

Practical : Shell Scripting - 1

Aim: Create a script file to take MongoDB database backup

Conditions:

- Setup MySQL/PostgreSQL/MongoDB in your local with test database and tables
- Take a MySQL/PostgreSQL/MongoDB database backup in to /tmp folder first.
- Move that backup file to /var/backup folder - if backup folder is not there created it otherwise move it
- Folder name inside backup folder should be - <DBName>-<YYYY>-<MM>-<DD>, There must be only one folder for each day, Backup name can be anything.
- This script file will be run automatically daily at 11 AM
- In case of manual run - If backup file is already there in the date folder then it should be overwrite (Delete and Create).
- Upload your shell script (.sh) file while submitting your exercise

MYSQL Backup

MySQL_Backup.sh

Performing Backup using mysqldump

```
Welcome  $ MySQL_Backup.sh X
home > vishwaas > Desktop > Backup_Scripts > $ MySQL_Backup.sh
1  #!/bin/bash
2
3
4  # Defining Variables
5  DbName='test';
6  User='root';
7  Password='Simform@123';
8  OutFile='MySQLBackup.sql';
9
10 DirFormat="MySQL_$(date +%Y-%m-%d)";
11 echo -e "\nThe Formate for folder is $Format\n";
12
13 # Perfoming Backup
14 mysqldump -u "$User" --password="$Password" "$DbName" > /var/tmp/"$OutFile" 2>/dev/null;
15
16 # Testing Succesfull Backup Creation
17 if [ $? -eq 0 ]
18 then
19     echo -e "\nBackup Created Succesfully\n";
20 else
21     echo -e "\nFailed To Create Backup...Exiting...\n";
22     exit 1;
23 fi
24
```

Creating /var/Backup Folder

```
# Checking for /var/Backup Folder Exist or Not.
if [ -d /var/Backup ]
then
    echo -e "\nCreating Folder in /var/Backup/...\n";
    #Some Delay
    n=10
    while [ $n -gt 0 ]
    do
        echo "...";
        $n = $((n-1))
        sleep 1;
    done
else
    mkdir /var/Backup;

    if [ $? -eq 0 ]
    then
        echo -e "\nSuccesfully Created /var/Backup Folder...\n";
    else
        echo -e "\nExiting...";
        exit 1;
    fi
fi
```

Creating Backup Folder with format inside /var/Backup/

```
# Creating Backup Folder with Database_YYYY_MM_DD Format
mkdir /var/Backup/$DirFormat;

if [ $? -eq 0 ]
then
    echo -e "\nSuccesfully Created Directory : $DirFormat\n";
else
    echo -e "\nFailed To Create Directory : $DirFormat...Exiting...\n";
    exit 1;
fi

# Moving The Backup File from /var/tmp to /var/Backup

mv /var/tmp/$OutFile /var/Backup/$DirFormat/

if [ $? -eq 0 ]
then
    echo -e "\nSuccesfully Moved $OutFile...\n";
    echo "Backup Succesfull";
else
    echo -e "\nFailed To Move $OutFile...Exiting...\n";
    echo "Backup Failed !!";
    exit 1;
fi
```

Running the Script

```
vishwaas@sf-cpu-415:/var$ ls
backups  cache  crash  lib  local  lock  log  mail  metrics  opt  run  snap  spool  tmp  www
vishwaas@sf-cpu-415:/var$ ll
total 60
drwxr-xr-x 15 root root      4096 Apr 17 20:26 ./
drwxr-xr-x 20 root root      4096 Dec 27 15:41 ../
drwxr-xr-x  2 root root      4096 Apr 17 15:04 backups/
drwxr-xr-x 20 root root      4096 Apr 17 14:11 cache/
drwxrwsrwt  2 root whoopsie 4096 Apr 17 19:15 crash/
drwxr-xr-x 86 root root      4096 Apr 17 14:11 lib/
drwxrwsr-x  2 root staff     4096 Apr 18 2022 local/
lrwxrwxrwx  1 root root           9 Dec 27 15:40 lock -> /run/lock/
drwxrwxr-x 20 root syslog    4096 Apr 17 14:11 log/
drwxrwsr-x  2 root mail      4096 Apr 17 16:06 mail/
drwxrwsrwt  2 root whoopsie 4096 Aug  9 2022 metrics/
drwxr-xr-x  2 root root      4096 Aug  9 2022 opt/
lrwxrwxrwx  1 root root           4 Dec 27 15:40 run -> /run/
drwxr-xr-x 25 root root      4096 Feb 22 17:09 snap/
drwxr-xr-x  7 root root      4096 Mar 22 15:11 spool/
drwxrwxrwt 13 root root      4096 Apr 17 20:22 tmp/
drwxr-xr-x  5 root root      4096 Mar 31 15:19 www/
```

/Var Folder before running the Script

```
root@sf-cpu-415:/home/vishwaas/Desktop/Backup_Scripts# ./MySQL_Backup.sh

The Formate for folder is

Backup Created Succesfully

Succesfully Created /var/Backup Folder...

Succesfully Created Directory : MySQL_2023-04-17

Succesfully Moved MySQLBackup.sql...

Backup Succesfull
root@sf-cpu-415:/home/vishwaas/Desktop/Backup_Scripts#
```

Backup Successful

```

vishwaas@sf-cpu-415:/var$ ls
Backup backups cache crash lib local lock log mail metrics opt
vishwaas@sf-cpu-415:/var$
vishwaas@sf-cpu-415:/var$ cd Backup/
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$ ls
MySQL_2023-04-17
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$ cd MySQL_2023-04-17/
vishwaas@sf-cpu-415:/var/Backup/MySQL_2023-04-17$
vishwaas@sf-cpu-415:/var/Backup/MySQL_2023-04-17$ ls
MySQLBackup.sql

```

Successfully Created a folder and backup moved inside the new backup folder

Postgres Backup

Postgres_Backup.sh

Initializing Database user and password and file format and executing backup using pg_dump.

```

$ Postgres_Backup.sh
home > vishwaas > Desktop > Backup_Scripts > $ Postgres_Backup.sh
1  #!/bin/bash
2
3
4  # Defining Variables
5  dbName='test';
6  User='vishwaas';
7  Password='Simform@123';
8  OutFile="Postgres_Backup_$(date +%Y-%m-%d).sql";
9
10 DirFormat="PostgreSQL_$(date +%Y-%m-%d)";
11 echo -e "\nThe Formate for folder is : $DirFormat\n";
12 echo -e "The Format for File is : $OutFile\n";
13 #Setting PGPASSWORD Environment Variable
14 PGPASSWORD='Simform@123';
15 # Perfoming Backup
16 pg_dump -U "$User" -d "$dbName" -f "/var/tmp/$OutFile" 2>/dev/null;
17
18 # Testing Succesfull Backup Creation
19 if [ $? -eq 0 ]
20 then
21     echo -e "\nBackup Created Succesfully\n";
22 else
23     echo -e "\nFailed To Create Backup...Exiting...\n";
24     exit 1;
25 fi
26

```

Creating /var/Backup Folder

```
27 # Checking for /var/Backup Folder Exist or Not.
28 if [ -d /var/Backup ]
29 then
30     echo -e "\nCreating Folder in /var/Backup/...\n";
31     #Some Delay
32     n=10
33     while [ $n -gt 0 ]
34     do
35         echo "..";
36         $n = $((n-1))
37         sleep 1;
38     done
39 else
40     mkdir /var/Backup;
41
42     if [ $? -eq 0 ]
43     then
44         echo -e "\nSuccesfully Created /var/Backup Folder...\n";
45     else
46         echo -e "\nExiting...";
47         exit 1;
48     fi
49 fi
50
51 fi
52
```

Creating Backup Folder with format inside /var/Backup/

```
52
53 # Creating Backup Folder with Database_YYYY_MM_DD Format
54 mkdir /var/Backup/$DirFormat;
55
56 if [ $? -eq 0 ]
57 then
58     echo -e "\nSuccesfully Created Directory : $DirFormat\n";
59 else
60     echo -e "\nFailed To Create Directory : $DirFormat...Exiting...\n";
61     exit 1;
62 fi
63
64
65 # Moving The Backup File from /var/tmp to /var/Backup
66
67 mv /var/tmp/$OutFile /var/Backup/$DirFormat/
68
69 if [ $? -eq 0 ]
70 then
71     echo -e "\nSuccesfully Moved $OutFile...\n";
72     echo "Backup Succesfull";
73 else
74     echo -e "\nFailed To Move $OutFile...Exiting...\n";
75     echo "Backup Failed !!";
76     exit 1;
77 fi
78
```

Executing Script

```
^Croot@sf-cpu-415:/home/vishwaas/Desktop/Backup_Scripts# ./Postgres_Backup.sh

The Formate for folder is : PostgreSQL_2023-04-18

The Format for File is : Postgres_Backup_2023-04-18.sql

Password:

Backup Created Succesfully

Creating Folder in /var/Backup/...

..
..
..
..
..
..
..
..
..
..
..

Succesfully Created Directory : PostgreSQL_2023-04-18

Succesfully Moved Postgres_Backup_2023-04-18.sql...

Backup Succesfull
```

Backup Successful

```
vishwaas@sf-cpu-415:/var$ cd Backup/
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$ ls
MySQL_2023-04-17  PostgreSQL_2023-04-18
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$
vishwaas@sf-cpu-415:/var/Backup$ cd PostgreSQL_2023-04-18/
vishwaas@sf-cpu-415:/var/Backup/PostgreSQL_2023-04-18$
vishwaas@sf-cpu-415:/var/Backup/PostgreSQL_2023-04-18$ ls
Postgres_Backup_2023-04-18.sql
vishwaas@sf-cpu-415:/var/Backup/PostgreSQL_2023-04-18$
vishwaas@sf-cpu-415:/var/Backup/PostgreSQL_2023-04-18$
vishwaas@sf-cpu-415:/var/Backup/PostgreSQL_2023-04-18$
```

Directory For Postgres Folder Successfully Created

MongoDB Backup

MongoDB_Backup.sh

Initializing Database user and password and file format and executing backup using mongodump.

```

$ Postgres_Backup.sh  $ MongoDB_Backup.sh X
home > vishwaas > Desktop > Backup_Scripts > $ MongoDB_Backup.sh
1  #!/bin/bash
2
3
4  # Defining Variables
5  dbName='test';
6  User='vishwaas';
7  Password='Simform@123';
8  OutFile="MongoDB_Backup_$(date +%Y-%m-%d).sql";
9
10 DirFormat="MongoDB_$(date +%Y-%m-%d)";
11 echo -e "\nThe Formate for folder is : $DirFormat\n";
12 echo -e "The Format for File is : $OutFile\n";
13
14 # Perfoming Backup
15 mongodump --username "$User" --password "$Password" --db "$dbName" --out /var/tmp/ 2>/dev/null;
16
17 # Testing Succesfull Backup Creation
18 if [ $? -eq 0 ]
19 then
20     echo -e "\nBackup Created Succesfully\n";
21 else
22     echo -e "\nFailed To Create Backup...Exiting...\n";
23     exit 1;
24 fi

```

Creating /var/Backup Folder

```

26 # Checking for /var/Backup Folder Exist or Not.
27 if [ -d /var/Backup ]
28 then
29     echo -e "\nCreating Folder in /var/Backup/...\n";
30     #Some Delay
31     n=10
32     while [ $n -gt 0 ]
33     do
34         echo "...";
35         $n ==$((n-1))
36         sleep 1;
37     done
38 else
39     mkdir /var/Backup;
40
41     if [ $? -eq 0 ]
42     then
43         echo -e "\nSuccesfully Created /var/Backup Folder...\n";
44     else
45         echo -e "\nExiting...";
46         exit 1;
47     fi
48 fi
49
50 fi

```

Creating Backup Folder with format inside /var/Backup/

```

52 # Creating Backup Folder with Database_YYYY_MM_DD Format
53 mkdir /var/Backup/$DirFormat;
54
55 if [ $? -eq 0 ]
56 then
57     echo -e "\nSuccesfully Created Directory : $DirFormat\n";
58 else
59     echo -e "\nFailed To Create Directory : $DirFormat...Exiting...\n";
60     exit 1;
61 fi
62
63
64 # Moving The Backup File from /var/tmp to /var/Backup
65
66 mv /var/tmp/$DbName /var/Backup/$DirFormat/
67
68 if [ $? -eq 0 ]
69 then
70     echo -e "\nSuccesfully Moved $OutFile...\n";
71     echo "Backup Succesfull";
72 else
73     echo -e "\nFailed To Move $OutFile...Exiting...\n";
74     echo "Backup Failed !!";
75     exit 1;
76 fi
77

```

Executing Script

```

root@sf-cpu-415:/home/vishwaas/Desktop/Backup_Scripts# ./MongoDB_Backup.sh

The Formate for folder is : MongoDB_2023-04-18

The Format for File is : MongoDB_Backup_2023-04-18.sql

Backup Created Succesfully

Creating Folder in /var/Backup/...

..
..
..
..
..
..
..
..
..
..

Succesfully Created Directory : MongoDB_2023-04-18

Succesfully Moved MongoDB_Backup_2023-04-18.sql...

Backup Succesfull

```



```
vishwaas@sf-cpu-415:/var$ cd Backup/  
vishwaas@sf-cpu-415:/var/Backup$  
vishwaas@sf-cpu-415:/var/Backup$  
vishwaas@sf-cpu-415:/var/Backup$ ls  
MongoDB_2023-04-18 MySQL_2023-04-17 PostgreSQL_2023-04-18  
vishwaas@sf-cpu-415:/var/Backup$  
vishwaas@sf-cpu-415:/var/Backup$  
vishwaas@sf-cpu-415:/var/Backup$  
vishwaas@sf-cpu-415:/var/Backup$ cd MongoDB_2023-04-18/  
vishwaas@sf-cpu-415:/var/Backup/MongoDB_2023-04-18$  
vishwaas@sf-cpu-415:/var/Backup/MongoDB_2023-04-18$ ls  
test  
vishwaas@sf-cpu-415:/var/Backup/MongoDB_2023-04-18$  
vishwaas@sf-cpu-415:/var/Backup/MongoDB_2023-04-18$  
vishwaas@sf-cpu-415:/var/Backup/MongoDB_2023-04-18$
```

Backup Created Successfully

Setting Cron Job

The script should run automatically at 11 A.M. daily. We can set this up as follow :

```
# For example, you can run a backup of all your user accounts  
# at 5 a.m every week with:  
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/  
#  
# For more information see the manual pages of crontab(5) and cron(8)  
#  
# m h dom mon dow   command  
  
0 11 * * * /home/Desktop/Backup_Scripts/MySQL_Backup.sh  
  
0 11 * * * /home/Desktop/Backup_Scripts/Postgres_Backup.sh  
  
0 11 * * * /home/Desktop/Backup_Scripts/MongoDB_Backup.sh
```

All these scripts will run at 11 A.M. to take backup of respective database.