



Ubuntu Linux install OpenSSH server

last updated October 14, 2019 in [OpenBSD](#), [Ubuntu Linux](#)

How do I install OpenSSH server on Ubuntu Linux?



Introduction: sshd (OpenSSH Daemon or server) is the daemon program for ssh client. It is a free and open source ssh server. ssh replaces insecure rlogin and rsh, and provide secure encrypted communications between two untrusted hosts over an insecure network such as the Internet. Ubuntu Desktop and minimal Ubuntu server do not come with sshd installed. However, you can easily install SSH server in Ubuntu using the following steps.

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How to install SSH server in Ubuntu

The procedure to install a ssh server in Ubuntu Linux is as follows:

1. Open the terminal application for Ubuntu desktop.
2. For remote Ubuntu server you must use BMC or KVM or IPMI tool to get console access
3. Type `sudo apt-get install openssh-server`
4. Enable the ssh service by typing `sudo systemctl enable ssh`

5. Start the ssh service by typing `sudo systemctl start ssh`
6. Test it by login into the system using `ssh user@server-name`

Let us see all Ubuntu OpenSSH server installation steps in details.

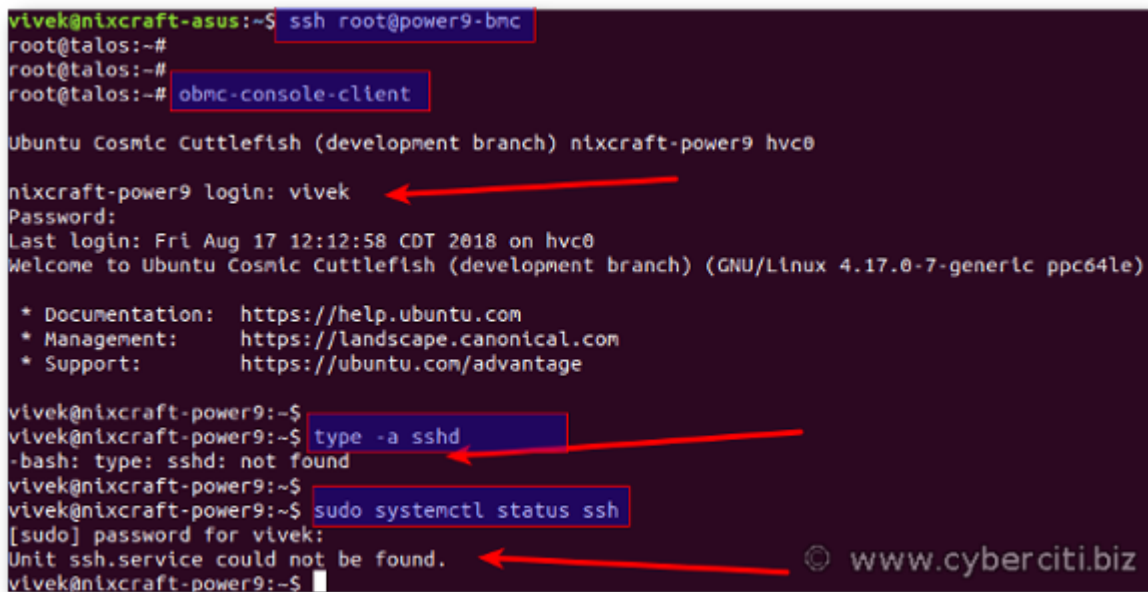
1. Login to remote server using bmc/ipmi/kvm over IP (optional)

I am using OpenPOWER based system called Talos II from Raptor Computing Systems. It is a PowerPC (ppc/ppc64le) based architecture. After a fresh installation of Ubuntu Linux (ppc64le), I found does not come with SSH server installed by default. So here is how to login to bmc server to gain access to the serial console:

```
$ ssh root@power9-bmc
```

Run `obmc-console-client` to get console access to the Ubuntu server console:

```
# obmc-console-client
```



The screenshot shows a terminal session on a nixcraft-asus machine. The user runs `ssh root@power9-bmc` to connect to a remote server. After logging in as root, they run `obmc-console-client` to access the BMC console. The console output shows the login for 'vivek' on 'nixcraft-power9'. The user then runs `type -a sshd`, which returns 'not found'. Finally, they run `sudo systemctl status ssh`, which returns 'Unit ssh.service could not be found.' Red arrows point to the `ssh root@power9-bmc` command, the `type -a sshd` command, and the `Unit ssh.service could not be found.` message. A watermark '© www.cyberciti.biz' is visible in the bottom right corner.

```
vivek@nixcraft-asus:~$ ssh root@power9-bmc
root@talos:~#
root@talos:~#
root@talos:~# obmc-console-client

Ubuntu Cosmic Cuttlefish (development branch) nixcraft-power9 hvc0

nixcraft-power9 login: vivek
Password:
Last login: Fri Aug 17 12:12:58 CDT 2018 on hvc0
Welcome to Ubuntu Cosmic Cuttlefish (development branch) (GNU/Linux 4.17.0-7-generic ppc64le)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

vivek@nixcraft-power9:~$
vivek@nixcraft-power9:~$ type -a sshd
-bash: type: sshd: not found
vivek@nixcraft-power9:~$ sudo systemctl status ssh
[sudo] password for vivek:
Unit ssh.service could not be found.
vivek@nixcraft-power9:~$
```

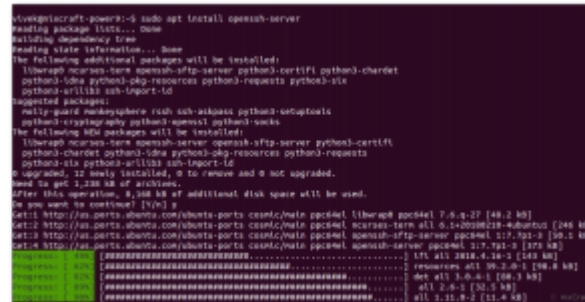
2. Ubuntu Linux install OpenSSH server

First update the system using the [apt command](#) or [apt-get command](#):

```
$ sudo apt update
$ sudo apt upgrade
```

To install openssh-server package, run:

```
$ sudo apt install openssh-server
```



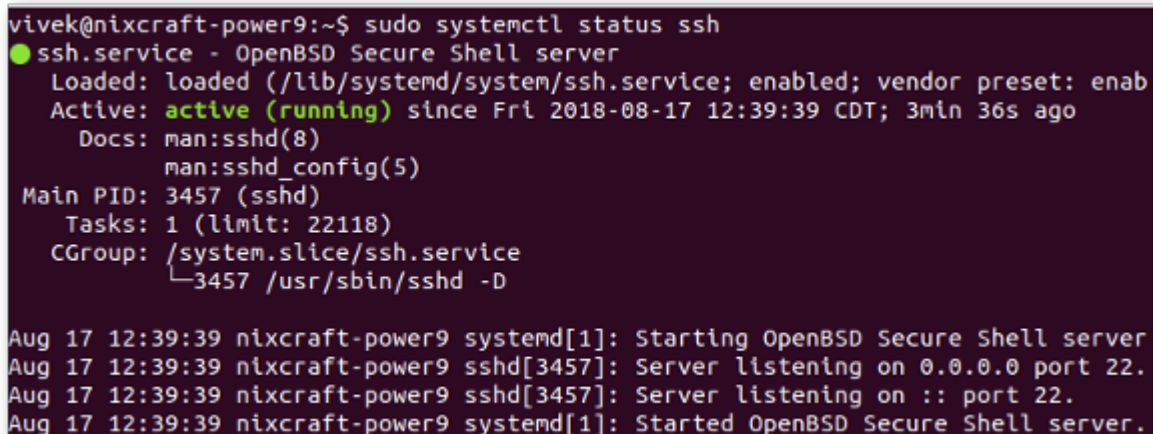
```
viveknixcraft-power9:~$ sudo apt install openssh-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libexpat1-dev libncurses-term openssh-client openssh-sftp-server python3-certifi python3-chardet
  python3-ida python3-pkg-resources python3-requests python3-six
  python3-urllib3 ssh-import-id
Requested packages:
  openssh-server
  python3-certifi python3-chardet python3-ida python3-pkg-resources python3-requests python3-six
  python3-urllib3 ssh-import-id
Need to get 1,238 kB of archives.
After this operation, 8,188 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el libexpat1-dev 2.2.6-2 [48.2 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el ncurses-term 6.1+20180825ubuntu1 [248 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el openssh-client 8.2p1-2 [345.1 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el openssh-sftp-server 8.2p1-2 [177.1 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-certifi 2018.8.24 [144 kB]
Get:6 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-chardet 3.0.4-1 [108.6 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-ida 0.15.1-1 [108.6 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-pkg-resources 45.2.0-1 [108.6 kB]
Get:9 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-requests 2.19.1-1 [108.6 kB]
Get:10 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-six 1.11.0-1 [10.8 kB]
Get:11 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el python3-urllib3 1.24.2-1 [108.6 kB]
Get:12 http://us.archive.ubuntu.com/ubuntu/poetry/main ppc64el ssh-import-id 5.10-1 [108.6 kB]
Fetched 1,238 kB (11.4 MB) in 11s (111 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
[Progress bar showing installation progress]
```

[Click to enlarge an image](#)

3. Verify that ssh service running

Type the following systemctl command:

```
$ sudo systemctl status ssh
```



```
vivek@nixcraft-power9:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2018-08-17 12:39:39 CDT; 3min 36s ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 3457 (sshd)
      Tasks: 1 (limit: 22118)
   CGroup: /system.slice/ssh.service
           └─3457 /usr/sbin/sshd -D

Aug 17 12:39:39 nixcraft-power9 systemd[1]: Starting OpenBSD Secure Shell server:
Aug 17 12:39:39 nixcraft-power9 sshd[3457]: Server listening on 0.0.0.0 port 22.
Aug 17 12:39:39 nixcraft-power9 sshd[3457]: Server listening on :: port 22.
Aug 17 12:39:39 nixcraft-power9 systemd[1]: Started OpenBSD Secure Shell server.
```

If not running enable the ssh server and start it as follows by typing the systemctl command:

```
$ sudo systemctl enable ssh
```

```
$ sudo systemctl start ssh
```

Synchronizing state of ssh.service with SysV service script with /lib/systemd/systemd-sy
 Executing: /lib/systemd/systemd-sysv-install enable ssh
 Created symlink /etc/systemd/system/ssh.service → /lib/systemd/system/ssh.service.

4. Configure firewall and open port 22

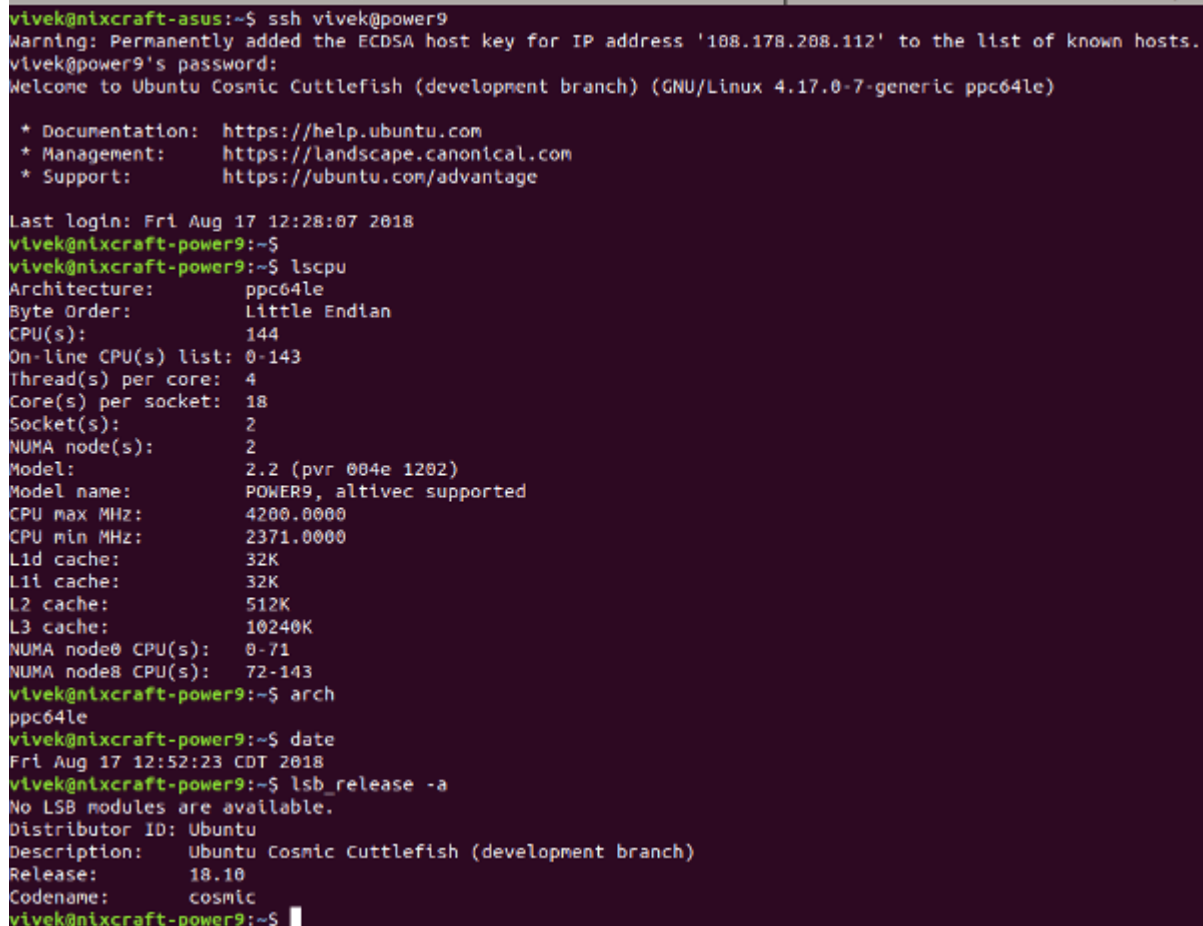
You must configure the Ubuntu Linux firewall called ufw. Here is [how open or allow port 22 when using ufw on Ubuntu](#):

```
$ sudo ufw allow ssh
$ sudo ufw enable
$ sudo ufw status
```

5. Test it

Now you can login from your desktop computer powered by Linux, *BSD, macOS, MS-Windows (putty client) or Unix-like system using the ssh command:

```
$ ssh vivek@server-ip
$ ssh vivek@power9
```



```
vivek@nixcraft-asus:~$ ssh vivek@power9
Warning: Permanently added the ECDSA host key for IP address '108.178.208.112' to the list of known hosts.
vivek@power9's password:
Welcome to Ubuntu Cosmic Cuttlefish (development branch) (GNU/Linux 4.17.0-7-generic ppc64le)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Last login: Fri Aug 17 12:28:07 2018
vivek@nixcraft-power9:~$
vivek@nixcraft-power9:~$ lscpu
Architecture:        ppc64le
Byte Order:          Little Endian
CPU(s):              144
On-line CPU(s) list: 0-143
Thread(s) per core:  4
Core(s) per socket:  18
Socket(s):           2
NUMA node(s):        2
Model:               2.2 (pvr 004e 1202)
Model name:          POWER9, altivec supported
CPU max MHz:         4200.0000
CPU min MHz:         2371.0000
L1d cache:           32K
L1i cache:           32K
L2 cache:            512K
L3 cache:            10240K
NUMA node0 CPU(s):   0-71
NUMA node8 CPU(s):   72-143
vivek@nixcraft-power9:~$ arch
ppc64le
vivek@nixcraft-power9:~$ date
Fri Aug 17 12:52:23 CDT 2018
vivek@nixcraft-power9:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu Cosmic Cuttlefish (development branch)
Release:       18.10
Codename:      cosmic
vivek@nixcraft-power9:~$
```

You can install [copy and install the public key using ssh-copy-id command for password less login](#):

```
$ ssh-copy-id vivek@power9
```

See "[SSH Public Key Based Authentication on a Linux/Unix server](#)" for more info.

Ssh config file

One can create shortcuts for ssh login / client options. For example create a file named `~/.ssh/config` as follows:

```
$ nano ~/.ssh/config
```

OR

```
$ vi $HOME/.ssh/config
```

Append the following to login into my EC2 Ubuntu server at AWS cloud:

```
Host web01
    HostName aws-ec2-www-server1.cyberciti.biz
    Port 22
    IdentityFile ~/.ssh/AWS_EC2_Virginia_US_East_Ubuntu_Boxes.pem
    User ubuntu
```

To log in simply type:

```
ssh web01
```

See "[OpenSSH Config File Examples](#)" for more info.

Conclusion

In this tutorial, you learn how to install the OpenSSH server application at a terminal prompt. Although instructions tested for Power9 (ppc64le) architecture, they should work on Intel AMD64 or ARM64 server as well. For more info see OpenSSH home page [here](#) and [how to secure OpenSSH server tutorial here](#).

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Posted by: Vivek Gite

The author is the creator of nixCraft and a seasoned sysadmin, DevOps engineer, and a trainer for the Linux operating system/Unix shell scripting. Get the **latest tutorials on SysAdmin, Linux/Unix and open source topics** via [RSS/XML feed](#) or [weekly email newsletter](#).

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Vivek Gite October 14, 2019 at 4:03 pm

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