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nixCraft

Linux and Unix tutorials for new and seasoned sysadmin.

Linux Hard Disk Format Command

by VIVEK GITE on MARCH 10, 2008

Q. I've installed a new 250GB SATA hard disk on our office CentOS Linux server. How do I format a hard disk under Linux operating system from a shell prompt?

A.. There are total 4 steps involved for hard disk upgrade and installation procedure:



Step #1 : Partition the new disk using fdisk command

Following command will list all detected hard disks:

```
# fdisk -l | grep '^Disk'
```

Output:

```
Disk /dev/sda: 251.0 GB, 251000193024 bytes
Disk /dev/sdb: 251.0 GB, 251000193024 bytes
```

A device name refers to the entire hard disk. For more information see [Linux partition naming convention and IDE drive mappings](#).

To partition the disk - /dev/sdb, enter:

```
# fdisk /dev/sdb
```

The basic fdisk commands you need are:

- **m** - print help

- **p** - print the partition table
- **n** - create a new partition
- **d** - delete a partition
- **q** - quit without saving changes
- **w** - write the new partition table and exit

Step#2 : Format the new disk using mkfs.ext3 command

To format Linux partitions using ext2fs on the new disk:

```
# mkfs.ext3 /dev/sdb1
```

Step#3 : Mount the new disk using mount command

First create a mount point /disk1 and use mount command to mount /dev/sdb1, enter:

```
# mkdir /disk1
# mount /dev/sdb1 /disk1
# df -H
```

Step#4 : Update /etc/fstab file

Open /etc/fstab file, enter:

```
# vi /etc/fstab
```

Append as follows:

/dev/sdb1	/disk1	ext3	defaults	1 2
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Save and close the file.

Task: Label the partition

You can label the partition using e2label. For example, if you want to label the new partition /backup, enter

```
# e2label /dev/sdb1 /backup
```

You can use label name insted of partition name to mount disk using /etc/fstab:

```
LABEL=/backup /disk1 ext3 defaults 1 2
```

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aniket March 11, 2008, 1:53 pm

yah thats good for understand.....

REPLY LINK

aniket March 11, 2008, 1:55 pm

i have 48TB storage server in raid 5, how do i format this server?

REPLY LINK

punam sen December 3, 2010, 6:27 pm

to format the corresponding hdd you need a RAM(Random Access Memory) 1 YB(yota byte)
1YB=1024 ZB
1ZB=1024 XB
1XB=1024 PB
1PB=1024 TB

REPLY LINK

HAHA May 3, 2013, 7:42 pm

That's retarded.

REPLY LINK

Anand October 5, 2013, 4:47 pm

LOL, I've got 1 UB (UnniByte) RAM on my Server

1UB=1024YB
1YB=1024 ZB
1ZB=1024 XB
1XB=1024 PB
1PB=1024 TB

Is it possible to format my 1.4 MB floppy now?

REPLY LINK

as pon FB May 3, 2014, 9:01 am

I have 90’90 power of per zylions! So what? You’ve only got a pint of milk!!! does your processor register ?????

REPLY LINK

nixCraft March 11, 2008, 2:20 pm

Aniket,

Use LVM directly or read this tutorial which [explains how to create partition larger than 2TB](#)

REPLY LINK

ankur March 27, 2008, 5:36 am

How do I format a harddisk using linux system call

REPLY LINK

lakshmikanthan July 9, 2008, 1:54 pm

hi,

thank you fro valuable information

REPLY LINK

dragon August 1, 2008, 7:52 am

how to format a disk by cpp programe?is there any sample code ?

REPLY LINK

Nagarajan January 6, 2009, 3:11 pm

Hi,

Thank you very much this valuable information.

Regards,
Nagarajan.S.G

REPLY LINK

llyappan January 29, 2009, 8:16 am

/dev/sdb1 /disk1 ext3 defaults 1 2

The above line what is mean by defaults and what is 1 2 ?

can u explain those two things !

REPLY LINK

bjaanes November 4, 2011, 9:48 pm

This is directly from the arch linux (amazing) [documentation](#):

1. The first number is “dump”: used by the dump utility to decide when to make a backup.
Dump checks the entry and uses the number to decide if a file system should be backed up.
Possible entries are 0 and 1. If 0, dump will ignore the file system; if 1, dump will make a backup. Most users will not have dump installed, so they should put 0 for the entry.
2. The second number is “pass”: used by fsck to decide which order filesystems are to be checked. Possible entries are 0, 1 and 2. The root file system should have the highest priority 1 – all other file systems you want to have checked should have a 2. File systems with a value 0 will not be checked by the fsck utility.

REPLY LINK

Pgt August 22, 2012, 12:55 am

Thanks bjaanes

REPLY LINK

shyam kumar February 24, 2009, 5:50 am

IN my system both WINDOWS-XP and LINUX , I've installed. after that
I want to format the linux OS from my system.

so please send to me tricks or method on Email addr., so i can remove LUNUX OS from my system.

BY both method (i)Text command and
(ii)without Text command.

REPLY LINK

Greatkanth March 22, 2011, 10:07 am

Hey man I also have same problem .did u got any methods to remove . please help man

REPLY LINK

HyPerCuBe March 12, 2009, 3:56 pm

verrrrrrrry useful i've searched for 2 days for this thanks

REPLY LINK

Sathish April 16, 2009, 10:47 am

Hi,

Thank you very much this valuable information. Very useful this

Thanks

B. Sathish.

REPLY LINK

Prasoon May 11, 2009, 6:18 pm

I have installed CentOS ..
now i want my disk to be fully formatted like a new one. with no files on it..

i remember doing it by booting in DOS mode in Win98..
Please tell how can i do it..

REPLY LINK

mjisri May 20, 2009, 4:06 am

Thank you.
nice and clear.

REPLY LINK

LinuxUser July 14, 2009, 8:10 am

Excellent and easy. Thanx

REPLY LINK

Charanjit Singh Cheema July 18, 2009, 7:20 am

Nice information and esp. the link that you posted for Anikat. Information really useful pal. Thanks a ton..

Regards
Charanjit Singh Cheema

REPLY LINK

Carlo August 16, 2009, 11:14 am

Thank you, this is the kind of fast reference that one is always looking for

REPLY LINK

antonio August 21, 2009, 10:23 pm

Well, this saved me an hour of banging my head against the wall... well written! thanks!

REPLY LINK

Jam September 1, 2009, 10:00 am

Yes. Very useful. Thanks.

REPLY LINK

anburaja September 9, 2009, 12:11 pm

help me to see the out put of the php programe, i have php 2007 developer

REPLY LINK

anburaja September 9, 2009, 12:13 pm

god bless you

REPLY LINK

Lion September 21, 2009, 7:42 pm

Very simple and useful, thanks :)

REPLY LINK

Chris November 6, 2009, 2:08 am

Great. Searched for a long time to find this, very well done. Thanks!

REPLY LINK

Sanjay January 15, 2010, 10:59 am

Can any one tell me what the mean by 1,2 in default and when i create a raid partition is there any change in default charcter or it is sama as ” default” .

REPLY LINK

manikandan April 14, 2010, 6:50 am

IN my Laptop both WINDOWS-XP and LINUX, i’ve safe the problem in windows hal.dll file is corrupted.
so please send to me tricks or method on Email addr.

REPLY LINK

Rick May 1, 2010, 1:48 pm

Good Recipe for what I did in UNIX for years with the simple format command.
You boiled it down to an excellent example...

REPLY LINK

Sigie May 1, 2010, 2:14 pm

very helpfull , thanks.

REPLY LINK

aaron May 14, 2010, 5:29 pm

very first command (fdisk /dev/sdb) failed. message is “Unable to open /dev/sdb”. any suggestions?

REPLY LINK

Abdelmannan May 23, 2010, 12:07 pm

Hello all,

Is there any software to bound two NIC to use on ip address for both NICs.

Thanks

REPLY LINK

nixCraft May 23, 2010, 1:46 pm

See [our tutorial for more](#) info.

REPLY LINK

Pankaj, Lucknow June 7, 2010, 11:26 am

Thank you very much these are very good and easy way commands to understand for the people.

REPLY LINK

mumunendra kumar July 26, 2010, 4:42 pm

how to format linex form my system plz reply solution at my email

REPLY LINK

vahid August 26, 2010, 3:02 am

thanks alot ,,,, , that was really usefull

REPLY LINK

sandeep choudhary August 27, 2010, 1:52 pm

how many formatting for window and linux
plz sand ams on my email address

REPLY LINK

raj September 30, 2010, 6:46 pm

I deleted the panel in ubuntu by mistake.. how can i get the default panels?

REPLY LINK

sathishkumar October 14, 2010, 2:53 pm

The above steps are so good and easy to format

Thank u Very much for your Formating steps.

REPLY LINK

linux December 18, 2010, 4:12 pm

a very nice article. thank you for sharing.

REPLY LINK

kunal December 30, 2010, 10:10 am

how do installed linux with command ???? tell me all command...????

[REPLY](#) [LINK](#)

bapi January 30, 2011, 5:04 am

IN my system both WINDOWS-XP and LINUX , I've installed. after that

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BY both method (i)Text command and

(ii)without Text command.

[REPLY](#) [LINK](#)

Guy February 6, 2011, 1:04 am

Good article.

Note: this works on centos 5.5 ... fyi.

[REPLY](#) [LINK](#)

tmel173 June 1, 2011, 4:09 pm

This is beautiful!!! There are some who care out there..

[REPLY](#) [LINK](#)

Narendra June 10, 2011, 4:28 am

IN my system both WINDOWS-XP and LINUX , I've installed. after that

I want to format the linux OS from my system.

so please send to me tricks or method on Email addr., so i can remove LUNUX OS from my system.

BY both method

(i)Text command and

(ii)without Text command.

[REPLY](#) [LINK](#)

Aravind September 12, 2011, 8:39 am

Hi Naren...I need to format my linux suse10.3 from my system.Will you please help me how to

do.i am very new to this linux.If u have any tricks means please send me that files also.Aravind
Thank you

REPLY LINK

paco July 31, 2011, 3:42 pm

Good tuto, thank you

REPLY LINK

retheesh October 4, 2011, 3:31 pm

very good solution thanks...

REPLY LINK

Ashok December 13, 2011, 2:39 am

Very Good solution.

Thanks

REPLY LINK

Zero February 11, 2012, 12:58 pm

just wanted to let you know you just saved my life, cheers mate

REPLY LINK

BINU RAJAN March 22, 2012, 5:49 pm

Vivek Gite U R GREAT
MY HDD WAS DETCTED BUT WAS NOT BOOTING AND WAS ALSO DENYING FRESH
INSTALLATION OF WINDOWS AND WAS RETURNING SOME STOP ERROR BUT AFTER
FORMATING ONE OF MY PARTITION IN SLAX NOW EVERYTHING IS BACK TO NORMAL AND
IT ALSO SAVED MY TONNES OF DATA

REPLY LINK

brandon April 20, 2012, 7:11 pm

I am using VMWare version 8 to run backtrack 5 and I added another hard drive to it. How do I format the drive to place a rainbow table on the said drive?

REPLY LINK

Sia Gi May 15, 2012, 8:48 pm

Very good and concise tutorial, thank you.

REPLY LINK

Vicky July 2, 2012, 12:50 pm

HI,

I have a FS created with the below cmd and started using fine.

mkfs.ext3 /dev/sdb1
(/dev/sdb1 been allocated from SAN with 1 TB capacity)

Now, I have resized the disk /dev/sdb1 to 2 TB from the SAN. After this my filesystem doesn't show the resized capacity of 2 TB :(, it still shows as 1 TB. What has to be done to get the FS space resized without data loss ?

Please help with this.

Thank you.
Cheers,
Vicky

REPLY LINK

Vimal July 30, 2012, 6:24 pm

Very clear & complete. Keep it up..!

REPLY LINK

Ahphu August 18, 2012, 4:57 am

hi

I have 640GB. how to format this hard disk for Linux operating system?

Please help me solution.....

REPLY LINK

Nickiest February 12, 2013, 9:08 am

I think you make a wrong typing in mkfs. In the line is hdb not sdb. ok?

REPLY LINK

Tejas Sakhare April 29, 2013, 5:50 am

I have 1.60GB. how to format this hard disk of Linux OS System. I have try but disk not detected for formatting. I want to OS Windows

Please help me solution.....

REPLY LINK

lalji June 8, 2013, 10:32 am

thank to much sir

REPLY LINK

Paola L. August 8, 2014, 8:48 am

Written in a clear and simple!!

Thank you :)

REPLY LINK

sarah September 9, 2014, 6:12 am

I am extremely techie challenged :(I do not know what kind of linux I have on my laptop. All I want to do is format my USB drive but I receive an error message.

Sorry, could not display all the contents of “THE GALILEO”: Error when getting information for file ‘/media/sarah/THE GALILEO/FOUND.000’: Input/output error

Easy way to correct and format?

REPLY LINK

Wellington Torrejais da Silva September 16, 2014, 7:42 pm

Thanks!!!

REPLY LINK

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