped  ]
root@sms:~# smsconfig apache cf
1) httpd.conf          4) mod_php.conf        7) Exit
2) php.ini             5) httpd-ssl.conf
3) mod_perl.conf       6) httpd-vhosts.conf
Please Select a conf to edit:
```

smsconfig tools

Beside services smscofig provide some tools for performing various tasks, similar to SMS-Config GUI Tools. Available tools are:

```
help, -help, --help          Display this help and exit
version, -V                  Display version of the script
status, all. st              Return the status of all services
mysqlreset                   Reset MySQL root password
webminreset                  Reset Webmin login
ldapreset                    Reset/Change OpenLDAP password
netconfig                    Set hostname and configure network interfaces
router                       Set up a router
inetd                        Edit the BSD Internet super-daemon (inetd.conf)
```

```
root@sms:~# smsconfig  -V
smsconfig v0.4.2
SMS Version: SMS 2.0.1


root@sms:~# smsconfig router
Select external network (WAN):
Available interfaces: eth1 eth0
eth0
Select internal network (LAN):
Available interfaces: eth1
eth1

+-------------------------------------------+
|       /etc/rc.d/rc.firewall created       |
+-------------------------------------------+
| Your router is ready, to start it run     |
| /etc/rc.d/rc.firewall or reboot your server |
+-------------------------------------------+

root@sms:~# smsconfig webminreset
1) admin
2) Exit
Please Select a user:1
Enter new password for admin
Updated password of Webmin user admin

root@sms:~# smsconfig info
smsconfig v0.4.2
SMS Version: SMS 2.0.1

System Information:
Hostname:       sms.org  sms
Network eth1:   192.168.0.12
Network eth0:   192.168.1.20
Architecture:   i686 3.2.33-lcd
CPU:            Pentium(R) Dual-Core  CPU      E5300  @ 2.60GHz
Memory:         Total: 490MB  Free: 54MB

Filesystem      Size  Used Avail Use% Mounted on
aufs            295M   27M  268M  10% /
tmpfs           246M     0  246M   0% /dev/shm
/dev/sr0        4.1G  4.1G     0 100% /mnt/sr0
/dev/md0        7.9G  146M  7.4G   2% /mnt/md0
```

5.2 Network configuration.

If you have a DHCP server enabled in your local network ,SMS will acquire an IP address automatically. In the case where a DHCP server isn't available and you need to configure your ethernet cards automatically, first check if your ethernet cards are automatically detected by checking /proc/net/dev or by running 'ifconfig'

```
root@sms:~# grep eth /proc/net/dev
 eth0: 3484894    6598    0   0   0   0 0 0 109113    1621    0    0    0    0    0    0

root@sms:~# ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 08:00:27:D8:0A:66
          inet6 addr: fe80::a00:27ff:fed8:a66/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:6663 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1640 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3489162 (3.3 Mb)  TX bytes:110703 (108.1 Kb)
```

Slackware configures Ethernet interfaces through /etc/rc.d/rc.inet1.conf. So by changing rc.inet1.conf to

```
# Config information for eth0:
IPADDR[0]="192.168.2.11"
NETMASK[0]="255.255.255..0"
USE_DHCP[0]=""
DHCP_HOSTNAME[0]=""

# Default gateway IP address:
GATEWAY="192.168.2.1"
```

For changes to apply run

```
root@sms:~# /etc/rc.d/rc.inet1 eth0_restart
root@sms:~# ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 08:00:27:D8:0A:66
          inet addr:192.168.2.11  Bcast:192.168.2.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fed8:a66/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:8506 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2110 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3612599 (3.4 Mb)  TX bytes:164526 (160.6 Kb)
```

DNS servers are listed in /etc/resolv.conf. To manually add name servers edit /etc/resolv.conf and enter e.g.

```
nameserver 192.168.2.1
nameserver 208.67.222.222
nameserver 208.67.220.220
```

Antoher way to configure manually your eth0 is by using 'ifconfig' like

```
root@sms:~# ifconfig eth0 192.168.2.11 netmask 255.255.255.0 broadcast 192.168.2.255
```

The same way you can add virtual network interfaces like

```
root@sms:~# ifconfig eth0:1 192.168.1.1 netmask 255.255.255.0 broadcast 192.168.1.255
```

If you want virtual interfaces to automatically start at boot place an entry in /erc/rc.d/rc.local like:

```
/sbin/ifconfig eth0:1 192.168.1.1 netmask 255.255.255.0 broadcast 192.168.1.255
```

5.3 Basic linux commands.

To get help about unix commands use the 'man' command to read manual pages, like "man ls" or use '--help' like "ls ---help" , or if a command is built in like 'cd' use "help cd".

5.3.1 ls

This command lists files in a directory. Windows and DOS users will notice its similarity to the dir command. By itself, ls(1) will list the files in the current directory. To see what's in your root directory, you could run:

```
root@sms:~# ls /
bin/  boot/  dev/  etc/  home/  lib/  mnt/  opt/  proc/  root/  sbin/  srv/  sys/  tmp/  usr/  var/
```

Directories get a slash at the end of the name, executable files get an asterisk at the end of the name, and so on. ls can also be used to get other statistics on files. For example, to see the creation dates, owners, and permissions, you would look at a long listing:

```
root@sms:~# ls -lh /
total 4.0K
drwxr-xr-x   2     root root    2.6K   Apr 23 16:18 bin/
drwxr-xr-x   6     root root    4.0K   Apr 27 20:39 boot/
drwxr-xr-x   15    root root    5.3K   Jun 19 13:35 dev/
drwxr-xr-x   79    root root    300    Jun 19 13:35 etc/
drwxr-xr-x   4     root root    47     Feb 28 06:03 home/
drwxr-xr-x   7     root root    60     Apr 25 14:03 lib/
drwxr-xr-x   4     root root    80     Jun 19  2011 mnt/
drwxr-xr-x   3     root root    74     Apr 23 16:17 opt/
dr-xr-xr-x   116   root root    0      Jun 19  2011 proc/
drwx--x---   6     root root    139    Oct  6  1997 root/
drwxr-xr-x   2     root root    4.4K   May 12  2010 sbin/
drwxr-xr-x   2     root root    39     Apr  8  2007 srv/
drwxr-xr-x   13    root root    0      Jun 19  2011 sys/
drwxrwxrwt   5     root root    100    Jun 19 13:35 tmp/
drwxr-xr-x   27    root root    80     Mar 25 12:29 usr/
drwxr-xr-x   36    root root    200    Apr 25 14:03 var/
```

Suppose you want to get a listing of the hidden files in a directory. This command will do just that:

```
root@sms:~# ls -a
./  ../  .bash_history  .cpan/  .gnupg/  .hplip.conf  .kde/  .rnd  .spamassassin/
```

Files beginning with a period (called dot files) are hidden when you run ls.
You will only see them if you pass the -a option. There are many more options that can be found in the manual page. Don't forget that you can combine options that you pass to ls.

5.3.2 cd

The cd command is used to change working directories. You simply type cd followed by the path name to change to. Here are some examples:

```
root@sms:/# cd /var/smb/
root@sms:/var/smb# cd smb
-bash: cd: smb: No such file or directory
root@sms:/var/smb# ls
samba/  tflux_downloads/
root@sms:/var/smb# cd samba/
root@sms:/var/smb/samba# pwd
/var/smb/samba
```

5.3.3 pwd

The pwd command is used to show your current location (parrent working dir). To use the pwd command just type pwd. For example:

```
root@sms:~# cd /boot/
root@sms:/boot# pwd
/boot
root@sms:/boot# cd /tmp/
root@sms:/tmp# pwd
/tmp
```

5.3.4 less

Pager utilities are useful for reading long outputs (through pipe) or files in a terminal for instance try

```
ls -lha  /usr/bin/ | less
```

or opening a file with

```
less  README.txt
```

Use the arrows up/down and page up/page down to scroll the output, press Q to quit.

5.3.5 cat

cat is short for "concatenate". It was originally designed to merge text files into one, but can be used for many other purposes. To merge two or more files into one, you simply list the files after the cat command and then redirect the new output to a file. cat works with standard input and standard output, so you have to use the shell redirection characters. For example:

```
cat file1 file2 file3 > bigfile
```

One can also use cat to display files. Many people cat text files through the more or less commands, like this:

```
cat file1 | less
```

That will display the file1 file and pipe it through the less command so that you only get one screen at a time. Another common use for cat is copying files. You can copy any file around with cat, like this:

```
cat /bin/bash > ~/mybash
```

The /bin/bash program is copied to your home directory and named mybash.
cat has many uses and the ones discussed here are just a few. Since cat makes extensive use of standard input and standard output, it is ideal for use in shell scripts or part of other complex commands.

5.3.6 echo

The echo(1) command displays the specified text on the screen. You specify the string to display after the echo command. By default echo will display the string and print a newline character after it.
You can pass the -n option to suppress the printing of the newline. The -e option will cause echo to search for escape characters in the string and execute them.

5.3.7 touch

touch(1) is used to change the timestamp on a file. You can change access timestamps and modification timestamps with this command. If the file specified does not exist, touch will create a zero length file with the name specified.

5.3.8 mkdir rmdir

mkdir(1) will create a new directory. You simply specify the directory to create when you run mkdir. This example creates the 'newfolder' directory in the current directory.

```
root@sms:~# mkdir newfolder
```

The -p option will tell mkdir to make any parent directories. For instance the command "mkdir /root/new/new2" will fail if /root/new doesn't exist but with the -p option it will create /root/new first and then /root/new/new2.

```
root@sms:~# mkdir /root/new/new1
mkdir: cannot create directory `/root/new/new1': No such file or directory
root@sms:~# mkdir -p /root/new/new1
root@sms:~# ls /root/new/
new1/
```

Exactly the opposite way rmdir works. To remove a dir use rmdir and to remove the dir and parent directories you pass the -p option.
Tip: be vary careful when using "rmdir -p" as you may harm your system.

5.3.9 cp

cp(1) copies files. DOS users will notice its similarity to the copy command. There are many options for cp , so you should have a look at the man page before using it. Basic usage for a simple file copy

```
cp file /tmp/     or    cp file /tmp/file2
```

To copy a directory

```
cp -r  /root/new     /tmp/    (copy directory new to /tmp)
```

5.3.10 mv

mv(1) moves files and directories from one place to another, but can be used to rename files or directories as well.

```
      mv file /tmp/      (move file to /tmp)
mv  file1  file2   (rename file1 to file2
```

5.3.11 rm

rm(1) removes files and directory trees. DOS users will notice the similarity to both the del and deltree commands. rm can be very dangerous if you do not watch yourself.

```
rm  file1   (delete file1)
rm -f  file1      (force the deletion of file1)
rm -r /root/new/  (delete the directory /root/new/)
```

5.3.12 ln

ln(1) is used to create links between files. These links can be either hard links or soft (symbolic) links by passing the -s option.

```
ln  -s   /var/smb/samba   ~/samba   (create a symlink of  /var/smb/samba to our
home directory)
```

5.3.13 grep

grep is used to for searching files or output for a pattern and return it.

```
root@sms:~# grep “192.168.2.11” /etc/rc.d/rc.inet1.conf
IPADDR[0]=”192.168.2.11”
```

or

```
root@sms:~# ps aux|grep sshd
root      3308  0.0  0.2   4208  1012 ?        Ss   14:18   0:00 /usr/sbin/sshd
```

grep has a lot of powerful options, use “grep --help” or “man grep” to find them.

5.3.14 find

The find(1) command allows the user to search the filesystem with a rich collection of search predicates. Users may specify a search with filename wildcards, ranges of modification or creation times, or other advanced properties.

```
root@sms:~# find  /var/ -name samba
/var/spool/samba
/var/cache/samba
/var/log/samba
/var/smb/samba
```

5.3.15 which, whereis

which is usually used to locate a program quickly. It just searches your PATH and returns the first instance it finds and the directory path to it.

whereis(1) command works similar to which, but can also search for man pages and source files.

```
root@sms:~# which grep
/usr/bin/grep
```

5.3.16 ps

ps is like activity monitor in OS X or task manager in Windows, it list all the running processes. For instance if we want to check if smbd process is running we can type:

```
root@sms:~# ps aux|grep smbd
root      4305  1.0  0.7  17992  3680 ?        Ss   18:17   0:00 /usr/sbin/smbd
-D
root      4307  0.0  0.2  17992  1196 ?        S    18:17   0:00 /usr/sbin/smbd
-D
```

More info on how ps works and what are those numbers in man pages.

In the output above we hold that a smbd runs with pids 4305, 4307.

5.3.17 kill

On occasion, programs misbehave and you'll need to put them back in line. The program for this kind of administration is called kill(1), and it can be used for manipulating processes in several ways. The most obvious use of kill is to kill off a process. You'll need to do this if a program has run away and is using up lots of system resources, or if you're just sick of it running. In order to kill off a process, you'll need to know its PID or its name. To get the PID, use the ps command as was discussed in the last section. For example, to kill off process 4747, you'd issue the following:

```
root@sms:~# kill  4747
```

Note that you'll have to be the owner of the process in order to kill it. This is a security feature. If you were allowed to kill off processes started by other users, it would be possible to do all sorts of malicious things. Of course, root can kill off any process on the system.

There's another variety of the kill command called killall(1). This program does exactly what it says: it kills all the running processes that have a certain name. If you wanted to kill off all the running vim processes, you could type the following command:

```
root@sms:~# killall vim
```

Sometimes a regular kill doesn't get the job done. Certain processes will not die with a kill. You'll need to use a more potent form. If that pesky PID 4747 wasn't responding to your kill request, you could do the following:

```
root@sms:~# kill -9 4747
```

That will almost certainly cause process 4747 to die. You can do the same thing with killall. What this is doing is sending a different signal to the process. A regular kill sends a SIGTERM (terminate) signal to the process, which tells it to finish what it's doing, clean up, and exit. kill -9 sends a SIGKILL (kill) signal to the process, which essentially drops it. The process is not allowed to clean-up, and sometimes bad things like data corruption could occur by killing something with a SIGKILL. There's a whole list of signals at your disposal. You can get a listing of signals by typing the following:

```
root@sms:~# kill -l
 1) SIGHUP       2) SIGINT       3) SIGQUIT      4) SIGILL       5) SIGTRAP
 6) SIGABRT      7) SIGBUS       8) SIGFPE       9) SIGKILL     10) SIGUSR1
11) SIGSEGV     12) SIGUSR2     13) SIGPIPE     14) SIGALRM     15) SIGTERM
16) SIGSTKFLT   17) SIGCHLD     18) SIGCONT     19) SIGSTOP     20) SIGTSTP
21) SIGTTIN     22) SIGTTOU     23) SIGURG      24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM   27) SIGPROF     28) SIGWINCH    29) SIGIO       30) SIGPWR
31) SIGSYS      34) SIGRTMIN    35) SIGRTMIN+1  36) SIGRTMIN+2  37) SIGRTMIN+3
38) SIGRTMIN+4  39) SIGRTMIN+5  40) SIGRTMIN+6  41) SIGRTMIN+7  42) SIGRTMIN+8
43) SIGRTMIN+9  44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6  59) SIGRTMAX-5  60) SIGRTMAX-4  61) SIGRTMAX-3  62) SIGRTMAX-2
63) SIGRTMAX-1  64) SIGRTMAX
```

5.3.18 nano

nano is a small, friendly editor, plain and easy to use, as easy as typing "nano file". If 'file' exist will open it for editing, if not exist it will create it. Basic nano commands are

Ctrl+G or F1 Help
Ctrl+O or F3 Save changes
Ctrl+X or F2 Exit nano and ask you to save if changes not saved.
Ctrl+W or F6 Search for a string
Ctrl+K or F9 Cut lines
Ctrl+U or F10 Uncut lines into current line.

5.3.19 vi

vi(1) is the standard Unix text editing program, and a powerful text editor. Comparing to nano it's more complicated with various modes and a lot of commands. Mastering vi isn't an easy goal but if you do, you would not regret it. On the other hand if you don't want to learn vi, you must at least know a few basic keystrokes to be able to edit and save a file. In the old days vi was used, and still used, to edit /etc/group /etc/passwd and /etc/sudoers with vigr, vipw and visudo, as a security measure, but now days you can edit them with nano, it wouldn't make a difference. Many applications though tend to use vi for editing their configuration files, such as Oracle's Grid Engine. To open /tmp/file1 just type "vi /tmp/file1", same as nano if the file exist it will open it for editing, if not will create it. Once you open the file with vi you will notice that you can enter any data. To be able to edit the file you have to switch to "insert mode" by typing "I". Once you are in " insert mode" edit the file and press the escape button (Esc) to return to command mode. To save the file type ":wq" if you don't want to save the file type ":q!", to open a file from vi type ":e /tmp/file1". Lets see an example:

vi test	*(Open file test in our parent directory with vi)*
press "i"	*(Enter insert mode and edit file test)*
press "Esc"	*(Return to command mode)*
type ":wq"	*(Save and Exit vi)*
type ":q!"	*(Exit vi and discard changes)*

5.3.20 mount, umount

Mounting devices is quite easy, using the "mount" command. All you need to do is provide the device you want to mount and the mount point. Most of the situations are automatically detected so you don't have to enter any other parameter. So to mount CD-ROM to /mnt/sr0 (mount point must exist) just type:

```
mount  /dev/sr0  /mnt/sr0
```

By issuing the command "mount" you will get all mount devices, this is the output of SMS.LiveCD.

```
root@sms:~# mount
aufs on / type aufs (rw,relatime,si=679f0722,nowarn_perm)
proc on /proc type proc (rw)
sysfs on /sys type sysfs (rw)
tmpfs on /dev/shm type tmpfs (rw)
/dev/sr0 on /mnt/sr0 type iso9660 (ro,noatime)
```

Now there are situations where you need to enter more options, like mounting an ISO image, like:

```
mount -t iso9660 -o loop /mnt/sda1/SMS.LiveCD.iso  /mnt/iso
```

You will notice there are several mount specific commands like:

```
mount.cifs   mount.fuse  mount.lowntfs-3g  mount.nfs  mount.ntfs-3g  mount.smbfs
```

So if you want to mount an NTFS partition with read-write permissions you can also use mount.ntfs-3g.

To unmount a device just use "umount" command following the device or mount point:

umount /mn/iso	*(Anything that mounted in /mnt/iso will unmounted)*
umount /dev/sr0	*(Unmount CD-ROM)*

5.3.21 adduser

The easiest way to manage users and groups is with the supplied scripts and programs. Slackware includes the programs adduser, userdel(8), chfn(1), chsh(1), and passwd(1) for dealing with users. The commands groupadd(8), groupdel(8), and groupmod(8) are for dealing with groups. With the exception of chfn, chsh, and passwd, these programs are generally only run as root, and are therefore located in /usr/sbin. chfn, chsh, and passwd can be run by anyone, and are located in /usr/bin.

Users can be added with the adduser program. We'll start out by going through the whole procedure, showing all the questions that are asked and a brief description of what everything means. The default answer is in the brackets, and can be chosen for almost all the questions, unless you really want to change something.

```
root@sms:~# adduser

Login name for new user []: angel
```

This is the name that the user will use to login. Traditionally, login names are eight characters or fewer, and all lowercase characters. (You may use more than eight characters, or use digits, but avoid doing so unless you have a fairly important reason.)
You can also provide the login name as an argument on the command line:

```
root@sms:~# adduser angel
```

In either case, after providing the login name, adduser will prompt for the user ID:

```
User ID ('UID') [ defaults to next available ]:
```

The user ID (UID) is how ownerships are really determined in Linux. Each user has a unique number, starting at 1000 in Slackware. You can pick a UID for the new user, or you can just let adduser assign the user the next free one. All users are placed into the users group by default. You might want to place the new user into a different group, but it is not recommended unless you know what you're doing.

```
Initial group [users]:
```

This question allows you to place the new user into additional groups. It is possible for a user to be in several groups at the same time.

```
Additional UNIX groups:

Users can belong to additional UNIX groups on the system.
For local users using graphical desktop login managers such
as XDM/KDM, users may need to be members of additional groups
to access the full functionality of removable media devices.

* Security implications *
Please be aware that by adding users to additional groups may
potentially give access to the removable media of other users.

If you are creating a new user for remote shell access only,
users do not need to belong to any additional groups as standard,
so you may press ENTER at the next prompt.

Press ENTER to continue without adding any additional groups
Or press the UP arrow key to add/select/edit additional groups
:  audio cdrom floppy plugdev video power netdev
```

Home directories default to being placed under /home. If you run a very large system, it's possible that you have moved the home directories to a different location (or to many locations). This step allows you to specify where the user's home directory will be.

```
Home directory [ /home/angel ]
```

bash is the default shell for Slackware Linux, and will be fine for most people, but if this is a virtual user you should change shell to /bin/false.

```
Shell [ /bin/bash ]
```

Accounts can be set up to expire on a specified date. By default, there is no expiration date.

```
Expiry date (YYYY-MM-DD) []:
```

If you entered something incorrectly, you should hit Control+C and start over. Otherwise, you can hit enter and the account will be made.

```
Login name.......:  angel
UID..............:  [ Next available ]
Initial group....:  users
Additional groups:  audio,cdrom,floppy,plugdev,video,power,netdev
Home directory...:  /home/angel
Shell............:  /bin/bash
Expiry date......:  [ Never ]

This is it... if you want to bail out, hit Control-C.  Otherwise, press
ENTER to go ahead and make the account.
```

Optionally you can enter additional information about the user. You don't have to enter any of this if you don't want to, and the user can change it at any time using chfn

```
Creating new account...

Changing the user information for angel
Enter the new value, or press return for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
```

Next you will have to choose a password for the user you just created.

```
Changing password for angel
Enter the new password (minimum of 5, maximum of 127 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
Password changed.

Account setup complete.
```

Tip: Having a secure password is the first line of defence against getting cracked. You do not want to have an easily guessed password, because that makes it easier for someone to break into your system. Ideally, a secure password would be a random string of characters, including upper and lowercase letters, numbers, and random characters.

Another way of adding users is with "useradd" command

```
root@sms:~# useradd -G users,power,netdev,cdrom -m -d /home/elmo -s bin/bash elmo
```

Or if you want to create users with no shell or home directory

```
root@sms:~# useradd -d /dev/null -s /bin/false elmo
```

To add or change password for users use "passwd" command.

```
root@sms:~# passwd   angel
Changing password for angel
Enter the new password (minimum of 5, maximum of 127 characters)
Please use a combination of upper and lower case letters and numbers.
New password:
Re-enter new password:
Password changed.
```

5.3.22 chmod, chown

The filesystem stores ownership information for each file and directory on the system. This includes what user and group own a particular file. We can easily change the file owners with the chown(1) (which means "change owner") and chgrp(1) (which means "change group") commands. To change the file owner to daemon, we would use chown:

```
root@sms:~# chown daemon /usr/bin/wc
```

To change the group owner to "root", we would use chgrp:

```
root@sms:~# chgrp root /usr/bin/wc
```

We can also use chown to specify the user and group owners for a file:

```
root@sms:~# chown daemon:root /usr/bin/wc
```

Permissions are the other important part of the multiuser aspects of the filesystem. With these, you can change who can read, write, and execute files. The permission information is stored as four octal digits, each specifying a different set of permissions. There are owner permissions, group permissions, and world permissions. The fourth octal digit is used to store special information such as set user ID, set group ID, and the sticky bit. The octal values assigned to the permission modes are (they also have letters associated with them that are displayed by programs such as ls and can be used by chmod):

```
Permission Type    Octal Value       Letter Value
"sticky" bit            1            t
set user ID        4                 s
set group ID            2            s
read               4                 r
write              2                 w
execute            1                 x
```

You add the octal values for each permission group. For example, if you want the group permissions to be "read" and "write", you would use "6" in the group portion of the permission information. To set special permissions with chmod, add the numbers together and place them in the first column. For example, to make it set user ID and set group ID, we use 6 as the first column:

```
root@sms:~# chmod 6755 /tmp/example
```

If the octal values confuse you, you can use letters with chmod. The permission groups are represented as:

```
Owner         u
Group               g
World               o
All of the above    a
```

Some people prefer the letters over the numbers. Either way will result in the same set of permissions.
The octal format is often faster, and the one you see most often used in shell scripts. Sometimes the letters are more powerful however. For example, there's no easy way to change one group of permissions while preserving the other groups on files and directories when using the octal format. This is trivial with the letters.

```
root@sms:~# ls -l
total 0
-rwxr-xr-x 1 root root 0 Jun 21 18:10 file1*
-rwxr-x--- 1 root root 0 Jun 21 18:10 file2*
----r-xr-x 1 root root 0 Jun 21 18:10 file3*
root@sms:~# chmod g-rxw file?
root@sms:~# ls -l
total 0
-rwx---r-x 1 root root 0 Jun 22 13:03 file1*
-rwx------ 1 root root 0 Jun 22 13:03 file2*
-------r-x 1 root root 0 Jun 22 13:03 file3*
```

Those are some basic commands, to get you started, some of the were took from slackbook.org, you might want to get into something more detailed and complete, like "Linux Complete Command Reference".

5.4 Samba (SMB) Configuration.

SMB (for Server Message Block) is a descendant of the older NetBIOS protocol that was initially used by IBM in their LAN Manager product. Microsoft has always been fairly interested in NetBIOS and it's successors (NetBEUI, SMB and CIFS). The Samba project has existed since 1991, when it was originally written to link an IBM PC running NetBIOS with a Unix server. These days, SMB is the preferred method for sharing file and print services over a network for virtually the entire civilized world because Windows supports it.

Samba's start up script is /etc/rc.d/rc.samba. To start it, you have to make it executable and start it with

```
/etc/rc.d/rc.samba start
```

Samba by default is enabled so you don't have to do all that, but if for a reason you want to restart the service do:

```
/etc/rc.d/rc.samba restart
```

Samba's configuration file is /etc/samba/smb.conf. The default configuration of SMS is:

```
[global]
        log file = /var/log/samba.%m
        ldap ssl = No
        restrict anonymous = no
        domain master = no
        public = yes
        server string = SMS Samba Server
        max protocol = NT1
        workgroup = WORKGROUP
        acl compatibility = winnt
        server signing = Auto
        security = share
        preferred master = no
        max log size = 50
# This option is important for security. It allows you to restrict
# connections to machines which are on your local network. The
# following example restricts access to two C class networks and
# the "loopback" interface. For more examples of the syntax see
# the smb.conf man page
;   hosts allow = 192.168.1. 192.168.2. 127.

[Samba @ SMS]
path = /var/smb/samba/
read only = no

[FAXES]
path = /var/spool/hylafax/recvq/
read only = no

[TorrentFlux Downloads]
path = /var/smb/tflux_downloads/
read only = no
```

Default security level is share, which means all guests allowed and have read-write permissions to all our share that indicate "read only = no"

To add a share just add it to smb.conf as

```
[name of the share]
path=<path to our shared directory>
read only = < yes or no>
... other options
```

To test your configuration just run "testparm" and check the output. For a full list of options for smb.conf use "man smb.conf", also check /etc/samba/smb.conf-sample.

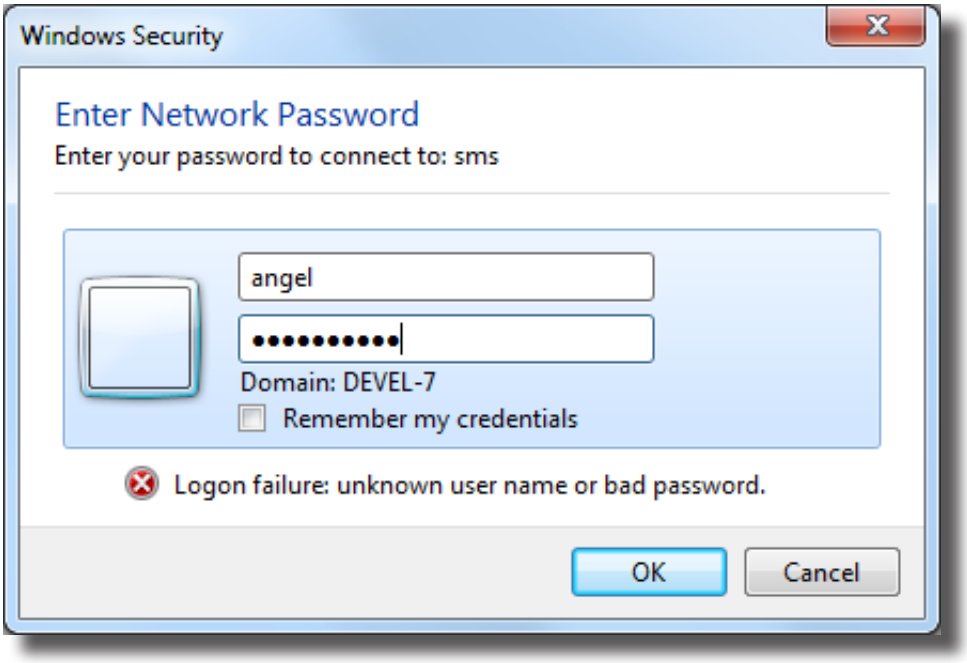
To change our security from share to user, so share prompt for username and password, change

security = share *to* *security = user*

And add our users with

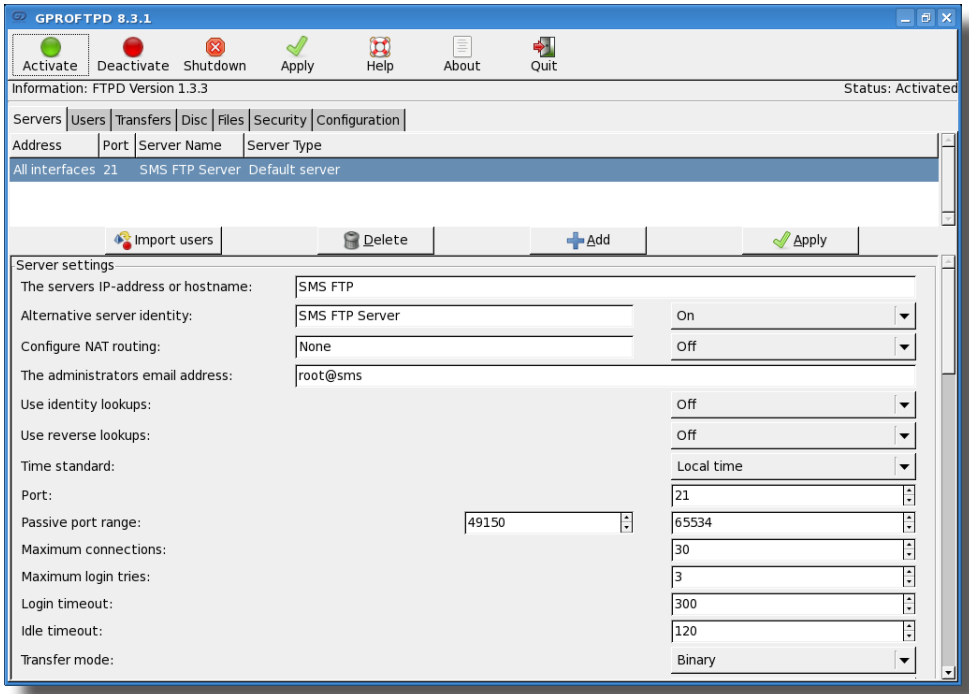
```
root@sms:~# smbpasswd -a angel
New SMB password:
Retype new SMB password:
Added user angel.
```

It's important to note that a given username must already exist in the /etc/passwd file. Now when try to connect to SMB shares from a windows machine you will get a promt to enter username and password.

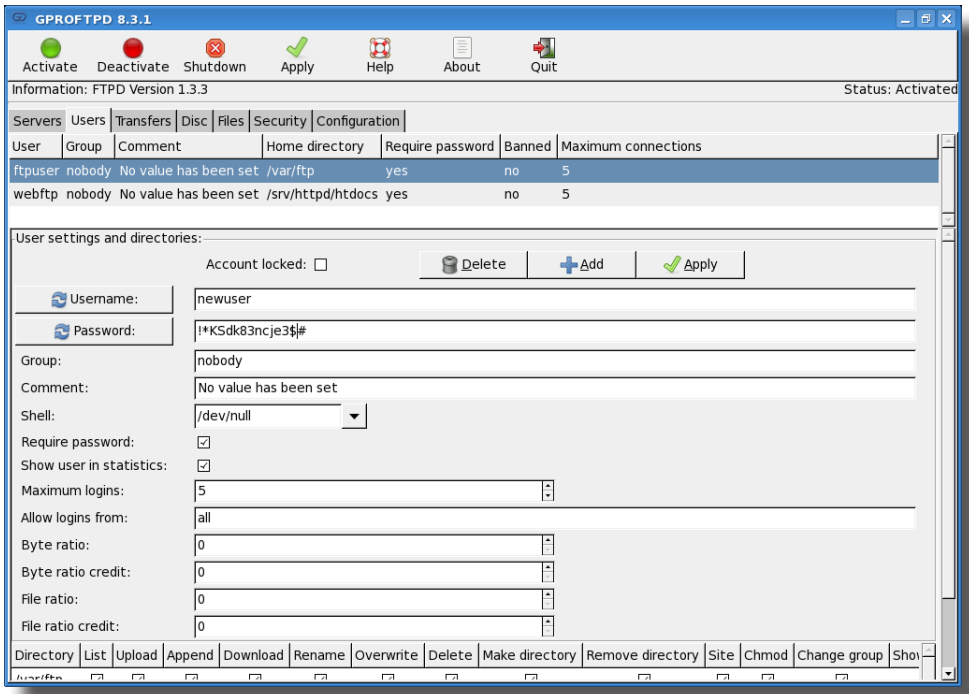


5.5 FTP (proftpd) configuration.

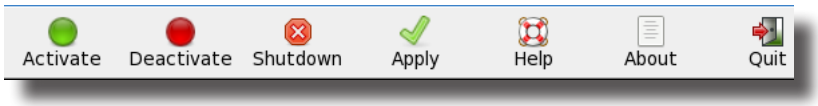
The easiest way of configuring proftpd is by using gproftpd already available in x-kde-addon package. If you made a full installation of SMS, all you have to do is start KDE with "startx".
In Servers tab you can set your FTP info and configuration variables



In Users tab you can add/delete edit users. To edit or delete a user, just select the user and edit his fields and press apply or press delete to delete the user. To add a user fill up his fields like username password directory and set the attributes, by clicking the boxes and press Add.



By clicking activate you enable the FTP server, Deactivate or Shutdown disable FTP server, Apply, apply changes to FTP server, Help has a few notes about adding users and directories, that you should read.



Tip: Proftpd can start as a standalone server or as an inetd, by editing /etc/inetd.conf.

5.5.1 FTP (vsftpd) configuration.

Superb Mini Server comes with a second FTP server to choose, called vsftpd (Very Secure FTP Daemon). To activated it, you need to edit /etc/inetd.conf and uncomment the line

```
# Very Secure File Transfer Protocol (FTP) server.
ftp     stream  tcp     nowait  root    /usr/sbin/tcpd  vsftpd
```

stop proftpd (/etc/rc.d/rc.proftpd stop) and restart inetd server (Internet super-server daemon).

```
root@sms:~# /etc/rc.d/rc.inetd restart
Starting Internet super-server daemon:  /usr/sbin/inetd
```

By default vsftpd allow anonymous logins, to change that edit /etc/vsftpd.conf and change

```
anonymous_enable=YES    to    anonymous_enable=NO
```

and to allow local users uncomment the line

```
# Uncomment this to allow local users to log in.
local_enable=YES
```

Some other good options you should consider are

```
# Uncomment this to enable any form of FTP write command.
write_enable=YES
# You may change the default value for timing out an idle session.
idle_session_timeout=600
# You may change the default value for timing out a data connection.
data_connection_timeout=120
# You may fully customise the login banner string:
ftpd_banner=Welcome to SMS FTP service.
# You may specify an explicit list of local users to chroot() to their home
# directory. If chroot_local_user is YES, then this list becomes a list of
# users to NOT chroot().
chroot_local_user=NO
chroot_list_enable=YES
# (default follows)
chroot_list_file=/etc/vsftpd.chroot_list
check_shell=NO
userlist_enable=YES
userlist_deny=NO
userlist_file=/etc/vsftpd.user_list
```

Create a file called /etc/vsftpd.chroot_list and /etc/vsftpd.user_list and add your users.

```
root@sms:~# cat /etc/vsftpd.chroot_list
administrator
root@sms:~# cat /etc/vsftpd.user_list
administrator
```

You can create users with no shell and create their home dir like:

```
root@sms:~# useradd -d /var/ftp/test -s /bin/false test
root@sms:~# mkdir -p /var/ftp/test
root@sms:~# chown -R test /var/ftp/test/
root@sms:~# passwd test
```

And finally add user test to /etc/vsftpd.chroot_list and /etc/vsftpd.user_list

Tip: If you don't want to start vsftpd through inetd you can change in /etc/vsftpd.conf

Listen=NO to Listen=YES

and you can start vsftpd with

```
vsftpd &
```

5.6 Sharing a Printer through Samba (CUPS + SMB).

Login to CUPS interface (https://youserver:631/admin) and add your printer, either by pressing the button Find New Printers" or by pressing "Add Printer". Once you have install a printer in our case was

```
HP845c      HP Deskjet 845c         HP Deskjet 845c hpijs, 3.10.5 Idle
```

Download windows drivers from http://cups.org/windows/software.php untar them with

```
tar xvjf cups-windows-6.0-source.tar.bz2
cd cups-windows-6.0
make install
```

You will also need to copy in /usr/share/cups/drivers, Microsoft Postscript drivers from a Windows XP machine localed in C:\WINDOWS\system32\spool\drivers\w32x86\3

```
ps5ui.dll
pscript.hlp
pscript.ntf
pscript5.dll
```

you need to edit /etc/samba/smb.conf and add under [global]

```
load printers = yes
printing = cups
printcap name = /etc/printcap
printer = HP845c
```

Temporally you need to switch security to user

```
Securtity = share to    Security = user
```

and add shares for printer and drivers.

```
[printers]
comment = All Printers
path = /var/spool/samba
browseable = yes
public = yes
guest ok = yes
printable = yes
printer admin = root

[print$]
  comment = Printer Drivers
  path = /usr/share/cups/drivers
browseable = yes
guest ok = yes
read only = yes
write list = root
```

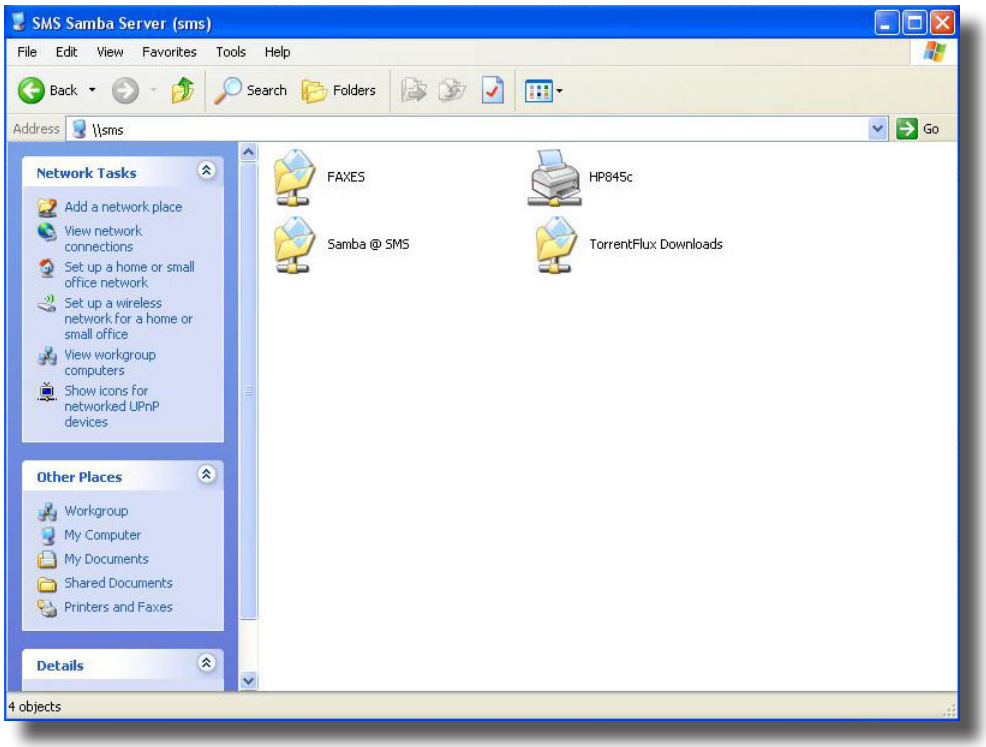
run "smbpasswd -a root" and after run "cupsaddsmb" script to add the windows drivers. A simple output will be

```
root@sms:/usr/share/cups/drivers# cupsaddsmb -a
Password for root required to access localhost via SAMBA:
```

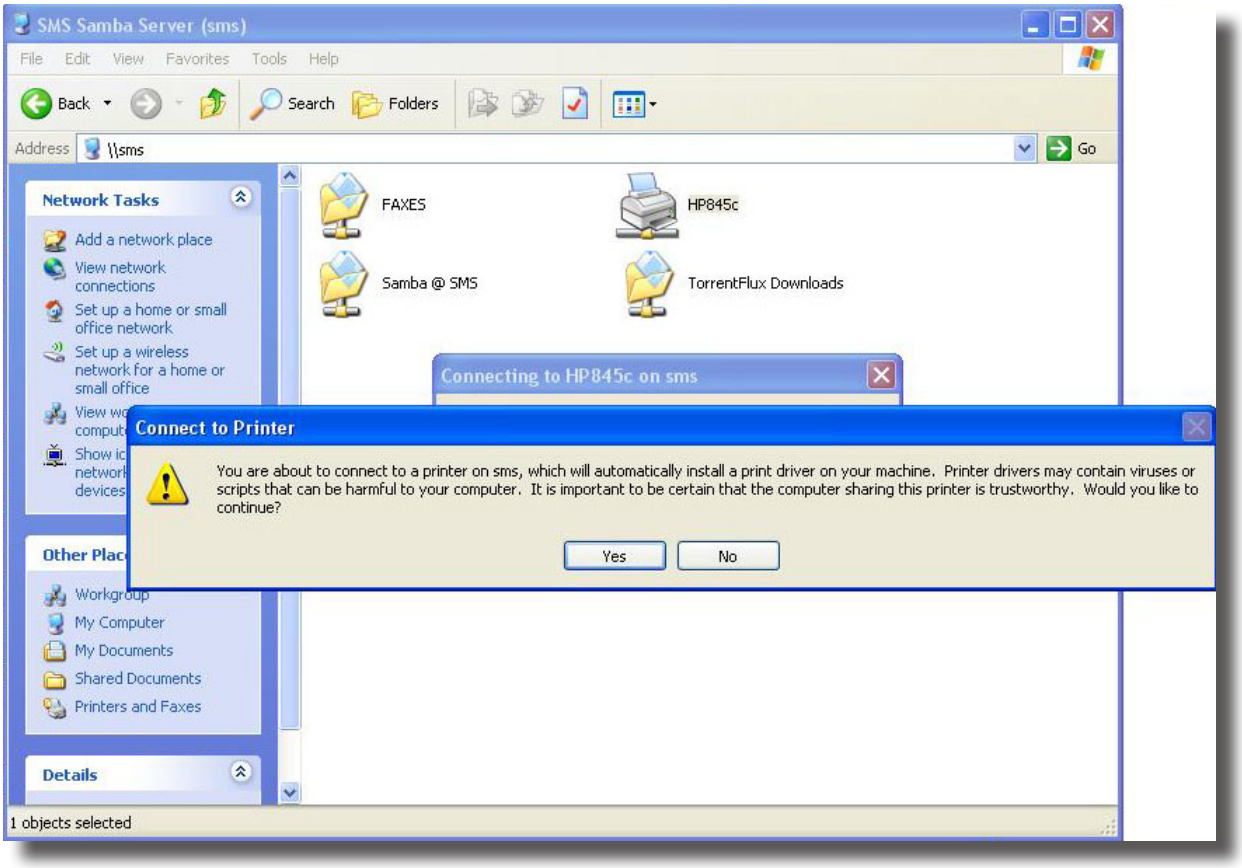
Now you can switch your security back to share.

A verbose output should look like that:

```
root@sms:/usr/share/cups/drivers# cupsaddsmb -a -v
Password for root required to access localhost via SAMBA:
Running command: smbclient //localhost/print$ -N -A /tmp/04a024e104f8e -c mkdir W32X86;put /
tmp/04a024e1a868c W32X86/HP845c.ppd;put /usr/share/cups/drivers/ps5ui.dll W32X86/ps5ui.dll;put /usr/
share/cups/drivers/pscript.hlp W32X86/pscript.hlp;put /usr/share/cups/drivers/pscript.ntf W32X86/
pscript.ntf;put /usr/share/cups/drivers/pscript5.dll W32X86/pscript5.dll
Domain=[WORKGROUP] OS=[Unix] Server=[Samba 3.5.6]
NT_STATUS_OBJECT_NAME_COLLISION making remote directory \W32X86
putting file /tmp/04a024e1a868c as \W32X86/HP845c.ppd (2014.0 kb/s) (average 2014.1 kb/s)
putting file /usr/share/cups/drivers/ps5ui.dll as \W32X86/ps5ui.dll (20699.9 kb/s) (average 16962.8 kb/s)
putting file /usr/share/cups/drivers/pscript.hlp as \W32X86/pscript.hlp (5085.4 kb/s) (average 15883.1
kb/s)
putting file /usr/share/cups/drivers/pscript.ntf as \W32X86/pscript.ntf (25312.7 kb/s) (average 19910.3
kb/s)
putting file /usr/share/cups/drivers/pscript5.dll as \W32X86/pscript5.dll (21982.1 kb/s) (average 20378.2
kb/s)

Running command: smbclient //localhost/print$ -N -A /tmp/04a024e104f8e -c put /usr/share/cups/drivers/
cups6.ini W32X86/cups6.ini;put /usr/share/cups/drivers/cupsps6.dll W32X86/cupsps6.dll;put /usr/share/
cups/drivers/cupsui6.dll W32X86/cupsui6.dll
Domain=[WORKGROUP] OS=[Unix] Server=[Samba 3.5.6]
putting file /usr/share/cups/drivers/cups6.ini as \W32X86/cups6.ini (14.1 kb/s) (average 14.1 kb/s)
putting file /usr/share/cups/drivers/cupsps6.dll as \W32X86/cupsps6.dll (3068.3 kb/s) (average 1371.5
kb/s)
putting file /usr/share/cups/drivers/cupsui6.dll as \W32X86/cupsui6.dll (2670.3 kb/s) (average 1835.4
kb/s)

Running command: rpcclient localhost -N -A /tmp/04a024e104f8e -c adddriver Windows NT x86 HP845c:pscript5.
dll:HP845c.ppd:ps5ui.dll:pscript.hlp:NULL:RAW:pscript5.dll,HP845c.ppd,ps5ui.dll,pscript.hlp,pscript.
ntf,cups6.ini,cupsps6.dll,cupsui6.dll
Printer Driver HP845c successfully installed.

Running command: rpcclient localhost -N -A /tmp/04a024e104f8e -c setdriver HP845c HP845c
Successfully set HP845c to driver HP845c.

So when browsing from a Windows machine you should see
```



Now by double click the printer, the driver will automatically installed. If the driver can't be found, such as if your machine is running Windows 7, windows will ask you for the driver, so you can point where the driver is or you can put it in an SMB share and navigate to there and install the printer.



5.7 Network File System (NFS).

To configure NFS you need to edit /etc/exports and add your shares, for instance:

```
/var/smb/samba/   *(rw,async,all_squash,no_subtree_check)
/var/smb/movies/   *(rw,async,all_squash,no_subtree_check)
/var/spool/hylafax/recvq/   faxmachine(async,all_squash,no_subtree_check)
```

By typing "man exports" you get the manual page for exports, that tells you what options you should use for exports. The asterisk tells to allow all workstations, a quick legend for our example

rw Allow both read and write requests on this NFS volume.

async This option allows the NFS server to violate the NFS protocol and reply to requests before any changes made by that request have been committed to stable storage (e.g. disc drive).

no_subtree_check

This option disables subtree checking, which has mild security implications, but can improve reliability in some circumstances.
If a subdirectory of a filesystem is exported, but the whole filesystem isn't then whenever a NFS request arrives, the server must check not only that the accessed file is in the appropriate filesystem (which is easy) but also that it is in the exported tree (which is harder). This check is called the subtree_check.

all_squash Map all uids and gids to the anonymous user.

To start NFS you need to make executable /etc/rc.d/rc.nfsd and /etc/rc.d/rc.rpc and start them.

```
root@sms:~# chmod +x /etc/rc.d/{rc.rpc,rc.nfsd}
root@sms:~# /etc/rc.d/rc.rpc start
Starting RPC portmapper:  /sbin/rpc.portmap
Starting RPC NSM (Network Status Monitor):  /sbin/rpc.statd
root@sms:~# /etc/rc.d/rc.nfsd start
Starting NFS server daemons:
  /usr/sbin/exportfs -r
  /usr/sbin/rpc.rquotad
  /usr/sbin/rpc.nfsd 8
  /usr/sbin/rpc.mountd
```

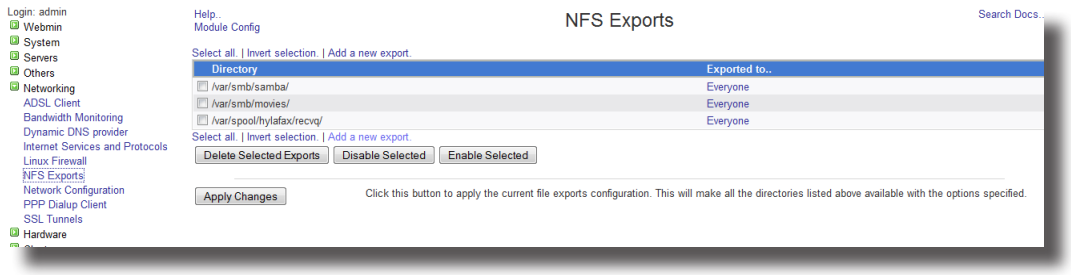
You can also export a directory directly from the command line on the server by using the exportfs command as follows:

```
exportfs -o rw,no_root_squash *:/var/smb/samba
```

And you can get you exports info by typing "exportfs"

```
root@sms:~# exportfs
/var/smb/samba  <world>
/var/smb/movies
                <world>
/var/spool/hylafax/recvq
                <world>
```

Tip: You can use webmin to config NFS at Webmin ->Networking -> NFS Exports.



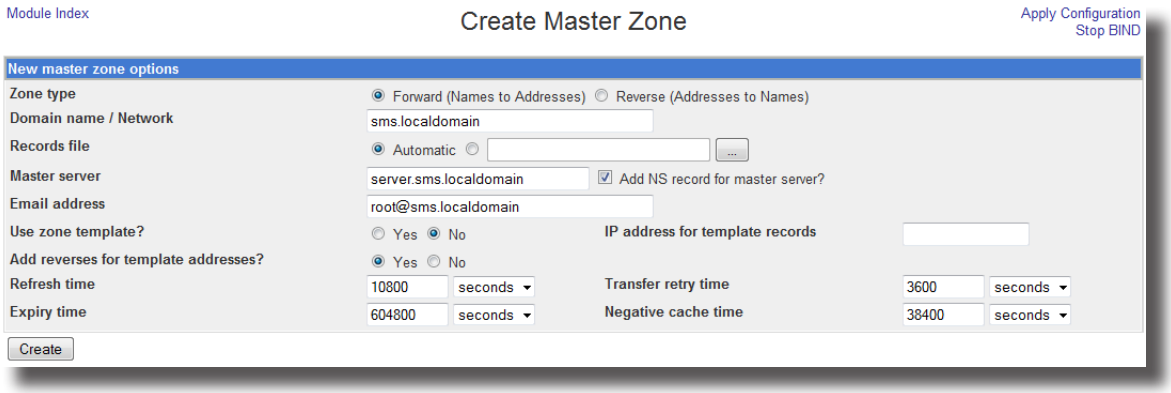
5.8 DNS setup with BIND (Webmin).

There is a good wiki available at
http://doxfer.webmin.com/Webmin/BINDDNSServer#Introduction_to_the_Domain_Name
We are going to cover the basics with few words.

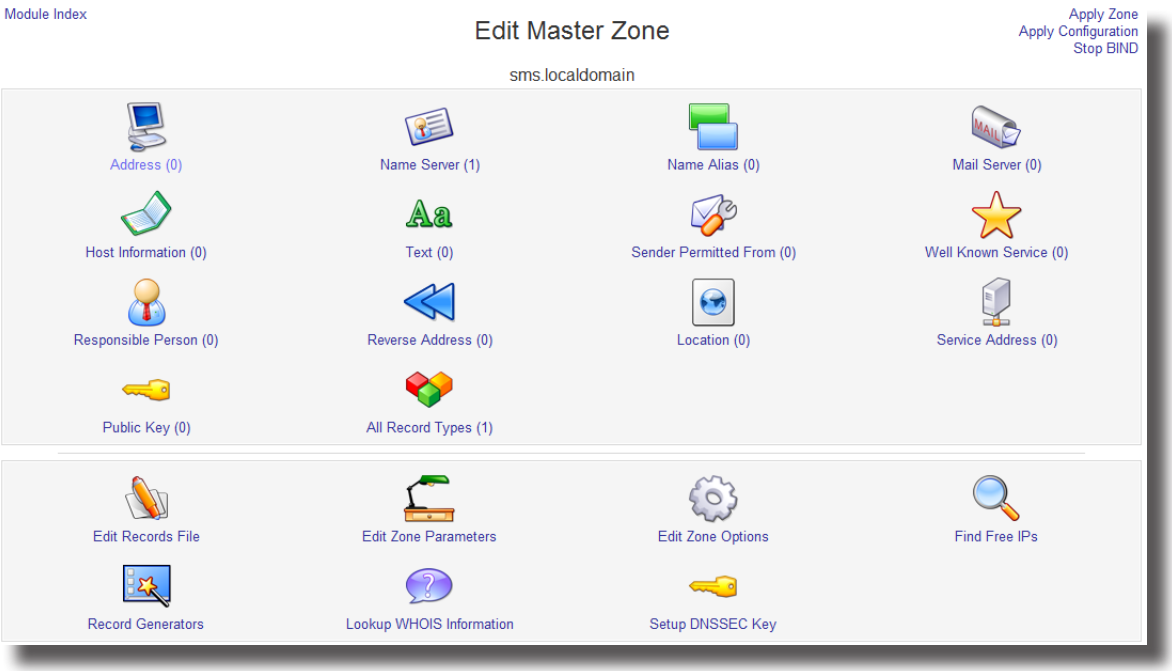
5.8.1 Creating a new master zone

A master zone is one for which your DNS server is the authoritative source of information. A single zone may be hosted by multiple servers, but only one is the master - all the rest are slaves. If you want to add a new master zone to your server's configuration, the steps to follow are :

1. Decide on a name for the new zone, such as example.com or internal. If this is going to be Internet domain that will be visible to other everyone in the world, the domain name must not have been registered by anyone else yet. However, you cannot normally register it yourself until your DNS server has been set up to host it.
2. On the module's main page, click on the Create a new master zone link below the table of existing zones. This will take you to the page shown in the image below for entering the details of the new zone.
3. If this is to be a forward zone like example.com or foo.com.au, leave the Zone type field set to Forward. However, if it is a reverse zone for looking up hostnames from IP addresses, set the field to Reverse.
4. In the Domain name / Network field, enter the name of the zone without any trailing dot. For a reverse zone, just enter the network address like 192.168.1. Webmin will automatically convert this to the in-addr.arpa format for you when the domain is created.
5. The Records file field controls where the configuration file containing the zone's records is stored. If you leave it set to Automatic, the filename will be determined automatically based on the module's configuration and the directory setting in the named.conf file. This is usually the best option, as it will result in the records file being created in the same directory as any existing zones, such as /var/named. However, if you de-select the Automatic option and enter a filename instead, all records for the zone will be written to that file. If you enter the name of an existing file, it will be overwritten when the domain is created.
6. In the Master server field, enter the full domain name of the master DNS server for this zone. This must be the canonical name of your system, such as server.example.com, not a short name like server. This server (and the values from the next
7. fields) are used to create the new zone's SOA record.
8. In the Email address field, enter the address of the person responsible for this zone. You can use the @ symbol in the address, which Webmin will automatically convert to a dot for inclusion in the SOA record.
9. The Refresh time field determines how often secondary servers should check with this master server for updates to the zone. The default is reasonable, but you may want to increase it for zones that rarely change, or decrease it for those that are frequently updated.
10. The Transfer retry time field determines how long a secondary server should wait after a failed zone transfer before trying again.
11. The Expiry time field controls the maximum amount of time that a secondary DNS server for the zone should cache records for before re-transferring them from the master.
12. The Default time-to-live field determines the TTL of records in the zone that do not have one set explicitly.
13. Click the Create button at the bottom of the page. As long as the form has been filled in correctly and the zone does not already exist on your server, you will be taken to a page for adding new records to the zone.
14. Return to the module's main page which will now include an icon for your new zone, and click the Apply Changes button at the bottom to activate it.



Once you press create you will see something like

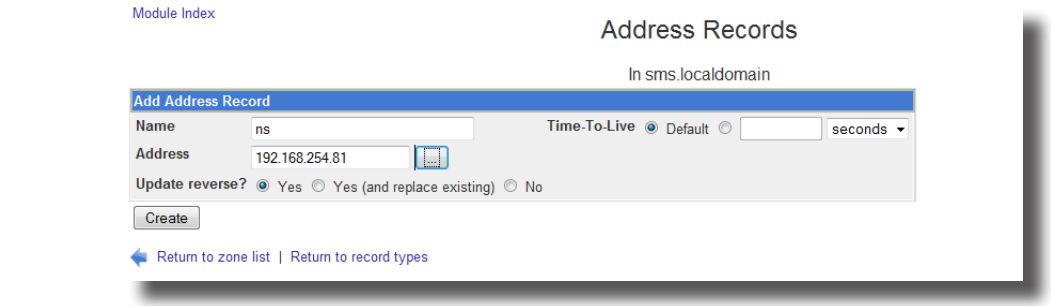


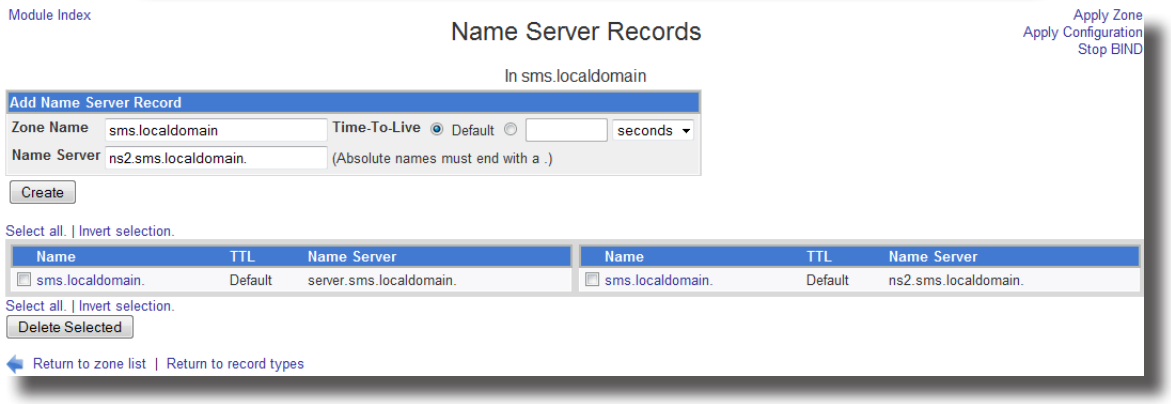
5.8.2 Record Types.

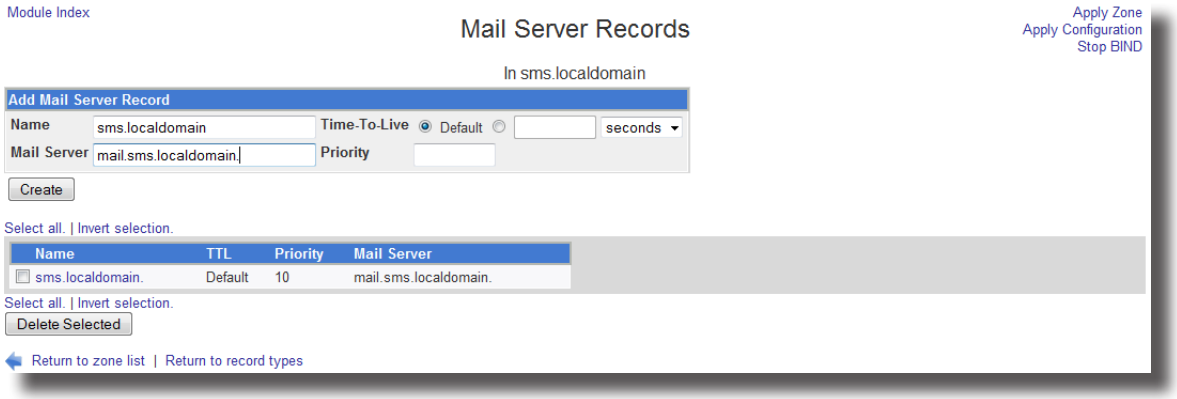
- *Address (A): An Address records associates an IP address with a hostname. Any system that you want to be able to connect to via HTTP, telnet or some other protocol using its hostname must have an address record so that clients can look up its IP*
- Name Sever (NS): Records of this type defines a name server that is responsible for a zone. Every zone must have at least one Name Server record for itself, and may have additional records that specify the DNS servers responsible for subdomains.
- Name Alias (CNAME): This type of record creates an additional name for an existing Address or Reverse Address record.
- Mail Server (MX): Mail Server records tell mail delivery programs like Sendmail and Postfix, which system to contact when delivering mail to a domain or host.
- Host Information (HINFO): Records of this type are used to record information about the hardware and operating system of a particular host.
- Text (TXT): A Text record associates an arbitrary message of some kind with a name.
- Well Known Service (WKS): A record of this type associates a hostname, port and protocol with a name.
- Responsible Person (PR): This type of record is used for specifying the person or group responsible for a particular host.
- Location (LOC): Location records are used to specify the physical location in latitude and longitude of a host.
- Service Address (SRV): Records of this type are used to associate a domain name, service name and protocol with a particular host.

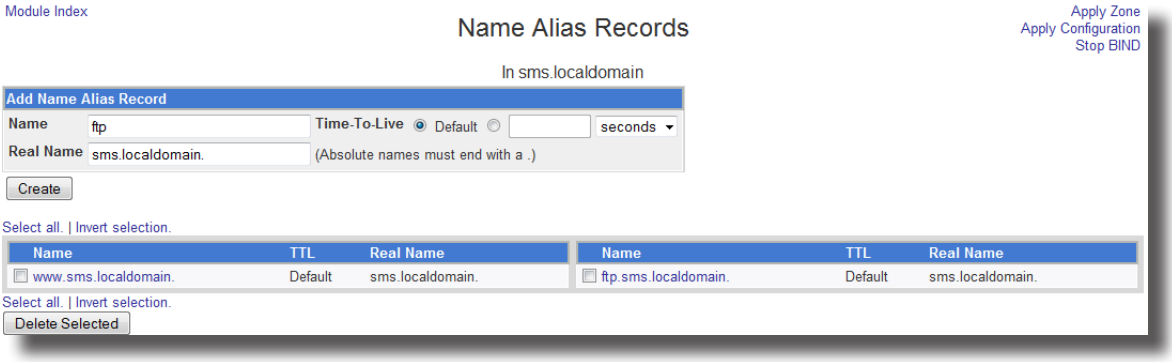
5.8.3 Adding Records

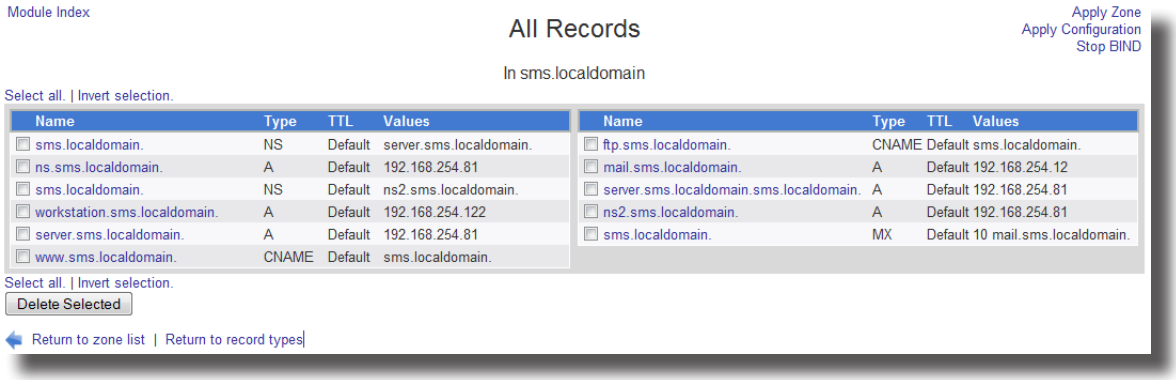
MX record must have an A record. Every time you press "Apply Configuration" always look at /var/log/syslog for BIND errors. If there is an error in your zone, it will not load.











And taking a look to our config you will see:

```
root@sms:~# cat /var/named/sms.localdomain.hosts
$ttl 38400
sms.localdomain.    IN    SOA    server.sms.localdomain. root.sms.localdomain. (
                    1309543705
                    10800
                    3600
                    604800
                    38400 )
sms.localdomain.          IN    NS     server.sms.localdomain.
ns.sms.localdomain.             IN     A      192.168.254.81
sms.localdomain.          IN    NS     ns2.sms.localdomain.
workstation.sms.localdomain.    IN     A      192.168.254.122
server.sms.localdomain.   IN    A      192.168.254.81
www.sms.localdomain.      IN    CNAME  sms.localdomain.
ftp.sms.localdomain.            IN     CNAME  sms.localdomain.
mail.sms.localdomain.           IN     A      192.168.254.12
server.sms.localdomain    IN    A      192.168.254.81
ns2.sms.localdomain.            IN     A      192.168.254.81
sms.localdomain.          IN    MX     10 mail.sms.localdomain.
```

To test if everything it's working open a terminal and type "dig sms.localdomain" or "dig sms.localdomain mx"v

```
root@sms:~# dig sms.localdomain

; <<>> DiG 9.7.1-P2 <<>> sms.localdomain
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 23744
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0

;; QUESTION SECTION:
;sms.localdomain.               IN      A

;; AUTHORITY SECTION:
sms.localdomain.        38400   IN      SOA     server.sms.localdomain. root.sms.localdomain. 1309543705 10800 3600 604800 38400

;; Query time: 1 msec
;; SERVER: 192.168.254.81#53(192.168.254.81)
;; WHEN: Fri Jul  1 23:30:36 2011
;; MSG SIZE  rcvd: 81
```

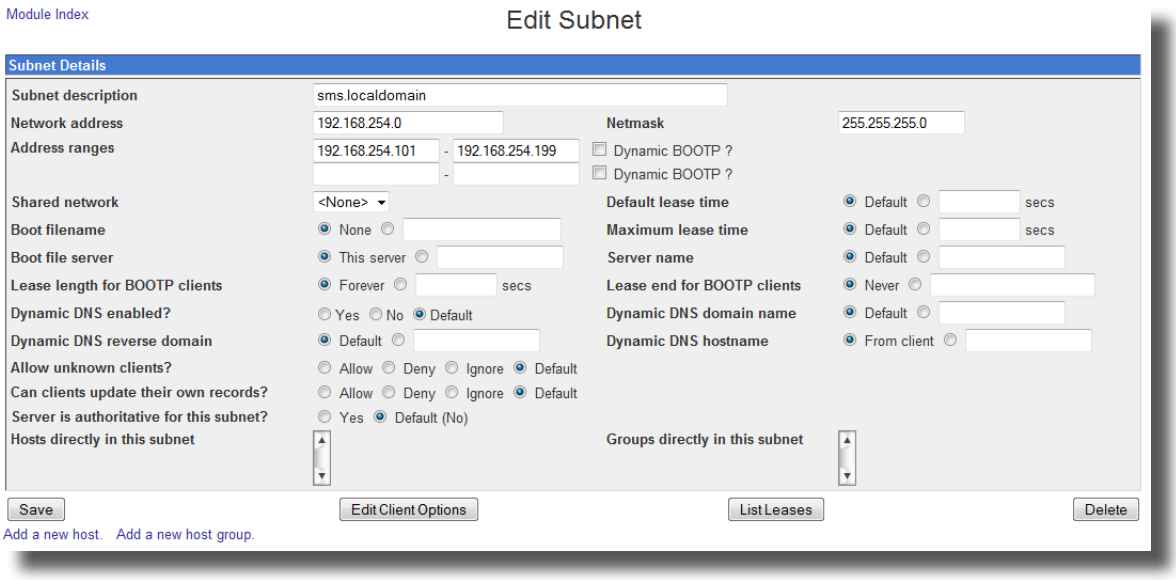
```
root@sms:~# dig sms.localdomain mx

; <<>> DiG 9.7.1-P2 <<>> sms.localdomain mx
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25898
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3

;; QUESTION SECTION:
;sms.localdomain.               IN      MX

;; ANSWER SECTION:
sms.localdomain.        38400   IN      MX      10 mail.sms.localdomain.

;; AUTHORITY SECTION:
sms.localdomain.        38400   IN      NS      server.sms.localdomain.
sms.localdomain.        38400   IN      NS      ns2.sms.localdomain.

;; ADDITIONAL SECTION:
mail.sms.localdomain.   38400   IN      A       192.168.254.12
ns2.sms.localdomain.    38400   IN      A       192.168.254.81
server.sms.localdomain. 38400   IN      A       192.168.254.81

;; Query time: 1 msec
;; SERVER: 192.168.254.81#53(192.168.254.81)
;; WHEN: Fri Jul  1 23:32:20 2011
;; MSG SIZE  rcvd: 141
```

5.8.4 DHCP Server (Webmin).

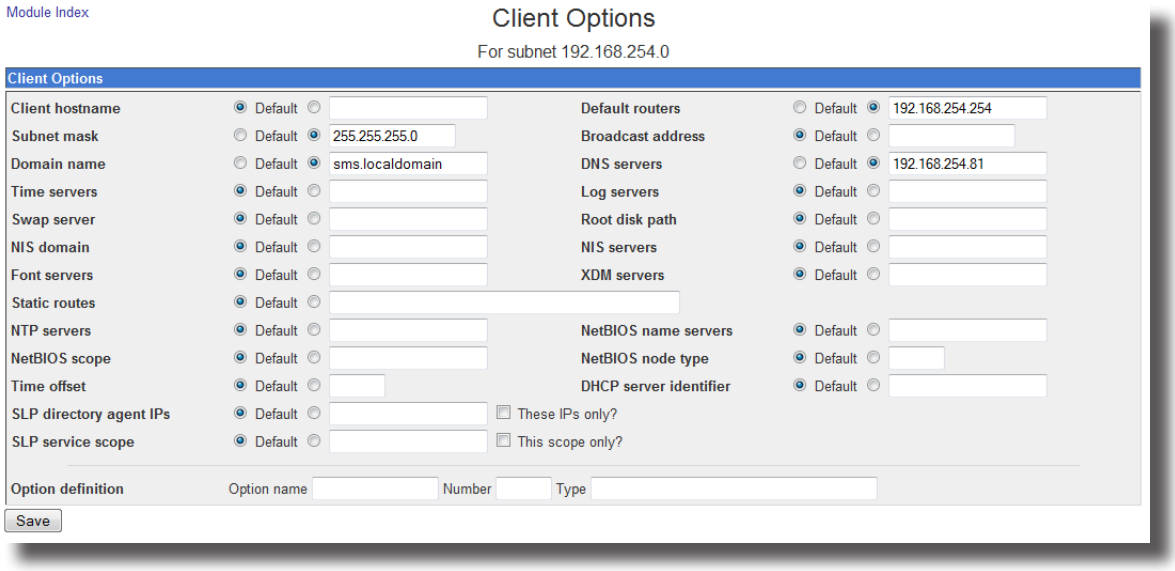
Now that you setup DNS, you need a DHCP server. Webmin has friendly interface for that at

Webmin -> Servers -> DHCP Server

Click on "Add new subnet" and enter subnet, netmask and DHCP range for leases. You can change lease time if you want, default is 1 day (1440), the values must be in seconds. When you done press "Save"



You can add additional options, by pressing "Edit Client Options". When you done return to subnet list and start server.



And this is, how your config (/etc/dhcpd.conf) looks.

```
# sms.localdomain
subnet 192.168.254.0 netmask 255.255.255.0 {
 option domain-name "sms.localdomain";
 range 192.168.254.101 192.168.254.199;
 option routers 192.168.254.254;
 option domain-name-servers 192.168.254.81;
 option subnet-mask 255.255.255.0;
 }
```

5.9 DNS setup with DNSMasq.

Although BIND is a powerfull DNS server, sometimes, requires high skills, making it quite a pain to a beginner. This is where dnsmasq comes, to save the day. Dnsmasq is a lightweight, easy to configure DNS forwarder, DHCP and TFTP server. It is designed to provide DNS and, optionally, DHCP and TFTP to a small network. Dnsmasq has an outdated webmin module at http://home.pacific.net.au/~magnecor/modules.html if someone wants to try it, hopefully SMS might include it, in feature builds.

5.9.1 Configuration.

Configuration of dnsmasq lies in /etc/dnsmasq.conf. Configuration file is well commented so take a look at it. First thing is to configure the interface that our DNS will listen to, for instance, if your server is also an internet router, you might don't want to have a DNS server on your external interface. If you don't configure any interface, dnsmasq will listen to all available interfaces. If you want multiple interfaces just repeat the line.

```
interface=eth0
interface=wlan0
```

If you want to exclude one interface only use

```
except-interface=eth1
```

To configure the DHCP range of leases to clients enter the values for interface (optional), IP range, netmask and lease time separated by comma.

```
dhcp-range=192.168.254.101,192.168.254.199,255.255.255.0,24h
```

or if you have multiple networks

```
dhcp-range=eth0,192.168.254.101,192.168.254.199,255.255.255.0,24h
dhcp-range=wlan0,192.168.1.101,192.168.1.199,255.255.255.0,6h
```

If you want dnsmasq to provide only DNS service on an interface, then use the following line to disable DHCP on it.

```
no-dhcp-interface=eth2
```

You can pass additional dhcp options like specify router, ntp server e.t.c

```
dhcp-option=option:router,192.168.254.254
dhcp-option=option:ntp-server,192.168.0.4,10.10.0.5
```

To test configuration you can run "dnsmasq --test".

```
root@sms:~# dnsmasq --test
dnsmasq: syntax check OK.
```

5.9.2 Start/Stop dnsmasq.

The start up script of DNSMasq located at /etc/rc.d/rc.dnsmasq, and if it's executable, SMS will start it automatically upon boot. Don't forget though to disable BIND since you can't have two dns servers binding on the same address:port. To start/stop dnsmasq do:

```
/etc/rc.d/rc.dnsmasq start
```

5.9.3 One line execute.

You can also start dnsmasq manually , overriding the configuration file, passing all the options in one line command, like:

```
dnsmasq --interface=eth0 --dhcp-range=eth0,192.168.254.101,192.168.254,24h --log-
dhcp
--dhcp-option=option:router,192.168.254.254 --keep-in-foreground
```

Tip: dnsmasq although it's light and easy to configure is a powerful DNS server, so you should look at it's documentation, for mastering it's power.

5.10 Netatalk (AFP).

*Netatalk is a freely-available Open Source AFP fileserver. It also provides a kernel level implementation of the AppleTalk Protocol Suite. A *NIX/*BSD system running Netatalk is capable of serving many Macintosh clients simultaneously as an AppleShare file server (AFP), AppleTalk router, *NIX/*BSD print server, and for accessing AppleTalk printers via Printer Access Protocol (PAP).*

By default AFP in SMS is disabled, which means the start up script (/etc/rc.d/rc.atalk) is not executable. To make it executable use "chmod".

```
chmod +x /etc/rc.d/rc.atalk
```

Configuration files are well commented. and the files you mostly need to change are

```
/etc/netatalk/AppleVolumes.default
/etc/netatalk/afpd.conf
```

Default share in SMS are /var/afp/shares but you can change that in /etc/netatalk/AppleVolumes.default just enter <path> <name of share> <options>

/var/afp/shares "AFP @ SMS" (a simple guest volume)

/var/afp/shares "AFP @ SMS" allow:user cnidsceme:cdb options:usedots,upriv (an advance user volume)

By passing the option "tm" enables TimeMachine support for shared volume.

var/afp/shares "AFP @ SMS" allow:user cnidsceme:cdb options:usedots,upriv,tm

If you want to share home directories add a tilde , like

~

To change afp daemon options, edit /etc/netatalk/afpd.conf accordingly e.g.

"Guest Volume" -uamlist uams_guest.so -loginmesg "Welcome guest!" (a guest volume)

"User Volume" -uamlist uams_clrtxt.so -port 12000 (a user volume listen on TCP port 12000)

SMS by default load guest and user libraries so can use it as is, or remove guest libraries.

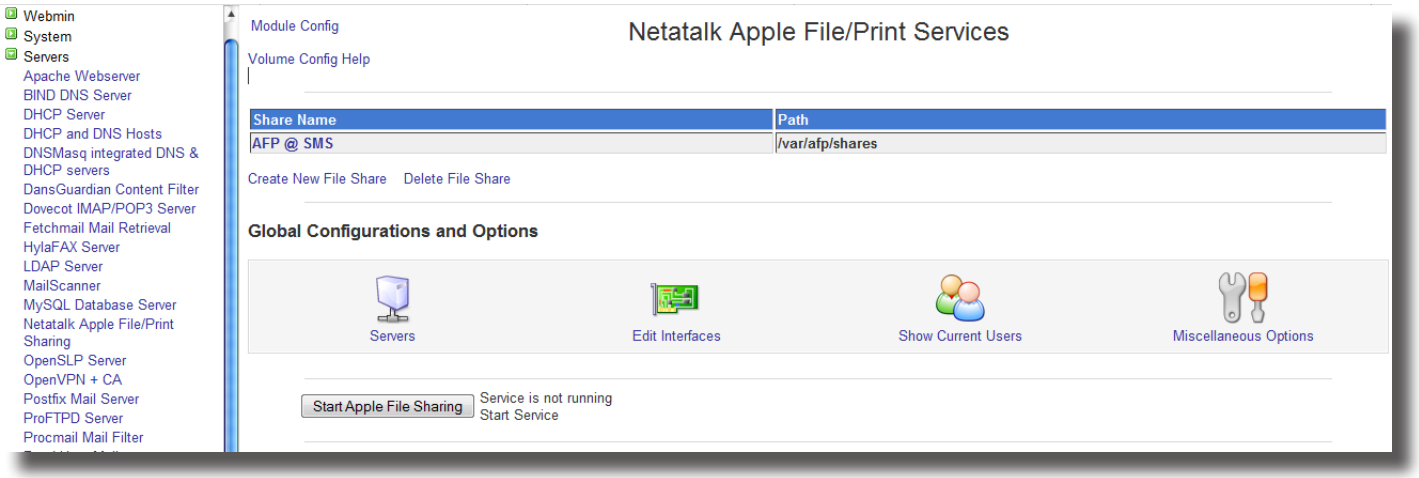
- -transall -uamlist uams_guest.so,uams_clrtxt.so,uams_dhx.so,uams_dhx2.so -nosavepassword

To start/stop netatalk use the start up script provided.

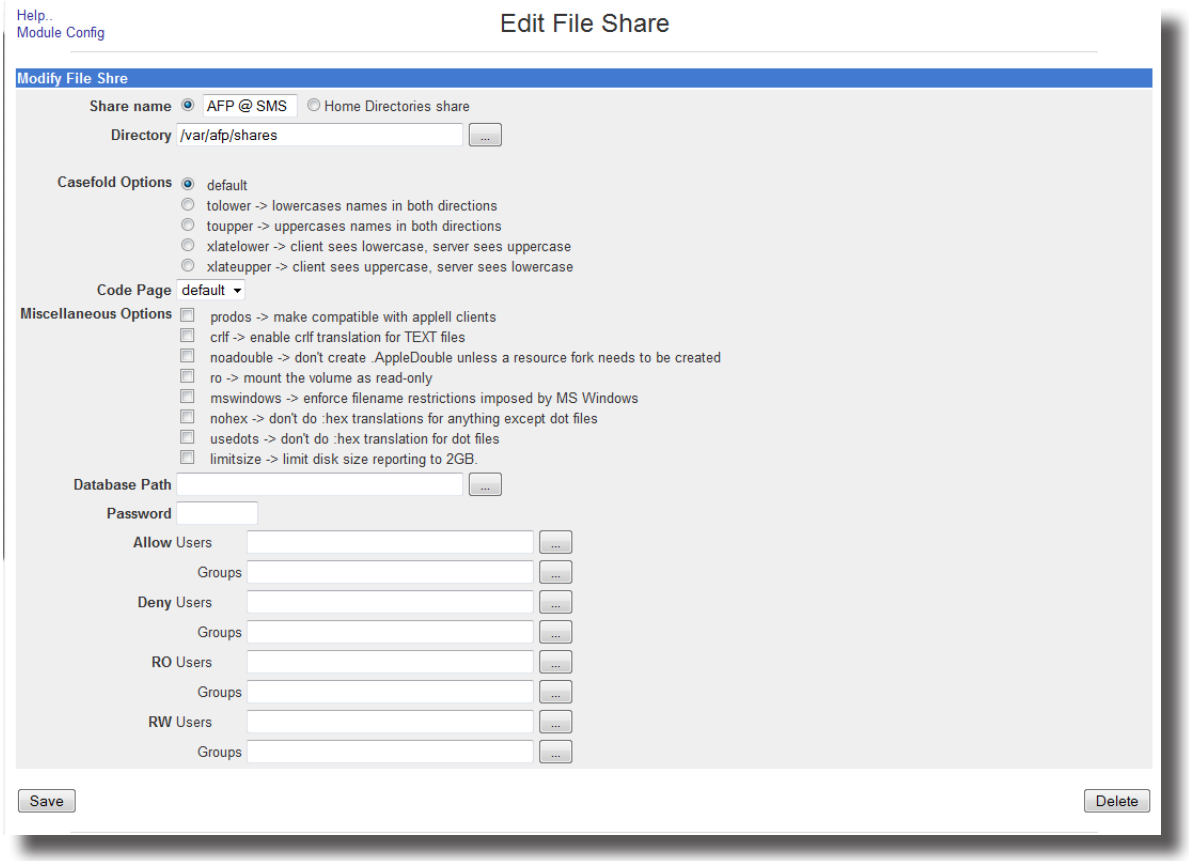
```
/etc/rc.d/rc.atalk  start
```

5.10.1 Webmin module.

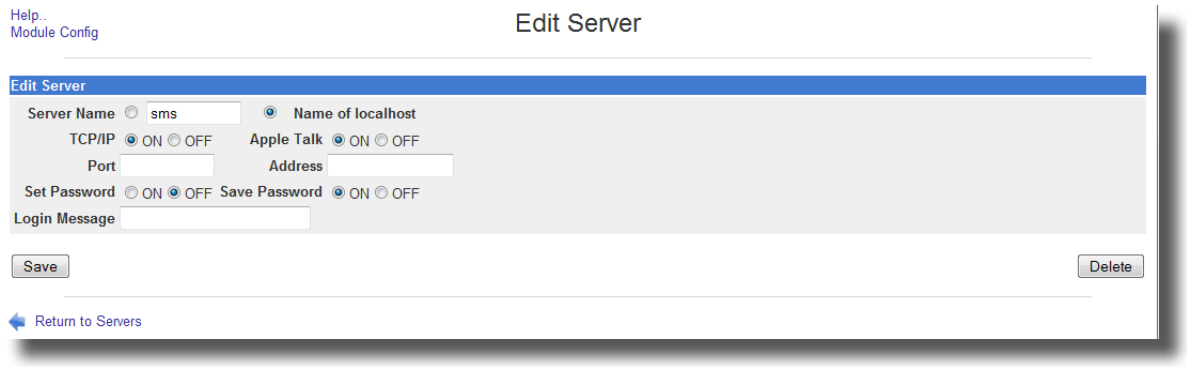
To configure AFP you can use Webmin, although it's module it's a bit confusing.
To access netatalk module navigate at
Webmin -> Servers -> Netatalk Apple File/Print Services.



To create a share click on "Create New File Share" or edit existing. You will notice that tm (TimeMachine) is missing, you can add it manually, by editing /etc/netatalk/AppleVolumes.default.



To configure afpd through webmin just click on button "Servers", and either create or edit one.



5.10.2 Installing Avahi daemons.

Avahi is a free zeroconf implementation, including a system for multicast DNS/DNS-SD service discovery on a local network via the mDNS/DNS-SD protocol suite. This enables you to plug your laptop or computer into a network and instantly be able to view other people who you can chat with, find printers to print to or find files being shared. Compatible technology is found in Apple MacOS X (branded Bonjour and sometimes Zeroconf).

Avahi is available as an extra package and you will found it in SMS.Native.CD-Extra.iso, under /extra/packages/avahi. To install download packages, or mount iso and use "installpkg" to install them.
You can additionally use "slapt-get" to install them automatically by typing:

slapt-get -i avahi imlib2 libdaemon nss-mdns

To start avahi daemons start the startup scripts in /etc/rc.d/

/etc/rc.d/rc.avahidaemon start
/etc/rc.d/rc.avahidnsconfd start

You can place an entry of the above in /etc/rc.d/rc.local to automatically start at boot.

To enable a service rename service.tmpl to service and vice-versa to disable it e.g. rename
/etc/avahi/services/afp.service.tmpl to /etc/avahi/services/afp.service

afp.service it's an xml document and looks like

```
<?xml version="1.0" standalone='no'?><!--*-nxml-*-->
<!DOCTYPE service-group SYSTEM "avahi-service.dtd">
<service-group>
<name replace-wildcards="yes">%h</name>
<service>
<type>_afpovertcp._tcp</type>
<port>548</port>
</service>
 <service>
  <type>_device-info._tcp</type>
  <port>0</port>
  <txt-record>model=Xserve</txt-record>
 </service>
</service-group>
```

By default SMS looks like an Xserve,
but you can change the icon by simple altering
<txt-record>model=Xserve</txt-record>

for instance you can put instead of Xserve

- PowerBook
- PowerMac
- Macmini
- iMac
- MacBook
- MacBookPro
- MacBookAir
- MacPro
- AppleTV1,1
- AirPort

and you can specify even the model e.g. iMac3,1 is not the same as iMac7,1 and so on.

SMS services for avahi are

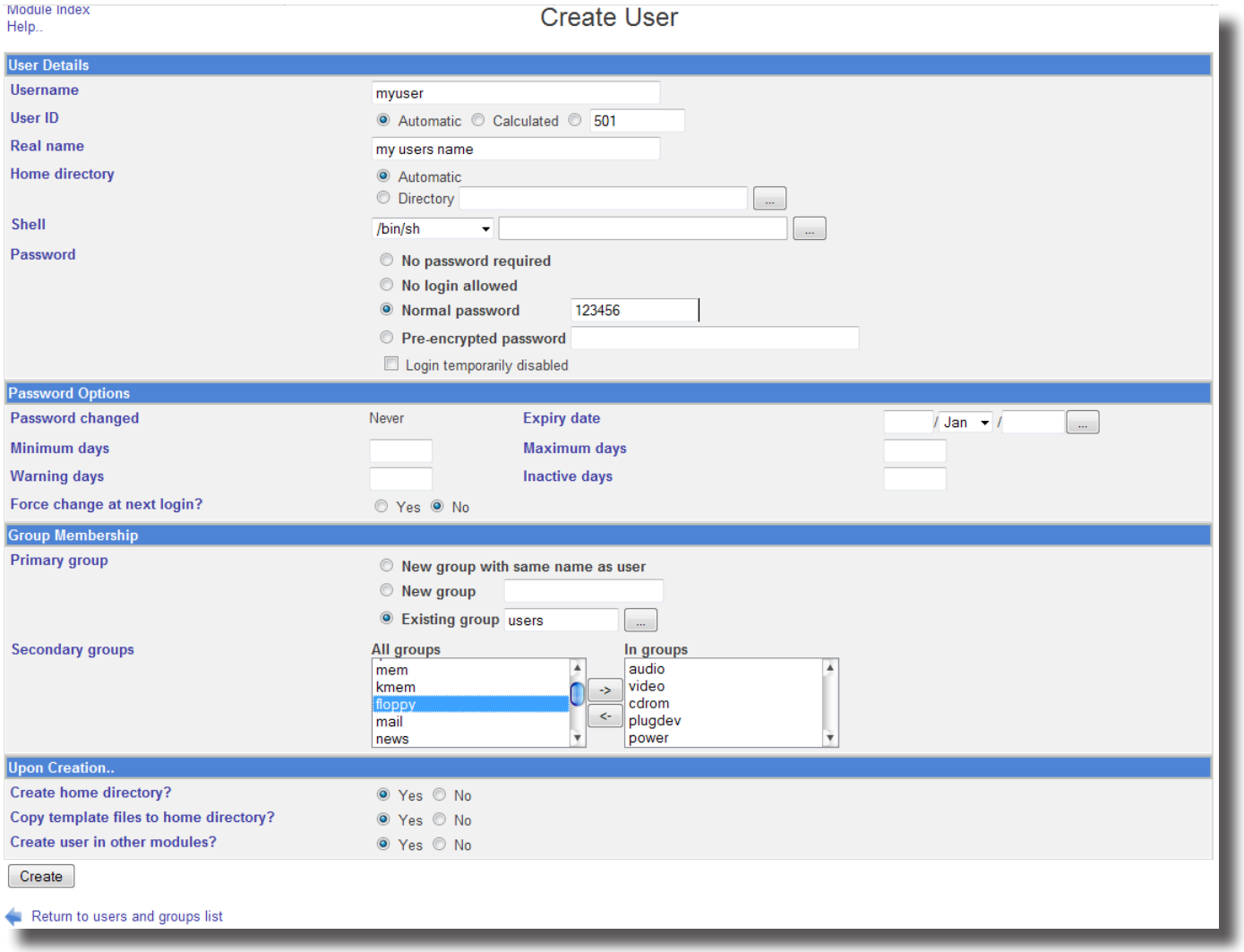
- afp.service.tmpl
- cups.service.tmpl
- http.service
- nfs.service.tmpl
- rfb.service.tmpl
- smb.service

By default http and smb service are enable, but since you are using AFP it's proper to disable smb.

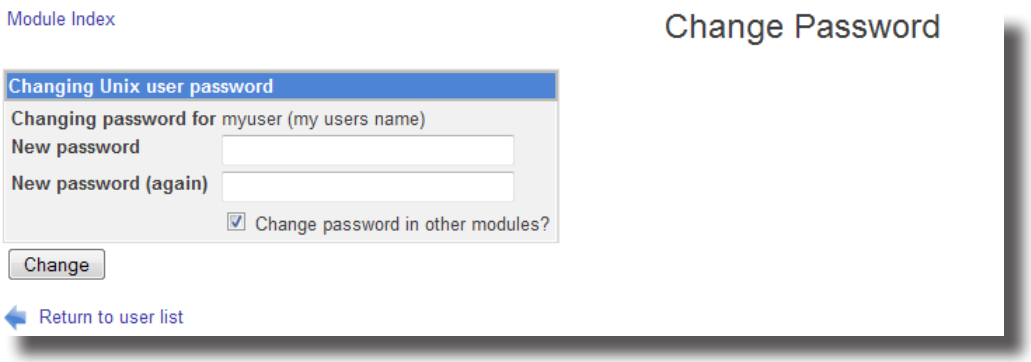
Tip: If you enable vnc in SMS and enable rfb.service
you will get the "Share Screen" button option on your Macs.

5.11 Managing Users (Webmin).

We already know how to add a user with "adduser" script, let's see how to create a user through Webmin. To manage users and groups in webmin, navigate to Webmin -> System -> Users and Groups, and you will see all users and groups your system has. To create a user click on "Create a new user" and fill the appropriate fields like username, real name and password. UID, home directory, and shell, you can leave them as default, unless you want your user to don't have a shell (no login), or you want a home directory other than /home , or not having a directory at all. In the password field, choose Normal Password, and webmin will encrypt it for you.
When you finish press "Create" to create your user.



To delete a user, select one or more users and press "Delete Selected Users".
To edit a user just click on a user and edit it's fields, like password UID e.t.c. You can also change passwords for users at Webmin -> System -> Change Passwords, by clicking on a user and setting a new password.



5.12 Fax server.

SMS comes with hylafax configured in ttyS0 (serial port 1), but you can change or add more modems.
To configure hylafax the proper way is to run "faxsetup". You will get a lot of output and series of questions that you can pass, by pressing enter to the default options.
Next you need to run "faxaddmodem" to add your modems. You need to stop hylafax server before running "faxaddmodem" though. So do a

```
/etc/rc.d/rc.hylafax stop
```

and run faxaddmodem, after you supply serial port you need to answer a few questions about your fax line details like, country code, telephone number e.t.c.
Tip: add 655 and above permissions to receive mode so avantfax be able to grap the messages

```
root@sms:~# faxaddmodem
Serial port that modem is connected to []? ttyS0

Ok, time to setup a configuration file for the modem.  The manual
page config(5F) may be useful during this process.  Also be aware
that at any time you can safely interrupt this procedure.

Reading scheduler config file /var/spool/hylafax/etc/config.

No existing configuration, let's do this from scratch.

Country code [0030]?
 ....
```

when you finish run

```
faxmodem ttyS0
```

to initiate the sending, and

```
/etc/rc.d/rc.hylafax start
```

to start the faxserver, and by typing faxstat you should see:

```
HylaFAX scheduler on sms.org: Running
Modem ttyS0 (<your number>): idle
```

If you don't see the above try to reboot so changes will take affect or try

```
/usr/sbin/faxgetty /dev/ttyS0
```

By now your hylafax server it's ready to receive and send faxes. To add users use the "faxadduser" command.

```
root@sms:~# faxadduser angel
```

5.12.1 AvantFax.

To install avantfax manual with "installpkg", or use "slapt-get -i avantfax". The install script will do the rest for you. You will be asked for mysql's root password, if you did not add a password just press enter or if you have a password enter it at the prompt.

Avantfax database has default settings

user:avantfax
pass:d58fe49

After installation completes go to http:/[yourserver]/avantfax/ and login.

username: admin
password: password

After you choose you password go to admin panel (http://[yourserver]/avantfax/admin/admin.php) and choose from scroll down menu Configure -> modems, and set

device: ttyS0 (notice we add it without /dev/ttyS0 and mind the caps)

alias: your alias

contact: your email (mail should be registered in users config to be accepted)

well that's was it, you are now ready to start enjoy your fax server...