**UMASK command**

**Syntax**: umask [options]

**Def**: This command is used to update the by default file and directory access permissions such as read, write and execute permissions for user/owner, group and others.

1. umask: simply writing umask without any option will display the by default umask value. Eg. umask
2. umask [mode]: It sets the user file creation mask to [mode]. If [mode] begins with a digit then it is interpreted as an octal number (means permissions are defined in the absolute/numeric mode), otherwise it is assumed to be a symbolic mode string like defined in chmod command.
3. umask –p: It displays the default umask value in a form that may be reused as an input.
4. umask –S: It displays the output in the symbolic mode. But by default umask always display the result as an octal number (in numeric mode).

**Example1**: Give read/write/execute permission to the user, and no permissions to group or others. i.e. the permission for files will be 600, and for directories will be 700.

$ umask 077

**Example2**: Give read/write/execute permission to the user, read/execute permissions to group or others for directories and read-only permission to group or others for other files. i.e. the permission for files will be 644, and for directories will be 755.

$ umask 022

**Important points to consider**:

* The leading zero in umask mode is just to signify that it is an octal number, or to give it look of a C-style octal number. Only the last 3 digits are actually useful in umask which tell about the access permissions.
* For checking the access permissions which you are setting with umask, you need to subtract the mode value (used with umask) digit wise from ‘777’ for a directory and ‘666’ for a file. For file it is ‘666’ because you cannot provide the execute permissions to the files using umask. (Eg. for files ‘000’ is same ‘001’ but for directories it is different)

**Other useful commands**

**Linux Groups**

There are two types of groups that a user can belong to:

* Primary or login group – is the group that is assigned to the files that are created by the user. Usually, the name of the primary group is the same as the name of the user. Each user must belong to exactly one primary group.
* Secondary or supplementary group - used to grant certain privileges to a set of users. A user can be a member of zero or more secondary groups.

1. List all the groups that currently logged in user belongs to: groups
2. List all the users which are present in your linux: cat /etc/passwd
3. List all the groups which are present in your linux: cat /etc/group
4. List all groups a specific user belongs to: groups [user name] (eg. groups ubuntu)
5. To list members of a group: getent group [group name] (eg. getent group adm)
6. Creating a new group: sudo groupadd [group name] (eg. sudo groupadd testgrp)
7. Creating a new user: sudo useradd [user name] (eg. sudo useradd testusr)