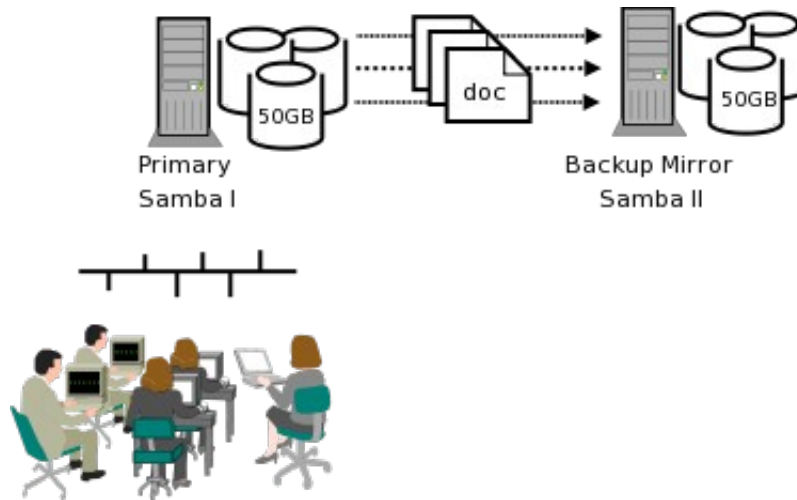## Konsep dan desain penyimpanan data terpusat

Bagian Server filesharing

1. Direktori dan file yang terstruktur
2. Manajemen user dan group filesharing
3. Proteksi file extension
4. Module recovery data
5. Quota filesystem
6. Backup incremental
7. Network mirroring backup
8. Samba primary domain controller

Persiapan partisi

No	Partisi	Mount Point	Kapasitas
1	/dev/sda1	/boot	300MB
2	/dev/sda2	/	10GB
3	/dev/sda4	/usr/local	4GB
4	/dev/sda5	/var	10GB
5	swap		2GB (1 x memory)
6	/dev/sdb1	/home	320GB
7	/dev/sdc1	/backup	320GB

Alokasi filesharing

| No	Direktori	Departemen	Group	Quota
1	/home/accounting	accounting	accounting	50GB
2	/home/marketing	marketing	marketing	50GB
3	/home/sales	sales	sales	50GB
4	/home/mis	mis	mis	100GB
5	/home/purchasing	purchasing	purchasing	50GB

Manajemen file extension

No	Ekstensi File	
1	Boleh	Dilarang
2	.doc	.exe
3	.xls	.mp3
4	.odt	.mpeg
5	.ppt	.wmv
6	.mdb	.avi
7	.odt	.3gp

Struktur direktori backup incremental

```
backup/
|-- accounting
|    `-- 2007
|        |-- Februari
|        |-- Januari
|        `-- Maret
|-- mis
|    |-- 2006
|    |    `-- Desember
|    `-- 2007
|        |-- Februari
|        |-- Januari
|        `-- Maret
`-- purchasing
     `-- 2007
         |-- Januari
         `-- Maret
```

Network mirror backup
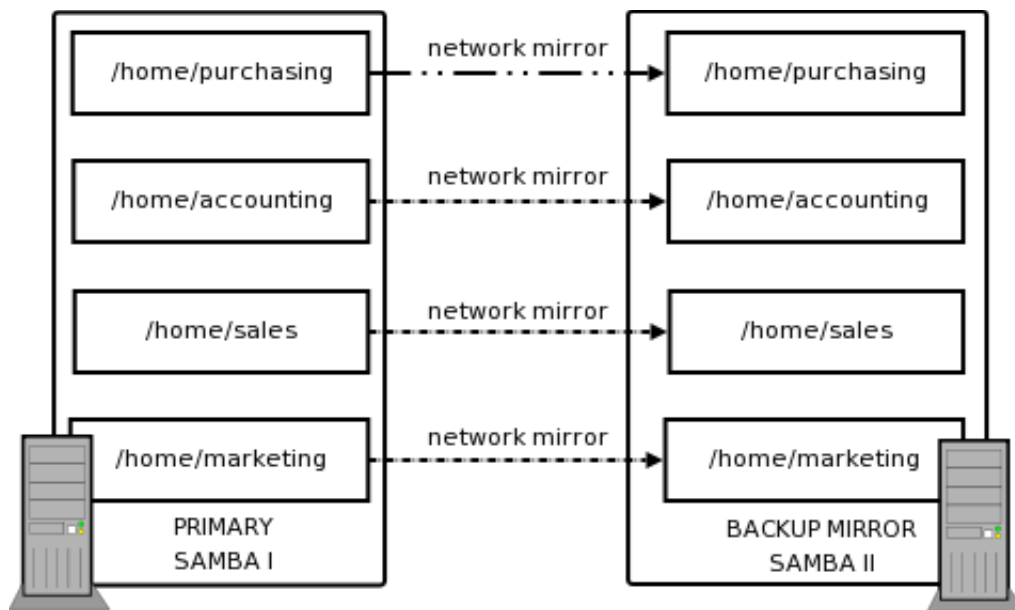
Samba Filesharing

Konfigurasi utama

```
[global]
workgroup = ARDELINDO
netbios name = SERVER-SAMBA
printcap name = cups
load printers = yes
printing = cups
log file = /var/log/samba/%m.log
max log size = 0
log level = 3
map to guest = bad user
security = user
encrypt passwords = yes
smb passwd file = /etc/samba/smbpasswd
```

Anonymous share

```
[Public]
comment = Writeable Public Filesharing
path = /home/public
public = yes
guest ok = yes
browseable = yes
writeable = yes
force user = public
force group = public
force create mode = 0777
force directory mode = 0777

[Pengumuman]
comment = Read Only Public Filesharing
path = /home/pengumuman
public = yes
guest ok = yes
read only = yes
browseable = yes
```

Manajemen user dan group

Penambahan user

```
#Departemen MIS
useradd budi
useradd ahmad
useradd dani

smbpasswd -a budi
smbpasswd -a ahmad
smbpasswd -a dani

groupadd mis
gpasswd -a budi mis
gpasswd -a ahmad mis
gpasswd -a dani mis

mkdir /home/mis
chown -R budi.mis /home/mis
chmod -R 775 /home/mis

#Departemen Accounting
useradd heri
useradd lia
useradd yuni

smbpasswd -a heri
smbpasswd -a lia
smbpasswd -a yuni

groupadd accounting
gpasswd -a heri
gpasswd -a lia
gpasswd -a yuni

mkdir /home/accounting
chown -R heri.accounting /home/accounting
chmod -R 775 /home/accounting

#Departemen purchasing
useradd rony
useradd sherly
useradd siti

smbpasswd -a rony
smbpasswd -a sherly
smbpasswd -a siti
```

```
groupadd purchasing
gpasswd -a rony
gpasswd -a sherly
gpasswd -a siti

mkdir /home/purchasing
chown -R rony.purchasing /home/purchasing
chmod -R 775 /home/purchasing
```

Manajemen Direktori Filesharing

Share Folder

```
[MIS]
path = /home/mis
valid users = budi ahmad dani
write list = budi dani
read list = ahmad
browseable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = mis


[ACCOUNTING]
nt acl support = yes
veto files = /*.mp3/*.mpeg/*.mpg/*.avi/*.asf/*.wmv/*.3gp/*.dat/*.iso/*.exe/
delete veto files = yes
path = /home/accounting
valid users = heri lia yuni
browseable = yes
writeable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = accounting

[PURCHASING]
nt acl support = yes
veto files = /*.mp3/*.mpeg/*.mpg/*.avi/*.asf/*.wmv/*.3gp/*.dat/*.iso/*.exe/
delete veto files = yes
path = /home/purchasing
valid users = rony sherly siti
browseable = yes
writeable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = purchasing
```

Pemulihan data dan pencarian file

Module Recycle Bin

```
[MIS]
vfs object = recycle audit extd_audit
recycle:repository = .recycle/%u/Recycle Bin
recycle:keeptree = Yes
recycle:versions = Yes

path = /home/mis
valid users = budi ahmad dani
write list = budi dani
read list = ahmad
browseable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = mis


[ACCOUNTING]
vfs object = recycle audit extd_audit
recycle:repository = .recycle/%u/Recycle Bin
recycle:keeptree = Yes
recycle:versions = Yes

nt acl support = yes
veto files = /*.mp3/*.mpeg/*.mpg/*.avi/*.asf/*.wmv/*.3gp/*.dat/.recycle/
delete veto files = yes
path = /home/accounting
valid users = heri lia yuni
browseable = yes
writeable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = accounting

[PURCHASING]
vfs object = recycle audit extd_audit
recycle:repository = .recycle/%u/Recycle Bin
recycle:keeptree = Yes
recycle:versions = Yes
```

```
nt acl support = yes
veto files = /*.mp3/*.mpeg/*.mpg/*.avi/*.asf/*.wmv/*.3gp/*.dat/.recycle/
delete veto files = yes
path = /home/purchasing
valid users = rony sherly siti
browseable = yes
writeable = yes
inherit permissions = yes
force create mode = 0775
force directory mode = 0775
force group = purchasing
```

Pencarian data

```
find /home/accounting -user lia -type f
find /home/accounting -mtime -2 -type -f
find /home/accounting -name *.doc -type -f

find /home/accounting -user lia -mtime -2 -type f
find /home/accounting -user lia -mtime -2 -name -type f
find /home/accounting -name *.doc -user lia -mtime -2 -type f

find /home/accounting/.recycle -mtime -1 -type f
find /home/accounting/.recycle -name *.doc -mtime -1 -type f
find /home/accounting/.recycle -user lia -mtime -1
```

Pemulihan data

```
find /home/accounting/.recycle -name *.doc -mtime -1 -type f | tar czvf
recovery.tar.gz -T-

find /home/accounting/.recycle -user lia -mtime -1 | tar czvf lia.tar.gz -T-

tar xzvf recovery.tar.gz
tar xzvf lia.tar.gz
```

System Log Samba

```
[root@server root]# smbstatus
Samba version 3.0.0-14.3E
PID      Username       Group         Machine
-------------------------------------------------------------------
16481    kursus         kursus        windows     (192.168.0.1)

Service      pid    machine       Connected at
-------------------------------------------------------
kursus       16481   windows       Tue Apr 27 12:01:36 2004
IPC$         3524    server-linux  Tue Apr 27 08:44:44 2004
Locked files:
Pid     DenyMode    Access       R/W          Oplock          Name
-----------------------------------------------------------------
16481      DENY_WRITE   0x2019f               RDWR                    EXCLUSIVE+BATCH
/home/kursus/kursus/networking/samba.sxw   Tue Apr 27 13:13:32 2004
```

Melihat status netBIOS
```
[root@server archmbox-4.5.0]# nmblookup -S server-linux
querying server-linux on 192.168.0.255
192.168.0.3 server-linux<00>
Looking up status of 192.168.0.3
        SERVER-LINUX    <00> -         H <ACTIVE>
        SERVER-LINUX    <03> -         H <ACTIVE>
        SERVER-LINUX    <20> -         H <ACTIVE>
        ..__MSBROWSE__. <01> - <GROUP> H <ACTIVE>
        LINUX           <00> - <GROUP> H <ACTIVE>
        LINUX           <1b> -         H <ACTIVE>
        LINUX           <1c> - <GROUP> H <ACTIVE>
        LINUX           <1d> -         H <ACTIVE>
        LINUX           <1e> - <GROUP> H <ACTIVE>
```

Scan netbios via linux
```
root@budi-desktop:~# nbtscan 192.168.0.1-254
Doing NBT name scan for addresses from 192.168.0.1-254

IP address        NetBIOS Name    Server    User        MAC address
------------------------------------------------------------------------------
192.168.0.31      CS              <server>  CS          00:00:00:00:00:00
192.168.0.101     YOYO            <server>  YOYO        00:00:00:00:00:00
192.168.0.41      HARDWARE-ARD    <server>  <unknown>   00:1b:11:e8:91:68
192.168.0.90      CHIPIERSON      <server>  <unknown>   00:11:5b:4f:65:35

C:\Documents and Settings\kursus>net view
```

Incremental Backup

Struktur direktori backup

```
backup/
|-- accounting
|    `-- 2007
|         |-- Februari
|         |-- Januari
|         `-- Maret
|-- mis
|    |-- 2006
|    |    `-- Desember
|    `-- 2007
|         |-- Februari
|         |-- Januari
|         `-- Maret
`-- purchasing
     `-- 2007
          |-- Januari
          `-- Maret
```

Script backup
```
#Definisi global
#Format file backup: departemen-tanggal.tar.gz
export TAHUN=$(date +"%Y")
export BULAN=$(date +"%B")
export TGL=$(date +"%d-%m-%Y")
export MIS="/home/mis"
export ACC="/home/accounting"
export PUR="/home/purchasing"
export DIR="mkdir -p"

#Direktori backup
export BCMIS=/backup/mis
export BCACC=/backup/accounting
export BCPUR=/backup/purchasing

#Make Directory Backup
$DIR $BCMIS/$TAHUN/$BULAN
$DIR $BCACC/$TAHUN/$BULAN
$DIR $BCPUR/$TAHUN/$BULAN

#Variabel Waktu Ini
export NOW="$TAHUN/$BULAN"

#Incremental Backup Per Hari
find $MIS -mtime -1 -type f | tar czvf $BCMIS/$NOW/mis-$TGL.tar.gz -T-
find $ACC -mtime -1 -type f | tar czvf $BCACC/$NOW/acc-$TGL.tar.gz -T-
find $PUR -mtime -1 -type f | tar czvf $BCPUR/$NOW/pur-$TGL.tar.gz -T-
```

Network Mirroring Backup

Rsync Server

```
#File: /etc/rsyncd.conf
#IP Rysnc client = 192.168.1.100
motd file = /etc/rsyncd.motd

[MIS]
comment = Departemen MIS
path = /home/mis
gid = mis
read only = yes
list = yes

[Accounting]
comment = Departemen Accounting
path = /home/accounting
gid = accounting
read only = yes
list = yes

[Purchasing]
comment = Departemen Purchasing
path = /home/purchasing
gid = purchasing
read only = yes
list = yes

[Incremental Backup]
comment = Incremental Backup
path = /backup
gid = backup
read only = yes
list = yes
```

Rsync Client

```
#Script rsync client
#IP Rsync server

#Variabel untuk server
export IP="192.168.1.99"
export MIS="MIS"
export ACC="Accounting"
export PUR="Purchasing"
```

Quota Filesystem

Ruang penyimpanan user berada di direktori /home memiliki kapasitas yang terbatas, tergantung dari besar byte saat membuat partisi. Kadangkala user melakukan sesuatu yang dapat membuat hardisk menjadi cepat penuh, sebagai administrator sistem kita dapat membatasi quota user dengan langkah sebagai berikut;

buat file quota dengan perintah

Untuk membuat quota kita harus meng-edit file /etc/fstab seperti pada bagian Manajemen filesystem. Gunakan superuser jika ingin membut file quota user, perintah di bawah ini akan membuat file aquota.user dan aquota.group.

```
quotacheck -mcug /home
```

edit quota user dgn perintah

Setelah kita berhasil membuat quota maka langkah berikutnya meng-edit quota per-user yang telah terdaftar dengan perintah;

```
edquota -u user
```

sehingga tampil baris text seperti berikut;

```
Disk quotas for user peserta (uid 504):
  Filesystem         blocks        soft        hard       inodes       soft       hard
  /dev/hda3            52            0           0           13          0          0
```

verify quota

Agar kita yakin konfigurasi telah sesuai maka perlu diperiksa dengan perintah quota nama_user, jika berhasil akan muncul tampilan teks quota user.

```
quota user
[root@pc01 root]# quota peserta
Disk quotas for user peserta (uid 504):
    Filesystem blocks   quota   limit   grace   files   quota   limit   grace
     /dev/hda3     52   10000   11000             13       0       0
```

tambah quota group

```
edquota group
edquota -g group
```

melihat dan edit quota per filesystem

quota yang telah kita buat tidak akan langsung diaktifkan, tetapi memiliki waktu mulai aktif yang defaultnya satu minggu setelah konfigurasi baru diberlakukan, maka untuk merubah waktu mulai aktif dilakukan dengan perintah;

```
edquota -t
Grace period before enforcing soft limits for users:
Time units may be: days, hours, minutes, or seconds
  Filesystem              Block grace period      Inode grace period
  /dev/hda3                     1days                   1days
```

report quota

Melihat semua laporan (report) quota user yang telah diberlakukan dengan perintah, hingga terdapat tampilan teks;

```
repquota -au
*** Report for user quotas on device /dev/hda3
Block grace time: 24:00; Inode grace time: 24:00
                        Block limits                File limits
User            used    soft    hard  grace    used  soft  hard  grace
-----------------------------------------------------------------------
root      --    8304       0       0            168     0     0
postgres  --    7332       0       0            177     0     0
budi      -- 644832       0       0          17865     0     0
didik     --   15240       0       0           1581     0     0
cluster1  --     144       0       0             35     0     0
cluster2  --    7280       0       0            402     0     0
peserta   --      52   10000   11000             13     0     0
peserta2  --    4868       0       0            647     0     0
kursus    --    4468       0       0            622     0     0
```

On & Off quota

Kita dapat mematikan atau mengaktifkan quota saat sistem operasi sudah berjalan (running) dengan perintah;

```
quotaon -vug /home
quotaoff -vaug
```

FTP Server ProFTPD

Konfigurasi server ProFTPD

```
ServerName                  "Debian"
ServerType                  standalone
DeferWelcome                off
MultilineRFC2228            on
DefaultServer               on
ShowSymlinks                on
TimeoutNoTransfer           600
TimeoutStalled              600
TimeoutIdle                 1200
DisplayLogin                welcome.msg
DisplayFirstChdir           .message
ListOptions                 "-l"
DenyFilter                  \*.*/
DefaultRoot                 ~
```

FTP Access

Datacenter dapat diakses tanpa melakukan penambahan aplikasi, menggunakan FTP Web client interface adalah pilihan yang tepat karena dapat dijalankan pada web browser standar yang ada pada PDA, Phone cell maupun komputer personal. FTP Web client interface menggunakan script PHP4.

Instalasi

```
cd /opt
tar xzvf datacenter.tar.gz
/opt/lamp/lamp php4
/opt/lamp/lamp start
```

Akses ftp web client

http://www.perusahaan.co.id:3333/ftp

Konfigurasi keamanan web ftp client
Akses ke ftp web client dan sslbridge hanya diberikan kepada user yang benar – benar memerlukannya. Untuk melakukan konfigurasi keamanan akses web client edit file /opt/lamp/etc/httpd.conf tambahkan parameter Directory kemudian restart lampp

```
Edit file httpd.conf
vim /opt/lampp/lampp/etc/httpd.conf

Parameter httpd.conf
# htdigest -c "/opt/lampp/ftp.passwd" FTP-ACCESS admin
# Akses FTP hanya untuk user FTP yang diizinkan (principal / vendor)
<Directory "/opt/lampp/htdocs/ftp">
    AuthType Digest
    AuthName FTP-ACCESS
    AuthUserFile "/opt/lampp/ftp.passwd"
    require valid-user
</Directory>

Restart lampp
/opt/lampp/lampp start
```

Samba Web Interface

Samba Web Interface
Samba web interface sslbridge berfungsi sebagai antarmuka pengguna untuk mengakses server samba melalui web browser tanpa menggunakan fasilitas VPN (Virtual Private Networking). Komputer desktop maupun datacenter dapat diakses menggunakan PDA, Smartphone, laptop maupun komputer personal melalui web browser.

Konfigurasi smbfs
```
apt-get install samba
apt-get install samba-common
apt-get install samba-client
apt-get install smbfs

ln -s /usr/bin/smbmount /bin/smbmount
ln -s /usr/bin/smbumount /bin/smbumount
ln -s /usr/bin/smbmnt /bin/smbmnt

chmod 4755 /usr/bin/smbmount
chmod 4755 /usr/bin/smbumount
chmod 4755 /usr/bin/smbmnt
```
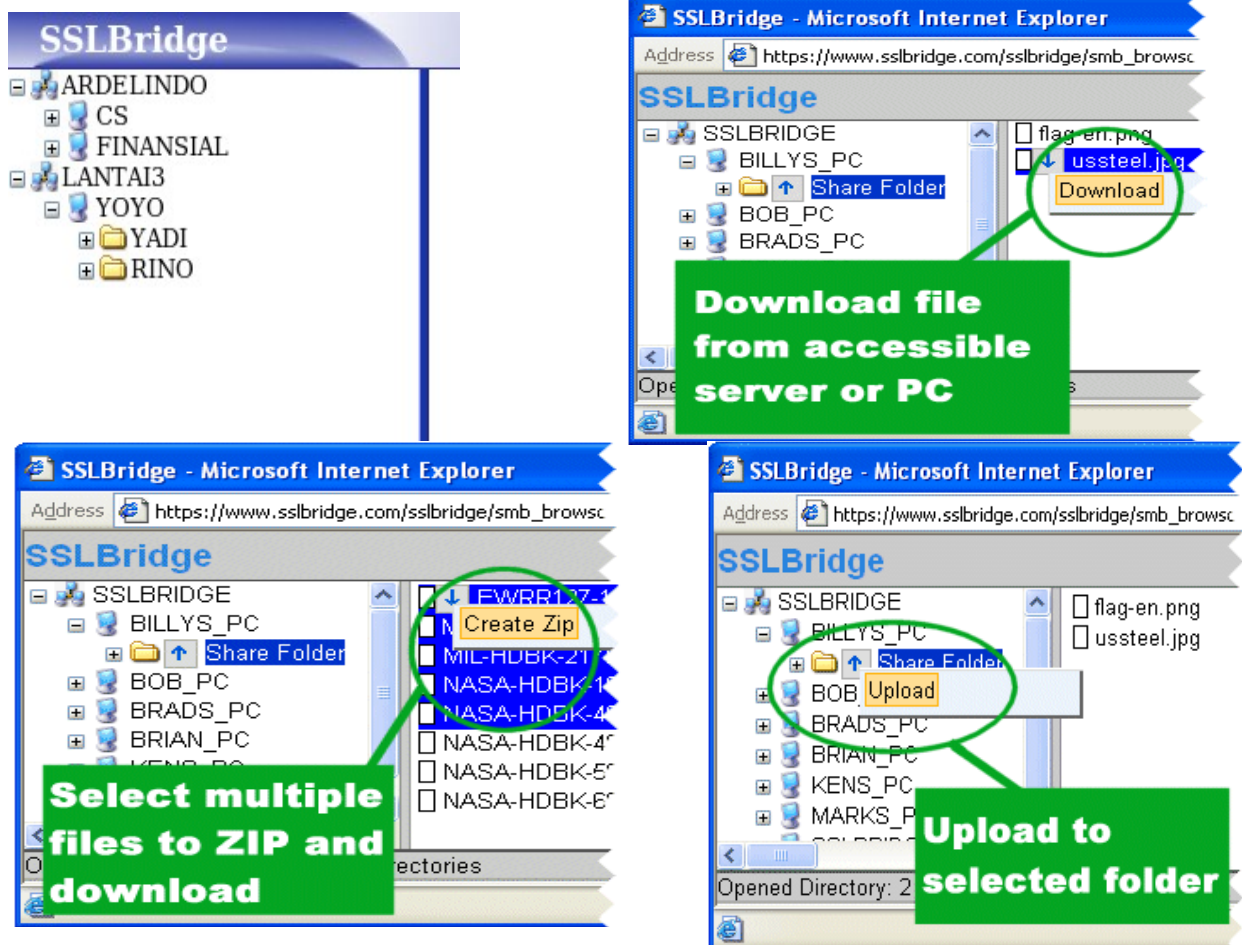
Instalasi sslbridge

```
cd /opt
tar xzvf datacenter.tar.gz
/opt/lamp/lamp php4
/opt/lamp/lamp start
```

Akses sslbridge

http://www.perusahaan.co.id:3333/samba

Konfigurasi keamanan akses sslbridge

```
# htdigest -c "/opt/lampp/samba.passwd" SAMBA-ACCESS admin
# Akses samba hanya untuk user yang diperbolehkan (staff lapangan)
<Directory "/opt/lampp/htdocs/samba">
    AuthType Digest
    AuthName SAMBA-ACCESS
    AuthUserFile "/opt/lampp/samba.passwd"
    require valid-user
</Directory>
```