**327.1 Discretionary Access Control**

**Description:**

Candidates are required to understand Discretionary Access Control and know how to implement it using Access Control Lists. Additionally, candidates are required to understand and know how to use Extended Attributes.

**Key Knowledge Areas:**

* Understand and manage file ownership and permissions, including SUID and SGID
* Understand and manage access control lists
* Understand and manage extended attributes and attribute classes

**Terms and Utilities:**

* getfacl
* setfacl
* getfattr
* setfattr

**Understand and manage file ownership and permissions, including SUID and SGID**

blablabla

|  |  |  |  |
| --- | --- | --- | --- |
|  | Character | Effect on files | Effect on dirs |
|  |  |  |  |
|  |  |  |  |

**chown**

**chown** - change file owner and group.

Synopsis:

**chown** [OPTION]... [OWNER][:[GROUP]] FILE...

**chown** [OPTION]... --reference=RFILE FILE...

Description:

* **chown** changes the user and/or group ownership of each given file.
* If only an owner (a user name/UID) is given, that user is made the owner of each given file, and the files' group is not changed.
* If the owner is followed by a colon and a group name/GID, with no spaces between them, the group ownership of the files is changed as well.
* If a colon but no group name follows the user name, that user is made the owner of the files and the group of the files is changed to that user's login group.
* If the colon and group are given, but the owner is omitted, only the group of the files is changed; in this case, **chown** performs the same function as **chgrp**.
* If only a colon is given, or if the entire operand is empty, neither the owner nor the group is changed.

Options:

**-c, --changes**

like verbose but report only when a change is made

**--dereference**

affect the referent of each symbolic link (this is the default), rather than the symbolic link itself

**-h, --no-dereference**

affect each symbolic link instead of any referenced file (useful only on systems that can change the ownership of a symlink)

**--from=CURRENT\_OWNER:CURRENT\_GROUP**

change the owner and/or group of each file only if its current owner and/or group match those specified here. Either may be omitted, in which case a match is not required for the omitted attribute.

**--no-preserve-root**

do not treat '/' specially (the default)

**--preserve-root**

fail to operate recursively on '/'

**-f, --silent, --quiet**

suppress most error messages

**--reference=RFILE**

use RFILE's owner and group rather than specifying OWNER:GROUP values

**-R, --recursive**

operate on files and directories recursively

**-v, --verbose**

output a diagnostic for every file processed

The following options modify how a hierarchy is traversed when the **-R** option is also specified. If more than one is specified, only the final one takes effect:

**-H**

if a command line argument is a symbolic link to a directory, traverse it

**-L**

traverse every symbolic link to a directory encountered

**-P**

do not traverse any symbolic links (default)

**--help**

**--version**

**chgrp**

**chgrp** - change group ownership

Synopsis:

**chgrp** [OPTION]... GROUP FILE...

**chgrp** [OPTION]... --reference=RFILE FILE...

Description:

* Change the group of each FILE to GROUP.
* With --reference, change the group of each FILE to that of RFILE.

Options:

**-c, --changes**

like verbose but report only when a change is made

**-f, --silent, --quiet**

suppress most error messages

**-v, --verbose**

output a diagnostic for every file processed

**--dereference**

affect the referent of each symbolic link (this is the default), rather than the symbolic link itself

**-h, --no-dereference**

affect symbolic links instead of any referenced file (useful only on systems that can change the ownership of a symlink)

**--no-preserve-root**

do not treat '/' specially (the default)

**--preserve-root**

fail to operate recursively on '/'

**--reference=RFILE**

use RFILE's group rather than specifying a GROUP value

**-R, --recursive**

operate on files and directories recursively

The following options modify how a hierarchy is traversed when the -R option is also specified. If more than one is specified, only the final one takes effect:

**-H**

if a command line argument is a symbolic link to a directory, traverse it

**-L**

traverse every symbolic link to a directory encountered

**-P**

do not traverse any symbolic links (default)

**--help**

**--version**

**chmod**

**Understand and manage access control lists**

blablabla

**Understand and manage extended attributes and attribute classes**

blablabla