Table of Contents

Setting Up an SSH Console	
Configure SSH in FreeNAS	
Specify SSH Public Key For a User	
Setting up PuTTY in Windows	
— — — — — — — — — — — — — — — — — — —	
Using SSH on a Mac	
•	

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2025/11/02 16:45 1/9 Setting Up an SSH Console

Setting Up an SSH Console

SSH stands for Secure SHell, and is a secure method to connect to a remote computer over a network. There are many advantages to using an SSH console rather than say the shell facility in the FreeNAS GUI.

The SSH console is a window that has a scrolling function which means you can go back and view the output in the console. You can also select large bodies of text and copy and paste them. This can be particularly useful when trying to get help from someone as they need to see what you have done. It is also useful when compiling data (i.e. SMART test data).

An SSH console is also very secure in two ways. Firstly it can be configured to require a Public/Private key and a password before you can log in to the session and the server. Secondly the connection between the server and the client is encrypted. This means any information that goes between the two cannot be read directly.

Configure SSH in FreeNAS

Open your web browser and type in the IP address of the FreeNAS web GUI that you noted down earlier (Fester used 192.168.0.58).

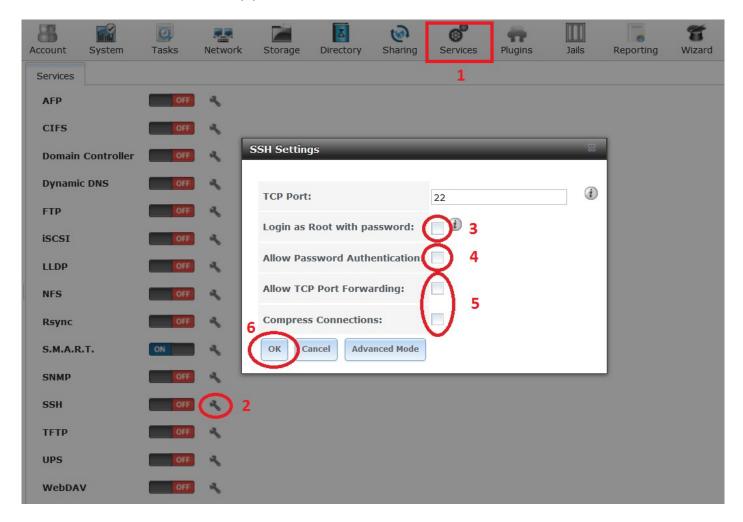
The web GUI will present itself and ask for the login details. Enter the username which is **root** (1) and your password (2) and click the "Log In" button (3).



Now you are logged into FreeNAS.

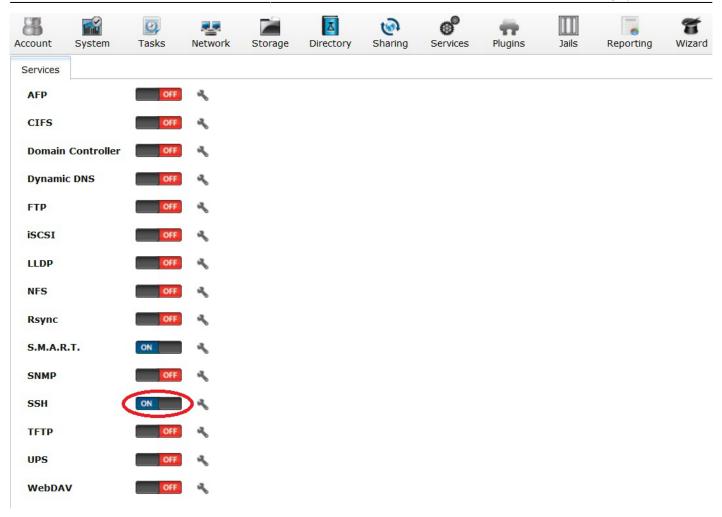
- Now navigate to the "Services" page (1).
- Click on the tiny spanner icon next to "SSH" (2).
- If you do not want the root user to be able to log in using only a password (i.e., if you want to require a public key, or if you don't want the root user to be able to log in remotely at all), uncheck the "Login as Root with password" tick box (3).

- If you want to require public key authentication, uncheck the "Allow password authentication" tick box (4).
- Make sure the remaining tick boxes are unchecked (5).
- Now click the "OK" button (6).



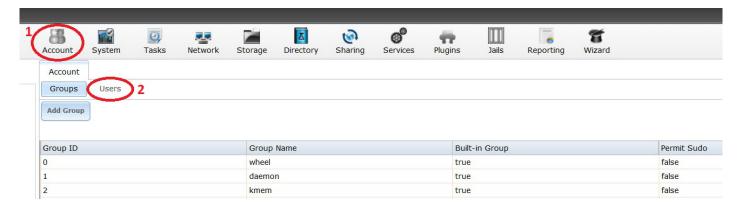
Now turn on the SSH service.

2025/11/02 16:45 3/9 Setting Up an SSH Console



Specify SSH Public Key For a User

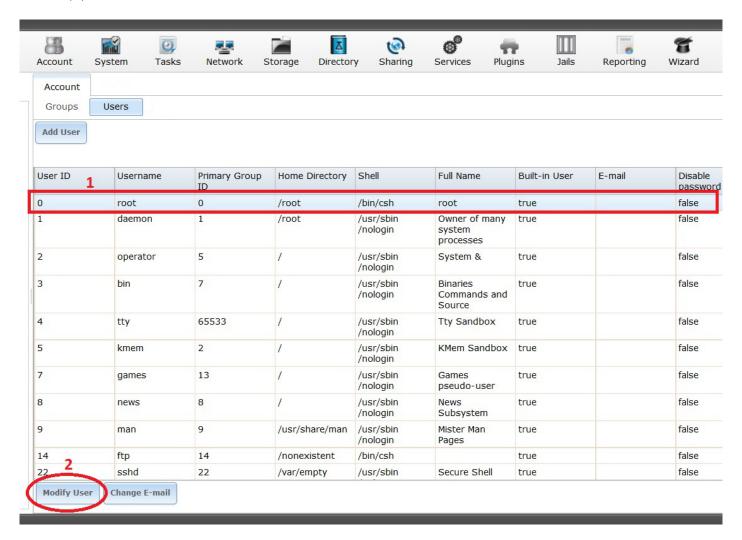
If you have required public key authentication in the SSH configuration, you'll need to tell FreeNAS what the public key is for each user who will be connecting via SSH. To do that, Navigate to the "Account" page by clicking on the Account icon (1). Now click on the "Users" button (2).



p { margin-bottom: 0.1in; direction: ltr; color: rgb(0, 0, 0); line-height: 120%; }p.western { font-family: "Times New Roman",serif; font-size: 12pt; }p.cjk { font-family: "Times New Roman",serif; font-size: 12pt; }p.ctl { font-family: "Times New Roman",serif; font-size: 12pt; }a:visited { color: rgb(128, 0, 128);

}a.western:visited { }a.cjk:visited { }a.ctl:visited { }a:link { color: rgb(0, 0, 255); }

Now select the "root" user account (1) (it will turn blue when selected) and click on the "Modify User" button (2).



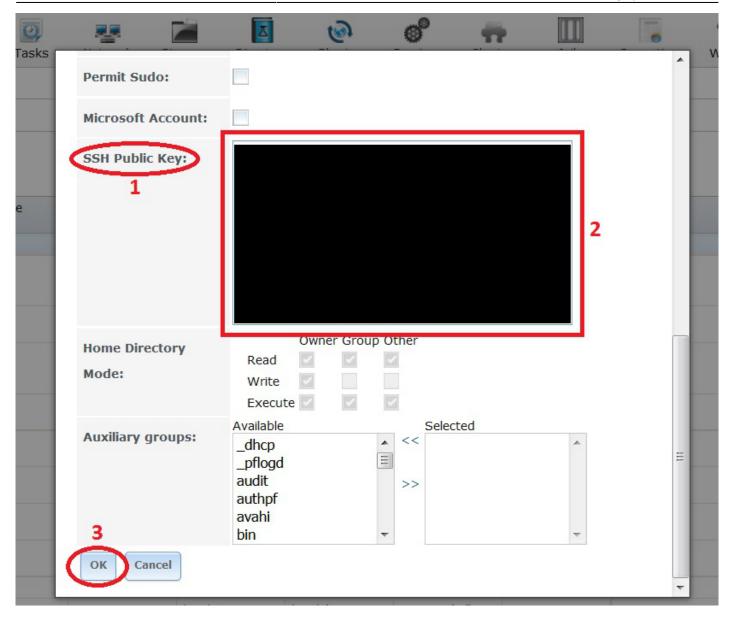
p { margin-bottom: 0.1in; direction: ltr; color: rgb(0, 0, 0); line-height: 120%; }p.western { font-family: "Times New Roman",serif; font-size: 12pt; }p.ctl { font-family: "Times New Roman",serif; font-size: 12pt; }a:visited { color: rgb(128, 0, 128); }a.western:visited { }a.cjk:visited { }a.ctl:visited { }a:link { color: rgb(0, 0, 255); }

The modify user window should now pop up. Scroll down till you come across the "SSH Public Key:" entry (1).

Now right click in the blank box next to it and paste in the previously copied public key (2).

Now click the "OK" button (3).

2025/11/02 16:45 5/9 Setting Up an SSH Console



Setting up PuTTY in Windows

Modern operating systems ship with an SSH client installed. Unfortunately, Windows is still not a modern operating system in this regard, so a third-party client will need to be used. Popular clients include Bitvise and PuTTY.

Public Key Authentication in PuTTY

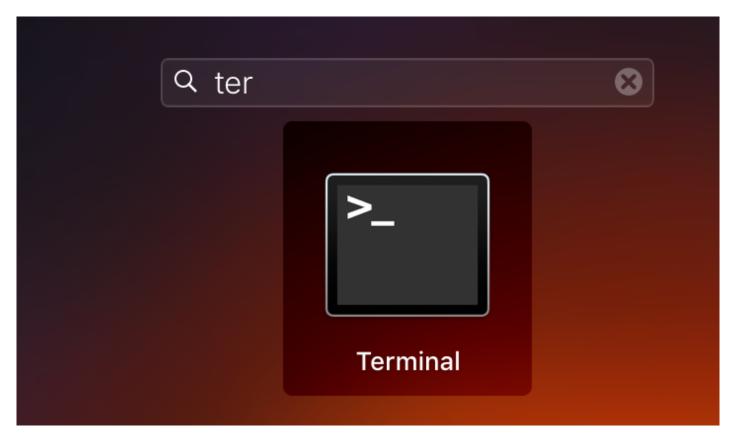
Using SSH on a Mac

Mac OS X includes an SSH client, but it must be used from the command line. To use it, you'll need to

open a terminal window. Start by clicking the launchpad button in your dock (it looks like a rocket):

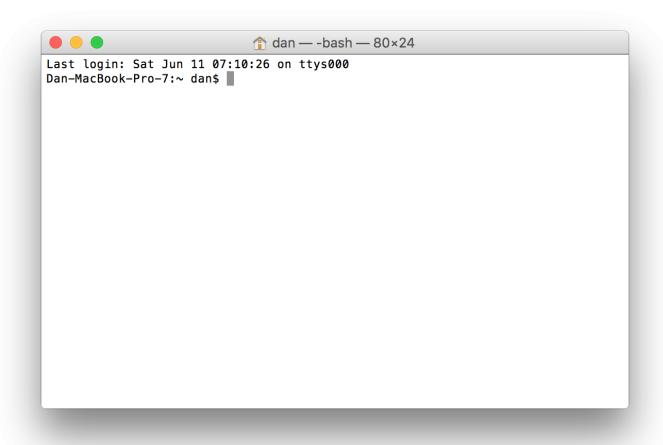


Begin typing "Terminal" into the search bar at the top, until you see the Terminal icon below:



Then click on the Terminal icon. You'll see a window like this:

2025/11/02 16:45 7/9 Setting Up an SSH Console



To connect to a server using SSH, you can simply type

ssh user@host

Where "user" and "host" are the username and hostname, respectively, that you want to connect to. For example,

ssh root@freenas

Or you can use an IP address:

ssh root@192.168.0.5

If you have required public key authentication on your FreeNAS server, you'll need to generate a keypair. To do this, type

ssh-keygen -t rsa

...and simply accept the defaults. The result will look like this:

```
Dan-MacBook-Pro-7:~ dan$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/dan/.ssh/id rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /Users/dan/.ssh/id rsa.
Your public key has been saved in /Users/dan/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:ZB0ZFqEWWJuCgEWIyFd/Thk5KOuncH8LT06w0CSdRdk dan@Dan-MacBook-Pro-7.local
The key's randomart image is:
----[RSA 2048]----+
+=+ .. +*.B=
=. o o+o E+.
   . . +oB+o
    ..0=+
    ··+ ·S.
    .00..0
    00+0 0
   --[SHA256]
Dan-MacBook-Pro-7:~ dan$
```

The system will prompt you for a passphrase; this is optional. If you enter a passphrase, you will need to enter it every time you use this keypair (i.e., every time you use ssh). If you leave the passphrase blank, you won't need to enter it when you connect to a remote server, but neither will a thief who manages to steal your computer. You'll now need to view your public key, to enter it in the FreeNAS configuration. To do that, type

```
cat .ssh/id rsa.pub
```

The result will look like this:

ssh-rsa

AAAAB3NzaC1yc2EAAAADAQABAAABAQCxoFuJ2Px8sIA0zla1FXjnG+af2kRNhj/FcQ5nhOn6F2LepgX f/4SQFjx5BWaD88H6/06lTaUAqprxKS4m33SKN7poH6RaeIfbJXwjJ/o0Cx0QbugGAeMKjH0Bg4fsHw vqGLT7o0lcQ0ubmGBZlSx9R9IFNmnDLAru+Z5gjuAwKCXGw2dxVqbq2IwB3jEoA3bbo8gy6Dso5wV75 0EC+dYlB/lQrxW/uscgPjpi1XCFVuWtajyz9jujakR1uHuRRphsp56GXVTovwM3P6h52ADDhr5vkfsk GKgmETj940x5+MFbmBvC9iIMIeRGLfWIAQY+8NjosQYfieU5U48oDmDb dan@Dan-MacBook-Pro-7.local

Copy this, all on line line, and paste it into your FreeNAS configuration.

Using SSH on Linux

SSH on Linux works just like SSH on a Mac. Follow the instructions above.

2025/11/02 16:45 9/9 Setting Up an SSH Console

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