

## Project: File System Usage Warning Script (fs\_usage\_warning.sh)

Field	Value
Script Name	fs_usage_warning.sh
Author	Sanjeet Prasad
Email	<a href="mailto:sanjeet8.23@gmail.com">sanjeet8.23@gmail.com</a>
Date	October 17, 2025
Platform	Ubuntu 22.04 Linux
Shell	Bash

### ❏ Objective

Create a shell script that monitors disk usage of ext2/ext4 file systems and sends email alerts when usage exceeds a specified threshold. The script uses the df command to check usage and the mailx command to send alerts.

### 🔧 Syntax

```
#fs_usage_warning [-c capacity-percentage] email-address [email-address] ...
```

#### Parameters:

- -c capacity-percentage (optional): Threshold for warning (default: 60). Do **not** include %.
- email-address: One or more recipients. Can be full email addresses or local account names.

#### Behaviour:

- If no email addresses are provided → **exit with error**
- If -c is not specified → **default to 60%**

### 📋 Functional Requirements

#### Disk Usage Monitoring

- Use df -T -P to list file systems
- Only process file systems of type ext2 or ext4
- Extract and compare Use% (without % symbol)

#### Email Alerts

- If usage < threshold → **no email sent**
- If usage ≥ threshold and < 90%:
  - **Subject:** "Warning: the file system <mount point> is above <capacity> % used"
- If usage ≥ 90%:

- **Subject:** "Critical Warning: the file system <mount point> is greater than or equal to 90% capacity"
- **Body:** Include only the relevant df line and header. No other file systems.

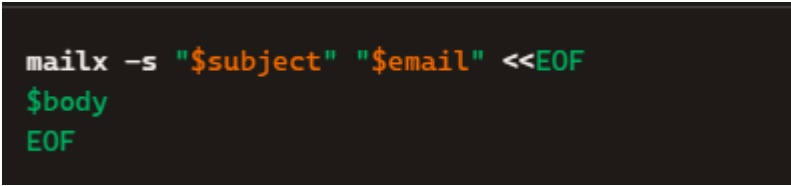
### Email Delivery

- Use mailx -s with **inline redirection**:

```
mailx -s "$subject" "$email" <<EOF
```

```
$body
```

```
EOF
```



```
mailx -s "$subject" "$email" <<EOF
$body
EOF
```

- **Do not use temporary files**
- Send a **separate email** for each file system that meets the threshold

### 4 Error Handling

- Invalid or missing capacity → show usage and exit
- No email addresses → show usage and exit
- Unknown flags → show usage and exit

### 5 Constraints

- Must be written in Bash
- Must run on a Linux system (preferably cyberserver.uml.edu)
- Must not use temporary files
- Must use inline redirection for email body
- Must not use restricted commands (which, type, locate, ls)

### 6 Sample Execution

```
./fs_usage_warning.sh -c 75 sanjeet8.23@gmail.com root
```

Sends warnings to sanjeet8.23@gmail.com and root if any ext2/ext4 file systems exceed 75% usage.