



BÁO CÁO LAB **11**

| | |
|---|---|
| Sinh viên thực hiện | Sinh viên 1 MSSV: Họ tên: Phan Võ Thiên Trường Sinh viên 2 MSSV: Họ tên: |
| Lớp | NS011 |
| Tổng thời gian thực hiện Lab trung bình | |
| Phân chia công việc (nếu là nhóm) | [Sinh viên 1]: [Sinh viên 2]: |
| Link Video thực hiện (nếu có yêu cầu) | |
| Ý kiến (nếu có) + Khó khăn gặp phải + Đề xuất, góp ý... | |
| Điểm tự đánh giá (bắt buộc) | ? /10 |



[Nội dung báo cáo chi tiết – Trình bày tùy sinh viên, Xuất file .PDF khi nộp]

Yêu cầu:

Viết script backup toàn bộ source code webserver ở tuần 10 và lưu backup ở VM 2 tuần 10.

Đầu tiên em tạo pubkey ở VM1 để copy qua VM2

```
ssh-keygen -t rsa -b 2048 -f ~/.ssh/id_rsa
```

sau khi tạo key xong copy để vào file authorized_keys bên VM2

sau đó tạo file backup-wordpress.sh

```
#!/bin/bash

# Định nghĩa các biến
SOURCE_DIR="/var/www/wordpress"
BACKUP_NAME="wordpress_backup_$(date +%Y%m%d%H%M%S').tar.gz"
DESTINATION_DIR="/var/" # Thay thế bằng đường dẫn thực tế trên VM2
VM2_USER="root" # Thay thế bằng tên người dùng thực tế trên VM2
VM2_IP="103.232.123.167"
VM2_PORT="2211"

# Tạo file tar.gz từ source directory
tar -czvf $BACKUP_NAME -C $SOURCE_DIR .

# Truyền file backup tới VM2
scp -P $VM2_PORT $BACKUP_NAME $VM2_USER@$VM2_IP:$DESTINATION_DIR

# Xóa file backup sau khi truyền
rm $BACKUP_NAME

echo "Backup completed and transferred to VM2"
~
~
~
```

Cấp quyền thực thi cho file và chạy

```
Chmod +x backup-wordpress.sh
```

```
./backup-wordpress.sh
```

Kiểm tra kết quả

VM1



```
./wp-includes/images/media/default.svg
./wp-includes/images/media/default.png
./wp-includes/images/media/interactive.svg
./wp-includes/images/media/spreadsheet.svg
./wp-includes/images/media/video.svg
./wp-includes/images/media/audio.png
./wp-includes/images/media/code.png
./wp-includes/images/media/text.png
./wp-includes/images/media/audio.svg
./wp-includes/images/media/archive.svg
./wp-includes/images/media/spreadsheet.png
./wp-includes/images/media/document.svg
./wp-includes/images/media/archive.png
./wp-includes/images/w-logo-blue.png
./wp-includes/images/arrow-pointer-blue-2x.png
./wp-includes/images/down_arrow-2x.gif
./wp-includes/images/wpspin-2x.gif
./wp-includes/images/spinner-2x.gif
./wp-includes/images/admin-bar-sprite.png
./wp-includes/images/wpicons.png
./wp-includes/class-wp-ajax-response.php
./wp-includes/class-wp-term-query.php
./wp-includes/user.php
./wp-includes/theme.php
./license.txt
./wp-comments-post.php
./wp-blog-header.php
./readme.html
./wp-config-sample.php
./htaccess
./wp-cron.php
./wp-activate.php
./wp-settings.php
wordpress_backup_20240911101642.tar.gz 100% 23MB 73.7MB/s 00:00
Backup completed and transferred to VM2
root@ns011-w10-truongpvt-1:/var/www# nano backup-wordpress.sh
root@ns011-w10-truongpvt-1:/var/www# cd
root@ns011-w10-truongpvt-1:/# cd .ssh/
root@ns011-w10-truongpvt-1:/ssh# nano authorized_keys
root@ns011-w10-truongpvt-1:/ssh# vi /var/www/backup-wordpress.sh
root@ns011-w10-truongpvt-1:/ssh#
```

VM2

```
root@ns011-w10-truongpvt-2:/# cd .ssh/
root@ns011-w10-truongpvt-2:/ssh# ls
authorized_keys
root@ns011-w10-truongpvt-2:/ssh# nano authorized_keys
root@ns011-w10-truongpvt-2:/ssh# systemctl restart sshd
root@ns011-w10-truongpvt-2:/ssh# cd /var/
root@ns011-w10-truongpvt-2:/var# ls
backups cache cron lib local lock log mail opt run snap spool www
root@ns011-w10-truongpvt-2:/var# cd www
-bash: cd: www: Not a directory
root@ns011-w10-truongpvt-2:/var# nano www
root@ns011-w10-truongpvt-2:/var# ls
backups cache cron lib local lock log mail opt run snap spool www wordpress_backup_20240911101642.tar.gz
root@ns011-w10-truongpvt-2:/var# ll
total 48108
drwxr-xr-x 13 root root    4096 Sep 11 10:16 ./
drwxr-xr-x 19 root root    4096 Sep 11 09:17 ../
drwxr-xr-x  2 root root    4096 Aug 27 08:29 backups/
drwxr-xr-x 12 root root    4096 Aug 26 13:41 cache/
drwxrwxrwt  2 root root    4096 Oct 4 2022 cron/
drwxr-xr-x 39 root root    4096 Aug 27 09:08 lib/
drwxrwsr-x  2 root staff   4096 Apr 18 2022 local/
lrwxrwxrwx  1 root root         9 Oct 4 2022 lock -> /run/lock/
drwxrwxr-x  9 root syslog   4096 Sep 11 09:17 log/
drwxrwsr-x  2 root mail    4096 Oct 4 2022 mail/
drwxr-xr-x  2 root root    4096 Oct 4 2022 opt/
lrwxrwxrwx  1 root root         4 Oct 4 2022 run -> /run/
drwxr-xr-x  5 root root    4096 Oct 4 2022 snap/
drwxr-xr-x  4 root root    4096 Oct 4 2022 spool/
drwxrwxrwt  7 root root    4096 Sep 11 09:17 www/
-rw-r--r--  1 root root 24601166 Sep 11 10:16 wordpress_backup_20240911101642.tar.gz
-rw-r--r--  1 root root 24601166 Sep 11 10:15 www
root@ns011-w10-truongpvt-2:/var# rm www
root@ns011-w10-truongpvt-2:/var# cd crash/
root@ns011-w10-truongpvt-2:/var/crash# ls
root@ns011-w10-truongpvt-2:/var/crash# cd ..
root@ns011-w10-truongpvt-2:/var# cd backups/
root@ns011-w10-truongpvt-2:/var/backups# ls
apt.extended_states.0
root@ns011-w10-truongpvt-2:/var/backups# cd ..
root@ns011-w10-truongpvt-2:/var# cd ..
```



Cấu hình crontab chạy script mục 1 mặc định vào lúc cách nhau 4 giờ 1 lần.

```
root@ns011-w10-truongpvt-1:/var/www# crontab -e
No modification made
root@ns011-w10-truongpvt-1:/var/www# crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# 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 */4 * * * /var/www/backup-wordpress.sh
```

Viết script backup database trên VM2 tuần 10 (Remote MySQL) và lưu vào VM1 tuần 10.

Tương tự với câu 1 tạo pub key trên VM2 và copy nó sang VM1

Sau đó tạo file script backup-database.sh



```
GNU nano 6.2                                     backup-database.sh
#!/bin/bash

# Biến
DB_NAME="wpdb" # Tên cơ sở dữ liệu
DB_USER="wp_user" # Tên người dùng cơ sở dữ liệu
DB_PASS="wp_password" # Mật khẩu cơ sở dữ liệu
BACKUP_DIR="/tmp" # Thư mục tạm để lưu file backup trên VM2
FILENAME="database_backup_$(date +%Y%m%d_%H%M%S').sql.gz"
REMOTE_USER="root" # Thay bằng tên người dùng của VM1
REMOTE_HOST="103.232.123.89" # Địa chỉ IP của VM1
REMOTE_DIR="/var/www" # Thư mục lưu trữ trên VM1
VM1_PORT="2210"

# Tạo backup cơ sở dữ liệu và nén nó
mysqldump -u "$DB_USER" -p"$DB_PASS" "$DB_NAME" | gzip > "$BACKUP_DIR/$FILENAME"

# Chuyển file backup sang VM1 qua SCP với private key
scp -P $VM1_PORT "$BACKUP_DIR/$FILENAME" "$REMOTE_USER@$REMOTE_HOST:$REMOTE_DIR"

# Xóa file backup cục bộ sau khi chuyển xong
rm "$BACKUP_DIR/$FILENAME"

# Thông báo hoàn thành
echo "Backup cơ sở dữ liệu đã hoàn tất và lưu trên VM1."
```

Cấp quyền cho nó và chạy

```
root@ns011-w10-truongpvt-2:/var# nano backup-database.sh
root@ns011-w10-truongpvt-2:/var# ./backup-database.sh
database_backup_20240911_130540.sql.gz
Backup cơ sở dữ liệu đã hoàn tất và lưu trên VM1.
root@ns011-w10-truongpvt-2:/var# nano backup-database.sh
root@ns011-w10-truongpvt-2:/var#
```



Cấu hình crontab chạy script mục 3 mặc định vào lúc cách nhau 2 giờ 1 lần.

```
LAB 10-VM2
Select an editor. To change later, run 'select-editor'.
 1. /bin/nano      <---- easiest
 2. /usr/bin/vim.basic
 3. /usr/bin/vim.tiny
 4. /bin/ed

Choose 1-4 [1]: 1
No modification made
root@ns011-w10-truongpvt-2:/var# crontab -e
no crontab for root - using an empty one
crontab: installing new crontab
root@ns011-w10-truongpvt-2:/var# ls
backup-database.sh  cache  lib  lock  mail  run  spool  wordpress_backup_20240911120902.tar.gz  wordpress_backup_20240911130345.tar.gz
backups             local  log  opt  snap  wordpress_backup_20240911123803.tar.gz
root@ns011-w10-truongpvt-2:/var# crontab -l
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# 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 */2 * * * /var/backup-database.sh
root@ns011-w10-truongpvt-2:/var#
```



Viết script hiển thị 3 menu cho phép chọn từ 1 đến 3 để kiểm tra tài nguyên hệ thống bao gồm: load average, free memory và check dung lượng sử dụng của ổ cứng.

```
GNU nano 6.2 menu.sh
#!/bin/bash
while true; do
    echo "Select an option:"
    echo "1. Load Average"
    echo "2. Free Memory"
    echo "3. Disk Usage"
    read -p "Enter choice [1-3]: " choice

    case $choice in
        1)
            echo "Load Average:"
            uptime
            ;;
        2)
            echo "Free Memory:"
            free -h
            ;;
        3)
            echo "Disk Usage:"
            df -h
            ;;
        *)
            echo "Invalid option, please try again."
            ;;
    esac
done
```



```
root@ns011-w10-truongpvt-1:/var/www# nano menu.sh
root@ns011-w10-truongpvt-1:/var/www# chmod +x menu.sh
root@ns011-w10-truongpvt-1:/var/www# ./menu.sh
Select an option:
1. Load Average
2. Free Memory
3. Disk Usage
Enter choice [1-3]: 0
Invalid option, please try again.
Select an option:
1. Load Average
2. Free Memory
3. Disk Usage
Enter choice [1-3]: 3
Disk Usage:


| Filesystem | Size | Used | Avail | Use% | Mounted on  |
|------------|------|------|-------|------|-------------|
| tmpfs      | 197M | 1.1M | 196M  | 1%   | /run        |
| /dev/vda1  | 20G  | 2.5G | 17G   | 13%  | /           |
| tmpfs      | 982M | 0    | 982M  | 0%   | /dev/shm    |
| tmpfs      | 5.0M | 0    | 5.0M  | 0%   | /run/lock   |
| /dev/vda15 | 105M | 6.1M | 99M   | 6%   | /boot/efi   |
| tmpfs      | 197M | 4.0K | 197M  | 1%   | /run/user/0 |


Select an option:
1. Load Average
2. Free Memory
3. Disk Usage
Enter choice [1-3]: 2
Free Memory:


|       | total | used  | free  | shared | buff/cache | available |
|-------|-------|-------|-------|--------|------------|-----------|
| Mem:  | 1.9Gi | 189Mi | 1.5Gi | 4.0Mi  | 258Mi      | 1.6Gi     |
| Swap: | 0B    | 0B    | 0B    |        |            |           |


Select an option:
1. Load Average
2. Free Memory
3. Disk Usage
Enter choice [1-3]: 1
```