

# Rsync

## Simple exact copy

Including all permissions, time, etc.

```
rsync -az --verbose --itemize-changes --times --recursive --whole-file --delete --links root@192.168.178.80:/source_dir/ /target_dir
```

Notice the '/' behind the source dir

Each bit position and value in rsync's output:

```
YXcstpoguax path/to/file
||||||| |
||||||| | L- x: The extended attribute information changed
||||||| | | L- a: The ACL information changed
||||||| | | L- u: The u slot is reserved for future use
||||||| | | L- g: Group is different
||||||| | | L- o: Owner is different
||||||| | | L- p: Permission are different
||||||| | | L- t: Modification time is different
||||||| | | L- s: Size is different
||||||| | | L- c: Different checksum (for regular files), or
||||||| | | | changed value (for symlinks, devices, and special files)
||||| |
||||| | L- the file type:
||||| | | f: for a file,
||||| | | d: for a directory,
||||| | | L: for a symlink,
||||| | | D: for a device,
||||| | | S: for a special file (e.g. named sockets and fifos)
||||| |
||||| | L- the type of update being done::
||||| | | <: file is being transferred to the remote host (sent)
||||| | | >: file is being transferred to the local host (received)
||||| | | c: local change/creation for the item, such as:
||||| | | | - the creation of a directory
||||| | | | - the changing of a symlink,
||||| | | | - etc.
||||| | | h: the item is a hard link to another item (requires
||||| | | | --hard-links).
||||| | | .: the item is not being updated (though it might have
||||| | | | attributes that are being modified)
||||| | | *: means that the rest of the itemized-output area contains
||||| | | | a message (e.g. "deleting")
```

## Some example output from rsync for various scenarios:

```
>f++++++ some/dir/new-file.txt
.f....og..x some/dir/existing-file-with-changed-owner-and-group.txt
.f.....x some/dir/existing-file-with-changed-unnamed-attribute.txt
>f...p...x some/dir/existing-file-with-changed-permissions.txt
>f...t...g..x some/dir/existing-file-with-changed-time-and-group.txt
>f.s.....x some/dir/existing-file-with-changed-size.txt
>f.st.....x some/dir/existing-file-with-changed-size-and-time-stamp.txt
cd++++++ some/dir/new-directory/
.d....og... some/dir/existing-directory-with-changed-owner-and-group/
.d...t..... some/dir/existing-directory-with-different-time-stamp/
```

## Full backup

```
rsync -haxAX --stats --delete --info=progress2 --info=name0 /* "$TargetMnt"
--exclude={"/dev/*,/proc/*,/sys/*,/tmp/*,/run/*,/mnt/*,/media/*,/lost+found"}
```

Some notable comments about parameters:

--stats gives information on files added, changed and deleted from the clone (called backup in your case).

--delete instructs rsync to delete files in the clone that no longer exist in the source directory.

info=progress2 gives a modern looking progress display whilst cloning directories.

--info=name0 prevents every single filename from being displayed as it is being copied. This gives less screen clutter but you may want to omit this parameter.

/\* tells rsync where to start synchronizing files. In this example it's the root directory but you want to change it to /media/user1/DATA4/FolderA.

"\$TargetMnt" tells rsync where to clone to. In your case change it to "/media/ivan/Seagate Backup Plus Drive/FolderA". The double quotes are important because your directory names contain spaces in them.

The second line starting with --exclude={"/dev/\* you don't need at all because these directories aren't in the list. Don't use this line and drop the line continuation character \ at the end of the first line.

As with all backup scenarios always test the backups to make sure all files are there and contain the appropriate information.

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