# Đặt IP quản trị iDRAC

* Đặt IP cho iDRAC bằng cách vào trực tiếp BIOS qua màn hình, bàn phím chuột.
* Đổi password tài khoản root

# Cấu hình hardware

* Bật Hyper threading
* Tạo RAID:
  + OS: disk đầu tiên => tạo RAID0
  + 3 ổ còn lại: non-RAID
  + Lưu ý: đối với các DC có workload search, analytincs thì cấu hình disk riêng cho Solr\_index

# Cài OS RHEL

* RHEL 8.10
* Minimal install
* Chia các mountpoint trên root (/)

**+ Mount point trên các máy Search, Ana:**

A table with text and numbers

AI-generated content may be incorrect.

**+ Mount point trên máy Trans, Docs:**

A white and black table with black text and numbers

AI-generated content may be incorrect.

=> theo quy trình cài đặt

# Cấu hình OS

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**4.1 Đặt IP:**

***(IP,DNS: bond 2 cổng vật lý => tạo interface cho (VLAN 232 -> Trans, VLAN 233 -> Search, VLAN 234 -> Ana, VLAN 235 -> Docs))***

nmcli connection add type bond con-name bond0 ifname bond0 bond.options "mode=802.3ad" ipv4.method disable ipv6.method ignore connection.autoconnect yes # kiem tra nmcli connection show "bond0"

nmcli connection add type ethernet slave-type bond con-name bond0-port1 ifname **enoX** master bond0

nmcli connection add type ethernet slave-type bond con-name bond0-port3 ifname **enoX** master bond0

nmcli connection add type vlan con-name **VLAN\_X** ifname **VLAN\_X** vlan.parent bond0 vlan.id **X**

nmcli connection modify **VLAN\_X** ipv4.addresses '10.64.**YY.xx**/24' ipv4.gateway '10.64.**YY**.1' ipv4.dns ' 10.64.89.11 10.64.89.13' ipv4.method manual ipv6.method ignore connection.autoconnect yes

~~--nmcli connection modify VLAN235 ethernet.mtu 9000 🡪 tạm thời ko chạy lệnh này~~

nmcli connection reload

hostnamectl set-hostname **dri-ehd\_X** #check thiết kế

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**4.2 Clear all subscription:**

subscription-manager remove --all

subscription-manager clean

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**4.3 Firewalld:**

systemctl stop firewalld

systemctl disable firewalld

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**4.4 Se Linux => Disabled => vi /etc/selinux/config:**

sed -i 's/SELINUX=enforcing/SELINUX=disabled/g' /etc/selinux/config

sed -i 's/SELINUX=permissive/SELINUX=disabled/g' /etc/selinux/config

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**4.5 Tạo repo file:**

cat << EOF >> /etc/yum.repos.d/rhel8.repo

[rhel-8-for-x86\_64-appstream-rpms]

name=rhel-8-for-x86\_64-appstream-rpms

baseurl=http://10.64.68.99/rhel-8-for-x86\_64-appstream-rpms

gpgcheck=0

enabled=1

[rhel-8-for-x86\_64-baseos-rpms]

name=rhel-8-for-x86\_64-baseos-rpms

baseurl=http://10.64.68.99/rhel-8-for-x86\_64-baseos-rpms

gpgcheck=0

enabled=1

[datastax]

name=datastax

baseurl=http://10.64.68.99/datastax

gpgcheck=0

enabled=1

[epel]

name=epel

baseurl=http://10.64.68.99/epel

gpgcheck=0

enabled=1

[epel-modular]

name=epel-modular

baseurl=http://10.64.68.99/epel-modular/

gpgcheck=0

enabled=1

EOF

yum clean all

yum repolist -v # Kiểm tra repo

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**4.6 Chỉnh sửa tham số Kenel và limit.conf**

cat << EOF >> /etc/sysctl.conf

net.ipv4.tcp\_keepalive\_time=60

net.ipv4.tcp\_keepalive\_probes=3

net.ipv4.tcp\_keepalive\_intvl=10

net.core.rmem\_max=16777216

net.core.wmem\_max=16777216

net.core.rmem\_default=16777216

net.core.wmem\_default=16777216

net.core.optmem\_max=40960

net.ipv4.tcp\_rmem=4096 87380 16777216

net.ipv4.tcp\_wmem=4096 65536 16777216

vm.max\_map\_count=1048575

EOF

#Check limits:

ulimit -a

cat << EOF >> /etc/security/limits.conf

cassandra soft nofile 1048576

cassandra hard nofile 1048576

cassandra soft memlock unlimited

cassandra hard memlock unlimited

cassandra soft as unlimited

cassandra hard as unlimited

cassandra - memlock unlimited

cassandra - nofile 1048576

cassandra - nproc 32768

cassandra - as unlimited

rma soft nofile 1048576

rma hard nofile 1048576

rma - nofile 1048576

\* soft nofile 1048576

\* hard nofile 1048576

\* soft as unlimited

\* hard as unlimited

\* soft memlock unlimited

\* hard memlock unlimited

root soft nofile 1048576

root hard nofile 1048576

root soft memlock unlimited

root hard memlock unlimited

root soft as unlimited

root hard as unlimited

root - memlock unlimited

root - nofile 1048576

root - nproc 32768

root - as unlimited

EOF

#Chu y: Dat tat ca nofile 1048576

#Sau đó phải khởi động lại OS mới có tác dụng

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**4.7 Cài đặt: Công cụ monitor, debug:**

yum -y install java-1.8 java-devel-1.8 lsof

yum -y install telnet

yum -y install wget

yum -y install net-tools

yum -y install hdparm

yum -y install iotop

yum -y install iftop

yum -y install nfs-utils

yum -y install rsync

yum -y install sshpass

yum -y install pssh

yum -y install sysstat

yum -y install dstat

yum -y install htop

yum -y install unzip

yum -y install python27

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**4.8 Mountpoint**

**+ Bước 1**: Khởi tạo các phân vùng và đặt định dạng LVM (8e)

fdisk /dev/sda --> p n default default +20G (tao sda4)

--> p n default default +100G (tao sda5) w

fdisk /dev/sdb => n p default default +650G w

fdisk /dev/sdc => n p default default default w

fdisk /dev/sdd => n p default default default w

**+ Bước 2**: Tạo Physical Volume

pvcreate /dev/sda4

pvcreate /dev/sda5

pvcreate /dev/sdb1

pvcreate /dev/sdc1

pvcreate /dev/sdd1

pvs or pvdisplay kiểm tra

**+ Bước 3**: Tạo Volume Group

vgcreate vg\_commitlog /dev/sda4

vgcreate vg\_u01 /dev/sda5

vgcreate vg\_data /dev/sdc1 /dev/sdd1

vgcreate vg\_solr /dev/sdb1

vgs kiểm tra

**+ Bước 4**: Tạo Logical Volume

lvcreate -l +100%FREE -n lv\_commitlog vg\_commitlog /dev/sda4

lvcreate -l +100%FREE -n lv\_u01 vg\_u01 /dev/sda5

lvcreate -l +100%FREE -n lv\_solr vg\_solr /dev/sdb1

lvcreate -l +100%FREE -n lv\_data vg\_data

lsblk kiểm tra

**+ Bước 5**: Tạo Filesystem

mkfs -t xfs /dev/vg\_commitlog/lv\_commitlog

mkfs -t xfs /dev/vg\_solr/lv\_solr

mkfs -t xfs /dev/vg\_u01/lv\_u01

mkfs -t xfs /dev/vg\_data/lv\_data

**+ Bước 6**: Mount

mkdir /commitlog

mkdir /solr\_index *(dành riêng cho các máy chủ Search và máy chủ Ana)*

mkdir /data

mkdir /u01

mount /dev/vg\_u01/lv\_u01 /u01

mount /dev/vg\_commitlog/lv\_commitlog /commitlog

mount /dev/vg\_solr/lv\_solr /solr\_index 🡪 lưu ý map đối với các DC đã lưu ý

mount /dev/vg\_data/lv\_data /data

df -HT, df -h, lsblk kiểm tra

lsblk -o NAME,UUID,SIZE

###vi /etc/fstab

uuidcommitlog="UUID="

uuidcommitlog+=`blkid | grep vg\_commitlog-lv\_commitlog | cut -f 2 -d " " | cut -c 7-42`

uuidcommitlog+=" /commitlog xfs defaults 0 0"

echo $uuidcommitlog >> /etc/fstab

uuidu01="UUID="

uuidu01+=`blkid | grep vg\_u01-lv\_u01 | cut -f 2 -d " " | cut -c 7-42`

uuidu01+=" /u01 xfs defaults 0 0"

echo $uuidu01 >> /etc/fstab

uuiddata="UUID="

uuiddata+=`blkid | grep vg\_data-lv\_data | cut -f 2 -d " " | cut -c 7-42`

uuiddata+=" /data xfs defaults 0 0"

echo $uuiddata >> /etc/fstab

uuidsolr="UUID="

uuidsolr+=`blkid | grep vg\_solr-lv\_solr | cut -f 2 -d " " | cut -c 7-42`

uuidsolr+=" /solr\_index xfs defaults 0 0"

echo $uuidsolr >> /etc/fstab

mount -a

**+ Bước 7: Tạo thư mục**

mkdir -p /data/data

mkdir -p /data/hints

mkdir -p /data/metadata

mkdir -p /data/cdc\_raw

mkdir -p /data/saved\_caches

mkdir -p /data/insights

mkdir -p /data/spark/worker

mkdir -p /data/spark/rdd

mkdir -p /data/dsefs/data

mkdir -p /u01/log/dse/cassandra

mkdir -p /u01/log/dse/insights

mkdir -p /u01/log/dse/spark/alwayson\_sql/dsefs

mkdir -p /u01/log/dse/spark/worker

mkdir -p /u01/log/dse/spark/master

mkdir -p /u01/app/dse/conf

mkdir -p /u01/app/dse/cassandra/conf

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**+ Bước 8: OS Hardening:**

#Thời gian hiệu lực của mật khẩu

vi /etc/login.defs => sửa tham số: PASS\_MAX\_DAYS=90

#Độ dài tối thiểu, số ký tự,... của mật khẩu

cat << EOF >> /etc/security/pwquality.conf

minlen=8

minclass=4

lcredit=-1

ucredit=-1

dcredit=-1

ocredit=-1

EOF

#Hạn chế số lần đăng nhập không thành công, Thời gian mở khóa khi bị khóa vì đăng nhập không thành công

cat << EOF >> /etc/security/faillock.conf

deny=5

unlock\_time=300

EOF

#Thiết lập thời gian ngắt kết nối khi không sử dụng

cat << EOF >> /etc/profile.d/tct\_sessiontimeout.sh

readonly TIMEOUT=300

EOF

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User/Group user root Fis@2025 /alluser Tct@2025

**+ Bước 9: Tạo Group, User**

groupadd -g 5001 hddt

groupadd -g 5003 bkadm

groupadd -g 5002 dbadm

groupadd -g 6001 rma

groupadd -g 6002 monitor

groupadd -g 7001 node\_exporter

groupadd -g 7002 splunk

useradd -u 5001 -g hddt -G wheel sysadmin

useradd -u 5003 -g bkadm backupadm

useradd -u 5002 -g dbadm -G wheel dbadmin

useradd -u 6001 -g rma rma

useradd -u 6002 -g monitor monitor

useradd -u 7001 -g node\_exporter node\_exporter

useradd -u 7002 -g splunk splunk

usermod -g cassandra -G bkadm cassandra

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**+ Bước 10: Đặt mật khẩu cho các user**

useradd -u 5004 -g hddt -G wheel appadm

#(Tạo user: appadm và thêm vào PrimaryGrp hddt và SecondaryGrp wheel

passwd appadm (Tạo password cho appadm)

#Tao mat khau

passwd root

Hddt@p$C83

passwd sysadmin

Hddt@nD6&6

passwd backupadm

Hddt@8$Qk4

passwd dbadmin

Hddt@r#5S4

passwd rma

Hddt@964U&

passwd monitor

Hddt@297!P

systemctl restart sshd

**+ Bước 11: Cài đặt thêm các gói**

yum install python27 -y

yum install -y dse-full-6.8.47

-------NTP Server

yum install -y chrony

sed -i 's/pool 2.rhel.pool.ntp.org iburst/#pool 2.rhel.pool.ntp.org iburst/g' /etc/chrony.conf

cat << EOF >> /etc/chrony.conf

server 10.64.68.26 iburst prefer

server 10.64.68.27 iburst

server 10.64.68.32 iburst

EOF

systemctl restart chronyd

systemctl enable chronyd

systemctl status chronyd

chronyc sources

**+ Bước 12: Phân quyền các thư mục**

chown -R cassandra:cassandra /data

chown -R cassandra:cassandra /commitlog

***chown -R cassandra:cassandra /solr\_index (chỉ chạy trên các máy chủ Search, Ana)***

chown -R cassandra:cassandra /u01/app/dse

chown -R cassandra:cassandra /u01/log/dse

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**+ Bước 13 : Copy file key**

mkdir -p /var/lib/datastax-agent/conf/

cat << EOF >> /var/lib/datastax-agent/conf/opsc\_system\_key

ECB:0UnFYZ9swrCpq/ExP748iw==

EOF

chown -R cassandra:cassandra /var/lib/datastax-agent

mkdir -p /u01/scripts/backup

mkdir -p /u01/log/scripts/backup\_full

mkdir -p /u01/log/scripts/backup\_inc

**+ Bước 14: Set các thông số**

# set CPU mode Performance:

cpupower frequency-set --governor performance

# Disable zone\_reclaim\_mode:

echo 0 > /proc/sys/vm/zone\_reclaim\_mode

# Tat swap:

sed -i 's/^\(.\*swap\)/#\1/' /etc/fstab

swapoff --all

# Sua tuned value cua read\_ahead\_kb:

sed -i 's/readahead=>4096/readahead=>0/g' /lib/tuned/throughput-performance/tuned.conf

**+ Bước 15: Tạo script crontab:**

mkdir /u01/scripts/os/

vi /u01/scripts/os/tuning.sh

#! /bin/bash echo never | sudo tee /sys/kernel/mm/transparent\_hugepage/defrag > /dev/null for pdisk in sda sdb sdc; do echo 0 > /sys/block/$pdisk/queue/rotational; echo 8 > /sys/class/block/$pdisk/queue/read\_ahead\_kb; echo deadline > /sys/class/block/$pdisk/queue/scheduler; echo 128 > /sys/class/block/$pdisk/queue/nr\_requests; done for dm in dm-0 dm-1 dm-2 dm-3 dm-4 dm-5; do echo 0 > /sys/block/$dm/queue/rotational; echo 8 > /sys/class/block/$dm/queue/read\_ahead\_kb;

done

EOF

chmod 744 /u01/scripts/os/tuning.sh

(crontab -l 2>/dev/null | grep -v "tuning.sh"; echo "\*/5 \* \* \* \* /u01/scripts/os/tuning.sh"; echo "@reboot sleep 30 && /u01/scripts/os/tuning.sh") | crontab -

crontab -l

# Check lai:

for i in {0..23}

do

cat /sys/devices/system/cpu/cpu$i/cpufreq/scaling\_governor

done

cat /proc/sys/vm/zone\_reclaim\_mode

cat /proc/meminfo | grep -i swap

for pdisk in sda sdb sdc; do cat /sys/block/$pdisk/queue/rotational; done

for pdisk in sda sdb sdc; do cat /sys/block/$pdisk/queue/read\_ahead\_kb; done

for pdisk in sda sdb sdc; do cat /sys/block/$pdisk/queue/scheduler; done

for pdisk in sda sdb sdc; do cat /sys/block/$pdisk/queue/nr\_requests; done

# Add timestamp for history command:

echo 'export HISTTIMEFORMAT="%d/%m/%y %T "' >> /etc/profile

source /etc/profile

**+ Bước 16: Cài đặt, add node Datastax từ Opscenter**

yum install datastax-agent-6.8.19 -y (deploy qua Ops center)

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yum update --exclude=dse\* --exclude=datastax\* -y (bỏ qua)

**+ Bước 17: Add thêm thông tin các node vào file /etc/host**

# Cấu hình file hosts của các node: là danh sách các node trong cluster. ( theo danh sach TK)

(Bước này bỏ qua để làm sau cùng khi đã join hết các node vào hệ thống)

cat << EOF >> /etc/hosts

# DC\_Search new:

10.64.100.101 tct-ehdsearchdb101

10.64.100.102 tct-ehdsearchdb102

10.64.100.103 tct-ehdsearchdb103

....

EOF

**Bước 18 : Reboot node**

Shutdown -r 0

**+ Bước 19: Cài Deep security, Splunk, SOC (báo Thắng cài đặt các phần mềm này)**

**+ Bước 20: Phân quyền ssh** *(làm sau cùng khi đã add node xong)*

vi /etc/ssh/sshd\_config

=> PermitRootLogin no

=> AllowUsers sysadmin dbadmin rma backupadm rma monitor (Cho phép user ssh)

=> DenyUsers splunk node\_exporter cassandra (K cho phép user ssh)

PermitRootLogin no

AllowUsers sysadmin dbadmin rma backupadm rma monitor

DenyUsers splunk node\_exporter cassandra