Dicas Linux

Dicas para Linux

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Como descobrir (listar) o UUID e LABEL de todas as partições?

Link: https://bistrunka.net/2012/09/22/como-descobrir-listar-o-uuid-e-label-de-todas-as-particoes/

(How to find out (list) the UUID and LABEL all the partitions?)

Para listar o código UUID (universally unique identifier) e LABEL (rótulo/nome) de todas as partições de todos os discos do computador com um único comando basta utilizar, como root, o comando blkid:

sudo blkid

Olhe a saída no meu computador:

zumm@destino:~$ sudo blkid
/dev/sda1: LABEL="Ubuntu-12.10″ UUID="98e6d91d-9b8b-46e5-8429-e492044cbbd5″ TYPE="ext4″
/dev/sda2: LABEL="Vídeos" UUID="457fce87-b36d-4364-971a-afaa11e39357″ TYPE="ext4″
/dev/sda3: LABEL="Backup" UUID="ae9f9aeb-ae10-4e70-b680-396e0dd1c320″ TYPE="ext4″
/dev/sda5: UUID="c526a707-a8bb-431a-a2ea-398bb59f8146″ TYPE="swap"
/dev/sda6: LABEL="AMD64″ UUID="a1d9c813-b4e7-4331-b4eb-6a08e44938e8″ TYPE="ext4″
/dev/sda7: LABEL="Gentoo" UUID="9daf9b72-ec06-4175-b484-01ff1add6a37″ TYPE="ext4″
/dev/sda8: LABEL="Mint" UUID="417d751e-faf9-4abc-ac43-271d47c973c6″ TYPE="ext4″
/dev/sdb1: LABEL="Ubuntu-11.04″ UUID="0a3b9f72-bbd6-4e7f-bf11-6ef2043cf973″ TYPE="ext4″
/dev/sdb2: LABEL="Dados" UUID="9100787c-03bf-4e22-8080-bd9a586fa2fe" TYPE="ext3″
/dev/sdb3: LABEL="Músicas" UUID="4d759fd5-5ab2-4b92-b6b6-c015507672ce" TYPE="ext3″
/dev/sdb4: UUID="bdf9c723-c739-4e53-8810-a4e98c9ea8f5″ TYPE="swap"
/dev/sdc1: LABEL="Debian" UUID="09aefbca-ddea-4068-be78-380fd959c658″ TYPE="ext4″
/dev/sdc2: LABEL="Arch" UUID="1e2b868a-c634-4f3b-81b6-0e22e33552b3″ TYPE="ext4″
/dev/sdc5: UUID="d6609dbc-1720-4e3d-b316-730fcd87d6b4″ TYPE="swap"
/dev/sdc6: LABEL="Music" UUID="414d9df7-1cdd-47e5-bda3-523b0a1f0a53″ TYPE="ext4″
/dev/sdc7: LABEL="Video" UUID="356f8f81-8569-46ef-9fbe-fd8837bb6538″ TYPE="ext4″

Outros comandos:

Para listar o UUID:

zumm@destino:~$ ls -l /dev/disk/by-uuid

total 0
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 0a3b9f72-bbd6-4e7f-bf11-6ef2043cf973 -> ../../sdb1
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 417d751e-faf9-4abc-ac43-271d47c973c6 -> ../../sda8
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 457fce87-b36d-4364-971a-afaa11e39357 -> ../../sda2
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 4d759fd5-5ab2-4b92-b6b6-c015507672ce -> ../../sdb3
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 9100787c-03bf-4e22-8080-bd9a586fa2fe -> ../../sdb2
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 98e6d91d-9b8b-46e5-8429-e492044cbbd5 -> ../../sda1
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 9daf9b72-ec06-4175-b484-01ff1add6a37 -> ../../sda7
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 a1d9c813-b4e7-4331-b4eb-6a08e44938e8 -> ../../sda6
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 ae9f9aeb-ae10-4e70-b680-396e0dd1c320 -> ../../sda3
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 bdf9c723-c739-4e53-8810-a4e98c9ea8f5 -> ../../sdb4
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 c526a707-a8bb-431a-a2ea-398bb59f8146 -> ../../sda5

Para listar o LABEL:

zumm@destino:~$ ls -l /dev/disk/by-label

total 0
drwxr-xr-x 2 root root 220 2012-09-22 16:37 .
drwxr-xr-x 6 root root 120 2012-09-21 20:05 ..
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 AMD64 -> ../../sda6
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 Backup -> ../../sda3
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 Dados -> ../../sdb2
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 Livre -> ../../sda7
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 Mint -> ../../sda8
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 Músicas -> ../../sdb3
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 Ubuntu-11.04 -> ../../sdb1
lrwxrwxrwx 1 root root 10 2012-09-21 20:05 Ubuntu-12.10 -> ../../sda1
lrwxrwxrwx 1 root root 10 2012-09-21 20:06 Vídeos -> ../../sda2

Listando os UUID's de apenas um disco:

zumm@destino:~$ blkid /dev/sda[1-9]

/dev/sda1:   LABEL="Ubuntu-12.10"   UUID="98e6d91d-9b8b-46e5-8429-e492044cbbd5"
TYPE="ext4"

/dev/sda2: LABEL="Vídeos" UUID="457fce87-b36d-4364-971a-afaa11e39357" TYPE="ext4"

/dev/sda3: LABEL="Backup" UUID="ae9f9aeb-ae10-4e70-b680-396e0dd1c320" TYPE="ext4"

/dev/sda5: UUID="c526a707-a8bb-431a-a2ea-398bb59f8146" TYPE="swap"

/dev/sda6: LABEL="AMD64" UUID="a1d9c813-b4e7-4331-b4eb-6a08e44938e8" TYPE="ext4"

/dev/sda7: LABEL="Gentoo" UUID="9daf9b72-ec06-4175-b484-01ff1add6a37" TYPE="ext4"

/dev/sda8: LABEL="Mint" UUID="417d751e-faf9-4abc-ac43-271d47c973c6" TYPE="ext4"

Listando organizado por colunas

zumm@destino:~$ sudo blkid -o list -c /dev/null

Obtendo todas as informações de uma partição com o TUNE2FS

zumm@destino:~$ sudo tune2fs /dev/sda2

tune2fs 1.41.14 (22-Dec-2010)

Filesystem volume name: Vídeos

Last mounted on: /media/Vídeos

Filesystem UUID: 457fce87-b36d-4364-971a-afaa11e39357

Filesystem magic number: 0xEF53

Filesystem revision #: 1 (dynamic)

Filesystem features: has_journal ext_attr resize_inode dir_index filetype needs_recovery extent flex_bg sparse_super large_file huge_file uninit_bg dir_nlink extra_isize

Filesystem flags: signed_directory_hash

Default mount options: (none)

Filesystem state: clean

Errors behavior: Continue

Filesystem OS type: Linux

Inode count: 59375616

Block count: 237497855

Reserved block count: 11874892

Free blocks: 175586011

Free inodes: 59374910

First block: 0

Block size: 4096

Fragment size: 4096

Reserved GDT blocks: 967

Blocks per group: 32768

Fragments per group: 32768
Inodes per group: 8192
Inode blocks per group: 512
RAID stride: 32750
Flex block group size: 16
Filesystem created: Tue Nov 1 00:13:51 2011
Last mount time: Fri Sep 21 20:06:02 2012
Last write time: Fri Sep 21 20:06:02 2012
Mount count: 16
Maximum mount count: 32
Last checked: Mon Sep 17 08:18:46 2012
Check interval: 15552000 (6 months)
Next check after: Sat Mar 16 08:18:46 2013
Lifetime writes: 251 GB
Reserved blocks uid: 0 (user root)
Reserved blocks gid: 0 (group root)
First inode: 11
Inode size: 256
Required extra isize: 28
Desired extra isize: 28
Journal inode: 8
Default directory hash: half_md4
Directory Hash Seed: d714b716-999e-4eb1-b4b8-a27ae6964d3b
Journal backup: inode blocks
zumm@destino:~$

Já dá para brincar um pouquinho.

Introduction to fstab

Link:

The configuration file `/etc/fstab` contains the necessary information to automate the process of mounting partitions. In a nutshell, mounting is the process where a raw (physical) partition is prepared for access and assigned a location on the file system tree (or mount point).

- In general fstab is used for internal devices, CD/DVD devices, and network shares (samba/nfs/sshfs). Removable devices such as flash drives *can* be added to fstab, but are typically mounted by gnome-volume-manager and are beyond the scope of this document.
- Options for mount and fstab are similar.
- Partitions listed in fstab can be configured to automatically mount during the boot process.
- If a device/partition is not listed in fstab ONLY ROOT may mount the device/partition.
- Users may mount a device/partition if the device is in fstab with the proper options.

IconsPage/tip.png For usage with network shares, see SettingUpNFSHowTo , SettingUpSamba and SSHFS.

Fstab File Configuration

IconsPage/info.png The syntax of a fstab entry is :

```
[Device] [Mount Point] [File System Type] [Options] [Dump] [Pass]
```

fields	description
<device>	The device/partition (by /dev location or UUID) that contain a file system.
<mount point>	The directory on your root file system (aka mount point) from which it will be possible to access the content of the device/partition (note: swap has no mount point). Mount points should not have spaces in the names.
<file system type>	Type of file system (see LinuxFilesystemsExplained).

<options>	Mount options of access to the device/partition (see the man page for `mount`).
<dump>	Enable or disable backing up of the device/partition (the command *dump*). This field is usually set to 0, which disables it.
<pass num>	Controls the order in which *fsck* checks the device/partition for errors at boot time. The root device should be 1. Other partitions should be 2, or 0 to disable checking.

Please refer to the examples section for sample entries. We have provided you some detailed explanations of each field:

Device

By default, Ubuntu now uses UUID to identify partitions.

UUID=xxx.yyy.zzz

To list your devices by UUID use blkid

```
sudo blkid
```

Alternative ways to refer to partitions:

- Label : LABEL=label
- Network ID
  - Samba : //server/share
  - NFS : server:/share
  - SSHFS : sshfs#user@server:/share
- Device : /dev/sdxy (not recommended)

Mount point

A mount point is a location on your directory tree to mount the partition. The default location is /media although you may use alternate locations such as /mnt or your home directory.

You may use any name you wish for the mount point, but you must create the mount point before you mount the partition.

For example : /media/windows

```
sudo mkdir /media/windows
```

File System Type

You may either use auto or specify a file system. Auto will attempt to automatically detect the file system of the target file system and in general works well. In general auto is used for removable devices and a specific file system or network protocol for network shares.

Examples:

- auto
- vfat - used for FAT partitions.
- ntfs, ntfs-3g - used for ntfs partitions.
- ext4, ext3, ext2, jfs, reiserfs, etc.
- udf,iso9660 - for CD/DVD.
- swap.

Options

Options are dependent on the file system.

You may use "defaults" here and some typical options may include :

- **Ubuntu 8.04** and later uses **relatime** as default for linux native file systems. You can find a discussion of relatime here : http://lwn.net/Articles/244829. This relates to when and how often the last access time of the current version of a file is updated, i.e. when it was last read.
- defaults = rw, suid, dev, exec, auto, nouser, and async.
- ntfs/vfat = permissions are set at the time of mounting the partition with umask, dmask, and fmask and can not be changed with commands such as chown or chmod.
  - I advise `dmask=027,fmask=137` (using umask=000 will cause all your files to be executable). More permissive options would be `dmask=000,fmask=111`.

- For mounting samba shares you can specify a username and password, or better a **credentials file**. The credentials file contains should be owned by root.root with permissions = 0400 .

Common options :

- sync/async - All I/O to the file system should be done (a)synchronously.
- auto - The filesystem can be mounted automatically (at bootup, or when mount is passed the -a option). This is really unnecessary as this is the default action of mount -a anyway.
- noauto - The filesystem will NOT be automatically mounted at startup, or when mount passed -a. You must explicitly mount the filesystem.
- dev/nodev - Interpret/Do not interpret character or block special devices on the file system.
- exec / noexec - Permit/Prevent the execution of binaries from the filesystem.
- suid/nosuid - Permit/Block the operation of suid, and sgid bits.
- ro - Mount read-only.
- rw - Mount read-write.
- user - Permit any user to mount the filesystem. This automatically implies noexec, nosuid,nodev unless overridden.
- nouser - Only permit root to mount the filesystem. This is also a default setting.
- defaults - Use default settings. Equivalent to rw, suid, dev, exec, auto, nouser, async.
- _netdev - this is a network device, mount it after bringing up the network. Only valid with fstype nfs.

For specific options with specific file systems see:

- man mount

Dump

This field sets whether the backup utility dump will backup file system. If set to "0" file system ignored, "1" file system is backed up.

Dump is seldom used and if in doubt use 0.

Pass (fsck order)

Fsck order is to tell fsck what order to check the file systems, if set to "0" file system is ignored.

Often a source of confusion, there are only 3 options :

- 0 == do not check.
- 1 == check this partition first.
- 2 == check this partition(s) next

In practice, use "1" for your root partition, / and 2 for the rest. All partitions marked with a "2" are checked in sequence and you do not need to specify an order.

Use "0" to disable checking the file system at boot or for network shares.

You may also "tune" or set the frequency of file checks (default is every 30 mounts) but in general these checks are designed to maintain the integrity of your file system and thus you should strongly consider keeping the default settings.

Examples

IconsPage/editor.png The contents of the file will look similar to following:

```
# /etc/fstab: static file system information.
#
# <file system> <mount point>   <type>  <options>      <dump>  <pass>

proc  /proc  proc  defaults  0  0
# /dev/sda5
UUID=be35a709-c787-4198-a903-d5fdc80ab2f8  /  ext3  relatime,errors=remount-ro  0  1
# /dev/sda6
UUID=cee15eca-5b2e-48ad-9735-eae5ac14bc90  none  swap  sw  0  0

/dev/scd0  /media/cdrom0  udf,iso9660  user,noauto,exec,utf8  0  0
```

NOTE: These network share examples (samba, nfs, and sshfs) assume you have already set up the appropriate server.

```
# FAT ~ Linux calls FAT file systems vfat)
# /dev/hda1
UUID=12102C02102CEB83 /media/windows  vfat auto,users,uid=1000,gid=100,dmask=027,fmask=137,utf8  0  0

# NTFS ~ Use ntfs-3g for write access (rw)
# /dev/hda1
UUID=12102C02102CEB83 /media/windows  ntfs-3g  auto,users,uid=1000,gid=100,dmask=027,fmask=137,utf8

# Zip Drives ~ Linux recognizes ZIP drives as sdx'''4'''
```

```
# Separate Home
# /dev/sda7
UUID=413eee0c-61ff-4cb7-a299-89d12b075093  /home  ext3  nodev,nosuid,relatime  0  2

# Data partition
# /dev/sda8
UUID=3f8c5321-7181-40b3-a867-9c04a6cd5f2f  /media/data  ext3  relatime,noexec  0  2

# Samba
//server/share  /media/samba  cifs  user=user,uid=1000,gid=100  0  0
# "Server" = Samba server (by IP or name if you have an entry for the server in your hosts file
# "share" = name of the shared directory
# "user" = your samba user
# This set up will ask for a password when mounting the samba share. If you do not want to enter a password, use
# replace "user=user" with "credentials=/etc/samba/credentials" In the credentials file put two lines
# username=user
# password=password
# make the file owned by root and ro by root (sudo chown root.root /etc/samba/credentials && sudo chmod 400 /e

# NFS
Server:/share  /media/nfs  nfs  rsize=8192 and wsize=8192,noexec,nosuid
# "Server" = Samba server (by IP or name if you have an entry for the server in your hosts file
# "share" = name of the shared directory

#SSHFS
sshfs#user@server:/share  fuse  user,allow_other  0  0
# "Server" = Samba server (by IP or name if you have an entry for the server in your hosts file
# "share" = name of the shared directory
```

File System Specific Examples

IconsPage/example.png Here are a couple of basic examples for different file system types. I will use /dev/sdb1 or /dev/hda2 for simplicity, but remember that any /dev location, UUID=<some_id>, or LABEL=<some_label> can work.

Extended file systems (ext)

Specifically, these are the ext2, ext3, and ext4 filesystems that are common as root filesystems in Linux. The main difference between ext2 and ext3 is that ext3 has journaling which helps protect it from errors when the system crashes. The more modern ext4 supports larger volumes along with other improvements, and is backward compatible with ext3.

A root filesystem:

```
UUID=30fcb748-ad1e-4228-af2f-951e8e7b56df / ext3 defaults,errors=remount-ro,noatime 0 1
```

A non-root file system, ext2:

```
/dev/sdb1 /media/disk2 ext2 defaults 0 2
```

File Allocation Table (FAT)

Specifically, fat16 and fat32, which are common for USB flash drives and flash cards for cameras and other devices.

```
/dev/hda2 /media/data1 vfat defaults,user,exec,uid=1000,gid=100,umask=000 0 0
```

```
/dev/sdb1 /media/data2 vfat defaults,user,dmask=027,fmask=137 0 0
```

New Technology File System (NTFS)

NTFS is typically used for a Windows partition.

```
/dev/hda2 /media/windows ntfs-3g defaults,locale=en_US.utf8 0 0
```

For a list of locales available on your system, run

- ```
  locale -a
  ```

Hierarchical File System (HFS)

HFS, or more commonly, HFS+, are filesystems generally used by Apple computers.

For Read/Write mounting:

```
/dev/sdb2 /media/Macintosh_HD hfsplus rw,exec,auto,users 0 0
```

Note: if you want to write data on this partition, you **must** disable the journalization of this partition with **diskutil** under Mac OS.

For Read only:

```
/dev/sda2 /media/Machintosh_HD hfsplus ro,defaults 0 2
```

Note: if you want to have access to your files on Ubuntu, you must change the permission of the folders and contained files you want to access by doing in the apple terminal:

```
sudo chmod -R 755 Folder
```

"Staff" group should have appeared in this folder's info. You can do this on Music and Movies to access these files from Ubuntu.

Editing fstab

IconsPage/editor.png Please, before you edit system files, **make a backup**. The -B flag with nano will make a backup automatically.

To edit the file in Ubuntu, run:

```
gksu gedit /etc/fstab
```

To edit the file in Kubuntu, run:

```
kdesu kate /etc/fstab
```

To edit the file directly in terminal, run:

```
sudo nano -Bw /etc/fstab
```

- -B = Backup origional fstab to /etc/fstab~ .
- -w = disable wrap of long lines.

Alternate:

```
sudo -e /etc/fstab
```

Useful Commands

IconsPage/terminal.png To view the contents of `/etc/fstab`, run the following terminal command:

```
cat /etc/fstab
```

To get a list of all the UUIDs, use one of the following two commands:

```
sudo blkid
ls -l /dev/disk/by-uuid
```

To list the drives and relevant partitions that are attached to your system, run:

```
sudo fdisk -l
```

To mount all file systems in `/etc/fstab`, run:

```
sudo mount -a
```

Remember that the mount point must already exist, otherwise the entry will not mount on the filesystem. To create a new mount point, use root privileges to create the mount point. Here is the generalization and an example:

```
sudo mkdir /path/to/mountpoint
sudo mkdir /media/disk2
```

Other Resources

IconsPage/resources.png Here are some more links for your convenience:

- UsingUUID
- How to fstab (from the Ubuntu Forums)

- http://en.wikipedia.org/wiki/Fstab
- SettingUpNFSHowTo
- SettingUpSamba
- LinuxFilesystemsExplained
- AutomaticallyMountPartitions
- HowtoPartition

EXECUTAR COMANDOS AO EFETUAR LOGIN OU LOGOUT NO LINUX

Link: https://www.vivaolinux.com.br/dica/Executar-comandos-ao-efetuar-login-ou-logout-no-Linux#google_vignette

Para que um comando seja executado quando o usuário efetua LOGIN (iniciar uma sessão) ou LOGOUT (finalizar a sessão), insira o seu comando nos respectivos arquivos que devem estar localizados no HOME de cada usuário:

- .bash_login
- .bash_logout

Obs.: Se estes arquivos não existirem, você deve criá-los.

Exemplos:

1) Exibir uma mensagem quando o usuário efetua LOGIN (adicionar em .bash_login):
echo "Bem-vindo(a) ao Linux!"

2) Limpar a tela quando o usuário efetua LOGOUT (adicionar em .bash_logout):
clear

Para que os novos usuários herdem estes arquivos de configuração, copie-os para a pasta /etc/skel. Assim sempre que um novo usuário for criado, serão copiados os arquivos .bash_login e .bash_logout para sua pasta HOME.

Espero que seja útil!

O comando AWK com if, else e outras opções

Link: https://blog.ironlinux.com.br/o-comando-awk/

Assim como o <u>SED</u> , o AWK é uma ferramenta para manipulação de texto. No entanto, o AWK também é considerado uma linguagem de programação. Com ele é possível pesquisar palavras num arquivo, identificar padrões, realizar substituições e muito mais! Além disso, o AWK suporta expressões regulares, o que permite realizar matches de padrões complexos.

Output de exemplo

Antes de tudo, para realizarmos as operações/exemplos com o AWK, vamos utilizar a saída do comando **ps u**:

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```
ps                                                                          u
```

Output do comando ps

1 | Utilizações básicas

1.1 | Printar a primeira coluna

Para apresentar apena a primeira coluna é possível utilizar o comando abaixo. A primeira coluna é representada por **$1**:

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```
ps          u          |          awk          '{print          $1}'
```

Primeira coluna com AWK

1.2 | Printar múltiplas colunas

É possível trazer múltiplas colunas utilizando o comando abaixo. OBS: A vírgula neste exemplo representará um espaço comum na saída final:

<div>Copiar</div>

```
ps u | awk '{print $1,$2,$3}'
```

Múltiplas colunas com AWK

1.3 | Printar múltiplas colunas separadas por Tab

Utilizando **"\t"** é possível separar as colunas com Tab:

<div>Copiar</div>

```
ps u | awk '{print $1 "\t" $2 "\t" $3}'
```

Múltiplas colunas separadas por tab com AWK

1.4 | Printar o último elemento

Utilizando **$NF** é possível trazer o último elemento (neste caso é a coluna COMMAND):

<div>Copiar</div>

```
ps u | awk '{print $NF}'
```

Último elemento/coluna com AWK

1.5 | Ignorar a primeira linha

É comum precisar remover a primeira linha de um arquivo para depois trabalhar com os dados. Para fazer isso, basta utilizar o comando abaixo:

```
ps                    u                    |                    awk                    'NR!=1'
```

Ignorar primeira linha com AWK

1.6 | Substituir texto

Para substituir um texto, podemos utilizar a função **sub()**, conforme o exemplo abaixo, que substitui a string "**kali**" por "**outro-usuario**":

```
ps          u          |          awk          -e          'sub(/kali/,          "outro-usuario")'
```

Substituir texto com AWK

OBS: A função **sub()** substitui apenas a primeira ocorrência, uma vez por linha. Caso queira substituir mais de uma ocorrência, utilize a função **gsub()**.

2 | Utilizando um outro delimitador

Por padrão, o delimitador do AWK é o espaço (ou tab). No entanto, em alguns casos, você precisará indicar um outro delimitador (como por exemplo **vírgula** ou **ponto e vírgula**). Desta forma, no exemplo abaixo, estamos utilizando **;** como delimitador e printando o segundo elemento:

```
echo          'oi;tudo;certo'          |          awk          -F          ';'          '{print          $2}'
```

Alterar delimitador AWK

3 | Condicionais

3.1 | AWK com if

Para exemplificar o uso de condicionais (if) vamos utilizar o arquivo **notas.txt** que possui o seguinte conteúdo:

IF no AWK

Por exemplo, para printar a linha inteira se a primeira coluna for a string **Iron**:

Copiar

```
awk '{ if ($1 == "Iron") print $0 }' notas.txt
```

Primeira coluna com if no AWK

Por exemplo, para printar a nota do aluno **Iron** em uma frase:

Copiar

```
awk '{ if ($1 == "Iron") print "A nota do Aluno", $1, "foi", $2}' notas.txt
```

Manipulando output com if no AWK

3.2 | AWK com if/else

No exemplo abaixo estamos utilizando if/else para determinar quais alunos reprovaram ou passaram (com nota maior que 5). Também estamos utilizando **NR!=1** para ignorar a primeira linha:

Copiar

```
awk 'NR!=1 {if ($2 >=5 ) print $0,"=>","Passou!"; else print $0,"=>","Reprovou!"}' notas.txt
```

AWK if e else

3.3 | Cheatsheet de condicionais

Condicionais	Descrição
if ($5 >= 10)	Se a quinta coluna for maior ou igual a 10
if ($3 == 10)	Se a terceira coluna for igual a 10
if ($1 == "Linux")	Se a primeira coluna for igual a string **Linux**
if ($1 == "Linux"	
if ($1 =="Linux" && $2 > 5)	Se a primeira coluna for igual a string **Linux e** a segunda coluna for **maior** que **5**

4 | Utilizando REGEX

4.1 | Exemplos com REGEX

Na regex abaixo, estamos printando a linha inteira caso a segunda coluna se inicie com o número 1:

Copiar

```
ps u | awk -e '$2 ~ /^1/ {print $0}'
```

Regex com AWK - exemplo 1

Na regex abaixo estamos printando todas as linhas cuja coluna 2 **não** comecem com o número 1:

Copiar

```
ps u | awk -e '$2 !~ /^1/ {print $0}'
```

Regex com AWK - exemplo 2

4.2 | Cheatsheet de REGEX

Regex	Descrição
[mr]	Letras** m** ou **r**
[a-z]	Qualquer letra de **a** à **z**
[a-zA-Z]	Qualquer letra de **A** à **Z** (maiúsculo ou minúsculo)
[A-Z0-9]{5}	5 caracteres, podendo ser qualquer letra de A à Z ou números de 0 a 9

5 | Alguns outros usos interessantes

5.1 | Pegar linhas entre dois padrões

Vamos utilizar o arquivo **padrao.txt** abaixo para realizar as operações:

Coletar linhas entre padrões com AWK

Caso você queira printar, todas as linhas entre "**padrao1**" e "**padrao2**":

<div>

Copiar

```
awk                    '/padrao1/{flag=1;next}/padrao2/{flag=0}flag'                    padrao.txt
```

</div>

Linhas entre padrões com AWK

Caso queira que "**padrao1**" e "**padrao2**" também seja printado:

<div>

Copiar

```
awk                    '/padrao1/{a=1}/padrao2/{print;a=0}a'                    padrao.txt
```

</div>

Conteúdo entre padrões com AWK

5.2 | Adicionar um prefixo nas linhas

Para adicionar um prefixo nas linhas pode-se utilizar a função **gensub()**, veja o exemplo abaixo, onde adicionamos a palavra "Prefixos" em todas as linhas que comecem com caracteres alfanuméricos:

<div>

Copiar

```
awk     -e     '     {     print     gensub(/^[a-zA-Z0-9]*/,     "Prefixos     &",1)     }'     notas.txt
```

</div>

gensub no AWK

Por fim, agradecemos a leitura e esperamos que este post tenha te ajudado de alguma maneira!

Caso tenha alguma dúvida, entre em contato conosco pelo Telegram , Facebook ou Instagram !

Veja mais posts no IronLinux !

Tags:

- Awk
- Comandos linux
- Linux
- Manipulação de texto
- Sed

Posts relacionados

Redirecionar a saída padrão e de erros

Redirecionar a saída padrão e de erros

- Vinicius Souza
- Linux

Quando é executado um comando ou algum script no Linux é possível redirecionar a saída padrão e de erros para não ser printado em tela ou que seja direcionado à algum lugar especifico.

Ler post completo
O comando SED no Linux

O comando SED no Linux

- Vinicius Souza
- Linux

O comando SED é uma ótima ferramenta de edição de arquivos ou de formatação de resultados de comandos, com ele você pode pesquisar, localizar e substituir, inserir ou excluir palavras, números e etc.

Ler post completo
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Estressando MEM, DISCO e CPU com Stress-ng [Debian9]

- Vinicius Souza
- Linux

O STRESS-NG Com a ferramenta Stress-ng podemos literalmente realizar o Stress de alguns recursos do seu servidor, sendo eles: Cpu, memória e disco.

Ler post completo

Verificar vida útil de um hard disk

Link: https://www.hdsentinel.com/hard_disk_sentinel_linux.php

	Download Hard Disk Sentinel Linux version
Hard Disk Sentinel Linux Edition (FREE)	

By using Hard Disk Sentinel Linux console edition, it is possible to examine the temperature and health information (and more) of **IDE, S-ATA (SATA II also), SCSI and USB** hard disks connected to motherboard or external controller cards. **The user must be root to use this software or start it with sudo.**

To display hard disk / SSD status in a graphical interface, download Hard Disk Sentinel Linux GUI (Graphical User Interface) package. Thanks for Gregory25!

To simplify starting Hard Disk Sentinel Linux Edition, it is possible to use one of the Linux Desktop Installers for the actual Linux distribution which allows starting directly from the desktop without the need of starting manually from a console. Thanks for Marc Sayer for these packages!

To receive daily status reports, please check the HDSentinel_EmailUtil.zip package. Thanks for Raul del Cid Lopez for this script!

Hard Disk Sentinel Linux version

List of features

- display hard disk / solid state disk information on the terminal
- create comprehensive report about the disk system, including both hard disk and SSD specific features (for example, media rotation rate, TRIM command, etc.)

- display and manage acoustic setting of hard disks (on supported USB disks also)
- offers outputs for both users and scripts/other applications to process

The following information are displayed:

- detected hard disk number and device name (for example /dev/sda)
- size, model ID, serial number, revision and interface of all detected hard disks
- temperature, health and performance values
- power on time (days, hour, minutes - if supported)
  Note: this is for informational purposes only, the value displayed under Windows (after some minutes of testing) may be more accurate
- acoustic management settings (if supported and **-aam** or **-setaam** option is used

Command line switches

The switches are NOT case sensitive. Upper and lower case can be used to specify them.

- **-h** - displays help and usage information
- **-r [report file]** - automatically save report to filename (default: report.txt)
- **-html** - use with -r to save HTML format report (-html -r report.html)
- **-mht** - use with -r to save MHT format report (-mht -r report.mht)
- **-autosd** - detect industrial SD card type and save flag file (see How to: monitor (micro) SD card health and status for more details)
- **-dev /dev/sdX** - detect and report only the specified device without accessing others
- **-devs d1,d2** - detect (comma separated) devices in addition to default ones eg. /dev/sda,/dev/sdb,/dev/sdc
- **-onlydevs d1,d2** - detect (comma separated) devices only eg. /dev/sda,/dev/sdb,/dev/sdc
- **-nodevs d1,d2** - exclude detection of (comma separated) devices eg. /dev/sda,/dev/sdb,/dev/sdc
- **-dump** - dump report to stdout (can be used with -xml to dump XML output instead of text)
- **-xml** - create and save XML report instead of TXT
- **-solid** - solid output (drive, tempC, health%, power on hours, model, S/N, size)
- **-verbose** - detailed detection information and save temporary files (only for debug purposes)
- **-aam** - display acoustic management settings (current and recommended level)
- **-setaam drive_num|ALL level(hex)80-FE|QUIET|LOUD** - set acoustic level on drive 0..n (or all)
  80 or QUIET is the lowest (most silent) setting, FE or LOUD is the highest (fastest) setting
  For example: **hdsentinel -setaam 0 loud** - Configures drive 0 to fastest (loud) setting. Same as **hdsentinel -setaam 0 FE**

Please send saved XML or TXT reports, questions or ideas to info@hdsentinel.com to help improving this tool.

License

Hard Disk Sentinel Linux edition is **FREE**. You can freely distribute and use it to analyse hard disk status. However, if you like this tool and would like to keep it updated, please support further development by registering the Windows version of the software.

Usage of Hard Disk Sentinel Linux version

After downloading the file below, please follow these steps to use it:

- double click to open and decompress it to any folder
- open a terminal window and navigate to the folder
- change file permissions to make it executable by using **chmod 755 HDSentinel**
- launch it by entering **sudo ./HDSentinel [options]**
  sudo is not required if you logged in as "root".

Examples

Optimize complete system for silence: **hdsentinel -setaam all quiet**

Optimize complete system for high performance (but louder disk access): **hdsentinel -setaam all loud**

Select a balanced level between silence and performance on drive 0: **hdsentinel -setaam 0 C0**
Note: some disks do not support balanced settings and they may select the most silent (80) or high performance (FE) setting instead.
Please start **hsentinel** without parameters to see drive assignments (eg. /dev/sda) to drive indexes.

Due to the high amount of requests, it is possible to create minimal output which can be easily parsed and processed for further use. Some examples are:

List disk drives, temperature (in Celsius), health %, power on hours, disk model, disk serial, size: **hdsentinel -solid**. Sample results:

```
/dev/sda 42   3  4830 WDC_WD800JD-8LSA0   WD-WMAM9F937837   76324
/dev/sdb 30 100  6128 ST3250624A          5ND3J94R          238472
/dev/sdc 46 100 10982 WDC_WD2500JS-00MHB0 WD-WCANK8705209  238475
/dev/sdd  ?  ?     ? GENERIC_CF_READER   9999                  0
/dev/sde  ?  ?     ? GENERIC_SD_READER   9999               1963
```

List only temperature, drive, size:
hdsentinel -solid | awk '{print $2, $1, $7}'

```
42 /dev/sda 76324
30 /dev/sdb 238472
46 /dev/sdc 238475
? /dev/sdd 0
? /dev/sde 1963
```

List only temperature, drive, model ID, highest temperature on top, drives without temperature information (for example card readers) removed:
hdsentinel -solid | awk '{print $2, $1, $5}' | grep -v "^?" | sort -nr

```
46 /dev/sdc WDC_WD2500JS-00MHB0
42 /dev/sda WDC_WD800JD-8LSA0
30 /dev/sdb ST3250624A
```

List only health, temperature, drive, lowest health on top, drives without temperature information (for example card readers) removed:
hdsentinel -solid | awk '{print $3, $2, $1}' | grep -v "^?" | sort -n

```
3 42 /dev/sda
100 30 /dev/sdb
100 46 /dev/sdc
```

Note that the spaces in hard disk model ID and serial number are replaced with underscore (_).

If you have any ideas, thoughts about the automatic processing of output or if you have complete script(s) you want to share with other users, please send a mail and it will be published on this page with the name and credits of the sender of the script.

Download Hard Disk Sentinel Linux

Hard Disk Sentinel 32-bit Linux console version - **executable, gzip-compressed**

Hard Disk Sentinel 64-bit Linux console version - **executable, zip-compressed**

Hard Disk Sentinel Linux console version for Raspberry PI (ARM CPU) - **executable, gzip-compressed**

Hard Disk Sentinel Linux console version for NAS boxes (ARMv5 CPU) - **executable, non-compressed** (see notes below)

Hard Disk Sentinel Linux console version for NAS boxes / Raspberry PI 4 (ARMv7 CPU) - **executable, gzip-compressed**

Hard Disk Sentinel Linux console version for NAS boxes / Raspberry PI 4 64-bit (ARMv8 / ARM64 CPU) - **executable, zip-compressed**

   Can be used with Synology D220j and other Synology NAS models with ARMv8 CPU

Compatibility

Kernel support is required to detect and display information about SATA hard disks. This version was successfully tested under the following systems:

- blackPanther OS v16.2 SE
- CentOS 5, 6 and newer
- Fedora 5, 6, 7, 8, 9, 10, 15 and newer
- Ubuntu 8.04 server kernel 2.6.24-16-server, 9.04
- Kubuntu 8.04
- Xubuntu 8.04
- Slackware 11.0
- UHU Linux 2.1
- SuSe 10.2, SuSe 10.3 (SuSe 10.0 - NOT working, reports wanted)
- Debian Lenny 5.0
- Debian GNU/Linux 6.0.1 Squeez
- Raspberry PI (ARM CPU)
- NAS boxes (ARM CPU): WD MyBook Live, D-Link DNS-320LW two bay Sharecenter, D-Link DNS-327L two bay Sharecenter, Seagate FreeAgent DockStar, Zyxel NSA320, Synology DS211. DSM 5.0-4493 update 3

Successfully tested with Adaptec SCSI controllers and SCSI hard disks, and with external enclosures built with different USB-ATA bridge in chips USB Hard disks, hard disk enclosures. Supports LSI / Intel / IBM RAID controllers too.

Updates

0.20

| 7/7/2023 | - added -devs, -onlydevs, -nodevs command line switches to control which drives should be detected
- added support of Kingston DataTraveler MAX : detect health, temperature, S.M.A.R.T. status of Kingston DataTraveler MAX series pendrives
- added support of DockCase DSWC1P USB-M.2 (NVMe/SATA) adapter
- added support of ASUS Tuf Gaming A1 USB 3.2 NVMe adapter
- added support of ACOS SATA SSDs, Fanxiang S101, Go-Infinity SSD, ZOZT G3000, SQUARE ES 550, Ramsta R900 SSDs
- improved support and reporting of 22 TB WD hard disk drives, Toshiba 18 TB hard disk drives
- improved support/health display of SanDisk SDSSDH3 models when new/unused
- improved support of various SAS drives
- improved compatibility with various USB devices
- improved Health % reporting for intensively used Indilinx Barefoot SSD
- improved compatibility with GLOWAY SSD, HP SSD 600, Patriot Burst Elite SSD, Patriot P220 SSD, Patriot P210 SSD, PNY SSD, PNY ELITE SSD, Toshiba SATA SSD, Kingston SSD, Swissbit SSD
- improved support of some Sandisk, Intel, LiteOn SATA SSDs, Transcend TS120GSSD220S SSD, WDS120G2G0A-00, Lexar SATA SSD, XRAYDISK SATA SSD, KINGSPEC SATA SSD, WALRAM SSD
- improved support of Intel Pro 5400s SSDs
- improved support and Health % calculation / text reports for various Sandisk SSDs
- improved support and Health % calculation / text reports for various Patriot SSDs
- improved support and Health % calculation / text reports for various DELL-specific SSDs
- added support of Apricorn Fortress L3 and Padlock 3 external hard disk drives and Apricorn ASK3 or ASK3z Secure Key pendrives: in addition to the robust design and security functions the hard disk drives and pendrives supported by Hard Disk Sentinel: complete health, temperature, self-monitoring S.M.A.R.T. status detected and displayed.
- added support of SSK USB 3.1 / 3.2 Gen 2 (10 Gbps) NVMe adapter: detect NVMe SSD status
- added support of Kingston XS2000 SSD, Goodram CX400 G2, Zadak SSD
- improved support of some Acer SSDs, Sandisk SSDs, Lite-on SSDs
- added support of Kingston Design-In SSDs (OMSP0S3, OM4P0S3, OM8P0S3, OCP0S3)
- improved health/status reporting for PNY SATA SSDs
- improved display of power on time, health, status of newer WD / Hitachi SAS hard disk drives
- improved text description of NVMe SSDs upon different problems / error conditions |

0.19

28/2/2021	- added support of newer SATA, SAS, NVMe M.2 PCie SSDs: detect health, temperature, and complete self-monitoring S.M.A.R.T. status - added support of newer hard disk drives, hybrid drives: detect health, temperature, and complete self-monitoring S.M.A.R.T. status - added support of newer NVMe-USB adapters / converters - added support of ORICO 3559U3 5-bay external USB 3.0 hard disk enclosure - added support of Yottamaster 4-bay and FS5U3 5-bay external USB 3.0 hard disk enclosure - improved **detection of NVMe M.2 SSDs** under Linux. Detect health, temperature and complete self-monitoring S.M.A.R.T. status of NVMe M.2 SSDs connected to motherboard (nvme0, nvme1, etc... devices)

0.18

7/11/2019	- added **detection of NVMe M.2 SSDs** under Linux. Detect health, temperature and complete self-monitoring S.M.A.R.T. status of NVMe M.2 SSDs connected to motherboard (nvme0, nvme1, etc... devices) - added detection of NVMe M.2 SSDs with USB-NVMe adapters based on ASMEDIA ASM236x and JMicron JMS583 chipsets - added detection of SAS hard disk drives and SSDs configured as RAID with LSI, Intel, Dell SAS RAID controllers - added support for new hard disk and SSD models, identify self-monitoring status of Kingston, Intel, Samsung, KingDian, Sandisk, LiteOn, ADATA, Crucial, Corsair, Lenovo, Apacer, WD SSDs - added/improved support of various Western Digital, Hitachi, Seagate, Toshiba hard disk drives - added/improved support of Helium (He) filled hard disk drives - added/improved support of numerous external USB adapters, USB-ATA bridges, docking stations - fixed bug with empty memory card readers

Hard Disk Sentinel Linux NVMe SSD detection
Hard Disk Sentinel Linux detection SAS hard disk in RAID configuration

0.17

30/8/2017	- added **detection of industrial micro SD cards** under Linux. Detect status immediately if the detection method of the micro SD card previously configured under the Windows - or if **-autosd** command line parameter specified to detect and save the detection method and use in all sub-sequent detections under Windows or Linux. Note: with Raspberry PI, it is not possible to detect internal memory card status, just status of card in external USB memory card reader. - added support of ASMedia ASM1352R dual drive (RAID) enclosures: detection of complete status of both hard disks - added **-html** command line option to save HTML format report (-html -r reportfile.html) - added **-mht** command line option to save MHT format report (-mht -r reportfile.mht) - added support of more than 26 drives, detection of additional drives when required - added support for new hard disk and SSD models, identify self-monitoring status

Hard Disk Sentinel Linux industrial SD memory card status
Hard Disk Sentinel Linux industrial SD memory card status in HTML report
Hard Disk Sentinel Linux industrial SD memory card status and S.M.A.R.T. self monitoring values

0.16

13/9/2016	- added support for Intel, IBM, LSI RAID controllers - experimental support of JMicron external USB RAID boxes (contact for assistance) - added support for 4000+ hard disk and SSD models, interpreting and displaying their self-monitoring status - displaying lifetime writes for SSDs

0.08 - <u>**Download Hard Disk Sentinel Linux 0.08 version**</u>

6/3/2012	- more hard disk drive / solid state disk details saved to report - improved compatibility with USB hard disks and various disk controllers - true 64 bit version released

0.03 - **Download this version**

21/7/2009	- more hard disk drive / solid state disk details saved to report -aam and -setaam commands to modify acoustic level of disk drives -dump to dump report to stdout -solid option to create solid output for further processing - improved power on time detection for Samsung, Maxtor, Toshiba, Fujitsu models - improved detection of SCSI and USB drives - detection of SCSI and USB drive capacities

0.02 - **Download this version**

25/7/2008	- added support for SCSI and <u>USB hard disks</u> - improved temperature detection on Fujitsu hard disks

0.01 - **Download this version**

29/4/2008	first initial version

Raspberry PI

Hard Disk Sentinel Linux version running on Raspberry PI

NAS boxes with ARM CPU

Hard Disk Sentinel Linux version running on D-Link DNS-320LW

The Linux version of Hard Disk Sentinel also available for NAS boxes built with ARM CPUs. The NAS box should have telnet / SSH access in order to download and use this tool.

To get Telnet / SSH access, special firmware version(s) or additional packages (like the fun_plug may be required. **Putty** tool is also required to connect the NAS box and access its console.

Usage:

- get Telnet / SSH access to the NAS box and log-in to your device by using putty.exe
- enter **wget http://www.hdsentinel.com/hdslin/armv5/hdsentinelarm** to download the latest ARMv5 CPU build.
  To simplify things, the file is not compressed.
- enter **chmod 755 hdsentinelarm** to set the proper permission (executable). You may use **chmod +x hdsentinelarm** instead.
- enter **./hdsentinelarm** to start the Hard Disk Sentinel on the NAS and get hard disk status information.

Tested on:

- WD MyBook Live
- D-Link DNS-320LW two bay Sharecenter
- Seagate FreeAgent DockStar

Some useful ssh config option

Link: https://taozhi.medium.com/some-useful-ssh-config-option-7858a58c5e7b

When managing multiple Linux servers, we use SSH for logging in and performing tasks. Understanding how to configure SSH properly is essential for efficient server management.

Basic Config

```
Host my_jump
    identityfile "~/.ssh/my_jump"
    hostname 47.254.197.212
    hostkeyalias my_jump
    user root
    port 22
```

In the above config, "my_jump" is the hostname supporting wildcards to match multiple servers simultaneously.

The identityfile specifies the authorized private keys, hostname is the server's IP address, and hostkeyalias is useful for connecting to the server when its IP address changes without needing to update known_hosts. The user and port specify the SSH login credentials.

Reuse the sock

Upon relogging into the server, how can we bypass entering the password and reuse the previous session to quickly reconnect? We should the control setting in ssh config.

```
Host *
    serveraliveinterval 60
    keepalive yes
    controlmaster auto
    controlpath ~/.ssh/socks/%h-%k-%p-%r
    controlpersist yes
```

By using the above configuration, we set the controlpath for all servers using the '*' symbol in the Host field. The controlpath specifies the socket path.

%h represents the host IP.

%k represents the hostname.

%p represents the port.

%r represents the username.

When you connect to a server using ssh, you should see a socket file present. `~/.ssh/socks`.

Set Jump Server

To secure production servers inaccessible for direct login, we can first connect to a jump server, then use SSH through the jump server to access the production server. Automating this process is possible by configuring ProxyCommand or ProxyJump in the SSH settings.

Config the jump server a and b first.

```
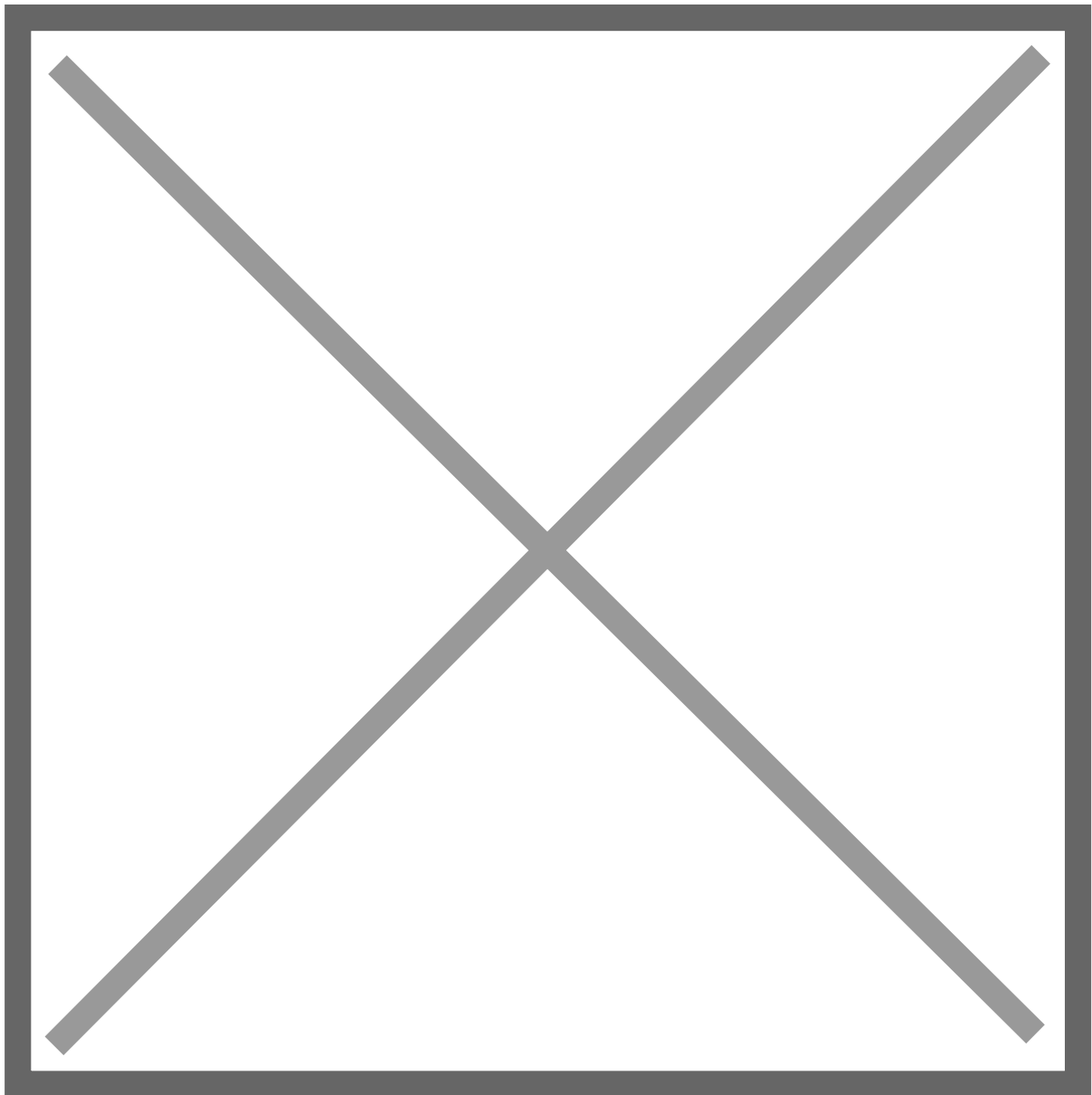Host jump-server-a
 HostKeyAlias jump-server-a
 Hostname 100.97.200.66

Host jump-server-b
 HostKeyAlias jump-server-b
 Hostname 100.97.200.67

Host jump-server-*
 HashKnownHosts no
 ServerAliveInterval 60
 Port 22
 User root
 PreferredAuthentications publickey
 IdentityFile ~/.ssh/id_taozhi
 Controlpath ~/.ssh/socks/%h-%k-%p-%r
 ControlMaster auto
 ControlPersist 5m
 setenv LC_ALL=C.UTF-8
```

Config the production servers

```
Host production-server-a
 ProxyJump jump-server-a

Host production-server-b
 ProxyJump jump-server-b

Host production-server-c
 ProxyCommand ssh -W %h:%p jump-server-b

Host production-server-*
 LogLevel ERROR
 UserKnownHostsFile /dev/null
 StrictHostKeyChecking no
 Port 22
 User root
 IdentityFile ~/.ssh/id_taozhi
 controlmaster no
 setenv LC_ALL=C.UTF-8
```

Following configuration, we can login to the production server locally.

```
ssh -o Hostname=172.16.28.19 production-server-a
```

You can log in to the production server with one command now.

Conclusions

SSH is a versatile command with numerous configuration options. More options can be found for reading here. If you have any useful ssh config you are using, please comment it, let using it together.