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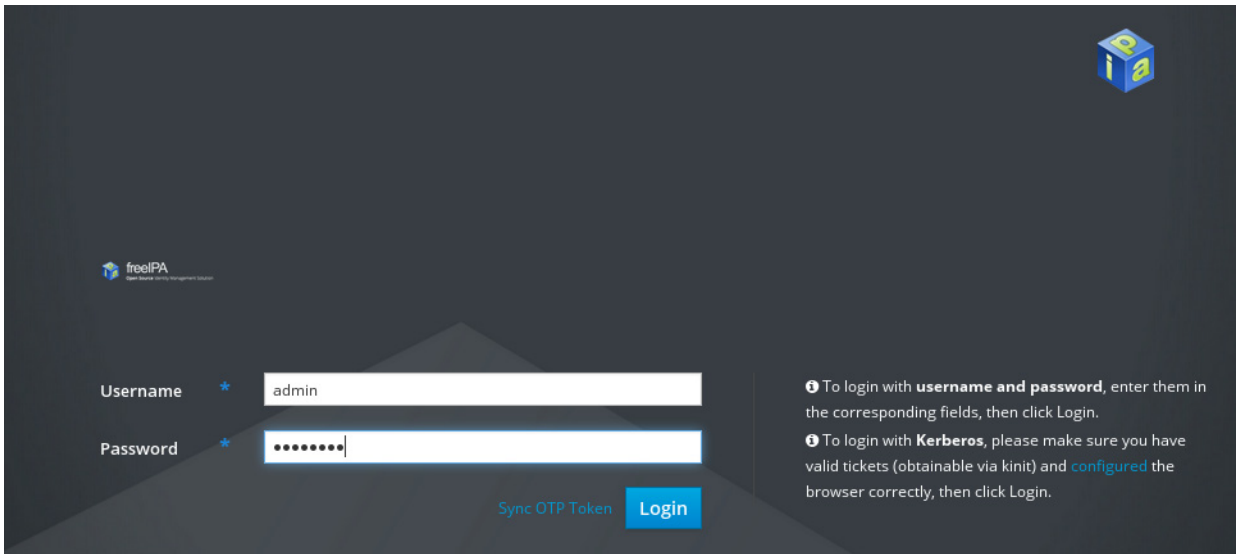
FreeIPA - Adding DNS entries

- As well as adding users, the DNS part of FreeIPA will need host entries, especially if you are intending to run services such as kerberised NFS.
- We'll add these entries using the Web GUI.
- As part of the FreeIPA installation, the web server service was configured and started, but it will accept connections only on the FreeIPA server itself, in our case *heron*.
- On the FreeIPA server you will need to be logged in and running the window system, then invoke the Firefox web browser with the server itself as the URL.
- For *heron* this would be *http://heron.fatrain.com*, and you should see:-



- Enter the username *admin* with password *abc12345*. (Unless you chose something different).

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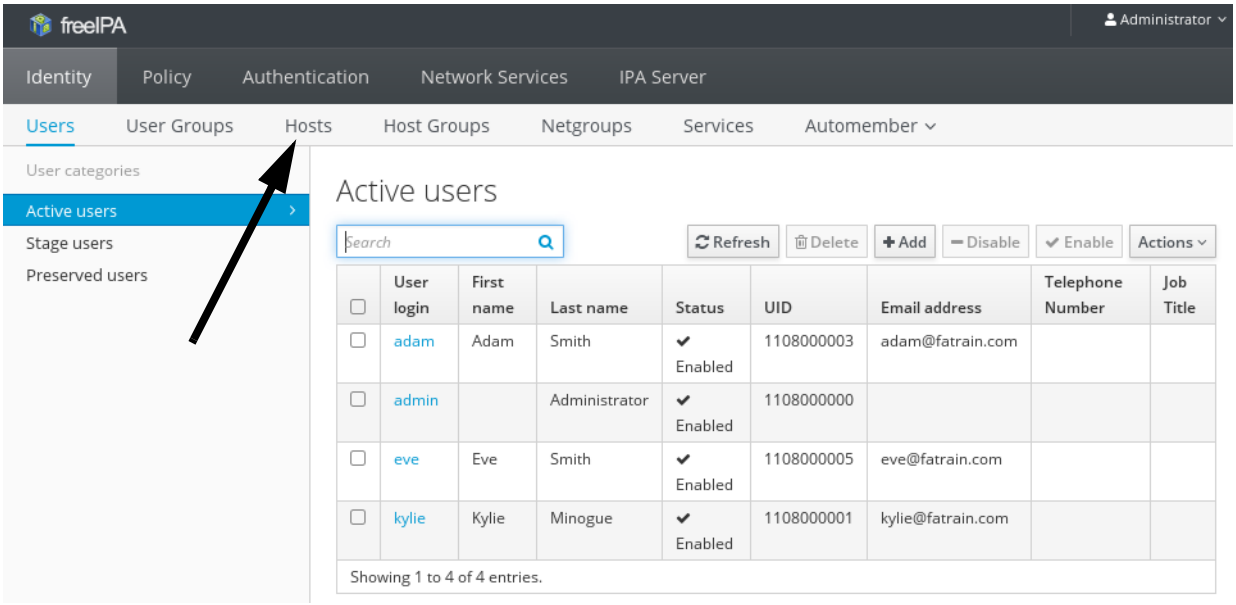
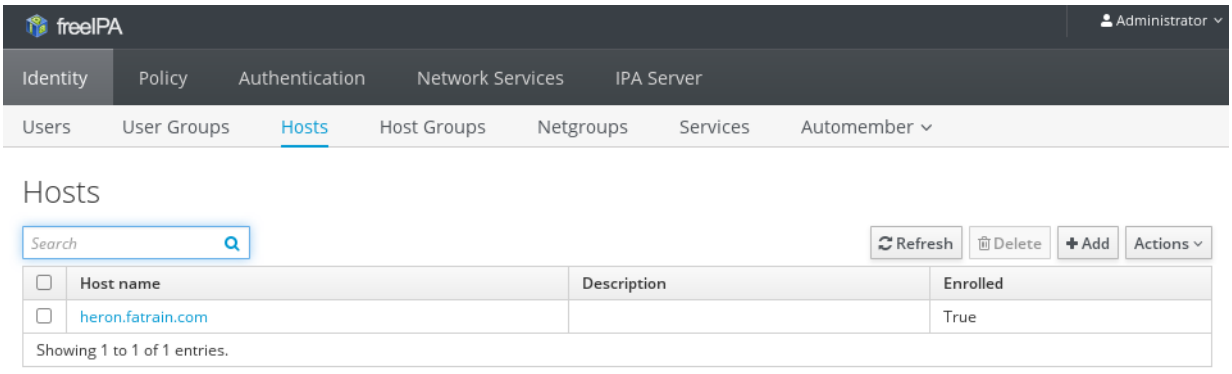
FreeIPA - Adding DNS entries

- The first screen you see shows the users:-



- You can try adding a user if you like, just click on the *+Add* button above the email address column.
- We want to add hosts, so click on the *Hosts* tab as indicated:-



- Now click on *+Add*.

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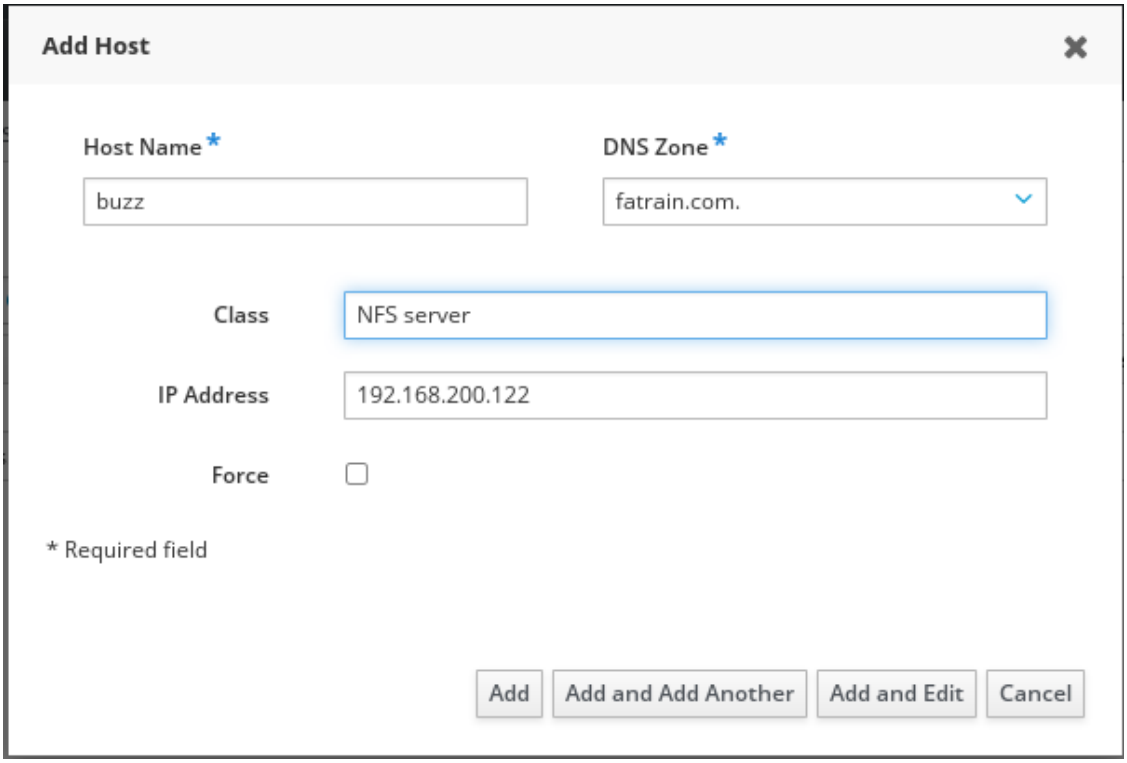
FreeIPA - Adding DNS entries

- The follow shows an example for the NFS server *buzz*:-



- Not sure what the force option is...and the GUI lacks any help facilities.
- Click on *Add* when completed, and add any further hosts in the same way - just ensure that the domain name is set correctly each time.
- Of course, substitute *buzz* with your server name.

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FreeIPA - Joining the Kerberos realm

- The server *buzz* can now be joined to the Kerberos realm within the FreeIPA server *heron*.
- On *buzz*, make sure the DNS server is set as the FreeIPA server; this may be with or without NetworkManager running.
- This will show if it is using the correct server:-

```
# nslookup
> buzz
Server:         192.168.200.201
Address:        192.168.200.201#53

Name:   buzz.fatrain.com
Address: 192.168.200.122
>
```

- Set a fully-qualified hostname:-

```
# hostnamectl  set-hostname  buzz.fatrain.com
```

* Install the *ipa-client* package:-

```
# yum  install  ipa-client
```

* Now run the *ipa-client-install* command:-

```
# ipa-client-install  --mkhomedir  --enable-dns-updates  \
        --force-ntpd
Discovery was successful!
Client hostname: buzz.fatrain.com
Realm: FATRAIN.COM
DNS Domain: fatrain.com
IPA Server: heron.fatrain.com
BaseDN: dc=fatrain,dc=com
```

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FreeIPA - Joining the Kerberos realm

Continue to configure the system with these values? [no]: ***yes***

Synchronizing time with KDC...
Attempting to sync time using ntpd. Will timeout after 15 seconds

User authorized to enroll computers: ***admin***

Password for admin@FATRAIN.COM: ***abc12345***

Successfully retrieved CA cert
    Subject: CN=Certificate Authority,O=FATRAIN.COM
    Issuer: CN=Certificate Authority,O=FATRAIN.COM
    Valid From: Mon Jul 04 05:59:17 2016 UTC
    Valid Until: Fri Jul 04 05:59:17 2036 UTC

Enrolled in IPA realm FATRAIN.COM
Created /etc/ipa/default.conf
New SSSD config will be created
Configured sudoers in /etc/nsswitch.conf
Configured /etc/sssd/sssd.conf
Configured /etc/krb5.conf for IPA realm FATRAIN.COM
trying https://heron.fatrain.com/ipa/json
Forwarding 'ping' to json server 'https://heron.fatrain.com/ipa/json'
Forwarding 'ca_is_enabled' to json server 'https://heron.fatrain.com/ipa/json'
Systemwide CA database updated.

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FreeIPA - Joining the Kerberos realm

```
Added CA certificates to the default NSS database.
Adding SSH public key from /etc/ssh/ssh_host_rsa_key.pub
Adding SSH public key from /etc/ssh/ssh_host_ecdsa_key.pub
Adding SSH public key from /etc/ssh/ssh_host_ed25519_key.pub
Forwarding 'host_mod' to json server 'https://heron.fatrain.com/ipa/json'
SSSD enabled
Configured /etc/openldap/ldap.conf
NTP enabled
Configured /etc/ssh/ssh_config
Configured /etc/ssh/sshd_config
Configuring fatrain.com as NIS domain.
Client configuration complete.
```

- Now we need to carry further commands on the FreeIPA server.
- We are going to create a service principal for server buzz, which is an identity that Kerberos can authenticate when we set buzz up as an NFS server.
- On the FreeIPA server *heron*:-

ipa service-add
Principal: ***nfs/buzz.fatrain.com***

```
---------------------------------------------
Added service "nfs/buzz.fatrain.com@FATRAIN.COM"
---------------------------------------------
  Principal: nfs/buzz.fatrain.com@FATRAIN.COM
  Managed by: buzz.fatrain.com
```

* Where *buzz* is the NFS server.

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FreeIPA - Joining the Kerberos realm

- Now back on the client *buzz*:-

klist -k

```
Keytab name: FILE:/etc/krb5.keytab
KVNO Principal
---- --------------------------------------------------------------------------
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
```

- Make sure your Kerberos ticket is still valid:-

klist

- If you get:-

klist: Credentials cache keyring 'persistent:0:0' not found

- Then it has expired, so:-

kinit admin

Password for admin@FATRAIN.COM: ***abc12345***

klist

```
Ticket cache: KEYRING:persistent:0:0
Default principal: admin@FATRAIN.COM

Valid starting       Expires              Service principal
07/05/2016 11:10:37  07/06/2016 11:10:33  krbtgt/
FATRAIN.COM@FATRAIN.COM
```

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FreeIPA - Joining the Kerberos realm

- Now run the following on *buzz*:-

```
# ipa-getkeytab -s heron.fatrain.com -p nfs/buzz.fatrain.com \
        -k /etc/krb5.keytab
Keytab successfully retrieved and stored in: /etc/krb5.keytab

# klist -k
Keytab name: FILE:/etc/krb5.keytab
KVNO Principal
---- --------------------------------------------------------------------
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 host/buzz.fatrain.com@FATRAIN.COM
   1 nfs/buzz.fatrain.com@FATRAIN.COM
   1 nfs/buzz.fatrain.com@FATRAIN.COM
   1 nfs/buzz.fatrain.com@FATRAIN.COM
   1 nfs/buzz.fatrain.com@FATRAIN.COM
```

- Repeat the above process for any other NFS servers that you may wish to create.
- We can now proceed to set up Kerberised NFS services between servers and clients.

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FreeIPA - Using the Kerberised logins

- Having run the *ipa-client-install* command on *buzz*, we should be able to login as users known only on the FreeIPA server.
- Note that the area of preparing a system for remote authentication is tricky, and you may see mention of doing this using a number of other tools, for example:-
    - **authconfig** - a CLI interface.
    - **authconfig-tui** - a menu driven text interface
    - **authconfig-gtk** - a graphical version of the above.
- In fact, using such a tool is a requirement of the certification exams, and we will see an example soon.
- For now, we'll examine logging in as a FreeIPA user.
- Although we created a couple of users, there are no home directories for them, so we can:-
    - Manually create the home directory.
    - Have it created automatically the first time the user logs in.
- In most installations, manual creation would probably be preferred, along with some sort of availability via NFS perhaps.

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FreeIPA - Using the Kerberised logins

- To find out if our FreeIPA client knows about the user accounts:-

```
# getent passwd eve
eve:*:1108000005:1108000005:Eve Smith:/home/eve:/bin/bash
# getent passwd adam
adam:*:1108000003:1108000003:Adam Smith:/home/adam:/bin/sh
```

- Notice what happens if we *su* to user *eve*:-

```
# su - eve
Creating home directory for eve.
Attempting to create directory /home/eve/perl5
```

  * The message about */home/eve/perl5* is because the *perl-homedir* package is installed - nothing to do with our activities.
  * Note how the home directory is automatically created; this is through a PAM module.

- To manually make a home directory, this time for *adam*:-

```
# mkdir /home/adam
# chown adam /home/adam
```

- Now login as *adam* or use *su - adam*.

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FreeIPA - Using the Kerberised logins

- The users should also be able to change their passwords.
- If we run *klist* as *eve* after a login (not an *su*):-

$ ***klist***

Ticket cache: KEYRING:persistent:1108000005:krb_ccache_t8g6wja
Default principal: eve@FATRAIN.COM

Valid starting	Expires	Service principal
07/05/2016 13:23:43	07/06/2016 13:23:42	krbtgt/FATRAIN.COM@FATRAIN.COM