

a Linux sysadmin blog

BY FREDERIK KONIETZNY

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Sep 06 2011 How to setup a FAI Install server on debian squeeze

Ok, Debian Squeeze is out for a while and now it's time to setup a new [FAI \(Fully Automatic Installation\)](#) install server. In this tutorial, I will describe, how to setup FAI with dhcpd3 or dnsmasq for bootp and DHCP.

purpose

This document describes how to set up a FAI install server 3.4.8 on Debian Linux 6.x with dhcpd3 or dnsmasq

list of references

- [fai project](#)

related article

- [PXE network boot of grml rescue system](#)
- [Tutorial: booting SystemRescueCd with PXE/NFS](#)
- <http://thekelleys.org.uk/dnsmasq/doc.html>
- <http://www.isc.org/software/dhcp>

prerequisite

software

The FAI install server is installed with a Debian Squeeze 6.x, and apt-cacher is installed.

Hardware

I will use the following network and hardware informations (MAC address), change these settings for your setup!

- FAI install server, Debian Squeeze 6.x, IP 192.168.2.245, Hostname fai.local
- Client debian-vm-01, MAC address 00:16:3e:1c:64:9b, IP: 192.168.2.240

install FAI

Add the FAI repository to a new configuration file named /etc/apt/sources.list.d/fai.list

```
deb http://fai-project.org/download squeeze koeln
```

To verify the packages from fai-project, add the following gpg key

c

```
gpg -a --recv-keys AB9B66FD.gpg -a --export AB9B66FD | apt-key add -
```

Now we install the FAI packages and some helper tools

```
apt-get install fai-server fai-client fai-doc fai-setup-storage fai-quickstart makepasswd dnsmasq
```

Answer all questions during the installation with the default answer.

setup FAI

Translation



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FAI

fai logging user

During the installation, clients will send logfiles to the "fai" user.

```
useradd -d /home/fai -m -s /bin/bash -c "FAI logging" fai
```

/etc/fai/fai.conf

Open /etc/fai/fai.conf in your favourite editor and add/edit the following options.

```
FAI_CONFIG_SRC=nfs://192.168.2.245/srv/fai/config
LOGUSER=fai
FAI_DEBMIRROR=192.168.2.245:/srv/mirror/debian-squeeze
MNTPOINT=/media/mirror
FAI=/var/lib/fai/config
```

Use the **makepasswd** command, to create a new password, and add the encrypted password to the FAI_ROOTPW variable in the /etc/fai/make-fai-nfsroot.conf configuration file. (default password is fai)

```
user@host:/# makepasswd --crypt-md5
e2TjmLPMW $1$zu3UkGiA$yibHHsa7WQ1VJm3d4YkQQ/
```

fai-setup

Run the fai-setup command to create the nfs root directory, NFS exports and to add the FAI user to the system.

```
fai-setup -v
cp -a /usr/share/doc/fai-doc/examples/simple/* /srv/fai/config/
```

NFS exports

Add the following NFS exports to /etc/exports and restart the NFS Kernel Daemon:

```
cat >> /etc/exports << "EOF"
/srv/fai/config 192.168.2.0/255.255.255.0(async,ro,no_subtree_check)
/srv/fai/nfsroot 192.168.2.0/255.255.255.0(async,ro,no_subtree_check,no_root_squash)
/srv/mirror/debian-squeeze 192.168.2.0/255.255.255.0(async,ro,no_subtree_check)
EOF
/etc/init.d/nfs-kernel-server restart
```

FAI / Debian mirror

The fai-mirror script creates a mirror of the needed Debian packages (defined in /srv/fai/config/package_config/)

```
mkdir -p /srv/mirror/debian-squeeze
fai-mirror /srv/mirror/debian-squeeze/
```

NFS root


With the following command we will create the FAI nfsroot:

```
make-fai-nfsroot -v
```

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Add to the nfsroot apt sources configuration (`/srv/fai/nfsroot/live/filesystem.dir/etc/apt/sources.list`) the apt-cacher proxy (including Debian backports repositories) – Check the related article for the apt-cacher setup.

```
deb http://192.168.2.44/apt-cacher/ftp.de.debian.org/debian/ squeeze main non-free contrib
deb http://192.168.2.44/apt-cacher/security.debian.org/ squeeze/updates main non-free contrib
deb http://192.168.2.44/apt-cacher/fai-project.org/download squeeze koeln
```

Set the boot NFS option in `/srv/fai/nfsroot/live/filesystem.dir/etc/initramfs-tools/initramfs.conf` to NFS

```
BOOT=nfs
```

setup PXE

pxelinux.cfg

```
# copy the menu binary
cp /usr/lib/sylinux/menu.c32 /srv/tftp/fai

cat > /srv/tftp/fai/pxelinux.cfg/default << "EOF"
DEFAULT menu.c32                                     # Prompt user for selection

menu color tabmsg 37;40   #80ffff #00000000
menu color hotsel 30;47   #40000000 #20ffff
menu color sel 30;47     #40000000 #20ffff
menu color scrollbar 30;47 #40000000 #20ffff
MENU WIDTH 80
MENU MARGIN 10
MENU PASSWORDMARGIN 3
MENU ROWS 12
MENU TABMSGROW 18
MENU CMDLINEROW 18
MENU ENDROW 24
MENU PASSWORDROW 11
MENU TIMEOUTROW 20
TIMEOUT 100
ALLOPTIONS 1

MENU TITLE PXE Boot Menu

LABEL local
  menu label ^Boot local harddisk
  menu default
  localboot 0

LABEL install
  menu label Debian Squeeze Install
  KERNEL vmlinuz-2.6.32-5-amd64
  APPEND ip=dhcp boot=live netboot=nfs nfsroot=192.168.2.245:/srv/fai/nfsroot root=/dev/nfs initrd=initrd.img-2.6.32-5-amd64 FAI_FLAGS=
  EOF
```

tftpd

Setup the tftpd-hpa daemon in `/etc/default/tftpd-hpa` to serve the kernel and initrd file to the install client.

```
TFTP_USERNAME="tftp"
TFTP_DIRECTORY="/srv/tftp/fai"
TFTP_ADDRESS="0.0.0.0:69"
TFTP_OPTIONS="--secure"
```

DHCP/bootp

Decide, if you want to use [dnsmasq](#), or [dhcpd3](#)

dnsmasq

```
cp /etc/dnsmasq.conf /etc/dnsmasq.conf.backup
cat > /etc/dnsmasq.conf << "EOF"
dhcp-range=192.168.2.235,192.168.2.240,static
dhcp-host=00:16:3e:1c:64:9b,debian-vm-03
dhcp-boot=pxelinux.0
log-queries
```

December 9, 2012

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dhcp

```
cp /etc/dhcp/dhcpd.conf /etc/dhcp/dhcpd.conf.backup
cat > /etc/dhcp/dhcpd.conf << "EOF"
log-facility local7;

option dhcp-max-message-size 2048;
use-host-decl-names on;
deny unknown-clients;

allow bootp;
allow booting;

option domain-name "local";
option domain-name-servers 192.168.2.245;

subnet 192.168.2.0 netmask 255.255.255.0 {
  option routers 192.168.2.1;
  option broadcast-address 192.168.2.255;
}

group {
  filename "pxelinux.0";
  next-server 192.168.2.245;

  option root-path "192.168.2.245:/srv/fai/nfsroot";

  host test1 {
    hardware ethernet 00:16:3e:1c:64:9b;
    fixed-address 192.168.2.240;
  }
}
EOF
```

Install the client

Boot the client with PXE boot enabled (enable PXE in the Clients BIOS) and select "Debian Squeeze Install" from the menu.

Posted by fkonietzny on September 6, 2011

FAI

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