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Backup an entire hard disk using dd command

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The ' dd ' command is one of the original Unix utilities and should be in
everyone's tool box. It can strip headers, extract parts of binary files and write
into the middle of floppy disks; it is used by the Linux kernel Makefiles to
make boot images. It can be used to copy and convert magnetic tape formats,
convert between ASCII and EBCDIC, swap bytes, and force to upper and
lowercase.

For blocked I/O, the dd command has no competition in the standard tool set.
One could write a custom utility to do specific I/O or formatting but, as dd is
already available almost everywhere, it makes sense to use it.

Like most well-behaved commands, dd reads from its standard input and
writes to its standard output, unless a command line specification has been
given. This allows dd to be used in pipes, and remotely with the rsh remote
shell command.

Unlike most commands, dd uses a keyword=value format for its parameters.
This was reputedly modeled after IBM System/360 JCL, which had an
elaborate DD 'Dataset Definition' specification for I/O devices. A complete
listing of all keywords is available from GNU dd with

dd --help

For more options check dd man page

Using dd you can create backups of an entire harddisk or just a parts of it.
This is also usefull to quickly copy installations to similar machines. It will only
work on disks that are exactly the same in disk geometry, meaning they have
to the same model from the same brand.

full hard disk copy

dd if=/dev/hdx of=/dev/hdy
dd if=/dev/hdx of=/path/to/image
dd if=/dev/hdx | gzip > /path/to/image.gz

Hdx could be hda, hdb etc. In the second example gzip is used to compress
the image if it is really just a backup.

Restore Backup of hard disk copy

dd if=/path/to/image of=/dev/hdx

gzip -dc /path/to/image.gz | dd of=/dev/hdx

MBR backup

In order to backup only the first few bytes containing the MBR and the partition table you can use dd as well.

dd if=/dev/hdx of=/path/to/image count=1 bs=512

MBR restore

dd if=/path/to/image of=/dev/hdx

Add "count=1 bs=446" to exclude the partition table from being written to disk. You can manually restore the table.