

# Lab: Linux File Permissions – Department-Based Access Control

## Objective

Set up departmental directories for a fictional company, assign users and groups accordingly, appropriately manage file permissions, and elevate the C-Level department's privileges to ensure they have full access across all folders using both traditional UNIX permissions and ACLs.

### Scenario: Company Directory Setup for a Fictional Business

Company Name: **CyberCorp**

CyberCorp has **5 departments and 15 employees. Each department has 3 staff members.** Only the **C-Level department** should have full access to all files across all departments.

### Departments & Employees

Department	Group Name	Staff Members
Marketing	marketing	Alice, Bob, Carol
HR	hr	David, Emily, Frank
IT	it	Grace, Henry, Ian
Sales	sales	Jack, Kelly, Liam
C-Level	clevel	CEO, CTO, CFO

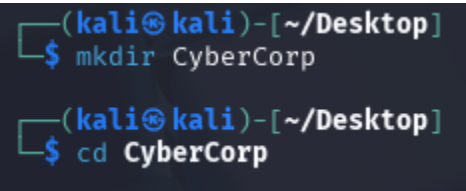
## Step-by-Step Instructions / Summary

1. Create Base Directory on Desktop
2. Create Department Subdirectories
  - a. Create Groups for Departments
  - b. Create Users and Assign to Groups
  - c. Check Group Assignments
3. Set Group Ownership of Directories
4. Set Directory Permissions (770)

5. Create 3 Files Per Department
  - a. Marketing
  - b. HR
  - c. IT
  - d. Sales
  - e. C-Level
6. Add C-Level Group Access via ACL
  - a. Verify C-Level Permissions with `getfacl`
7. Generate Directory Tree View with `tree`
8. Screenshot submissions

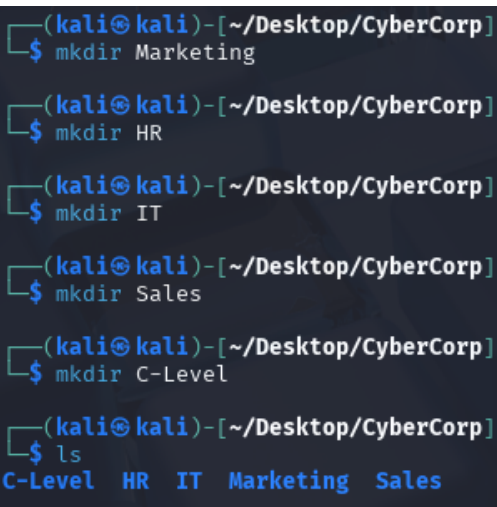
**Commands and steps used for this lab:**

1. Create base directory on desktop

<p><b>Making the base folder</b>  <b>mkdir CyberCorp</b></p>	 <pre>(kali㉿kali)-[~/Desktop] \$ mkdir CyberCorp  (kali㉿kali)-[~/Desktop] \$ cd CyberCorp</pre>
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2. Create department subdirectories and groups

- 2.1. Making the subdirectories inside the CyberCorps folder

<p><b>mkdir Marketing</b>  <b>mkdir HR</b>  <b>mkdir IT</b>  <b>mkdir Sales</b>  <b>mkdir C-Level</b>  <b>ls</b></p>	 <pre>(kali㉿kali)-[~/Desktop/CyberCorp] \$ mkdir Marketing  (kali㉿kali)-[~/Desktop/CyberCorp] \$ mkdir HR  (kali㉿kali)-[~/Desktop/CyberCorp] \$ mkdir IT  (kali㉿kali)-[~/Desktop/CyberCorp] \$ mkdir Sales  (kali㉿kali)-[~/Desktop/CyberCorp] \$ mkdir C-Level  (kali㉿kali)-[~/Desktop/CyberCorp] \$ ls C-Level HR IT Marketing Sales</pre>
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## 2.2. Making the required groups for the collection of users later on

```
sudo groupadd marketing
sudo groupadd hr
sudo groupadd it
sudo groupadd sales
sudo groupadd clevel
cat /etc/group
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd marketing

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd hr

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd it

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd sales

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd clevel

(kali㉿kali)-[~/Desktop/CyberCorp]
$ cat /etc/group
```

```
marketing:x:1001:
hr:x:1002:
it:x:1003:
sales:x:1004:
clevel:x:1005:
```

## 3. Create users and assign to groups

### 3.1. Creating users for Marketing group

```
sudo useradd -G marketing Alice
sudo useradd -G marketing Bob
sudo useradd -G marketing Carol
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Alice

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Bob

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Carol
```

### 3.2. Creating users for HR group

```
sudo useradd -G hr David
sudo useradd -G hr Emily
sudo useradd -G hr Frank
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr David

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr Emily

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr Frank
```

### 3.3. Creating users for IT group

```
sudo useradd -G it Grace
sudo useradd -G it Henry
sudo useradd -G it Ian
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Grace

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Henry

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Ian
```

### 3.4. Creating users for Sales group

```
sudo useradd -G sales Jack
sudo useradd -G sales Kelly
sudo useradd -G sales Liam
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Jack

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Kelly

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Liam
```

### 3.5. Creating users for C-Level group

```
sudo useradd -G clevel CEO
sudo useradd -G clevel CTO
sudo useradd -G clevel CFO
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CEO

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CTO

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CFO
```

### 3.6. Check if all the created users assigned to the associated group

```
cat /etc/group
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cat /etc/group

marketing:x:1001:Alice,Bob,Carol
hr:x:1002:David,Emily,Frank
it:x:1003:Grace,Henry,Ian
sales:x:1004:Jack,Kelly,Liam
clevel:x:1005:CEO,CTO,CFO
```

## 4. Set group ownership and permissions

### 4.1. Setting the group ownership for each respective directory

<pre> sudo chown :marketing Marketing sudo chown :hr HR sudo chown :it IT sudo chown :sales Sales sudo chown :clevel C-Level ls -l </pre>	<pre> (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chown :marketing Marketing  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chown :hr HR  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chown :it IT  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chown :sales Sales  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chown :clevel C-Level  (kali㉿kali)-[~/Desktop/CyberCorp] \$ ls -l total 20 drwxrwxr-x 2 kali clevel  4096 Jun 13 23:04 C-Level drwxrwxr-x 2 kali hr      4096 Jun 13 23:03 HR drwxrwxr-x 2 kali it      4096 Jun 13 23:03 IT drwxrwxr-x 2 kali marketing 4096 Jun 13 23:03 Marketing drwxrwxr-x 2 kali sales   4096 Jun 13 23:03 Sales </pre>
---	---

#### 4.2. Setting the proper permissions for each group and respective directory

<pre> sudo chmod 770 Marketing sudo chmod 770 HR sudo chmod 770 IT sudo chmod 770 Sales sudo chmod 770 C-Level ls -l </pre>	<pre> (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chmod 770 Marketing  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chmod 770 HR  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chmod 770 IT  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chmod 770 Sales  (kali㉿kali)-[~/Desktop/CyberCorp] \$ sudo chmod 770 C-Level  (kali㉿kali)-[~/Desktop/CyberCorp] \$ ls -l total 20 drwxrwx--- 2 kali clevel  4096 Jun 13 23:04 C-Level drwxrwx--- 2 kali hr      4096 Jun 13 23:03 HR drwxrwx--- 2 kali it      4096 Jun 13 23:03 IT drwxrwx--- 2 kali marketing 4096 Jun 13 23:03 Marketing drwxrwx--- 2 kali sales   4096 Jun 13 23:03 Sales </pre>
---	---

### 5. Create 3 files per department using different methods (Using touch, echo, nano)

#### 5.1. Creating the 3 files for the Marketing Directory

```
cd Marketing
touch product.txt
echo "Ad campaign plan" > campaign.txt
nano budget.txt
ls
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd Marketing

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ touch product.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ echo "Ad campaign plan" > campaign.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ nano budget.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ ls
budget.txt  campaign.txt  product.txt
```

## 5.2. Creating the 3 files of the HR Directory

```
cd HR
touch employees.txt
echo "guidelines" > policies.txt
nano recruitment.txt
ls
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd HR

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ touch employees.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ echo "guidelines" > policies.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ nano recruitment.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ ls
employees.txt  policies.txt  recruitment.txt
```

## 5.3. Creating the 3 files of the IT Directory

```
cd IT
touch network_config.yaml
echo "Updates & Security" >
server_maintenance.log
nano security_patch_notes.txt
ls
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd IT

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ touch network_config.yaml

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ echo "Updates & Security" > server_maintenance.log

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ nano security_patch_notes.txt

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ ls
network_config.yaml  security_patch_notes.txt  server_maintenance.log
```

## 5.4. Creating the 3 files of the Sales directory

```
cd Sales
touch q2_leads.csv
echo "Introduction of Product" >
pitch_deck.pptx
nano client_followups.txt
ls
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd Sales

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ touch q2_leads.csv

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ echo "Introduction of Product" > pitch_deck.pptx

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ nano client_followups.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ ls
client_followups.txt  pitch_deck.pptx  q2_leads.csv
```

## 5.5. Creating the 3 files for C-Level

```
cd C-Level
touch company_strategy.docx
echo "Financial_Analysis_Model" >
financial_overview.xlsx
nano board_meeting_notes.txt
ls
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd C-Level

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ touch company_strategy.docx

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ echo "Financial_Analysis_Model" > financial_overview.xlsx

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ nano board_meeting_notes.txt

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ ls
board_meeting_notes.txt  company_strategy.docx  financial_overview.xlsx
```

## 6. Add C-Level group access to all folders

### 6.1. Setting the access for all C-Level groups

```
sudo setfacl -m g:clevel:rwx marketing
sudo setfacl -m g:clevel:rwx hr
sudo setfacl -m g:clevel:rwx it
sudo setfacl -m g:clevel:rwx sales
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo setfacl -m g:clevel:rwx Marketing

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo setfacl -m g:clevel:rwx HR

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo setfacl -m g:clevel:rwx IT

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo setfacl -m g:clevel:rwx Sales
```

### 6.2. Verify the C-Level permissions

getfacl marketing  
getfacl hr  
getfacl it  
getfacl sales  
getfacl clevel

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl Marketing
# file: Marketing
# owner: kali
# group: marketing
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl HR
# file: HR
# owner: kali
# group: hr
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl IT
# file: IT
# owner: kali
# group: it
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl Sales
# file: Sales
# owner: kali
# group: sales
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl C-Level
# file: C-Level
# owner: kali
# group: clevel
user::rwx
group::rwx
other::—
```



## 7. Generate a directory tree view

7.1. `sudo apt install tree`

7.2. `tree -pug`

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo apt install tree
tree is already the newest version (2.2.1-1).
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 1297

(kali㉿kali)-[~/Desktop/CyberCorp]
$ tree -pug
[drwxrwxr-x kali kali ] .
├── [drwxrwx--- kali clevel ] C-Level
│   ├── [-rw-rw-r-- kali kali ] board_meeting_notes.txt
│   ├── [-rw-rw-r-- kali kali ] company_strategy.docx
│   └── [-rw-rw-r-- kali kali ] financial_overview.xlsx
├── [drwxrwx--- kali hr ] HR
│   ├── [-rw-rw-r-- kali kali ] employees.txt
│   ├── [-rw-rw-r-- kali kali ] policies.txt
│   └── [-rw-rw-r-- kali kali ] recruitment.txt
├── [drwxrwx--- kali it ] IT
│   ├── [-rw-rw-r-- kali kali ] network_config.yaml
│   ├── [-rw-rw-r-- kali kali ] security_patch_notes.txt
│   └── [-rw-rw-r-- kali kali ] server_maintenance.log
├── [drwxrwx--- kali marketing] Marketing
│   ├── [-rw-rw-r-- kali kali ] budget.txt
│   ├── [-rw-rw-r-- kali kali ] campaign.txt
│   └── [-rw-rw-r-- kali kali ] product.txt
└── [drwxrwx--- kali sales ] Sales
    ├── [-rw-rw-r-- kali kali ] client_followups.txt
    ├── [-rw-rw-r-- kali kali ] pitch_deck.pptx
    └── [-rw-rw-r-- kali kali ] q2_leads.csv

6 directories, 15 files
```

## 8. Additional screenshot submissions

Screenshot	Description
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```

(kali@kali)-[~/Desktop/CyberCorp]
$ tree -pug
[drwxrwxr-x kali kali ] .
├── [drwxrwx--- kali clevel ] C-Level
│   ├── [-rw-rw-r-- kali kali ] board_meeting_notes.txt
│   ├── [-rw-rw-r-- kali kali ] company_strategy.docx
│   └── [-rw-rw-r-- kali kali ] financial_overview.xlsx
├── [drwxrwx--- kali hr ] HR
│   ├── [-rw-rw-r-- kali kali ] employees.txt
│   ├── [-rw-rw-r-- kali kali ] policies.txt
│   └── [-rw-rw-r-- kali kali ] recruitment.txt
├── [drwxrwx--- kali it ] IT
│   ├── [-rw-rw-r-- kali kali ] network_config.yaml
│   ├── [-rw-rw-r-- kali kali ] security_patch_notes.txt
│   └── [-rw-rw-r-- kali kali ] server_maintenance.log
├── [drwxrwx--- kali marketing] Marketing
│   ├── [-rw-rw-r-- kali kali ] budget.txt
│   ├── [-rw-rw-r-- kali kali ] campaign.txt
│   └── [-rw-rw-r-- kali kali ] product.txt
└── [drwxrwx--- kali sales ] Sales
    ├── [-rw-rw-r-- kali kali ] client_followups.txt
    ├── [-rw-rw-r-- kali kali ] pitch_deck.pptx
    └── [-rw-rw-r-- kali kali ] q2_leads.csv

6 directories, 15 files

```

CyberCorp directory structure using tree

```

(kali@kali)-[~/Desktop/CyberCorp]
$ cd Marketing

(kali@kali)-[~/Desktop/CyberCorp/Marketing]
$ ls -l
total 8
-rw-rw-r-- 1 kali kali 14 Jun 12 22:21 budget.txt
-rw-rw-r-- 1 kali kali 17 Jun 12 22:21 campaign.txt
-rw-rw-r-- 1 kali kali  0 Jun 12 22:20 product.txt

(kali@kali)-[~/Desktop/CyberCorp]
$ cd HR

(kali@kali)-[~/Desktop/CyberCorp/HR]
$ ls -l
total 8
-rw-rw-r-- 1 kali kali  0 Jun 13 19:48 employees.txt
-rw-rw-r-- 1 kali kali 11 Jun 13 19:48 policies.txt
-rw-rw-r-- 1 kali kali 15 Jun 13 19:49 recruitment.txt

(kali@kali)-[~/Desktop/CyberCorp]
$ cd IT

(kali@kali)-[~/Desktop/CyberCorp/IT]
$ ls -l
total 8
-rw-rw-r-- 1 kali kali  0 Jun 13 19:57 network_config.yaml
-rw-rw-r-- 1 kali kali 11 Jun 13 20:00 security_patch_notes.txt
-rw-rw-r-- 1 kali kali 19 Jun 13 19:59 server_maintenance.log

(kali@kali)-[~/Desktop/CyberCorp]
$ cd Sales

(kali@kali)-[~/Desktop/CyberCorp/Sales]
$ ls -l
total 8
-rw-rw-r-- 1 kali kali 11 Jun 13 20:13 client_followups.txt
-rw-rw-r-- 1 kali kali 24 Jun 13 20:12 pitch_deck.pptx
-rw-rw-r-- 1 kali kali  0 Jun 13 20:08 q2_leads.csv

(kali@kali)-[~/Desktop/CyberCorp]
$ cd C-Level

(kali@kali)-[~/Desktop/CyberCorp/C-Level]
$ ls -l
total 8
-rw-rw-r-- 1 kali kali 16 Jun 13 21:53 board_meeting_notes.txt
-rw-rw-r-- 1 kali kali  0 Jun 13 20:16 company_strategy.docx
-rw-rw-r-- 1 kali kali 25 Jun 13 21:53 financial_overview.xlsx

```

Each department folder with ls -l

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd Marketing

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ touch product.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ echo "Ad campaign plan" > campaign.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ nano budget.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Marketing]
$ ls
budget.txt  campaign.txt  product.txt
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd HR

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ touch employees.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ echo "guidelines" > policies.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ nano recruitment.txt

(kali㉿kali)-[~/Desktop/CyberCorp/HR]
$ ls
employees.txt  policies.txt  recruitment.txt
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd IT

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ touch network_config.yaml

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ echo "Updates & Security" > server_maintenance.log

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ nano security_patch_notes.txt

(kali㉿kali)-[~/Desktop/CyberCorp/IT]
$ ls
network_config.yaml  security_patch_notes.txt  server_maintenance.log
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd Sales

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ touch q2_leads.csv

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ echo "Introduction of Product" > pitch_deck.pptx

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ nano client_followups.txt

(kali㉿kali)-[~/Desktop/CyberCorp/Sales]
$ ls
client_followups.txt  pitch_deck.pptx  q2_leads.csv
```

File creation steps using touch, nano, echo

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cd C-Level

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ touch company_strategy.docx

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ echo "Financial_Analysis_Model" > financial_overview.xlsx

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ nano board_meeting_notes.txt

(kali㉿kali)-[~/Desktop/CyberCorp/C-Level]
$ ls
board_meeting_notes.txt  company_strategy.docx  financial_overview.xlsx
```

## Group creation

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd marketing

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd hr

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd it

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd sales

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo groupadd clevel
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ cat /etc/group
```

```
marketing:x:1001:
hr:x:1002:
it:x:1003:
sales:x:1004:
clevel:x:1005:
```

## User assignment

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Alice

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Bob

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G marketing Carol

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr David

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr Emily

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G hr Frank
```

## Group creation and user assignment

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Grace

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Henry

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G it Ian
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Jack

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Kelly

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G sales Liam
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CEO

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CTO

(kali㉿kali)-[~/Desktop/CyberCorp]
$ sudo useradd -G clevel CFO
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl Marketing
# file: Marketing
# owner: kali
# group: marketing
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl HR
# file: HR
# owner: kali
# group: hr
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

getfacl output to verify C-Level permissions

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl IT
# file: IT
# owner: kali
# group: it
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl Sales
# file: Sales
# owner: kali
# group: sales
user::rwx
group::rwx
group:clevel:rwx
mask::rwx
other::—
```

```
(kali㉿kali)-[~/Desktop/CyberCorp]
$ getfacl C-Level
# file: C-Level
# owner: kali
# group: clevel
user::rwx
group::rwx
other::—
```



## Tools & Skills Used

- **mkdir, ls, tree, touch, echo, nano**
- **useradd, groupadd, chown, chmod**
- **setfacl, getfacl**
- Linux filesystem permissions
- Group-based access control
- ACLs for extended permissions



## Reflection & Takeaways

In this lab I learned how Linux file permission and group-based access control work. I made a mistake from Step 4 where I named the base directory CyberCorps instead of CyberCorp. At the time it would've caused confusion with my structures and screenshots. I fixed it by deleting and recreating the users, groups, and directories to have proper consistency. I learned to use setfacl and getfacl to grant cross-department access for C-Level users, something I couldn't do with chmod alone.