

[AWS] Route53 + Workmail + SES

- 1.
2. route53 가
3. Workmail
5. Workmail Add Domain
6. Domain record 가
7. Workmail user
8. Workmail Test

[] <https://my.freedom.com/clientarea.php>

"freedom"

< >
1. 가 TLD 가 => (.tk, .ml, .ga, .gq, .cf)
2. - 1 ,
3. 2 가 가 ,
freedom
4. DNS - DNS Freedom 가
.

1. freedom 가
2. domain
 - 1) [Register a new Domain]
 - 2) TLD [Get it now!] Selected

Checkout

3) [Use DNS] - Use Freenom DNS Service IP address
==> Domain IP
4) Total Due Today : \$0.00USD -> ->
Complete Order

Route53 가

route 53 - -

1. : <freenom >
2. - (.)
- 3.

WorkMail

Workmail - Create organization

1. Create organization
2. Email domain : Existing Route 53 domain
- Route 53 hosted zone : <Freenom >
3. Alias : alias name
- Workmail url
. (https://<alias>.awsapps.com/mail)
4. Advanced settings
- User directory :
 - 1) Create Amazon Workmail directory - 가
Workmail
 - 2) Use existing directory - AWS Directory Service
Simple AD, AD, AD , workmail가
- Encryption :
 - 1) use Amazon WorkMail managed key - AWS
 - 2) Use existing customer managed key(CMK) - AWS KMS
customer managed key(CMK) key
5. Create organization

Workmail Add Domain

WorkMail-Organizations-< organization>-Domains

1. Add domain
2. Domain name - route53 domain
3.
 - Domain ownership : TXT
 - WorkMail configuration : Workmail MX, CNAME
 - Improved security : (DKIM, SPF, DMARC)
 - Improved email delivery
4. Organization - Domains
[my domain] "Set as default" default [my domain]

Domain record 가

Route 53 - - < > - -



1. subdomain (main domain X)
2. Type (TXT, MX, CNAME..)
3.
 - ** "Workmail Add Domain" 3 가 **



Workmail User

Workmail - organization - Users

User details

1. User name - user name AWS WorkMail 가
2. Display name - name

Email setup

1. Email address
 - <User name>@<workmail >
2. Password , Repeat password

- Email

Workmail Test

<Mail login>

1. WorkMail - Organizations - [my organization] url

- <https://xxx.awsapps.com/mail>

2. Workmail user (Email address x), user

< >



test email



test test <testtest@ >
받는 사람

testtest@jaesung.tk의 전자 메일이 수신되지 않는

hello, test email

< >



받는 사람(T)

test test <testtest@ >

참조(C)

제목(U) RE: test email

Test mail



[Linux] LVM

- 1

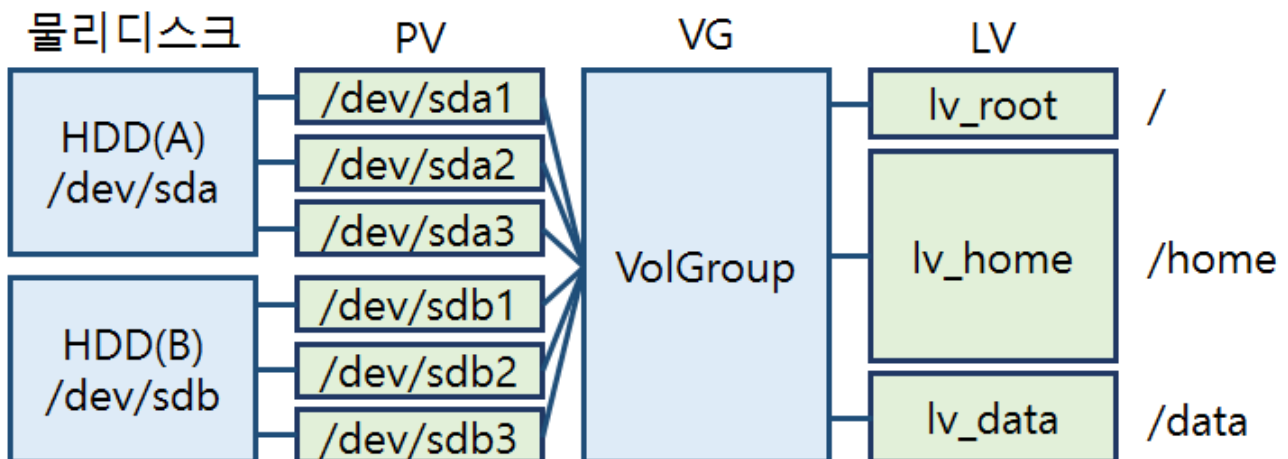
1. LVM ?

HDD

1.

LVM

)



2. LVM

1) LVM

LVM

2) PV(Physical Volume) :

/dev/sda1, /dev/sdb1, /dev/sdc1

LVM

LVM

PV

(PV PE(Physical Extent))

- PE(Physical Extent) :

PV

4MB

3) VG (Volume Group) :

Physical Volume (PE가 ?)

PV

PV

VG

LV

4) LV (Logical Volume) :

Volume Group 가

3. LVM

/home

LVM

/home

가

df -Th

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	xfs	30G	1.3G	29G	5%	/
/dev/sda1	xfs	1014M	140M	875M	14%	/boot
/dev/sda3	ext4	68G	55M	65G	1%	/home

1) LVM

-

rpm -qa |grep lvm

```
-  
# yum install lvm2
```

```
-  
# systemctl enable lvm2-monitor
```

2)

```
LVM .( fdisk -l /dev/sda )
```

```
          LVM          LVM          .  
          /dev/sda3 (/home)          LVM
```

```
-  
# fdisk -l /dev/sda
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1	*	2048	2099199	1048576	83	Linux
/dev/sda2		2099200	65013759	31457280	83	Linux
/dev/sda3		65013760	209715199	72350720	8e	Linux

```
-  
# fdisk /dev/sda  
Command (m for help): **p**  
Disk /dev/sda: 107.4 GB, 107374182400 bytes, 209715200 sectors  
Units = sectors of 1 * 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 4096 bytes  
I/O size (minimum/optimal): 4096 bytes / 4096 bytes  
Disk label type: dos  
Disk identifier: 0x000c8e42
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1	*	2048	2099199	1048576	83	Linux
/dev/sda2		2099200	65013759	31457280	83	Linux
/dev/sda3		65013760	209715199	72350720	83	Linux

```
Command (m for help): **t**
Partition number (1-3, default 3): **3**
Hex code (type L to list all codes): **8e**
Changed type of partition 'Linux' to 'Linux LVM'
```

```
Command (m for help): **p**
```

```
Disk /dev/sda: 107.4 GB, 107374182400 bytes, 209715200 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disk label type: dos
Disk identifier: 0x000c8e42
```

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1	*	2048	2099199	1048576	83	Linux
/dev/sda2		2099200	65013759	31457280	83	Linux
/dev/sda3		65013760	209715199	72350720	8e	Linux LVM

```
Command (m for help): **w**
```

3) **(PV)**

LVM

PE(Physical Extent) : PV LVM2
4MB

3-1) PV (pvcreate)

```
# pvcreate /dev/sda3
WARNING: ext4 signature detected on /dev/sda3 at offset 1080.
Wipe it? [y/n]: y Wiping ext4 signature on /dev/sda3. Physical
volume "/dev/sda3" successfully created.
```

```
# pvcreate /dev/sda3
WARNING: ext4
signature detected on /dev/sda3 at offset 1080.
Wipe it? [y/n]: y
Wiping ext4 signature on /dev/sda3.
Physical volume "/dev/sda3" successfully created.
```



```

pvcreate /dev/sda3
WARNING: ext4 signature detected on /dev/sda3 at offset 1080.
Wipe it? [y/n]: y
Wiping ext4 signature on /dev/sda3.
Physical volume "/dev/sda3" successfully created.

```

3-2) PV

```

# pvs
PV VG Fmt Attr PSize  PFree
/dev/sda3  lvm2 --- <69.00g <69.00g

# pvscan PV /dev/sda3
lvm2 [<69.00 GiB]Total: 1 [<69.00 GiB] / in use: 0 [0 ] / in
no VG: 1 [<69.00 GiB]

# pvdisplay
VG NamePV Size          <69.00 GiB
Allocatable          NO
PE Size              0
Total PE             0
Free PE              0
Allocated
PE                  0
PV UUID              dFUFjg-ETp6-aCkV-UHpw-HpP7-e40T-7L00p3

```

3-3) (VG)

```

# (VG) /dev/VG_NAME
- VG

# vgcreate [ ] [ ]

vgcreate vg-home /dev/sda3Volume group "vg-home" successfully
created

- VG

# vgs
VG #PV #LV #SN Attr VSize VFreevg-home 1 0 0 wz--n-
<69.00g <69.00g

```

```
# vgscan
Reading volume groups from cache.Found volume group "vg-home"
using metadata type lvm2
```

```
# vgsdisplay
--- Volume group ---
VG Name          vg-home
System
IDFormat         lvm2
Metadata Areas   1
Metadata Sequence No 1
VG Access        read/write
VG Status        resizable
MAX LV           0
Cur LV          00
pen LV           0
Max PV           0
Cur PV          1
Act PV           1
VG Size          <69.00 GiB
PE Size          4.00 MiB
Total PE         17663
Alloc PE / Size  0 / 0
Free PE / Size   17663 / <69.00 GiB
VG UUID          MESw3F-j0gs-yz0o-bwR9-34nn-u0dP-qH0HEC
```

4)

```
#                               (Logical Volumes)
- LV

# lvcreate -n data1v L 70GB testvg --> testvg 70G data1v

# lvcreate -n lv-home -l +100%FREE vg-home --> lv-
home
# lvcreate

lvcreate -n lv-home -l +100%FREE vg-homeLogical volume "lv-
home" created.

- LV          (lvs, lvdisplay, lvscan)

# lvs
```

```
LV   VG   Attr   LSize   Pool Origin Data% Meta% Move Log
Cpy%Sync Convert
lv-home vg-home -wi-ao---- <69.00g
```

```
# lvscan
```

```
ACTIVE          '/dev/vg-home/lv-home' [<69.00 GiB] inherit
```

```
# lvsdisplay
```

```
--- Logical volume ---
```

```
LV Path          /dev/vg-home/lv-home
```

```
LV Name          lv-home
```

```
VG Name          vg-home
```

```
LV UUID          AY0b7g-L0pN-DrTm-Lhgb-vqU5-T2W1-0cFe4W
```

```
LV Write Access  read/write
```

```
LV Creation host, time localhost.localdomain, 2022-05-11
16:20:59 +0900
```

```
LV Status        available
```

```
# open           0
```

```
LV Size          <69.00 GiB
```

```
Current LE       17663
```

```
Segments         1
```

```
Allocation       inheritRead ahead sectors    auto
```

```
- currently set to 8192
```

```
Block device     253:0
```

5)

5-1) **LV**

```
# lvsdisplay          LV Path  ext4
```

```
/home
```

```
**
```

```
# mkfs.ext4 /dev/vg-home/lv-home
```

```
**mke2fs 1.42.9 (28-Dec-2013)Discarding
```

```
device blocks: done
```

```
Filesystem label=OS
```

```
type: LinuxBlock
```

```
size=4096 (log=2)Fragment size=4096 (log=2)Stride=0 blocks,
Stripe width=0 blocks4521984 inodes, 18086912 blocks904345
blocks (5.00%) reserved for the super userFirst data
block=0Maximum filesystem blocks=2166358016552 block
groups32768 blocks per group, 32768 fragments per group8192
```

```

inodes per groupSuperblock backups stored on blocks:
32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632,
2654208,      4096000, 7962624, 11239424 Allocating group
tables: done
Writing inode tables: done
Creating journal (32768 blocks): doneWriting superblocks and
filesystem accounting information: done

```

```

**# mount -t ext4 /dev/vg-home/lv-home /home**

```

```

**# df -Th

```

```

**Filesystem

```

```

Type      Size Used Avail Use% Mounted on/dev/sda2
xfs       30G 1.3G  29G   5% /devtmpfs          devtmpfs 484M   0
484M  0%
/devtmpfs                tmpfs   493M   0 493M   0%
/dev/shmtmpfs            tmpfs   493M  13M 480M   3%
/runtmpfs                tmpfs   493M   0 493M   0%
/sys/fs/cgroup/dev/sda1          xfs    1014M 140M 875M  14%
/boottmpfs               tmpfs   99M   0 99M   0% /run/user/0*
/dev/mapper/vg--home-lv--home ext4    68G  53M 65G   1% /home*

```

```

5-2)          /etc/fstab          .

```

```

# /etc/fstab

```

```

/dev/vg-home/lv-home    /home          ext4 defaults    1 2

```

PXE

PXE

Preboot execution environment ,
OS 가

PXE

Virtualbox , Host-only Adapter .

Virtualbox - File - Host Network Manager

IPv4 Address: 10.0.0.254/24

DHCP Server: None

CentOS 07 VM PXE:

NIC 2EA (/)

CentOS 07 VM Client:

NIC 1EA ()

PXE

Public

```
cat << EOF | sudo tee /etc/sysconfig/network-scripts/ifcfg-  
enp0s3
```

TYPE=Ethernet

BOOTPROTO=dhcp

DEFROUTE=yes

NAME=enp0s3

DEVICE=enp0s3

ONBOOT=yes

EOF

Private

```
cat << EOF | sudo tee /etc/sysconfig/network-scripts/ifcfg-  
enp0s8
```

TYPE=Ethernet

BOOTPROTO=none

DEFROUTE=no

NAME=enp0s8

DEVICE=enp0s8

ONBOOT=yes

IPADDR=10.0.0.11

PREFIX=24

EOF

```
sudo systemctl restart network
sudo systemctl status network
```

PXE DHCP

```
sudo yum install -y dhcp
```

```
sudo mkdir /etc/dhcp/dhcpd.d/
```

```
cat << EOF | sudo tee /etc/dhcp/dhcpd.conf
```

```
option domain-name-servers        10.0.0.11;
```

```
## 10.0.0.11 -> PXE                IP
```

```
default-lease-time 600;
```

```
max-lease-time 7200;
```

```
authoritative;
```

```
## DHCPNAK send enable
```

```
filename                "pxelinux.0";
```

```
next-server             10.0.0.11;
```

```
## tftp                IP
```

```
subnet 10.0.0.0 netmask 255.255.255.0 {
```

```
    range dynamic-bootp 10.0.0.200 10.0.0.253;
```

```
    option broadcast-address 10.0.0.255;
```

```
    # option routers 10.0.0.11;
```

```
    ## Client 가                    Gateway IP
```

```
    ##
```

```
}
```

EOF

```
sudo systemctl enable --now dhcpd
```

```
sudo systemctl status dhcpd
```

PXE TFTP

tftp

```
sudo yum install -y syslinux tftp tftp-server
sudo cp /usr/share/syslinux/pxelinux.0 /var/lib/tftpboot/

sudo systemctl enable --now tftp
sudo systemctl status tftp

tftp
(to) 10.0.0.11
tftp> verbose
tftp> trace
tftp> get pxelinux.0

PXE      ISO

wget
http://mirror.navercorp.com/centos/7/isos/x86_64/CentOS-7-x86_64-Minimal-2009.iso

sudo mkdir /var/lib/tftpboot/centos7

sudo mount CentOS-7-x86_64-Minimal-2009.iso /mnt
## sudo mount -t iso9660 -o loop CentOS-7-x86_64-Minimal-2009.iso /mnt

sudo cp /mnt/images/pxeboot/vmlinuz /var/lib/tftpboot/centos7/
sudo cp /mnt/images/pxeboot/initrd.img /var/lib/tftpboot/centos7/
sudo cp /usr/share/syslinux/menu.c32 /var/lib/tftpboot/

sudo mkdir /var/lib/tftpboot/pxelinux.cfg/

cat << EOF | sudo tee /var/lib/tftpboot/pxelinux.cfg/default
timeout 100
default menu.c32

menu title ##### PXE Boot Menu #####
label 1
    menu label ^1) Install CentOS 7
    kernel centos7/vmlinuz
        append          initrd=centos7/initrd.img
method=http://10.0.0.11/iso devfs=nomount
```

```
label 2
  menu label ^2) Boot from local drive
  localboot
EOF
```

```
sudo yum install -y httpd
```

```
cat << EOF | sudo tee /etc/httpd/conf.d/pxeboot.conf
Alias /iso /mnt
<Directory /mnt>
  Require ip 127.0.0.1 10.0.0.0/24
</Directory>
EOF
```

```
sudo systemctl enable --now httpd
sudo systemctl disable --now firewalld
```

```
PXE      ISO
```

```
Virtualbox - VM - Settings
```

```
      NIC      dhcpd      NIC      .
(      NIC      .)
```

```
VM Start -      F12 - Boot Manager - 1) LAN (      L      )
```

```
CentOS      .
```

```
PXE
```

```
PXE      PC      CentOS      가
      .      initrd(=      )      CentOS
(kickstart) 가      nfs      가      PXE
      가      .
```