

Laporan Praktikum 3

Administrasi Sistem

Backup



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Backup

Backup merupakan proses **membuat data cadangan** yang dilakukan dengan **cara menyalin data asli** sehingga data cadangan tersebut suatu saat dapat digunakan kembali apabila data asli mengalami kerusakan atau kehilangan.

Berikut merupakan **implementasi dari backup** dan sistem operasi yang digunakan adalah **Ubuntu 16.04 LTS** :

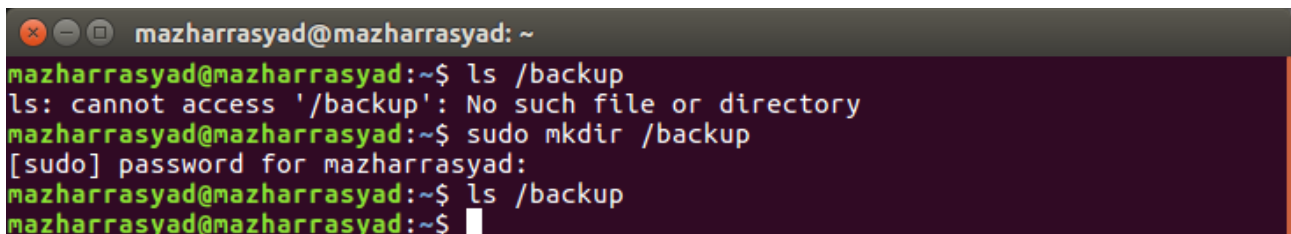
Lab 3.1 Melakukan full backup

1. Buka program terminal



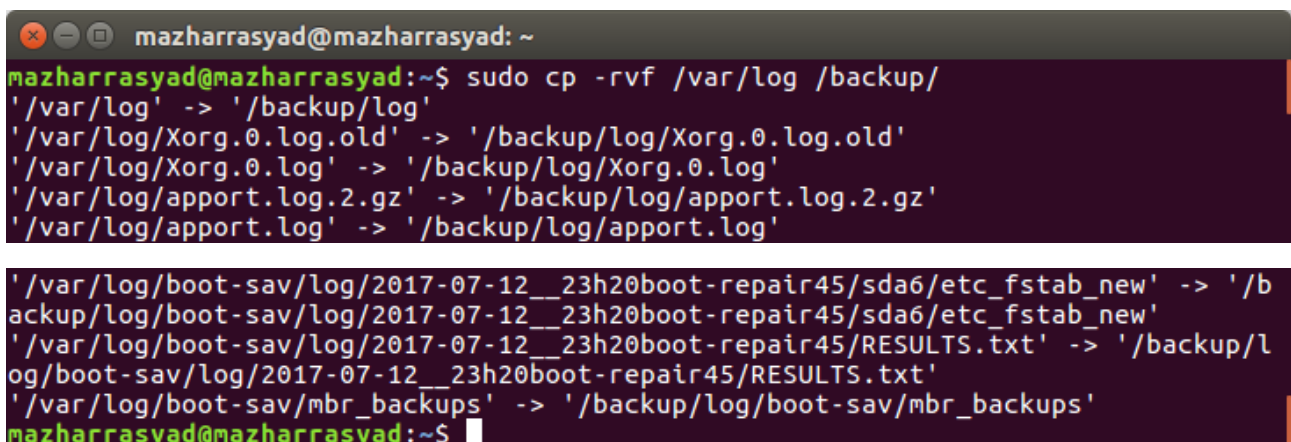
```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$
```

2. Perhatikan Anda harus memastikan direktori /backup sudah ada, atau jika belum ada maka buat direktori /backup. Anda juga harus memiliki ijin akses penuh terhadap direktori /var/log untuk dapat menyalin seluruh isi direktori tersebut



```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ ls /backup  
ls: cannot access '/backup': No such file or directory  
mazharrasyad@mazharrasyad:~$ sudo mkdir /backup  
[sudo] password for mazharrasyad:  
mazharrasyad@mazharrasyad:~$ ls /backup  
mazharrasyad@mazharrasyad:~$
```

3. Gunakan perintah menyalin file yaitu 'cp', salin lah direktori /var/log kedalam direktori /backup



```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo cp -rvf /var/log /backup/  
'/var/log' -> '/backup/log'  
'/var/log/Xorg.0.log.old' -> '/backup/log/Xorg.0.log.old'  
'/var/log/Xorg.0.log' -> '/backup/log/Xorg.0.log'  
'/var/log/apport.log.2.gz' -> '/backup/log/apport.log.2.gz'  
'/var/log/apport.log' -> '/backup/log/apport.log'  
  
'/var/log/boot-sav/log/2017-07-12__23h20boot-repair45/sda6/etc_fstab_new' -> '/b  
ackup/log/boot-sav/log/2017-07-12__23h20boot-repair45/sda6/etc_fstab_new'  
'/var/log/boot-sav/log/2017-07-12__23h20boot-repair45/RESULTS.txt' -> '/backup/l  
og/boot-sav/log/2017-07-12__23h20boot-repair45/RESULTS.txt'  
'/var/log/boot-sav/mbr_backups' -> '/backup/log/boot-sav/mbr_backups'  
mazharrasyad@mazharrasyad:~$
```

4. Lakukan verifikasi atau pemeriksaan bahwa saat ini setelah melakukan penyalinan, maka direktori /var/log dan /backup/log sama .! Ikuti langkah langkah berikut dan perhatikan apakah yang diperbandingkan dari masing masing perintah berikut ini:

- `sudo du -sh /var/log /backup/log` untuk membandingkan **ukuran file di direktori**

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo du -sh /var/log /backup/log  
52M    /var/log  
52M    /backup/log  
mazharrasyad@mazharrasyad:~$
```

- `sudo find /var/log | wc -l && sudo find /backup/log | wc -l` untuk membandingkan **jumlah baris di direktori**

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo find /var/log | wc -l && sudo find /backup/log | wc -l  
577  
577  
mazharrasyad@mazharrasyad:~$
```

Lab 3.2 Melakukan full backup dengan perintah tar

1. Buka program terminal

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$
```

2. Gunakan perintah tar untuk mengarsip file/direktori, untuk melakukan full backup direktori /var/log dimana file arsip sebagai hasil backup diletakkan kedalam direktori /backup . Ikuti langkah langkah berikut ini :

```
mazharrasyad@mazharrasyad: /backup  
mazharrasyad@mazharrasyad:~$ cd /backup/  
mazharrasyad@mazharrasyad:/backup$
```

```
mazharrasyad@mazharrasyad: /backup  
mazharrasyad@mazharrasyad:/backup$ sudo tar -cvf log.tar -C /var log  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/  
log/lightdm/x-1.log.2.gz  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:/backup$
```

3. Perhatikan apakah hasil arsip dari direktori /var/log terdapat di dalam direktori /backup dan bagaimana ukurannya ?

```
mazharrasyad@mazharrasyad: /backup  
mazharrasyad@mazharrasyad:/backup$ ls  
log  log.tar  
mazharrasyad@mazharrasyad:/backup$ sudo du -sh /var/log log.tar  
52M    /var/log  
51M    log.tar  
mazharrasyad@mazharrasyad:/backup$
```

Lab 3.3 Menambah file kedalam file arsip

1. Periksa hasil arsip sebelumnya dengan perintah berikut:

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -tvf /backup/log.tar  
drwxrwxr-x root/syslog      0 2018-11-20 19:49 log/  
-rw-r----- root/adm       7775 2018-11-20 19:49 log/apport.log.1  
-rw-r--r--  root/root      7893 2017-11-30 11:05 log/dpkg.log.11.gz  
-rw-rw-r--  root/utmp     341376 2018-11-01 07:07 log/wtmp.1  
drwxr-xr-x  root/root        0 2017-02-16 03:19 log/fsck/  
  
-rw-----  root/root          0 2018-11-03 07:35 log/lightdm/x-1.log  
-rw-----  root/root       2074 2018-11-14 04:04 log/lightdm/lightdm.log.6.g  
z  
-rw-----  root/root        784 2018-09-30 21:17 log/lightdm/x-1.log.5.gz  
-rw-r--r--  root/root       461 2018-05-28 07:12 log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:~$
```

2. Buatlah file coba.txt dan letakkan kedalam direktori /var/log

```
root@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo su -  
root@mazharrasyad:~# echo "Halooooooo STT NF" > /var/log/coba.txt  
root@mazharrasyad:~# cat /var/log/coba.txt  
Halooooooo STT NF  
root@mazharrasyad:~#
```

3. Tambahkan file tersebut kedalam file arsip log.tar, dengan perintah berikut :

```
root@mazharrasyad: /backup  
root@mazharrasyad:~# cd /backup/  
root@mazharrasyad:/backup# tar -rvf log.tar /var/log/coba.txt  
tar: Removing leading '/' from member names  
/var/log/coba.txt  
root@mazharrasyad:/backup#
```

4. Lakukan pemeriksaan apakah file tersebut berhasil ditambahkan kedalam file arsip log.tar dengan perintah berikut:

```
root@mazharrasyad: /backup  
root@mazharrasyad:/backup# tar -tvf /backup/log.tar  
drwxrwxr-x root/syslog      0 2018-11-20 19:49 log/  
-rw-r----- root/adm       7775 2018-11-20 19:49 log/apport.log.1  
-rw-r--r--  root/root      7893 2017-11-30 11:05 log/dpkg.log.11.gz  
-rw-rw-r--  root/utmp     341376 2018-11-01 07:07 log/wtmp.1  
drwxr-xr-x  root/root        0 2017-02-16 03:19 log/fsck/  
-rw-r----- root/adm        31 2017-02-16 03:19 log/fsck/checkfs  
  
-rw-----  root/root          0 2018-11-03 07:35 log/lightdm/x-1.log  
-rw-----  root/root       2074 2018-11-14 04:04 log/lightdm/lightdm.log.6.g  
z  
-rw-----  root/root        784 2018-09-30 21:17 log/lightdm/x-1.log.5.gz  
-rw-r--r--  root/root       461 2018-05-28 07:12 log/alternatives.log.5.gz  
-rw-r--r--  root/root        17 2018-11-20 21:59 var/log/coba.txt  
root@mazharrasyad:/backup#
```

Lab 3.4 Melakukan restore/extract file arsip

1. Buat direktori /restore1

```
root@mazharrasyad: ~  
root@mazharrasyad:~# mkdir /restore1  
root@mazharrasyad:~#
```

2. Kemudian ekstrak file /backup/log.tar kedalam direktori /restore1 dengan perintah berikut :

```
root@mazharrasyad: ~  
root@mazharrasyad:~# tar -xvf /backup/log.tar -C /restore1  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
var/log/coba.txt  
root@mazharrasyad:~# ~
```

3. Perhatikan apakah didalam direktori /restore1 terdapat direktori 'log' ?

```
root@mazharrasyad: ~  
root@mazharrasyad:~# ls /restore1/  
log  var  
root@mazharrasyad:~#
```

Lab 3.5 Melakukan full backup terkompresi

1. Buka program terminal

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$
```

2. Gunakan perintah mengarsip dan mengkompres yaitu 'tar', untuk melakukan full backup direktori /var/log dimana file arsip dan kompres sebagai hasil backup diletakkan kedalam direktori /backup . Ikuti langkah langkah berikut ini:

```
root@mazharrasyad: /backup  
mazharrasyad@mazharrasyad:~$ sudo su -  
[sudo] password for mazharrasyad:  
root@mazharrasyad:~# cd /backup  
root@mazharrasyad: /backup#
```

```
root@mazharrasyad: /backup  
root@mazharrasyad: /backup# tar -czvf log.tar.gz -C /var log  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/  
log/fsck/checkfs  
log/lightdm/x-1.log.2.gz  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
root@mazharrasyad: /backup#
```

```
root@mazharrasyad: /backup  
root@mazharrasyad: /backup# tar -cjvf log.tar.bz -C /var log  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/  
log/fsck/checkfs  
log/lightdm/x-4.log  
log/lightdm/x-1.log.2.gz  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
root@mazharrasyad: /backup#
```

3. Perhatikan apakah hasil arsip dan kompresi dari direktori /var/log terdapat di dalam direktori /backup, ada berapa file dan masing masing bagaimana ukurannya ?

```
root@mazharrasyad: /backup
root@mazharrasyad:/backup# ls
log  log.tar  log.tar.bz2  log.tar.gz
root@mazharrasyad:/backup#
```

- Ada 3 file

```
root@mazharrasyad: /backup
root@mazharrasyad:/backup# ls
log  log.tar  log.tar.bz2  log.tar.gz
root@mazharrasyad:/backup#
```

- Masing-masing ukurannya

```
root@mazharrasyad: /backup
root@mazharrasyad:/backup# du -sh /backup/log.tar*
51M    /backup/log.tar
11M    /backup/log.tar.bz2
11M    /backup/log.tar.gz
root@mazharrasyad:/backup#
```


Lab 3.6 Melihat daftar file yang terdapat dalam file hasil full backup terkompresi

1. Buka program terminal

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$
```

2. Gunakan perintah berikut ini untuk melihat isi atau daftar file dalam file hasil arsip terkompresi sebelumnya

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -tzvf /backup/log.tar.gz  
[sudo] password for mazharrasyad:  
drwxrwxr-x root/syslog      0 2018-11-20 21:58 log/  
-rw-r----- root/adm       7775 2018-11-20 19:49 log/apport.log.1  
-rw-r--r-- root/root       7893 2017-11-30 11:05 log/dpkg.log.11.gz  
-rw-rw-r-- root/utmp     341376 2018-11-01 07:07 log/wtmp.1  
drwxr-xr-x root/root        0 2017-02-16 03:19 log/fsck/  
-rw-r----- root/adm        31 2017-02-16 03:19 log/fsck/checkfs  
  
-rw----- root/root          0 2017-12-12 11:05 log/lightdm/x-4.log  
-rw----- root/root        666 2018-11-01 17:02 log/lightdm/x-1.log.2.gz  
-rw----- root/root          0 2018-11-03 07:35 log/lightdm/x-1.log  
-rw----- root/root     2074 2018-11-14 04:04 log/lightdm/lightdm.log.6.g  
Z  
-rw----- root/root        784 2018-09-30 21:17 log/lightdm/x-1.log.5.gz  
-rw-r--r-- root/root        461 2018-05-28 07:12 log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:~$
```

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -tjvf /backup/log.tar.bz  
[sudo] password for mazharrasyad:  
drwxrwxr-x root/syslog      0 2018-11-20 21:58 log/  
-rw-r----- root/adm       7775 2018-11-20 19:49 log/apport.log.1  
-rw-r--r-- root/root       7893 2017-11-30 11:05 log/dpkg.log.11.gz  
-rw-rw-r-- root/utmp     341376 2018-11-01 07:07 log/wtmp.1  
drwxr-xr-x root/root        0 2017-02-16 03:19 log/fsck/  
-rw-r----- root/adm        31 2017-02-16 03:19 log/fsck/checkfs  
  
-rw----- root/root          0 2017-12-12 11:05 log/lightdm/x-4.log  
-rw----- root/root        666 2018-11-01 17:02 log/lightdm/x-1.log.2.gz  
-rw----- root/root          0 2018-11-03 07:35 log/lightdm/x-1.log  
-rw----- root/root     2074 2018-11-14 04:04 log/lightdm/lightdm.log.6.g  
Z  
-rw----- root/root        784 2018-09-30 21:17 log/lightdm/x-1.log.5.gz  
-rw-r--r-- root/root        461 2018-05-28 07:12 log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:~$
```

3. Perhatikan dengan baik output perintah diatas

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -tzvf /backup/log.tar.gz | wc -l  
578  
mazharrasyad@mazharrasyad:~$ sudo tar -tjvf /backup/log.tar.bz | wc -l  
578  
mazharrasyad@mazharrasyad:~$
```

- Hasil output perintah diatas adalah sama

Lab 3.7 Melakukan restore/extract hasil full backup terkompresi

1. Buat direktori /restore2

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo mkdir /restore2  
mazharrasyad@mazharrasyad:~$
```

2. Kemudian ekstrak file /backup/log.tar.gz kedalam direktori /restore2 dengan perintah berikut:

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -xzvf /backup/log.tar.gz -C /restore2  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/  
log/lightdm/x-1.log.2.gz  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:~$
```

3. Perhatikan apakah didalam direktori /restore terdapat direktori 'log' ?

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ ls /restore2/  
log  
mazharrasyad@mazharrasyad:~$
```

4. Hapus direktori /restore2/log

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo rm -rf /restore2/log  
mazharrasyad@mazharrasyad:~$ ls /restore2/  
mazharrasyad@mazharrasyad:~$
```

5. Kemudian ekstrak file /backup/log.tar.bz kedalam direktori /restore2

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo tar -xjvf /backup/log.tar.bz -C /restore2  
log/  
log/apport.log.1  
log/dpkg.log.11.gz  
log/wtmp.1  
log/fsck/
```

```
log/lightdm/x-1.log.2.gz  
log/lightdm/x-1.log  
log/lightdm/lightdm.log.6.gz  
log/lightdm/x-1.log.5.gz  
log/alternatives.log.5.gz  
mazharrasyad@mazharrasyad:~$
```

6. Perhatikan apakah didalam direktori /restore2 terdapat direktori 'log' ?

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ ls /restore2/  
log  
mazharrasyad@mazharrasyad:~$
```

Lab 3.8 Melakukan full backup dengan rsync

1. Buatlah direktori /backup2, dengan perintah berikut ini:

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo mkdir /backup2  
mazharrasyad@mazharrasyad:~$
```

2. Lakukan full backup direktori /var/log dengan perintah berikut ini:

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo rsync -av --log-file=/tmp/rsync.log /var/log /  
backup2/  
sending incremental file list  
log/  
log/Xorg.0.log  
log/Xorg.0.log.old  
log/Xorg.1.log  
log/Xorg.1.log.old  
log/Xorg.2.log  
log/Xorg.2.log.old  
log/unattended-upgrades/unattended-upgrades.log.3.gz  
log/unattended-upgrades/unattended-upgrades.log.4.gz  
log/unattended-upgrades/unattended-upgrades.log.5.gz  
log/unattended-upgrades/unattended-upgrades.log.6.gz  
log/upstart/  
log/upstart/procps-instance-static-network-up.log.1.gz  
  
sent 52,339,795 bytes  received 8,964 bytes  34,899,172.67 bytes/sec  
total size is 52,293,521  speedup is 1.00  
mazharrasyad@mazharrasyad:~$
```

3. Periksa apakah pada direktori /backup2 terdapat direktori log

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ ls /backup2/  
log  
mazharrasyad@mazharrasyad:~$
```

4. Lihatlah isi direktori log tersebut apakah sama dengan isi direktori log pada direktori /var

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo du -sh /backup2/log/ /var/log/  
52M    /backup2/log/  
52M    /var/log/  
mazharrasyad@mazharrasyad:~$
```

5. Bacalah atau amati file log /tmp/rsync.log

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ cat /tmp/rsync.log  
2018/11/20 23:43:28 [16422] building file list  
2018/11/20 23:43:28 [16422] rsync: opendir "/var/log/speech-dispatcher" failed:  
Permission denied (13)  
2018/11/20 23:43:28 [16422] rsync: recv_generator: mkdir "/backup2/log" failed:  
Permission denied (13)  
2018/11/20 23:43:28 [16422] *** Skipping any contents from this failed directory  
***  
2018/11/20 23:43:28 [16422] cd+++++++ log/  
2018/11/20 23:43:29 [16422] sent 15,739 bytes  received 313 bytes  32,104.00 byt  
es/sec  
2018/11/20 23:43:35 [16426] >f+++++++ log/unattended-upgrades/unattended-upgra  
des.log.5.gz  
2018/11/20 23:43:35 [16426] >f+++++++ log/unattended-upgrades/unattended-upgra  
des.log.6.gz  
2018/11/20 23:43:35 [16426] cd+++++++ log/upstart/  
2018/11/20 23:43:35 [16426] >f+++++++ log/upstart/procps-instance-static-netwo  
rk-up.log.1.gz  
2018/11/20 23:43:35 [16426] sent 52,339,795 bytes  received 8,964 bytes  34,899,  
172.67 bytes/sec  
2018/11/20 23:43:35 [16426] total size is 52,293,521  speedup is 1.00  
mazharrasyad@mazharrasyad:~$
```

Lab 3.9 Melakukan incremental/differential backup dengan rsync

1. Buatlah direktori /var/log/coba

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo mkdir /var/log/coba  
[sudo] password for mazharrasyad:  
mazharrasyad@mazharrasyad:~$
```

2. Buatlah file sttnf.log didalam direktori /var/log/coba, dengan perintah berikut ini:

```
root@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo su -  
root@mazharrasyad:~# echo "Halooo STT NF" > /var/log/coba/sttnf.log  
root@mazharrasyad:~#
```

3. Selanjutnya lakukan incremental/differential backup direktori /var/log dengan perintah berikut ini:

```
root@mazharrasyad: ~  
root@mazharrasyad:~# rsync -av --log-file=/tmp/rsync.log /var/log /backup2/  
sending incremental file list  
log/  
log/auth.log  
log/syslog  
log/coba/  
log/coba/sttnf.log  
  
sent 288,548 bytes  received 240 bytes  577,576.00 bytes/sec  
total size is 52,306,959  speedup is 181.13  
root@mazharrasyad:~#
```

4. Periksa pada direktori /backup2/log apakah terdapat direktori "/backup2/log/coba" dan file "/backup2/log/coba/sttnf.log"

```
root@mazharrasyad: ~  
root@mazharrasyad:~# ls /backup2/log/coba  
sttnf.log  
root@mazharrasyad:~#
```

5. Kemudian hapus file /var/log/coba/sttnf.log

```
root@mazharrasyad: ~  
root@mazharrasyad:~# rm -f /var/log/coba/sttnf.log  
root@mazharrasyad:~#
```

6. Kemudian cobalah jalankan perintah berikut:

```
root@mazharrasyad: ~  
root@mazharrasyad:~# rsync -av --log-file=/tmp/rsync.log /var/log /backup2/  
sending incremental file list  
log/auth.log  
log/syslog  
log/coba/  
  
sent 298,472 bytes  received 218 bytes  597,380.00 bytes/sec  
total size is 52,316,947  speedup is 175.15  
root@mazharrasyad:~#
```

7. Periksa pada direktori /backup2/log apakah file "/backup2/log/coba/sttnf.log" juga terhapus atau tidak ada ?

```
root@mazharrasyad: ~  
root@mazharrasyad:~# ls /backup2/log/coba  
sttnf.log  
root@mazharrasyad:~#
```

8. Jika file /backup2/log/coba/sttnf.log masih ada coba jalankan perintah berikut ini:

```
root@mazharrasyad: ~  
root@mazharrasyad:~# rsync -av --delete --log-file=/tmp/rsync.log /var/log /back  
up2/  
sending incremental file list  
log/syslog  
deleting log/coba/sttnf.log  
  
sent 156,043 bytes  received 212 bytes  312,510.00 bytes/sec  
total size is 52,317,869  speedup is 334.82  
root@mazharrasyad:~#
```

9. Periksa kembali apakah file "/backup2/log/coba/sttnf.log" sudah terhapus atau tidak ada ?

```
root@mazharrasyad: ~  
root@mazharrasyad:~# ls /backup2/log/coba  
root@mazharrasyad:~#
```


Lab 3.10 Melakukan backup ke remote penyimpanan dengan rsync

1. Buatlah direktori /backup3 pada komputer remote (misal: komputer teman Anda) yang telah menjalankan service ssh dan mengijinkan komputer Anda untuk mengaksesnya via ssh.
- Membuat direktori /backup3 di komputer lain

```
pc18@pc18-desktop: ~  
File Edit View Search Terminal Help  
pc18@pc18-desktop:~$ sudo mkdir /backup3  
pc18@pc18-desktop:~$
```

- Status ssh di komputer lain

```
pc18@pc18-desktop: ~  
File Edit View Search Terminal Help  
pc18@pc18-desktop:~$ systemctl status ssh  
● ssh.service - OpenBSD Secure Shell server  
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enab  
   Active: active (running) since Sat 2018-12-01 16:27:07 WIB; 1 day 17h ago  
 Main PID: 888 (sshd)  
    Tasks: 1 (limit: 4558)  
   CGroup: /system.slice/ssh.service  
           └─888 /usr/sbin/sshd -D  
  
Des 01 16:27:13 pc18-desktop systemd[1]: Reloading OpenBSD Secure Shell server.  
Des 01 16:27:13 pc18-desktop sshd[888]: Received SIGHUP; restarting.  
Des 01 16:27:13 pc18-desktop systemd[1]: Reloaded OpenBSD Secure Shell server.  
Des 01 16:27:13 pc18-desktop sshd[888]: Server listening on 0.0.0.0 port 22.  
Des 01 16:27:13 pc18-desktop sshd[888]: Server listening on :: port 22.  
Des 01 16:27:13 pc18-desktop systemd[1]: Reloading OpenBSD Secure Shell server.  
Des 01 16:27:13 pc18-desktop sshd[888]: Received SIGHUP; restarting.  
Des 01 16:27:13 pc18-desktop systemd[1]: Reloaded OpenBSD Secure Shell server.  
Des 01 16:27:13 pc18-desktop sshd[888]: Server listening on 0.0.0.0 port 22.  
Des 01 16:27:13 pc18-desktop sshd[888]: Server listening on :: port 22.  
lines 1-18/18 (END)
```


2. Kemudian lakukan full backup direktori /var/log ke direktori /backup3 yang ada pada komputer teman Anda (misal : ip komputer teman Anda adalah 192.168.1.10):

Saat Anda ditanyakan password, masukkan password user root yang terdaftar di komputer teman Anda!

- Melihat alamat ip komputer lain

```
pc18@pc18-desktop: ~  
File Edit View Search Terminal Help  
pc18@pc18-desktop:~$ ifconfig  
enp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.50.56 netmask 255.255.255.128 broadcast 192.168.50.127  
    inet6 fe80::a9f7:4b25:81ca:8e1c prefixlen 64 scopeid 0x20<link>  
    ether d0:27:88:6c:05:91 txqueuelen 1000 (Ethernet)  
    RX packets 218047 bytes 304333409 (304.3 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 174559 bytes 15295362 (15.2 MB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0x10<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 17935 bytes 5422896 (5.4 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 17935 bytes 5422896 (5.4 MB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
pc18@pc18-desktop:~$
```

- Status ssh di komputer lokal

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ systemctl status ssh  
● ssh.service - OpenBSD Secure Shell server  
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enab  
   Active: active (running) since Sen 2018-12-03 12:20:48 WIB; 22min ago  
 Process: 2989 ExecReload=/bin/kill -HUP $MAINPID (code=exited, status=0/SUCCE  
 Process: 2983 ExecReload=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)  
 Process: 1009 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)  
 Main PID: 1041 (sshd)  
   CGroup: /system.slice/ssh.service  
           └─1041 /usr/sbin/sshd -D  
  
lines 1-9/9 (END)
```

- Melakukan full backup direktori /var/log ke direktori /backup3

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ sudo scp -r /var/log pc18@192.168.50.56:/backup3
```

- Masukkan password user komputer lain

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ sudo scp -r /var/log pc18@192.168.50.56:/backup3
pc18@192.168.50.56's password:
```

- Proses backup

```
mazharrasyad@mazharrasyad: ~
mazharrasyad@mazharrasyad:~$ sudo scp -r /var/log pc18@192.168.50.56:/backup3
pc18@192.168.50.56's password:
apport.log.1                100% 7862      7.7KB/s   00:00
dpkg.log.11.gz              100% 22KB      21.6KB/s  00:00
wtmp.1                      100% 376KB     376.1KB/s 00:00
checkfs                     100% 31        0.0KB/s   00:00
checkroot                   100% 31        0.0KB/s   00:00
xcoba.log                   100% 355       0.4KB/s   00:00
Xorg.3.log                  100% 30KB      29.5KB/s  00:00
dpkg.log.5.gz               100% 10KB      10.4KB/s  00:00
postgresql-9.5-main.log.1   100% 28KB      28.4KB/s  00:00
postgresql-9.5-main.log.4.gz 100% 5878      5.7KB/s   00:00
x-3.log.1.gz                100% 758       0.7KB/s   00:00
x-0.log.7.gz                100% 709       0.7KB/s   00:00
x-4.log                     100% 0         0.0KB/s   00:00
x-1.log.2.gz                100% 666       0.7KB/s   00:00
x-1.log                     100% 0         0.0KB/s   00:00
lightdm.log.6.gz            100% 4313      4.2KB/s   00:00
x-1.log.5.gz                100% 784       0.8KB/s   00:00
mylog                       100% 4657KB    4.6MB/s   00:00
alternatives.log.5.gz       100% 763       0.8KB/s   00:00
mazharrasyad@mazharrasyad:~$
```

3. Periksa apakah pada direktori /backup3 pada komputer 192.168.1.10 terdapat direktori log, lihatlah isi direktori log tersebut apakah sama dengan isi direktori log pada direktori /var di komputer Anda
- Masuk ke komputer lain

```
pc18@pc18-desktop: ~  
mzharrasyad@mzharrasyad:~$ sudo ssh pc18@192.168.50.56  
pc18@192.168.50.56's password:  
Welcome to Ubuntu 18.04.1 LTS (GNU/Linux 4.15.0-39-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/advantage  
  
* Canonical Livepatch is available for installation.  
- Reduce system reboots and improve kernel security. Activate at:  
  https://ubuntu.com/livepatch  
  
201 packages can be updated.  
0 updates are security updates.  
  
Last login: Sat Oct 27 16:54:05 2018 from 192.168.10.73  
pc18@pc18-desktop:~$
```

- Memeriksa direktori /backup3 dan /log

```
pc18@pc18-desktop: ~  
pc18@pc18-desktop:~$ ls / | grep backup3  
backup3  
pc18@pc18-desktop:~$ ls /backup3  
log  
pc18@pc18-desktop:~$
```

- Membandingkan hasil /backup3/log dengan /var/log

```
mzharrasyad@mzharrasyad: ~  
pc18@pc18-desktop:~$ sudo du -sh /backup3/log  
76M    /backup3/log  
pc18@pc18-desktop:~$ sudo find /backup3/log | wc -l  
585  
pc18@pc18-desktop:~$ exit  
logout  
Connection to 192.168.50.56 closed.  
mzharrasyad@mzharrasyad:~$ sudo du -sh /var/log  
56M    /var/log  
mzharrasyad@mzharrasyad:~$ sudo find /var/log | wc -l  
586  
mzharrasyad@mzharrasyad:~$
```

4. Bacalah atau amati file log /tmp/rsync.log pada komputer Anda.

- Melihat file rsync.log

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ cat /tmp/rsync.log  
cat: /tmp/rsync.log: No such file or directory  
mazharrasyad@mazharrasyad:~$
```

5. Kemudian cobalah membuat file atau direktori pada direktori /var/log komputer Anda dan lakukan lagi rsync untuk melakukan incremental atau differential backup, serta amati log /tmp/rsync.log pada komputer Anda.!

- Membackup lagi file yang ada di /var/log ke /backup3

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ sudo rsync -av --log-file=/tmp/rsync.log /var/log p  
c18@192.168.50.56:/backup3  
pc18@192.168.50.56's password:  
sending incremental file list  
log/auth.log  
log/kern.log  
log/mylog  
log/syslog  
  
sent 52,847 bytes  received 24,312 bytes  17,146.44 bytes/sec  
total size is 77,357,133  speedup is 1,002.57  
mazharrasyad@mazharrasyad:~$
```

- Periksa kembali file /tmp/rsync.log

```
mazharrasyad@mazharrasyad: ~  
mazharrasyad@mazharrasyad:~$ cat /tmp/rsync.log  
2018/12/03 14:33:15 [9421] building file list  
2018/12/03 14:33:15 [9421] <f.st..... log/auth.log  
2018/12/03 14:33:15 [9421] <f.st..... log/kern.log  
2018/12/03 14:33:15 [9421] <f.st..... log/mylog  
2018/12/03 14:33:15 [9421] <f.st..... log/syslog  
2018/12/03 14:33:15 [9421] sent 52,847 bytes  received 24,312 bytes  17,146.44 b  
ytes/sec  
2018/12/03 14:33:15 [9421] total size is 77,357,133  speedup is 1,002.57  
2018/12/03 14:33:41 [9468] building file list  
2018/12/03 14:33:41 [9468] <f.st..... log/auth.log  
2018/12/03 14:33:41 [9468] <f.st..... log/mylog  
2018/12/03 14:33:41 [9468] <f.st..... log/syslog  
2018/12/03 14:33:41 [9468] sent 33,676 bytes  received 20,567 bytes  15,498.00 b  
ytes/sec  
2018/12/03 14:33:41 [9468] total size is 77,358,430  speedup is 1,426.15  
mazharrasyad@mazharrasyad:~$
```

-----Selesai-----

Referensi

- Modul praktikum Administrasi sistem dan jaringan – STT NF (Disusun oleh: Henry Saptono, S.Si, M.Kom)