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10 Corporate real-Time Shell Scripts

1. Backup Script

Script

```
#!/bin/bash
SOURCE="/home/ubuntu/aditya"
DESTINATION="/home/ubuntu/jaiswal/"
DATE=$(date +%Y-%m-%d_%H-%M-%S)

# Create backup directory and copy files
mkdir -p $DESTINATION/$DATE
cp -r $SOURCE $DESTINATION/$DATE
echo "Backup completed on $DATE"
```

Explanation

- **SOURCE**: The directory to be backed up.
- **DESTINATION**: The directory where the backup will be stored.
- **DATE**: Captures the current date and time to create a unique backup folder.
- **mkdir -p $DESTINATION/$DATE**: Creates the backup directory if it does not exist.
- **cp -r $SOURCE $DESTINATION/$DATE**: Copies the contents of the source directory to the backup directory.
- **echo "Backup completed on $DATE"**: Outputs a message indicating the completion of the backup.

Scheduling with Cron

To run the backup script at regular intervals, use `crontab -e` to edit the crontab file and add:

```
* * * * * /path/to/backup_script.sh
```

This example runs the script every minute. Adjust the schedule as needed.

2. Disk Usage Check Script

Script

```
#!/bin/bash
THRESHOLD=80
# Check disk usage and print a warning if usage is above the threshold
df -H | grep -vE '^Filesystem|tmpfs|cdrom' | awk '{ print $5 " " $1 }' |
while read output;
do
  usage=$(echo $output | awk '{ print $1}' | cut -d'%' -f1)
  partition=$(echo $output | awk '{ print $2 }')
  if [ $usage -ge $THRESHOLD ]; then
    echo "Warning: Disk usage on $partition is at ${usage}%"
  fi
done
```

Explanation

- **THRESHOLD**: Sets the disk usage percentage threshold.
- **df -H**: Lists disk usage in human-readable format.
- **grep -vE '^Filesystem|tmpfs|cdrom'**: Filters out unnecessary lines.
- **awk '{ print $5 " " $1 }'**: Extracts the usage percentage and partition name.
- **while read output**: Iterates over each line of the filtered output.
- **usage=$(echo $output | awk '{ print $1}' | cut -d'%' -f1)**: Extracts the usage percentage.
- **partition=$(echo $output | awk '{ print $2 }')**: Extracts the partition name.
- **if [$usage -ge $THRESHOLD]; then**: Checks if the usage exceeds the threshold.
- **echo "Warning: Disk usage on $partitionisat{usage}%"**: Prints a warning message.

3. Service Health Check Script

Script

```
#!/bin/bash
SERVICE="nginx"
# Check if the service is running, if not, start it
if systemctl is-active --quiet $SERVICE; then
  echo "$SERVICE is running"
else
  echo "$SERVICE is not running"
  systemctl start $SERVICE
fi
```

Explanation

- **SERVICE**: The name of the service to check.
- **systemctl is-active --quiet $SERVICE**: Checks if the service is running.
- **echo "$SERVICE is running"**: Prints a message if the service is running.
- **systemctl start $SERVICE**: Starts the service if it is not running.

4. Network Connectivity Check Script

Script

```
#!/bin/bash
HOST="google.com"
# Output file
OUTPUT_FILE="/home/ubuntu/output.txt"
# Check if the host is reachable
if ping -c 1 $HOST &> /dev/null
then
  echo "$HOST is reachable" >> $OUTPUT_FILE
else
  echo "$HOST is not reachable" >> $OUTPUT_FILE
fi
```

Explanation

- **HOST**: The hostname to check.
- **OUTPUT_FILE**: The file to write the output to.
- **ping -c 1 $HOST &> /dev/null**: Pings the host once, suppressing output.
- **echo "$HOST is reachable" >> $OUTPUT_FILE**: Writes to the output file if the host is reachable.

- **echo "$HOST is not reachable" >> $OUTPUT_FILE**: Writes to the output file if the host is not reachable.

5. Database Backup Script

Installation

Install MySQL:

```
sudo apt install mysql-server
```

Set up MySQL password:

```
ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'root';
FLUSH PRIVILEGES;
```

Script

```
#!/bin/bash
DB_NAME="mydatabase"
BACKUP_DIR="/path/to/backup"
DATE=$(date +%Y-%m-%d_%H-%M-%S)
# Perform a database backup and save it to the backup directory
mysqldump -u root -p $DB_NAME > $BACKUP_DIR/$DB_NAME-$DATE.sql
echo "Database backup completed: $BACKUP_DIR/$DB_NAME-$DATE.sql"
```

Explanation

- **DB_NAME**: The name of the database to back up.
- **BACKUP_DIR**: The directory where the backup will be stored.
- **DATE**: Captures the current date and time.
- **mysqldump -u root -p $DB_NAME > $BACKUP_DIR/$DB_NAME-$DATE.sql**: Dumps the database to a SQL file.
- **echo "Database backup completed: $BACKUP_DIR/$DB_NAME-$DATE.sql"**: Outputs a message indicating the completion of the backup.

6. System Uptime Check Script

Script

```
#!/bin/bash
# Print the system uptime
uptime -p
```

Explanation

- **uptime -p**: Prints the system uptime in a human-readable format.

7. Listening Ports Script

Installation

Install net-tools:

```
sudo apt install net-tools
```

Script

```
#!/bin/bash
# List all listening ports and the associated services
netstat -tuln | grep LISTEN
```

Explanation

- **netstat -tuln**: Lists all TCP and UDP listening ports.
- **grep LISTEN**: Filters the output to show only listening ports.

8. Automatic Package Updates Script

Script

```
#!/bin/bash
# Update system packages and clean up unnecessary packages
apt-get update && apt-get upgrade -y && apt-get autoremove -y && apt-get
clean
echo "System packages updated and cleaned up"
```

Explanation

- **apt-get update**: Updates the package list.
- **apt-get upgrade -y**: Upgrades all installed packages.
- **apt-get autoremove -y**: Removes unnecessary packages.
- **apt-get clean**: Cleans up the package cache.
- **echo "System packages updated and cleaned up"**: Outputs a message indicating the completion of the update and cleanup.

9. HTTP Response Times Script

Script

```
#!/bin/bash
URLS=("https://www.devopsshack.com/" "https://www.linkedin.com/")
# Check HTTP response times for multiple URLs
for URL in "${URLS[@]}"; do
  RESPONSE_TIME=$(curl -o /dev/null -s -w '%{time_total}\n' $URL)
  echo "Response time for $URL: $RESPONSE_TIME seconds"
done
```

Explanation

- **URLS**: An array of URLs to check.
- **for URL in "${URLS[@]}"**: Iterates over each URL.
- **curl -o /dev/null -s -w '%{time_total}\n' $URL**: Uses curl to fetch the URL and measure the total response time.
- **echo "Response time for $URL: $RESPONSE_TIME seconds"**: Prints the response time for each URL.

10. Monitor System Processes and Memory Usage Script

Script

```
#!/bin/bash
# Monitor system processes and their memory usage
ps aux --sort=-%mem | head -n 10
```

Explanation

- **ps aux**: Lists all running processes.
- **--sort=-%mem**: Sorts the processes by memory usage in descending order.
- **head -n 10**: Displays the top 10 processes by memory usage.