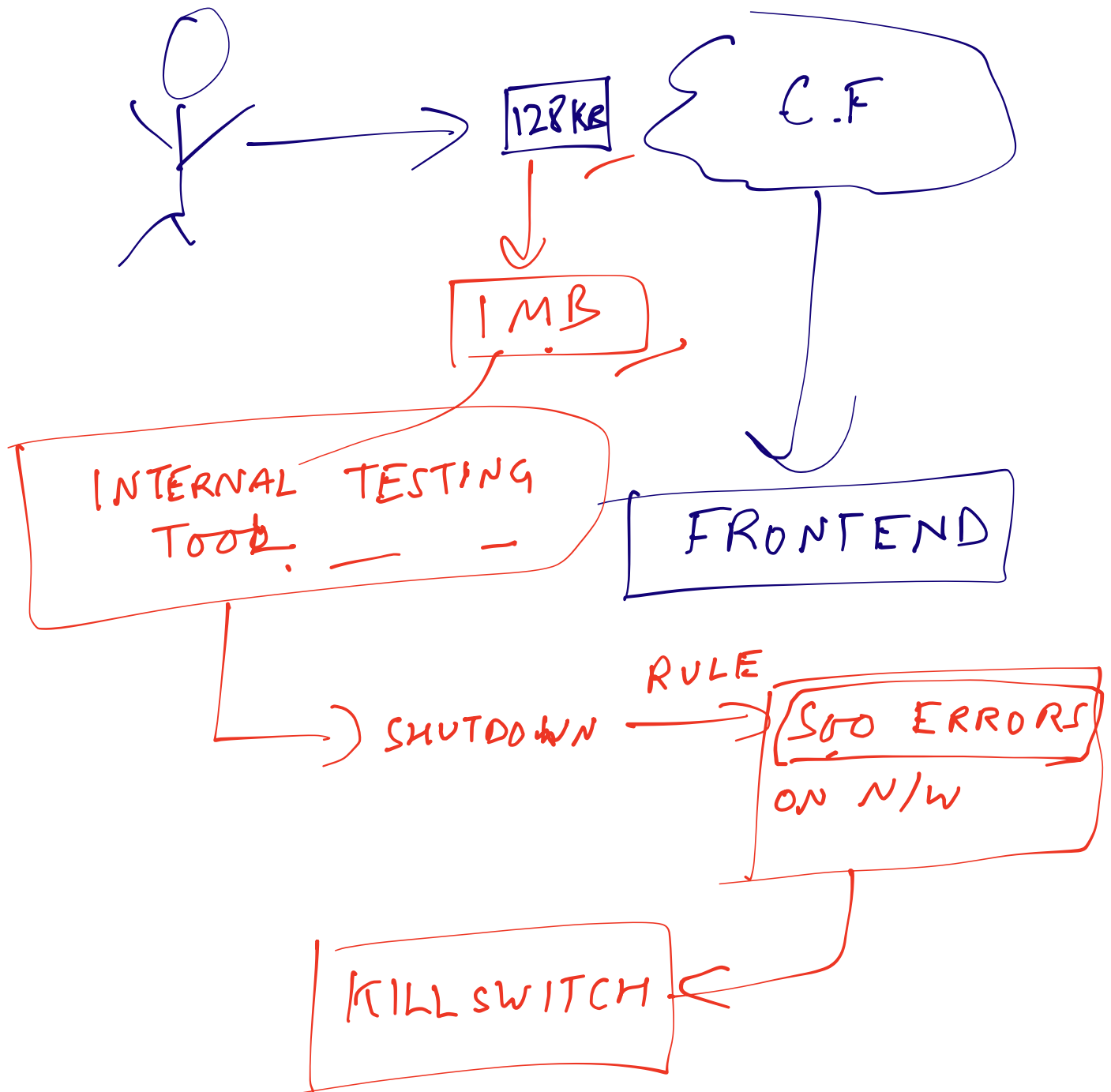
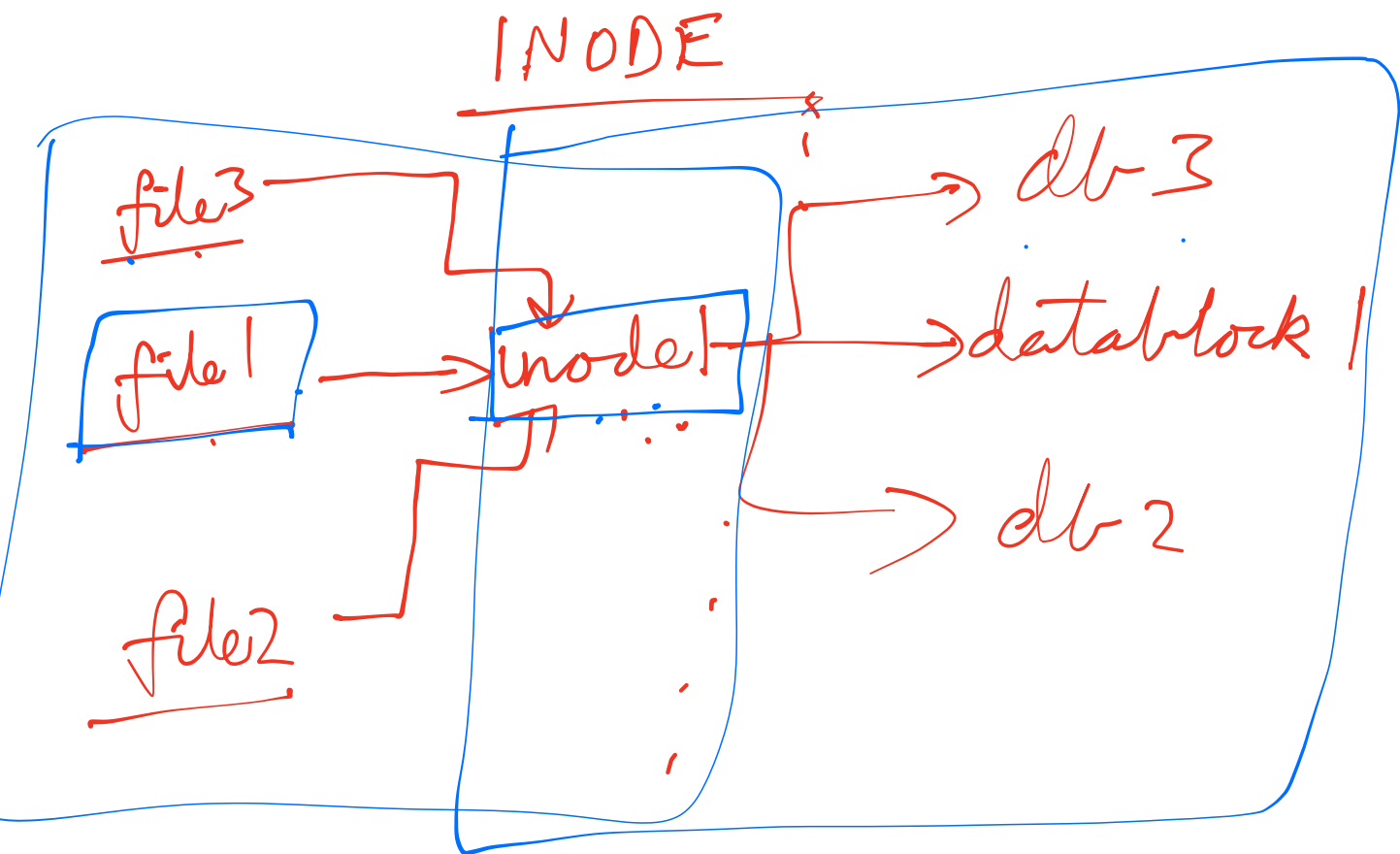


REMOTE CODE EXECUTION (RCE)

└→ REACT





BACKUPS

DAY	FULL	INCREMENTAL	DIFFERENTIAL
SUNDAY	✓		
MONDAY	X	changes since Sunday	changes since Sunday
TUESDAY	X	changes since Monday	changes since Sunday
BKUP TIME		<u>FASTER</u>	<u>SLOWER</u>
RESTORATION TIME		<u>SLOWER</u>	<u>FASTER</u>

rsync

Checksum — Fixed Sized Hash
calculated from the
content of the file

```
ubuntu@ip-172-31-27-45:~$ sha256sum file.txt
e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855  file.txt
ubuntu@ip-172-31-27-45:~$ vi file.txt
ubuntu@ip-172-31-27-45:~$ sha256sum file.txt
1017406568ba3b7b423fe3cb2f03392dade0922e923f3a399a578ca3f2f5a392  file.txt
ubuntu@ip-172-31-27-45:~$ vi file.txt
ubuntu@ip-172-31-27-45:~$ sha256sum file.txt
56145f06dbf4aa738353acdeb9290482567c0b59136f74c27a1bf1739cd7b97d  file.txt
ubuntu@ip-172-31-27-45:~$
```

rsync

```
tarunasthana@IN-FVFGK2EPQ05N ~ % rsync -avz -e "ssh -i Downloads/repl.pem" test.txt ubuntu@35.172.191.175:~/backup/
building file list ... done
test.txt

sent 161 bytes  received 42 bytes  36.91 bytes/sec
total size is 38  speedup is 0.19
tarunasthana@IN-FVFGK2EPQ05N ~ %
```

— a → Archive Mode
Preserve the perms, timestamps

- V → verbosity

- Z → Compression

Mirror

Source will match the destination absolutely with mirroring

W/o mirroring the destination is allowed to have extra files.

```
tarunasthana@IN-FVFGK2EPQ05N ~ % rsync -avz --delete -e "ssh -i Downloads/repl.pem" backup ubuntu@35.172.191.175:~/
building file list ... done
deleting backup/test.txt
backup/

sent 94 bytes  received 26 bytes  21.82 bytes/sec
total size is 0  speedup is 0.00
```

Limit Bandwidth

```
tarunasthana@IN-FVFGK2EPQ05N ~ % rsync -avz --bwlimit=1024 -e "ssh -i Downloads/repl.pem" backup ubuntu@35.172.191.175:~/
building file list ... done

sent 84 bytes  received 20 bytes  23.11 bytes/sec
total size is 0  speedup is 0.00
```

Dest to Src sync

```
tarunasthana@IN-FVFGK2EPQ05N ~ % rsync -avz -e "ssh -i Downloads/repl.pem" ubuntu@35.172.191.175:~/backup .
receiving file list ... done
backup/
backup/test.txt

sent 44 bytes  received 161 bytes  37.27 bytes/sec
total size is 5  speedup is 0.02
tarunasthana@IN-FVFGK2EPQ05N ~ % cd backup
tarunasthana@IN-FVFGK2EPQ05N backup % ls
backup
test.txt
tarunasthana@IN-FVFGK2EPQ05N backup % cd ..
tarunasthana@IN-FVFGK2EPQ05N ~ % rsync -avz --delete -e "ssh -i Downloads/repl.pem" ubuntu@35.172.191.175:~/backup .
receiving file list ... done
deleting backup/backup/test.txt
deleting backup/backup/
backup/

sent 22 bytes  received 117 bytes  25.27 bytes/sec
total size is 5  speedup is 0.04
tarunasthana@IN-FVFGK2EPQ05N ~ % cd backup
tarunasthana@IN-FVFGK2EPQ05N backup % ls
test.txt
tarunasthana@IN-FVFGK2EPQ05N backup % █
```

Scenario:

You're responsible for backing up the `/var/app/data` directory daily. Your task is to write a script that:

1. Performs an incremental or differential backup based on the day of the week:
 - * On Sunday, do a full backup ✓
 - * On Monday to Wednesday, do an incremental backup ✓
 - * On Thursday to Saturday, do a differential backup ✓
2. Generates a checksum for the created backup file.
3. Validates the checksum immediately after backup creation. ✓
4. Syncs the backup to a remote server `backup@example.com:/backups/` using `rsync`.

— Deciding which bkp to take today
— date + %u

→ How to do 'incremental or differential bkp'
tar -Xvcz <files>

— How to select files to take backup of?

backup ()

{ tar -xuf . . .

touch fullbackup.txt
touch incre.txt
touch diff.txt

markers

select_file ()

find /var/app/data -type f

- newer fullbackup.txt

incre.txt

— Generate & validate checksum
`sha256sum filename > file.txt`

— rsync to remote server

SKELETON

```
#!/bin/bash
set -euo pipefail
trap . . . . .
```

```
SRC = "/var/app/data"
```

```
DEST = "/backup"
```

```
REMOTE = "backup@example.com :/backups/"
```

```
INC_MARK = "$DEST/.inc.txt"
```

```
DIFF_MARK = "$DEST/.diff.txt"
```

```
FULL_MARK = "$DEST/.full.txt"
```

decide_backup = type')

{

Basis the day, decide backup to take

}

prepare_file_list()

{

find -newer

}

create_backup()

{

tar -xvf


touch FULL-MAR Or INC-MAR

}

generate_checksum()

{

sha256sum ✓



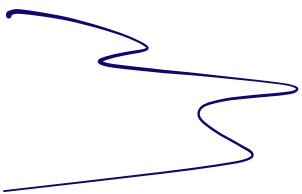
validate - checksum ()

{ ✓



sync - remote ()

{ rsync



decide - backup - type

prepare - file - list

generate - checksum

create_backup

validate_checksum

sync_remote