

TECHNICAL TASK 1

DX NetOps CA Performance Center Installation

Form No - QF18 | Rev No - 1.0

Organisation: Data Edge | Task given by : Himanshu Patel

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SUMMARY

What is NetOps:

Network Operations, commonly known as NetOps, is an evolving field focusing on the efficient management and optimization of network infrastructure. It encompasses various tools, techniques, and practices to ensure the smooth operation of network systems, improve performance, and maintain security. NetOps is essential for maintaining the reliability and efficiency of modern digital infrastructures, particularly in complex environments with extensive networks. DX NetOps CA Performance Center is a comprehensive network performance management solution developed by Broadcom. It provides a unified platform for monitoring, analyzing, and optimizing network performance.

Personal Interest in NetOps:

Learning and researching about NetOps has significantly piqued my interest in this field. The dynamic nature of network operations, combined with the critical role they play in ensuring seamless connectivity and performance has drawn me towards pursuing a career in this domain. The intricate balance of technical skills, problem-solving abilities, and continuous learning required in NetOps aligns perfectly with my professional aspirations.

Installation of CA Performance Center (please read the DC part) :

I undertook the task of installing CA Performance Center and its associated components on four RHEL virtual machines running on VirtualBox. The installation process involved the following steps:

1. **Installing NetOps Portal:** This involved setting up the central interface for network performance monitoring and management.
2. **Installing Data Repository(Cluster Deployment):** This step focused on creating a centralised database to store and manage performance data collected from various network devices. I chose to do a Cluster Deployment as a challenge for myself as it is a more complex form of installation and to broaden my knowledge and skills.
3. **Installing Data Aggregator:** The data aggregator was installed to consolidate data from the sources, providing a unified view of network performance.
4. **Installing Data Collector:** Finally, the data collector installation was a situation where my laptop system crashed and rebooted. This incident also affected all of my configurations on VMs and I was presented with an RHEL OS Installation page all over again. My system over performed and unfortunately led to a crash.

The installation process provided hands-on experience with the setup and configuration of network performance management tools. By implementing this task, I have gained a deeper understanding of the components and workflows involved in network performance management. This experience has further solidified my interest in pursuing a career in NetOps and has equipped me with valuable skills for future professional endeavours in this field.

INTRODUCTION

As part of the technical round for the internship position at Data Edge in Bray, Ireland, I was assigned the task of installing the CA Performance Center. Under the guidance of Himanshu Patel, this task was both absolutely insightful and an incredible learning experience. Despite juggling two jobs and attending college full-time, I dedicated significant effort to mastering this installation process. The challenge not only broadened my technical skills but also deepened my appreciation for performance management tools.

My commitment to this task highlights my determination and ability to manage multiple responsibilities while delivering high-quality results. I am genuinely enthusiastic about the opportunity to join Data Edge and contribute to the work being led by Paul Phelan. The chance to be part of such a team and work, learn and grow with them is a prospect I eagerly look forward to, and I am confident that my dedication and hard work will make me a valuable asset to the company.

I successfully completed the installation on the **DX NetOps Portal, The Data Repository** - Performed a cluster deployment as a more complex learning curve and showcasing my skills for the internship, **Data Aggregator** was seamlessly installed just as well. However, During the installation of Data Collector, My system could not handle the load and unfortunately crashed. This has affected my VM settings and the inter-connectivity as a whole. I was wise enough to ALWAYS take screenshots of my work as a best practice and reporting purposes and thus I could submit this report.

I have genuinely performed the given tasks with immense dedication and have also learnt more about cluster deployment all by myself to show that I have a strong sense of propensity towards learning and the proclivity of applying all of my knowledge at this internship.

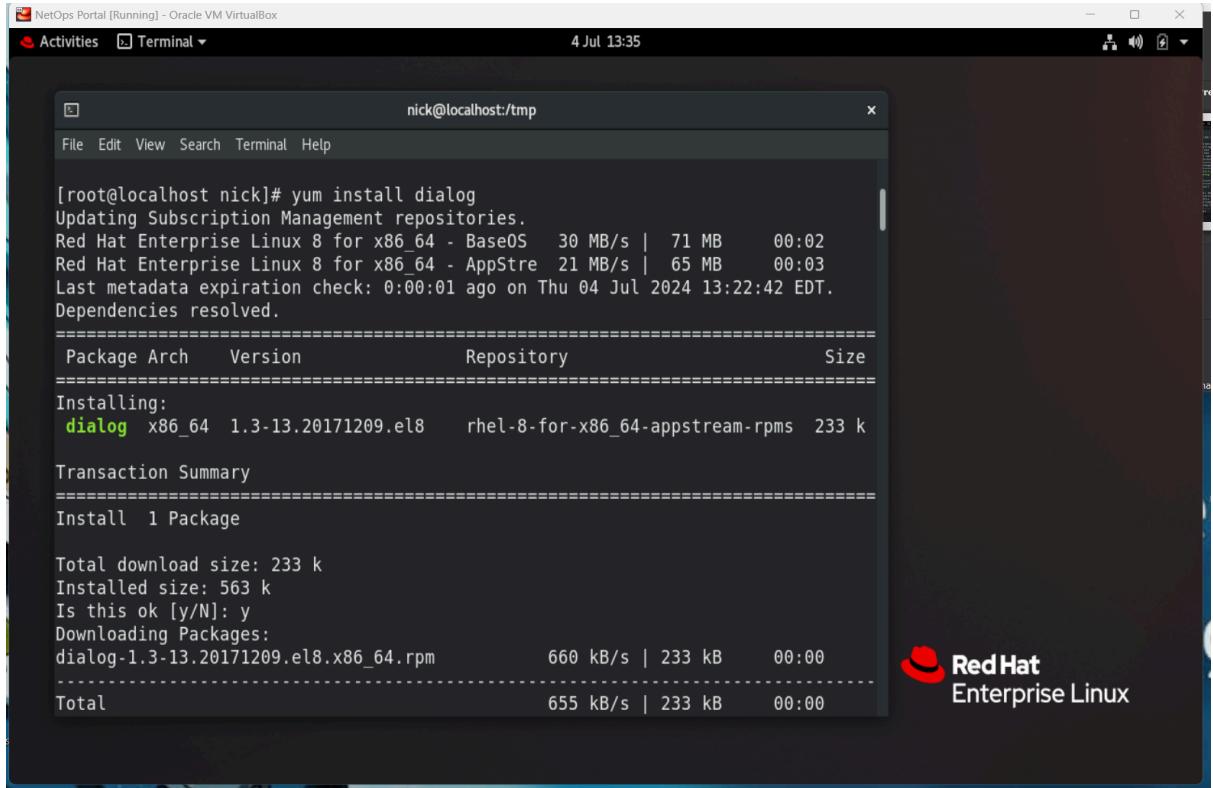
Note - All 4 components installed successfully on 4 RHEL vms.

INSTALLATION

● NetOps Portal Installation:

Firstly, I downloaded the files provided by naomi onto the VMs and unzipped them. Then copied the .bin files of the respective installations into the /tmp directory and Downloaded the necessary prerequisites required for the installation of NetOps Portal.

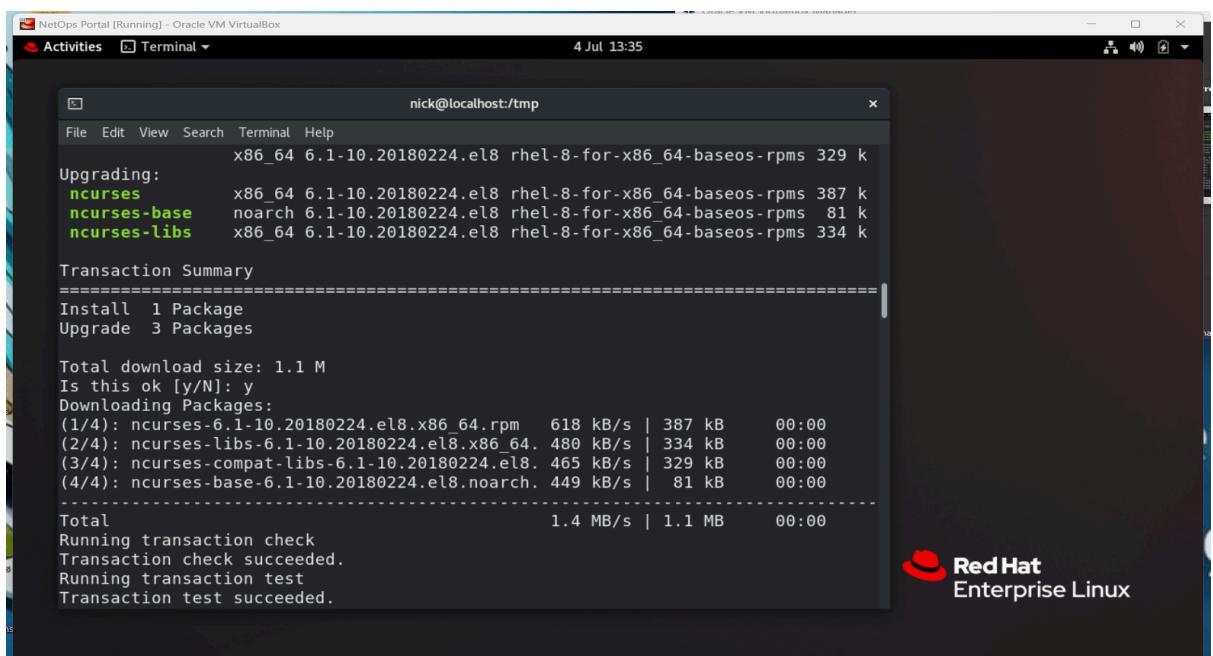
1. Installation of prerequisites.



```
[root@localhost nick]# yum install dialog
Updating Subscription Management repositories.
Red Hat Enterprise Linux 8 for x86_64 - BaseOS   30 MB/s | 71 MB     00:02
Red Hat Enterprise Linux 8 for x86_64 - AppStre 21 MB/s | 65 MB     00:03
Last metadata expiration check: 0:00:01 ago on Thu 04 Jul 2024 13:22:42 EDT.
Dependencies resolved.
=====
 Package Arch      Version           Repository          Size
 =====
 Installing:
 dialog x86_64 1.3-13.20171209.el8    rhel-8-for-x86_64-appstream-rpms 233 k

 Transaction Summary
 =====
 Install 1 Package

 Total download size: 233 k
 Installed size: 563 k
 Is this ok [y/N]: y
 Downloading Packages:
 dialog-1.3-13.20171209.el8.x86_64.rpm       660 kB/s | 233 kB     00:00
 -----
 Total                                         655 kB/s | 233 kB     00:00
```



```
Upgrading:
 ncurses           x86_64 6.1-10.20180224.el8    rhel-8-for-x86_64-baseos-rpms 329 k
 ncurses-base      noarch 6.1-10.20180224.el8    rhel-8-for-x86_64-baseos-rpms 387 k
 ncurses-libs       x86_64 6.1-10.20180224.el8    rhel-8-for-x86_64-baseos-rpms 81 k

 Transaction Summary
 =====
 Install 1 Package
 Upgrade 3 Packages

 Total download size: 1.1 M
 Is this ok [y/N]: y
 Downloading Packages:
 (1/4): ncurses-6.1-10.20180224.el8.x86_64.rpm   618 kB/s | 387 kB     00:00
 (2/4): ncurses-libs-6.1-10.20180224.el8.x86_64. 480 kB/s | 334 kB     00:00
 (3/4): ncurses-compat-libs-6.1-10.20180224.el8. 465 kB/s | 329 kB     00:00
 (4/4): ncurses-base-6.1-10.20180224.el8.noarch. 449 kB/s | 81 kB     00:00
 -----
 Total                                         1.4 MB/s | 1.1 MB     00:00

 Running transaction check
 Transaction check succeeded.
 Running transaction test
 Transaction test succeeded.
```



2. Gave necessary permissions to the .bin file for execution and ran the same.



NetOps Portal [Running] - Oracle VM VirtualBox

Activities Terminal 4 Jul 13:36

```
nick@localhost:tmp
File Edit View Search Terminal Help
[root@localhost nick]# whoami
root
[root@localhost nick]# cd /tmp
[root@localhost tmp]# ls
anaconda.log
CAPerfCenterSetup.bin
dbus.log
dnf.librepo.log
ks-script-2c1lvu7l
ks-script-nbxrql7s
packaging.log
program.log
sensitive-info.log
systemd-private-e81918206dcf411c9c2abf6c2246e902-chronyd.service-utibU6
systemd-private-e81918206dcf411c9c2abf6c2246e902-colord.service-VJKxoh
systemd-private-e81918206dcf411c9c2abf6c2246e902-fwupd.service-cvVFKk
systemd-private-e81918206dcf411c9c2abf6c2246e902-geoclue.service-4EpSB7
systemd-private-e81918206dcf411c9c2abf6c2246e902-ModemManager.service-vcNxHL
systemd-private-e81918206dcf411c9c2abf6c2246e902-rtkit-daemon.service-7TQUWE
tmpaddon
tracker-extract-files.1000
[root@localhost tmp]# chmod +x CAPerfCenterSetup.bin
[root@localhost tmp]# ./CAPerfCenterSetup.bin -i console
Preparing to install
```

3. Installation Process Initiated

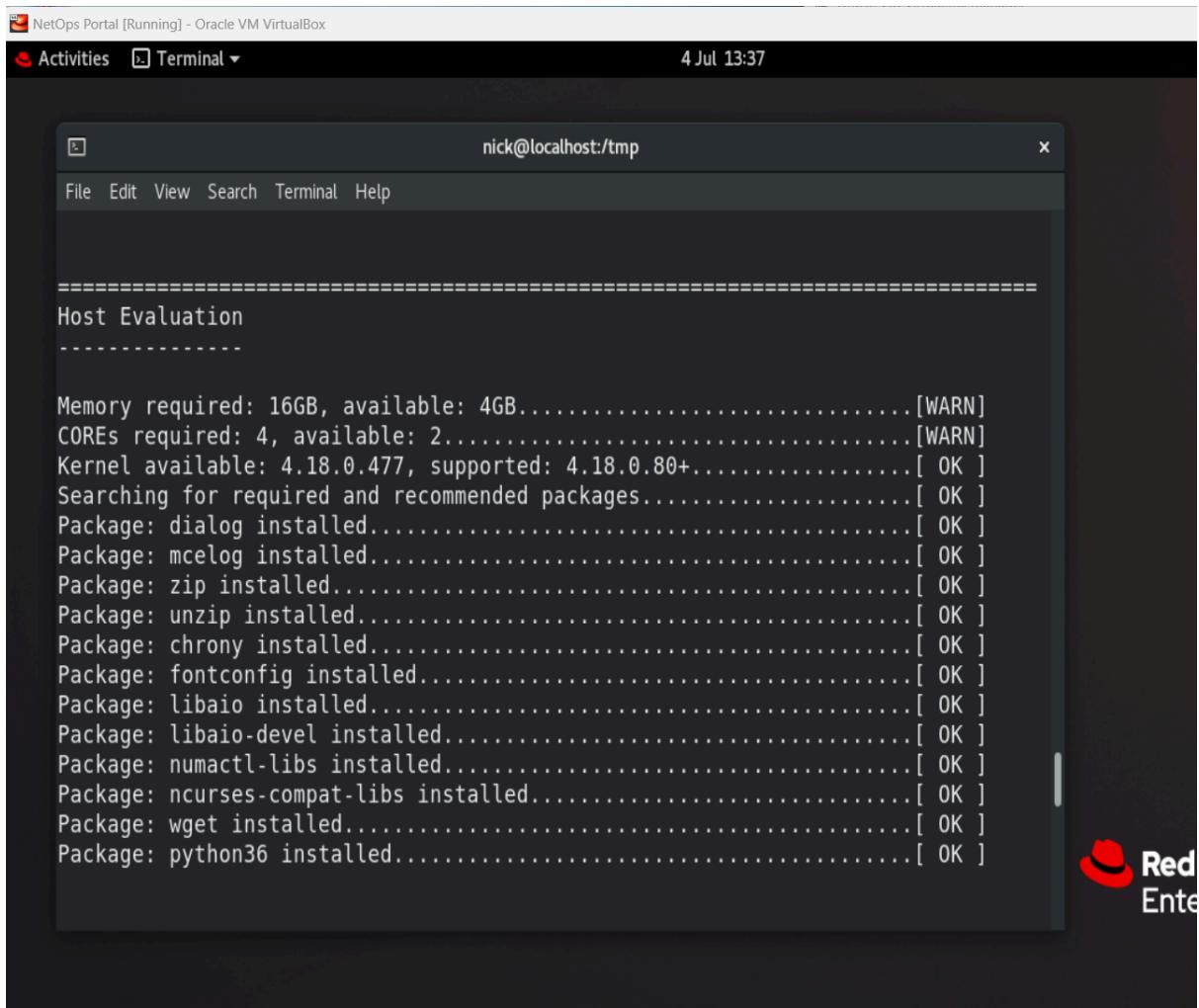


NetOps Portal [Running] - Oracle VM VirtualBox

Activities Terminal 4 Jul 13:36

```
nick@localhost:tmp
File Edit View Search Terminal Help
Picked up JAVA_TOOL_OPTIONS: -Djdk.util.zip.disableZip64ExtraFieldValidation=true
=====
Choose Locale...
-----
->1- English
2- Français
3- 日本語
CHOOSE LOCALE BY NUMBER: 1
=====
Performance Center (created with InstallAnywhere)
-----
Preparing CONSOLE Mode Installation...
=====
Welcome
-----
```

4. Host Evaluation Phase



NetOps Portal [Running] - Oracle VM VirtualBox
Activities Terminal 4 Jul 13:37

nick@localhost:/tmp

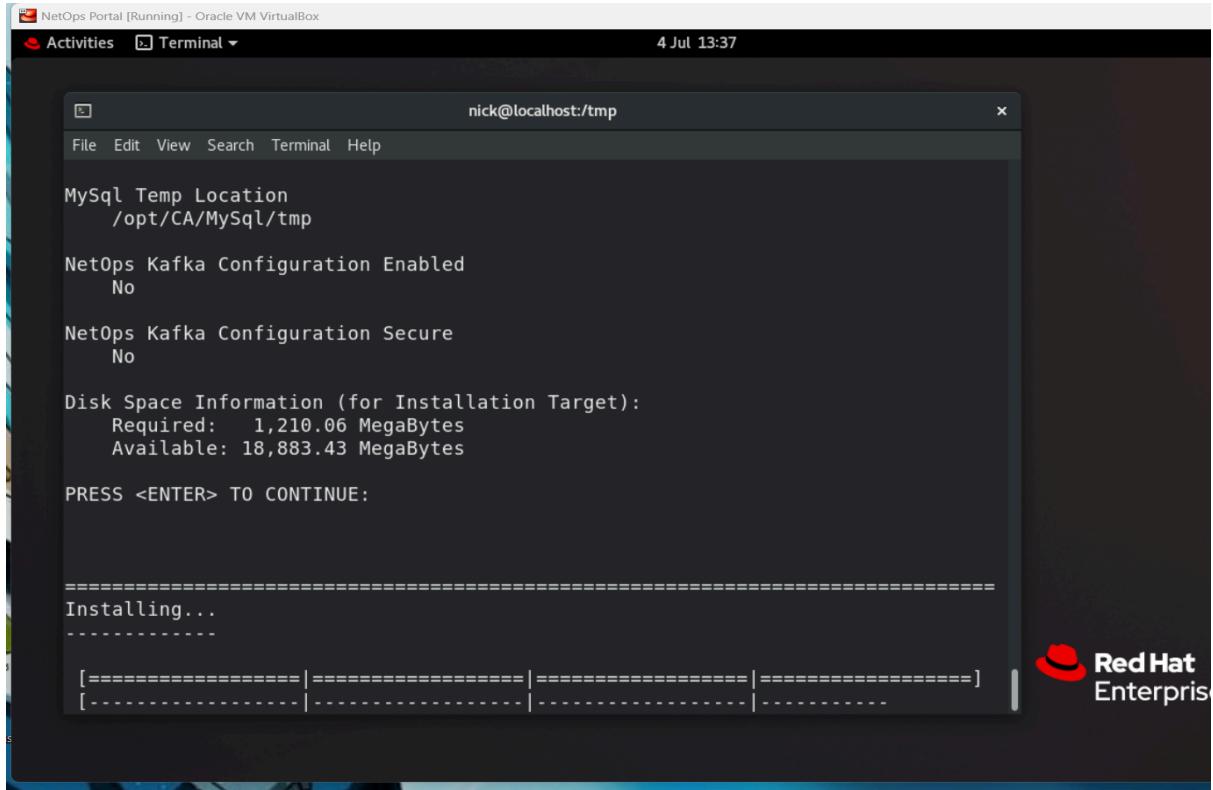
File Edit View Search Terminal Help

```
=====
Host Evaluation
-----

Memory required: 16GB, available: 4GB.....[WARN]
COREs required: 4, available: 2.....[WARN]
Kernel available: 4.18.0.477, supported: 4.18.0.80+.....[ OK ]
Searching for required and recommended packages.....[ OK ]
Package: dialog installed.....[ OK ]
Package: mcelog installed.....[ OK ]
Package: zip installed.....[ OK ]
Package: unzip installed.....[ OK ]
Package: chrony installed.....[ OK ]
Package: fontconfig installed.....[ OK ]
Package: libaio installed.....[ OK ]
Package: libaio-devel installed.....[ OK ]
Package: numactl-libs installed.....[ OK ]
Package: ncurses-compat-libs installed.....[ OK ]
Package: wget installed.....[ OK ]
Package: python36 installed.....[ OK ]
```

Red Hat Enterprise Linux

5. Installation Begins



NetOps Portal [Running] - Oracle VM VirtualBox
Activities Terminal 4 Jul 13:37

nick@localhost:/tmp

File Edit View Search Terminal Help

```
MySQL Temp Location
/opt/CA/MySQL/tmp

NetOps Kafka Configuration Enabled
No

NetOps Kafka Configuration Secure
No

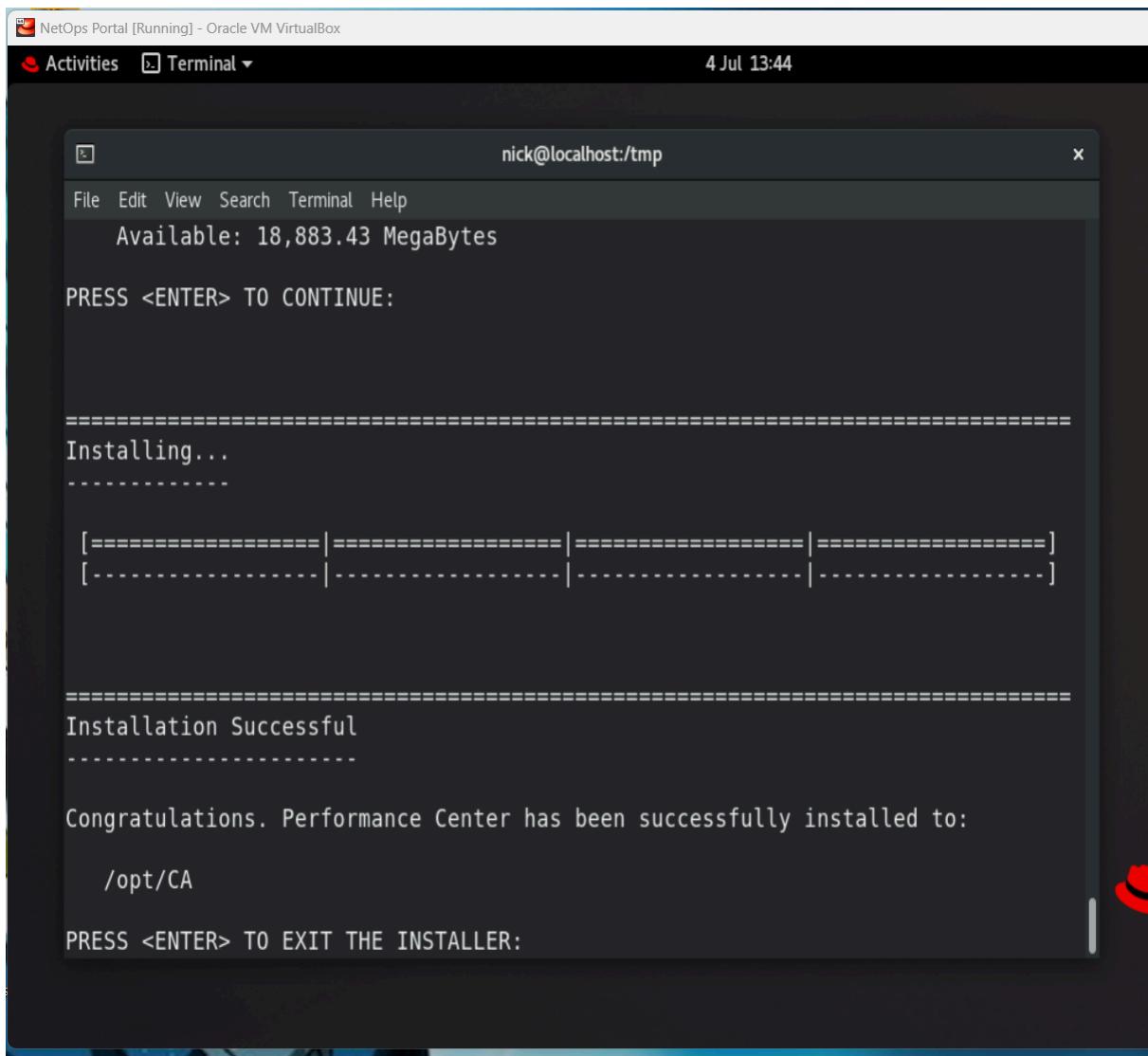
Disk Space Information (for Installation Target):
Required: 1,210.06 MegaBytes
Available: 18,883.43 MegaBytes

PRESS <ENTER> TO CONTINUE:

=====
Installing...
-----
[ ====== | ====== | ====== | ====== ]
```

Red Hat Enterprise Linux

6. Installation Successful



- **Data Repository Cluster Deployment:**

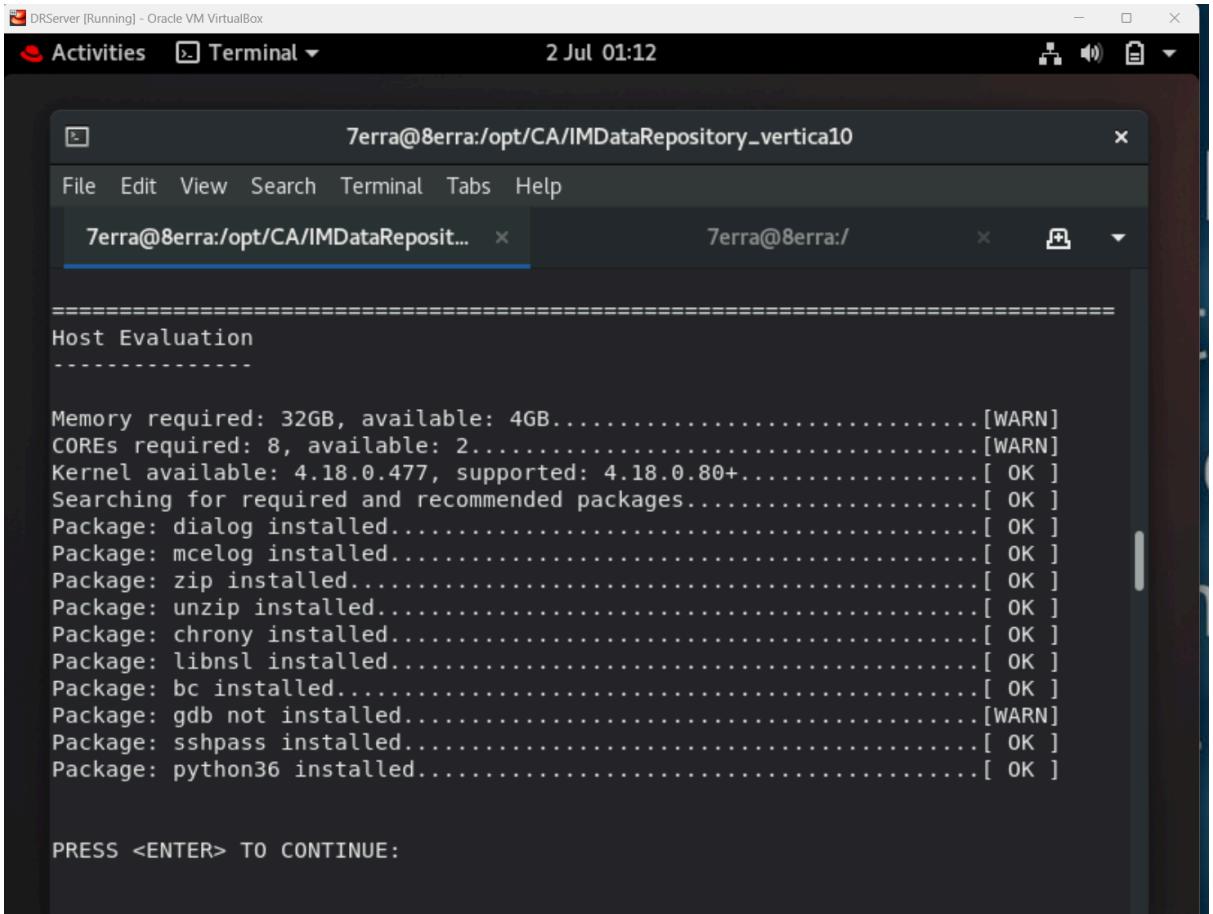
1. Changed IP Address of 3 nodes to be within the same network - Edited the etc/sysconfig/network-scripts/enp0s3 file - Adding IPADDR, GATEWAY, PREFIX, DNS1 and DNS2 information. Set BootProto = none.
Created a hostname for all 3 nodes within the etc folder.

```
[7erra@8erra ~]$ su root
Password:
su: Authentication failure
[7erra@8erra ~]$ su root
Password:
[root@8erra 7erra]# cat /etc/hosts
10.0.2.15 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
192.168.10.11 9erra
192.168.10.12 8erra
192.168.10.13 7erra
[root@8erra 7erra]# cd /tmp
[root@8erra tmp]# ls
236252.tmp
79baf0141906e3e55e4.details
79baf0141906e3e55e4.notes
aliasSync.lck
anaconda.log
c6ab6b1f1906e3f5f6f.details
c6ab6b1f1906e3f5f6f.notes
CAPerfCenterSetup.bin
dbus.log
dnf.librepo.log
hsperfdata_7erra
```

2. Copied installDR.bin in /tmp folder

```
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository_vertica10 7erra@8erra:/
hsperfdata_root
ia_remove.sh0265.tmp
ia_remove.sh1567.tmp
ia_remove.sh8005.tmp
install.dir.8771
installDR.bin
jetty-0_0_0_8181-pc_pc-any-10770892311547927160
jetty-0_0_0_8181-pc_pc-any-10947770157537511032
jetty-0_0_0_8181-pc_pc-any-13844683559095077772
jetty-0_0_0_8181-pc_pc-any-17702531801435016766
jetty-0_0_0_8181-pc_pc-any-18157560234133338643
jetty-0_0_0_8181-pc_pc-any-18248907403877665377
jetty-0_0_0_8181-pc_pc-any-1863619085747456318
jetty-0_0_0_8281-EventManager_EventManager-any-13444643038614229014
jetty-0_0_0_8281-EventManager_EventManager-any-15461849992589727745
jetty-0_0_0_8281-EventManager_EventManager-any-16347760006768377314
jetty-0_0_0_8281-EventManager_EventManager-any-17138478544868774404
jetty-0_0_0_8281-EventManager_EventManager-any-17466307481314646913
jetty-0_0_0_8281-EventManager_EventManager-any-17896211897945346942
jetty-0_0_0_8281-EventManager_EventManager-any-4674581087267732076
jetty-0_0_0_8381-sso_sso-any-1527966445481483525
jetty-0_0_0_8381-sso_sso-any-15319931860646828216
jetty-0_0_0_8381-sso_sso-any-1796740313835263065
jetty-0_0_0_8381-sso_sso-any-3983913340113373936
```

3. Started the installation by ./installDR.bin and agreed to the contract as in previous netops installation.
4. Host evaluation initiated.



The screenshot shows a terminal window titled "7erra@8erra:/opt/CA/IMDataRepository_vertical10". The window displays the output of a host evaluation script. The output includes various system checks with their status (WARN or OK). At the bottom, it prompts the user to press enter to continue.

```

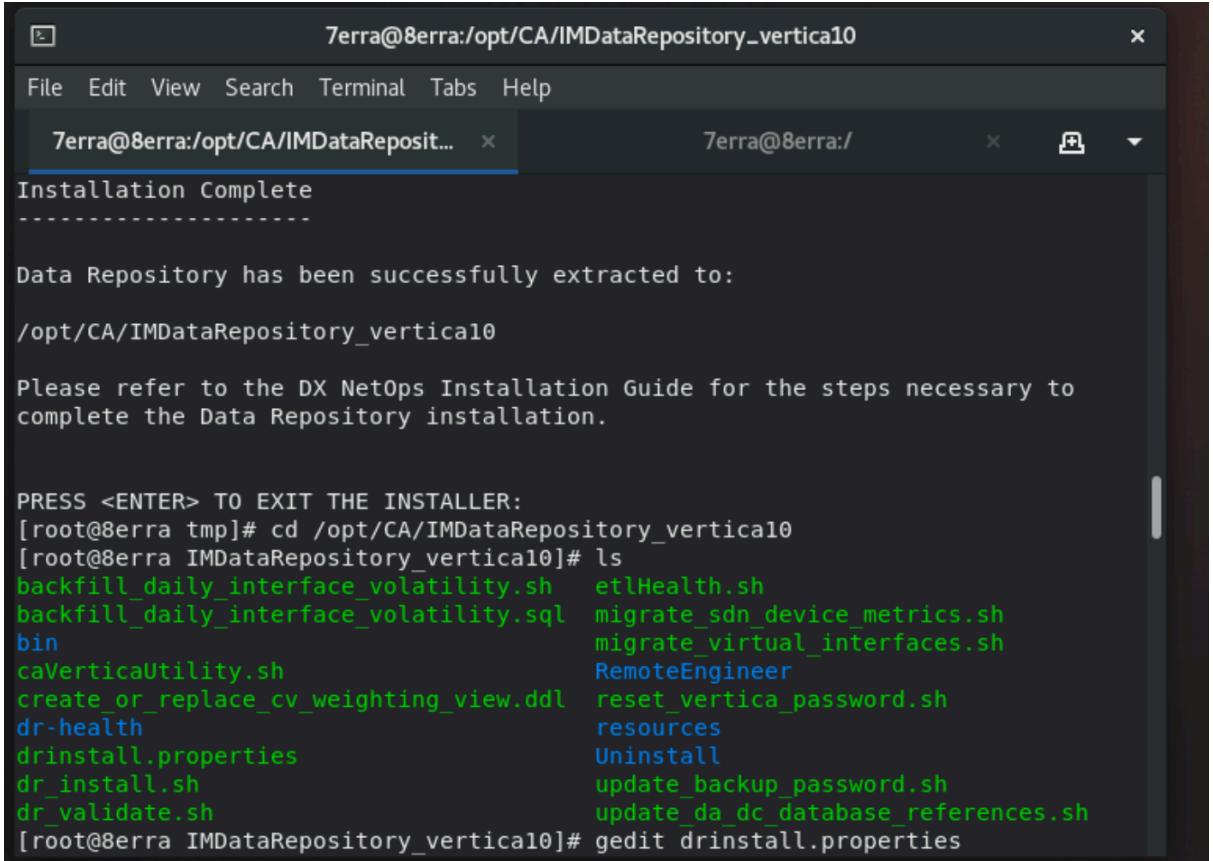
=====
Host Evaluation
=====

Memory required: 32GB, available: 4GB.....[WARN]
COREs required: 8, available: 2.....[WARN]
Kernel available: 4.18.0.477, supported: 4.18.0.80+.....[OK]
Searching for required and recommended packages.....[OK]
Package: dialog installed.....[OK]
Package: mcelog installed.....[OK]
Package: zip installed.....[OK]
Package: unzip installed.....[OK]
Package: chrony installed.....[OK]
Package: libns1 installed.....[OK]
Package: bc installed.....[OK]
Package: gdb not installed.....[WARN]
Package: sshpass installed.....[OK]
Package: python36 installed.....[OK]

PRESS <ENTER> TO CONTINUE:

```

5. DR extraction successful - /opt/CA/IMDataRepository_vertical10



The screenshot shows a terminal window titled "7erra@8erra:/opt/CA/IMDataRepository_vertical10". The window displays the output of a command that has successfully extracted the Data Repository to the specified directory. It provides instructions for the next steps and lists the files in the repository directory.

```

=====
Installation Complete
=====

Data Repository has been successfully extracted to:
/opt/CA/IMDataRepository_vertical10

Please refer to the DX NetOps Installation Guide for the steps necessary to
complete the Data Repository installation.

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@8erra tmp]# cd /opt/CA/IMDataRepository_vertical10
[root@8erra IMDataRepository_vertical10]# ls
backfill_daily_interface_volatility.sh    etlHealth.sh
backfill_daily_interface_volatility.sql   migrate_sdn_device_metrics.sh
bin                                         migrate_virtual_interfaces.sh
caVerticalUtility.sh                      RemoteEngineer
create_or_replace_cv_weighting_view.ddl   reset_vertica_password.sh
dr-health                                  resources
drinstall.properties                         Uninstall
dr_install.sh                             update_backup_password.sh
dr_validate.sh                            update_da_dc_database_references.sh
[root@8erra IMDataRepository_vertical10]# gedit drinstall.properties

```

6. ./dr_validate.sh -p drinstall.properties command run. Minor changes to the properties file were made like adding the ssh_password for non prompt based installation. Edited /export/dradmin to /home/dradmin for creation of dradmin user in the home directory of the RHEL VM.

Compliance enforcement on all 3 nodes was successful.

```
7erra@8erra:/opt/CA/IMDataRepository_vertical10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... × 7erra@8erra:/ × ⌂ ▾

(gedit:8061): dconf-WARNING **: 00:55:12.259: failed to commit changes to dconf: The connection is closed
[root@8erra IMDataRepository_vertical10]# ./dr_validate.sh -p drinstall.properties
Log File: logs/install_log_validate_07-02-2024_00-55-32.log
Checking for existing publickey setup for root...
Using properties SSH password for root

=====
Beginning Data Repository Prerequisite Compliance Enforcement on host 7erra
=====
Red Hat Enterprise Linux Major Release: 8 ..... [ OK ]
Creating data directory /data on 7erra... ..... [ OK ]
Creating catalog directory /catalog on 7erra... ..... [ OK ]
Processor Type: Intel ..... [ OK ]
Checking to see if required 'dialog' package is available. ..... [ OK ]
CPU frequency scaling not available on this system ..... [ OK ]
DR Administrative User dradmin does not exist. It will be created during vertical
installation. [ OK ]
Maximum number of file handles >= 65536 ..... [ OK ]
Detected incorrect maximum number of memory maps ..... [ WARN ]
Set maximum number of memory maps to Total Mem(KB)/16 ..... [ OK ]
Detected incorrect page reclaim threshold value ..... [ WARN ]
Set page reclaim threshold value to 7749 ..... [ OK ]
```

```
7erra@8erra:/opt/CA/IMDataRepository_vertical10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... × 7erra@8erra:/ × ⌂ ▾

Ensuring rc-local is executable. ..... [ OK ]
Ensuring rc-local service is enabled. ..... [ WARN ]

Data Repository Prerequisite Compliance Status on host 7erra -- PASSED
=====
Beginning Data Repository Prerequisite Compliance Enforcement on host 8erra
=====
Red Hat Enterprise Linux Major Release: 8 ..... [ OK ]
Creating data directory /data on 8erra... ..... [ OK ]
Creating catalog directory /catalog on 8erra... ..... [ OK ]
Processor Type: Intel ..... [ OK ]
Checking to see if required 'dialog' package is available. ..... [ OK ]
CPU frequency scaling not available on this system ..... [ OK ]
DR Administrative User dradmin does not exist. It will be created during vertical
installation. [ OK ]
Maximum number of file handles >= 65536 ..... [ OK ]
Detected incorrect maximum number of memory maps ..... [ WARN ]
Set maximum number of memory maps to Total Mem(KB)/16 ..... [ OK ]
Detected incorrect page reclaim threshold value ..... [ WARN ]
Set page reclaim threshold value to 7749 ..... [ OK ]
Disabling necessary firewall settings. ..... [ OK ]
Enabling chronyrd. ..... [ OK ]
Starting chronyrd. ..... [ OK ]
Ensuring tuned is off for RHEL7+... ..... [ OK ]
```

```
7erra@8erra:/opt/CA/IMDataRepository_Vertica10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... x 7erra@8erra:/ x
Data Repository Prerequisite Compliance Status on host 8erra -- PASSED
=====
Beginning Data Repository Prerequisite Compliance Enforcement on host 8erra
=====
Red Hat Enterprise Linux Major Release: 8 ..... [ OK ]
Creating data directory /data on 8erra... ..... [ OK ]
Creating catalog directory /catalog on 8erra... ..... [ OK ]
Processor Type: Intel ..... [ OK ]
Checking to see if required 'dialog' package is available. ..... [ OK ]
CPU frequency scaling not available on this system ..... [ OK ]
DR Administrative User dradmin does not exist. It will be created during vertica
installation. [ OK ]
Maximum number of file handles >= 65536 ..... [ OK ]
Detected incorrect maximum number of memory maps ..... [ WARN ]
Set maximum number of memory maps to Total Mem(KB)/16 ..... [ OK ]
Detected incorrect page reclaim threshold value ..... [ WARN ]
Set page reclaim threshold value to 7749 ..... [ OK ]
Disabling necessary firewall settings. ..... [ OK ]
Enabling chronynd. ..... [ OK ]
Starting chronynd. ..... [ OK ]
Ensuring tuned is off for RHEL7+...
Detected incorrect readahead parameter for /dev/sda ..... [ WARN ]
Set runtime value for readahead parameter on /dev/sda to 2048 ..... [ OK ]
```

7. Validation script initiated

```
7erra@8erra:/opt/CA/IMDataRepository_Vertica10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... x 7erra@8erra:/ x
Data Repository Prerequisite Compliance Status on host 8erra -- PASSED
Fresh install of Vertica is being performed - skipping database connectivity testi
ng.
=====
Script finished - ./dr_validate.sh
=====
[root@8erra IMDataRepository_Vertica10]# ./dr_install.sh -p drinstall.properties
Log File: logs/install_log_install_07-02-2024_00-59-04.log
Checking for existing publickey setup for root...
Using properties SSH password for root

Red Hat Enterprise Linux Major Release: 8 ..... [ OK ]
=====
Installing Data Repository (Vertica)
=====
./resources/vertica-10.1.1-20.x86_64.RHEL6.rpm located. ..... [ OK ]
./resources/vlicense.dat located. ..... [ OK ]
Checking to see if Vertica Installation Package already exists...
Performing a new installation of Vertica...
warning: ./resources/vertica-10.1.1-20.x86_64.RHEL6.rpm: Header V3 RSA/SHA256 Sign
ature, key ID f54b82a0: NOKEY
Verifying... #####
Preparing... #####
Updating / installing...
```

8. Hostname mapping phase successful

```
7erra@8erra:/opt/CA/IMDataRepository_vertica10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... × 7erra@8erra:/ × + ▾

View the latest Vertica documentation at https://www.vertica.com/documentation/vertica/
Vertica installation package install .....[ OK ]
=====
Invoking install_vertica...
=====
Vertica Analytic Database 10.1.1-20 Installation Tool

>> Validating options...

Mapping hostnames in --hosts (-s) to addresses...
    7erra          => 192.168.10.13
    8erra          => 192.168.10.12
    9erra          => 192.168.10.11

>> Starting installation tasks.
>> Getting system information for cluster (this may take a while)...

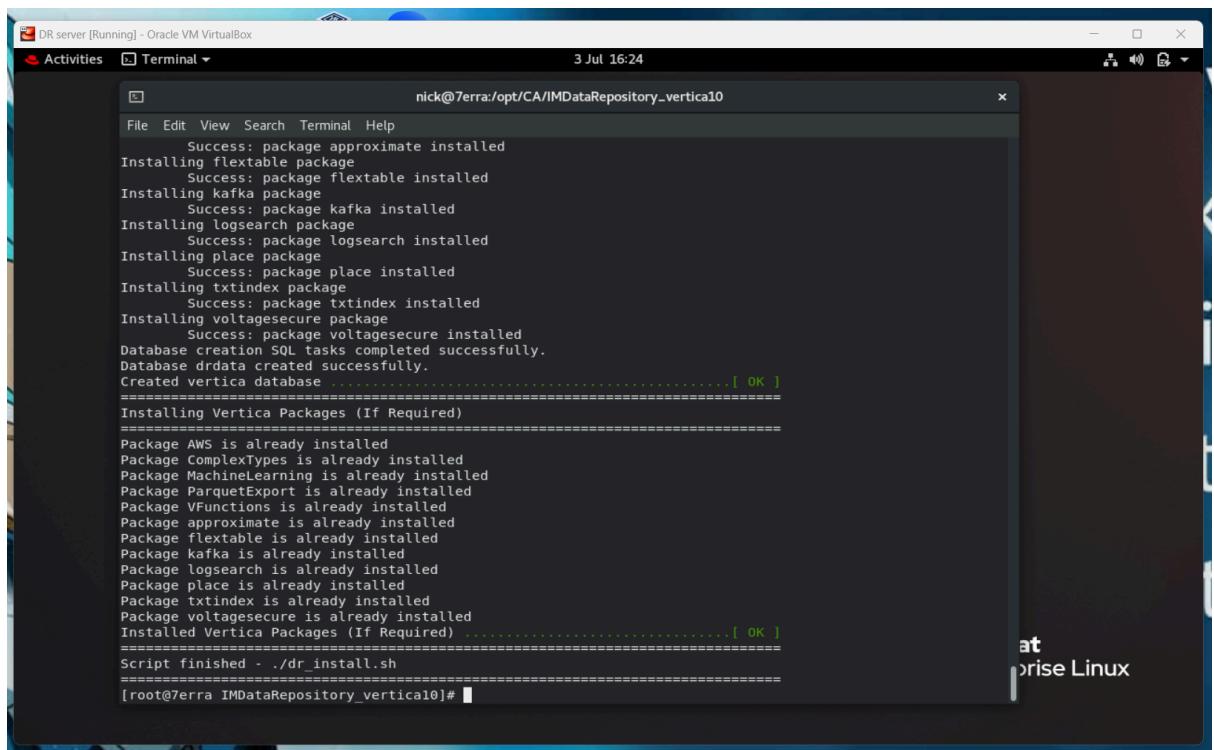
Default shell on nodes:
192.168.10.13 /bin/bash
```

9. Vertica Installation OK and initiated vertica database creation

```
7erra@8erra:/opt/CA/IMDataRepository_vertica10
File Edit View Search Terminal Tabs Help
7erra@8erra:/opt/CA/IMDataRepository... × 7erra@8erra:/ × + ▾

Vertica installation
7erra@8erra:/opt/CA/IMDataRepository_vertica10 .....[ OK ]
=====
Create Vertica Database
=====
Creating Vertica database: drdata on host(s): 7erra,8erra,9erra using data directory: /data and catalog directory: /catalog
Distributing changes to cluster.
    Creating database drdata
    Starting bootstrap node v_drdata_node0002 (192.168.10.12)
    Starting nodes:
        v_drdata_node0002 (192.168.10.12)
    Starting Vertica on all nodes. Please wait, databases with a large catalog may take a while to initialize.
        Node Status: v_drdata_node0002: (DOWN)
        Node Status: v_drdata_node0002: (DOWN)
        Node Status: v_drdata_node0002: (DOWN)
        Node Status: v_drdata_node0002: (UP)
    Creating database nodes
    Creating node v_drdata_node0001 (host 192.168.10.13)
    Creating node v_drdata_node0003 (host 192.168.10.11)
    Generating new configuration information
    Starting all nodes
Start hosts = ['192.168.10.13', '192.168.10.11']
Starting nodes:
```

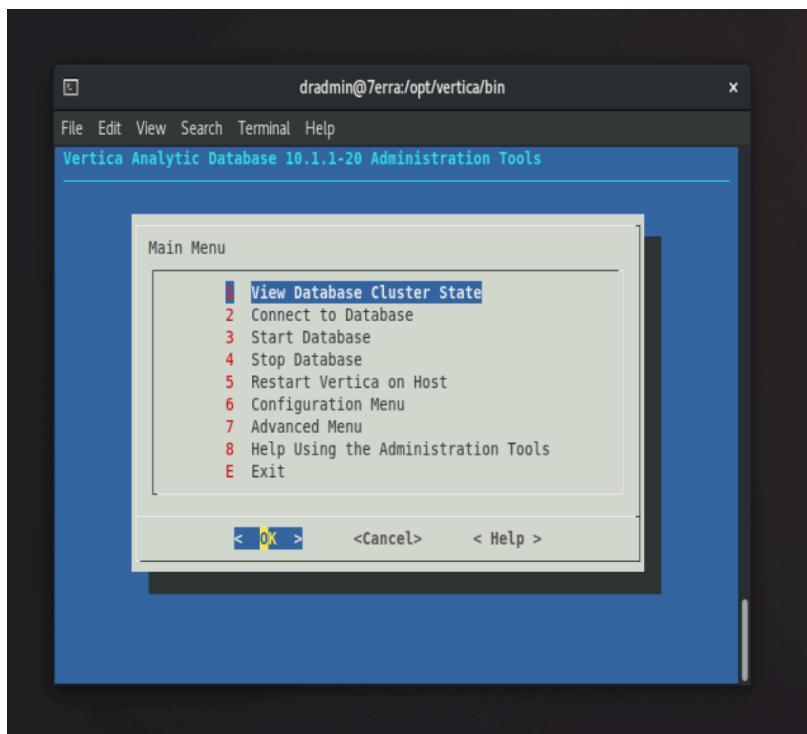
10. ./dr_install script ran and vertica database created successfully

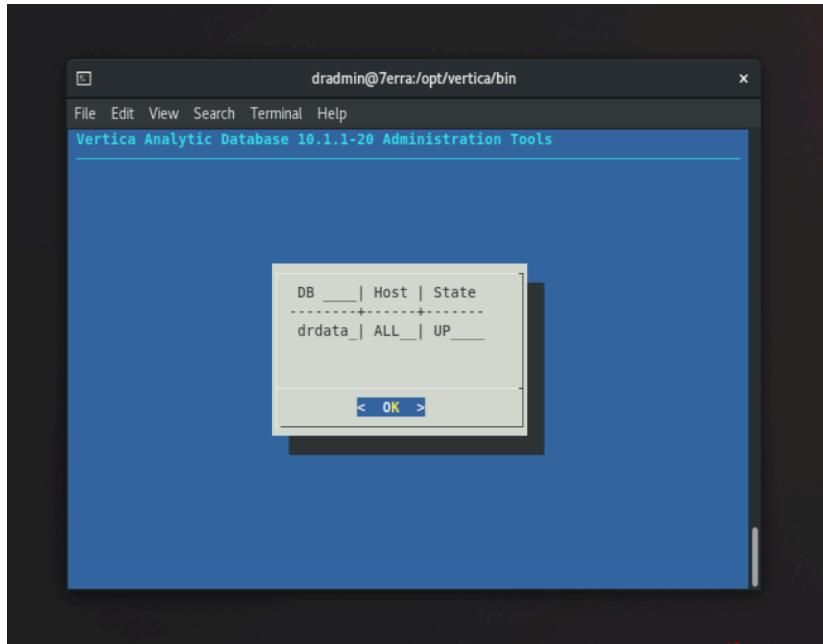


```
nick@7erra:/opt/CA/IMDataRepository_vertica10
File Edit View Search Terminal Help
Success: package approximate installed
Installing flextable package
Success: package flextable installed
Installing kafka package
Success: package kafka installed
Installing logsearch package
Success: package logsearch installed
Installing place package
Success: package place installed
Installing txtindex package
Success: package txtindex installed
Installing voltagesecure package
Success: package voltagesecure installed
Database creation SQL tasks completed successfully.
Database drdata created successfully.
Created vertica database .....[ OK ]
=====
Installing Vertica Packages (If Required)
=====
Package AWS is already installed
Package ComplexTypes is already installed
Package MachineLearning is already installed
Package ParquetExport is already installed
Package VFunctions is already installed
Package approximate is already installed
Package flextable is already installed
Package kafka is already installed
Package logsearch is already installed
Package place is already installed
Package txtindex is already installed
Package voltagesecure is already installed
Installed Vertica Packages (If Required) .....[ OK ]
=====
Script finished - ./dr_install.sh
=====
[root@7erra IMDataRepository_vertica10]#
```

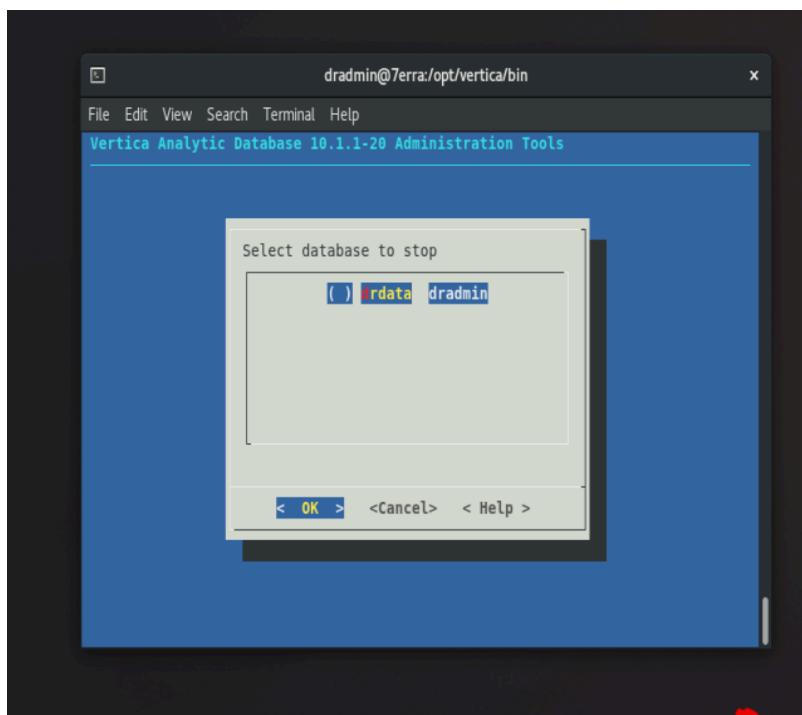
11. Proof of database installation successful.

Logged into dradmin user and ran admintools for DB status



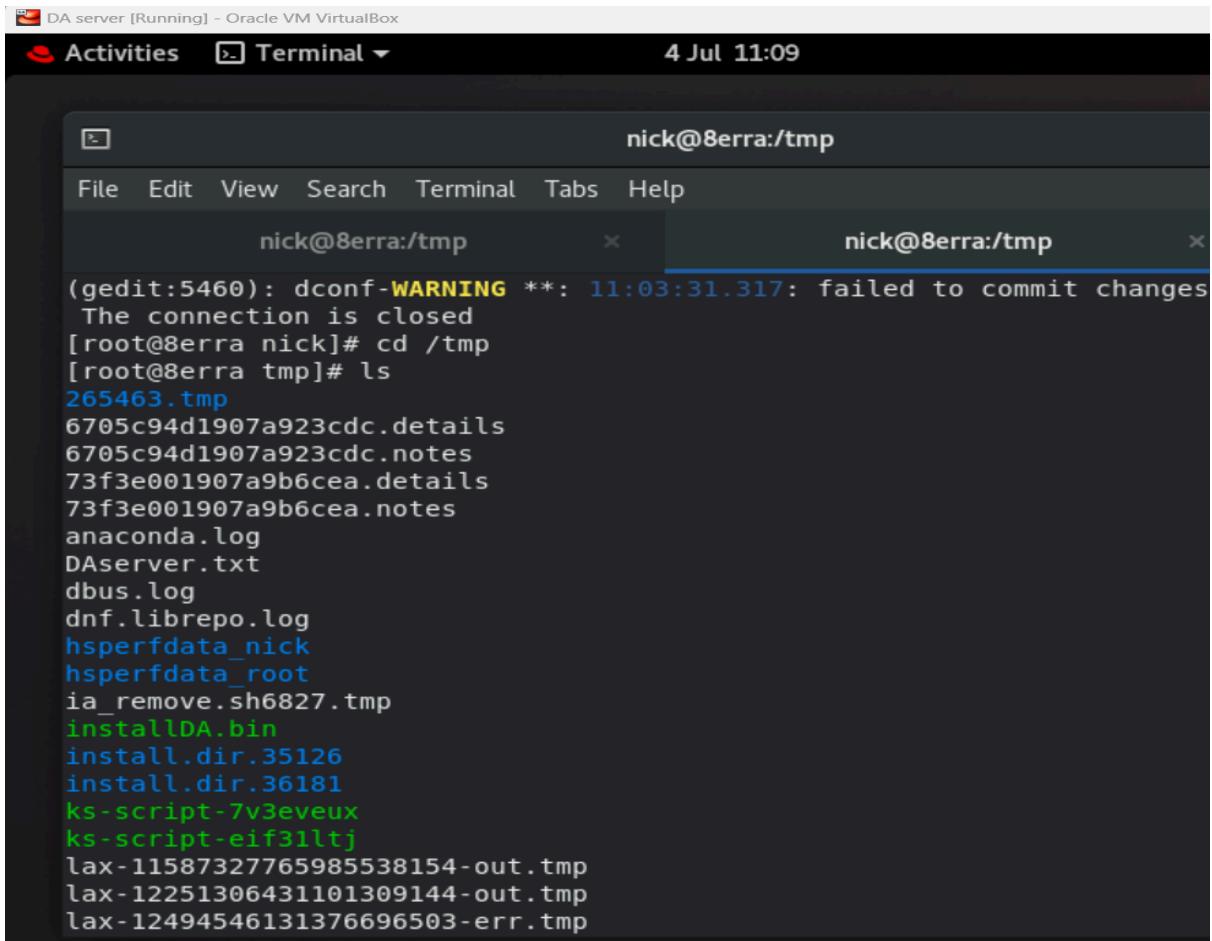


The DB is in running state with UP status in the image above, option to stop the DB in the image below.



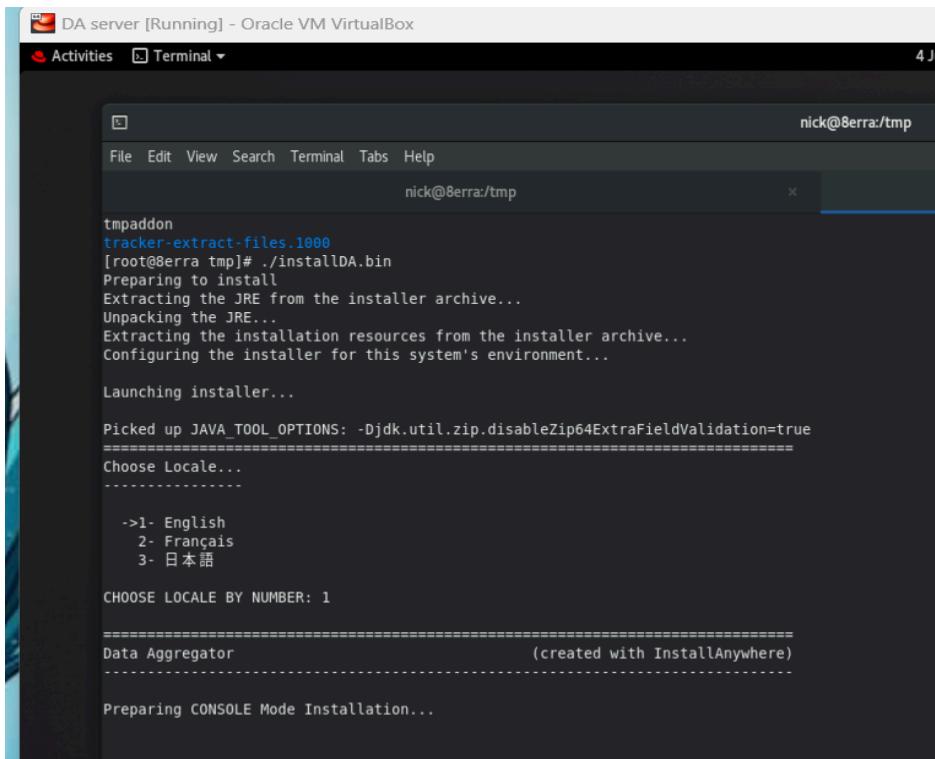
- **Data Aggregator:**

1. Copied installDA.bin in the /tmp folder



```
(gedit:5460): dconf-WARNING **: 11:03:31.317: failed to commit changes  
The connection is closed  
[root@8erra nick]# cd /tmp  
[root@8erra tmp]# ls  
265463.tmp  
6705c94d1907a923cdc.details  
6705c94d1907a923cdc.notes  
73f3e001907a9b6cea.details  
73f3e001907a9b6cea.notes  
anaconda.log  
DAserver.txt  
dbus.log  
dnf.librepo.log  
hsperfdata_nick  
hsperfdata_root  
ia_remove.sh6827.tmp  
installDA.bin  
install.dir.35126  
install.dir.36181  
ks-script-7v3eveux  
ks-script-eif31ltj  
lax-11587327765985538154-out.tmp  
lax-12251306431101309144-out.tmp  
lax-12494546131376696503-err.tmp
```

2. ./installDA.bin command running



```
tmpaddon  
tracker-extract-files.1000  
[root@8erra tmp]# ./installDA.bin  
Preparing to install  
Extracting the JRE from the installer archive...  
Unpacking the JRE...  
Extracting the installation resources from the installer archive...  
Configuring the installer for this system's environment...  
  
Launching installer...  
  
Picked up JAVA_TOOL_OPTIONS: -Djdk.util.zip.disableZip64ExtraFieldValidation=true  
=====  
Choose Locale...  
-----  
  
    ->1- English  
        2- Français  
        3- 日本語  
  
CHOOSE LOCALE BY NUMBER: 1  
  
=====  
Data Aggregator                               (created with InstallAnywhere)  
-----  
  
Preparing CONSOLE Mode Installation...
```

3. Host Evaluation Initiated

```
DA server [Running] - Oracle VM VirtualBox
Activities Terminal ▾ 4 Jul 11:12

nick@8erra:/tmp

File Edit View Search Terminal Tabs Help
nick@8erra:/tmp x

=====
Host Evaluation
-----

Memory required: 12GB, available: 4GB.....[WARN]
COREs required: 4, available: 2.....[WARN]
Kernel available: 4.18.0.477, supported: 4.18.0.80+[ OK ]
Searching for required and recommended packages.....[ OK ]
Package: dialog installed.....[ OK ]
Package: mcelog installed.....[ OK ]
Package: zip installed.....[ OK ]
Package: unzip installed.....[ OK ]
Package: chrony installed.....[ OK ]
Package: python36 installed.....[ OK ]

PRESS <ENTER> TO CONTINUE:

=====
Pre-Install Checking
-----

Before continuing the upgrade of Data Aggregator, confirm that NetOps Portal
has been upgraded to 23.3.8 or higher. If NetOps Portal is not upgraded,
Portal will not allow Data Aggregator to synchronize until Portal is upgraded
to at least 23.3.8.
Do you want to continue?

->1- No
2- Yes

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: 2

=====
Pre-Install Checking
-----

The current Data Aggregator system is already using the same version you are
about to install.
Do you want to continue?

->1- Yes
```

DA server [Running] - Oracle VM VirtualBox

Activities Terminal 4

```
nick@8erra:/tmp
```

File Edit View Search Terminal Tabs Help

nick@8erra:/tmp X

```
=====
Pre-Installation Summary
=====

Please Review the Following Before Continuing:

Product Name:
    Data Aggregator

Install Folder:
    /opt/IMDataAggregator

User Name (Linux Only)
    root

Maximum Data Aggregator Memory
    2142M

Maximum ActiveMQ Memory
    714M

Database Server Hostname/IP
    7erra

Database Name
    drdata

Database Server Port
    5433

Database Username
    dauser

Database Admin Username
    dradmin

HTTP Port
    8581

HTTPS Port

SSH Port for Apache Karaf Shell
    8501

Data Aggregator Data Home
    /opt/IMDataAggregator/data

Disk Space Information (for Installation Target):
```

4. DA Installation Successful

```
Disk Space Information (for Installation Target):
Required: 1,467.98 MegaBytes
Available: 9,527.3 MegaBytes

PRESS <ENTER> TO CONTINUE:

=====
Installing...
-----
[=====|=====|=====|=====]
[.....|.....|.....|.....]

=====
Installation Complete
-----
Congratulations. Data Aggregator has been successfully installed to:
/opt/IMDataAggregator

Note that Data Aggregator can take a few minutes to become available.

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@8erra tmp]#
```

Logs review with 0 errors

```
DA Server new [Running] - Oracle VM VirtualBox
Activities *Data_Aggregator_Install... 8 Jul 13:30
Open ▾ Data_Aggregator_Install_07_08_2024_13_18_31.log
/opt/IMDataAggregator/Logs
Save ▾ x

Data_Aggregator_Install_07_08_2024_13_18_31.log
-----  
-fileOverwrite_/opt/IMDataAggregator/activemq-bin-bin.tar.gz=Yes  
-fileOverwrite_/opt/IMDataAggregator/jmx.password=Yes  
-fileOverwrite_/opt/IMDataAggregator/jetty-realm.properties=Yes  
-fileOverwrite_/opt/IMDataAggregator/activemq.xml=Yes  
-fileOverwrite_/opt/IMDataAggregator/netops-common.care.tgz=Yes  
-fileOverwrite_/opt/IMDataAggregator/re.sh=Yes  
-fileOverwrite_/opt/IMDataAggregator/installCARE.sh=Yes  
-fileOverwrite_/opt/IMDataAggregator/NOTICE.txt=Yes  
-fileOverwrite_/opt/IMDataAggregator/karafd.sh=Yes  
-fileOverwrite_/opt/IMDataAggregator/activemq.sh=Yes  
-fileOverwrite_/opt/IMDataAggregator/installers/netops-da-graphql-installer.txe=Yes  
  
Summary  
-----  
Installation: Successful.  
4677 Successes  
0 Warnings  
0 NonFatalErrors  
0 FatalErrors  
  
Action Notes:  
A  
None  
  
Install Log Detail:
```

Plain Text ▾ Tab Width: 8 ▾ Ln 1, Col 1 ▾ INS

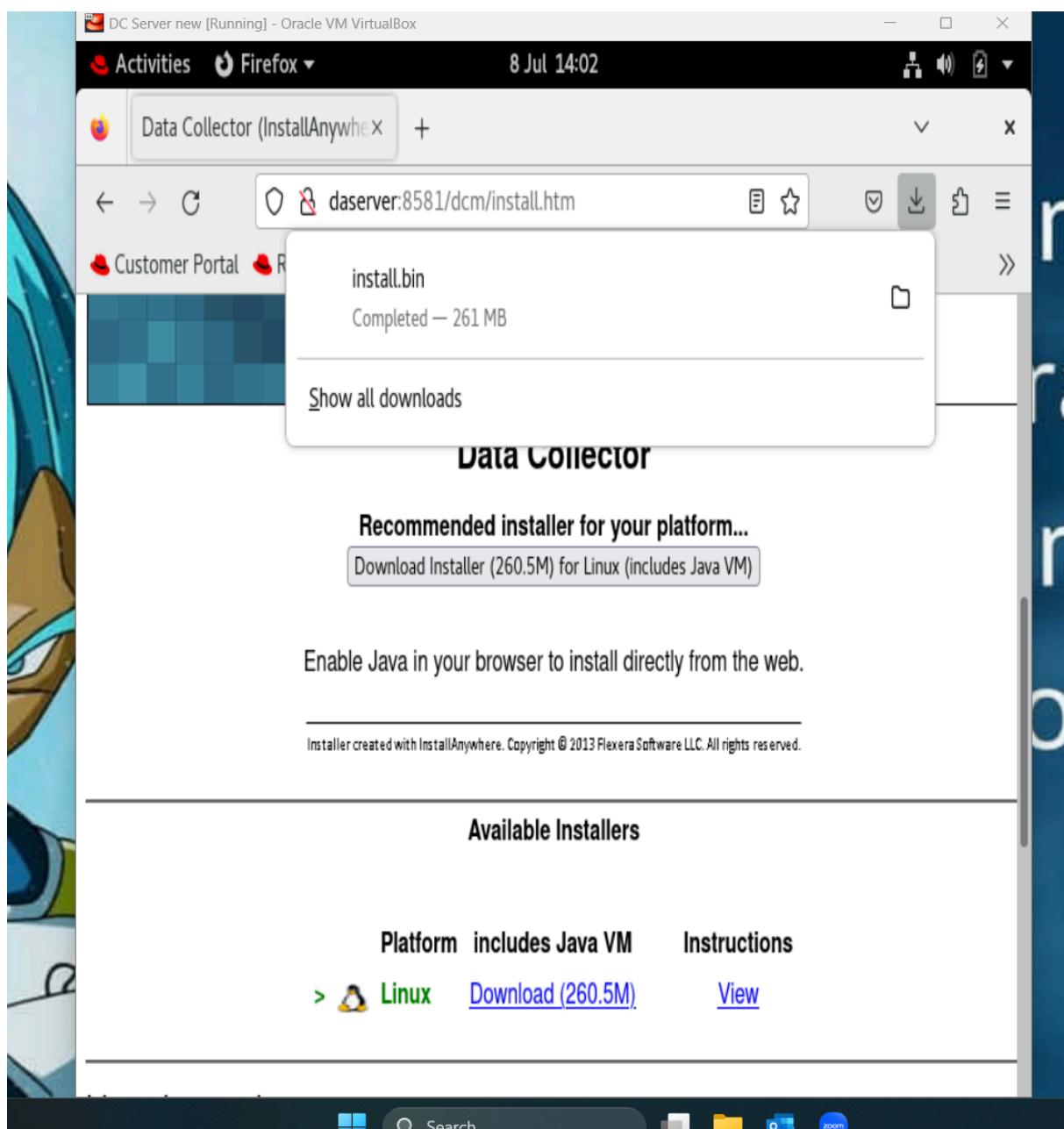
● Data Collector:

Some important factors are missing within the broadcom installation process guide.

1. For all the VMs playing the role of a server, every single ip and hostname should be edited within the /etc/hosts folder of DR, DA and DC servers for internal communication. After reading the vertica blog, I realised alot of people were facing this same issue and when I tried running the installation after editing the /etc/hosts file. My installations for all components went in seamlessly.
2. Make sure that the firewall daemon is running. Allow access to port 8581 using firewall-cmd –add-port=8581/tcp

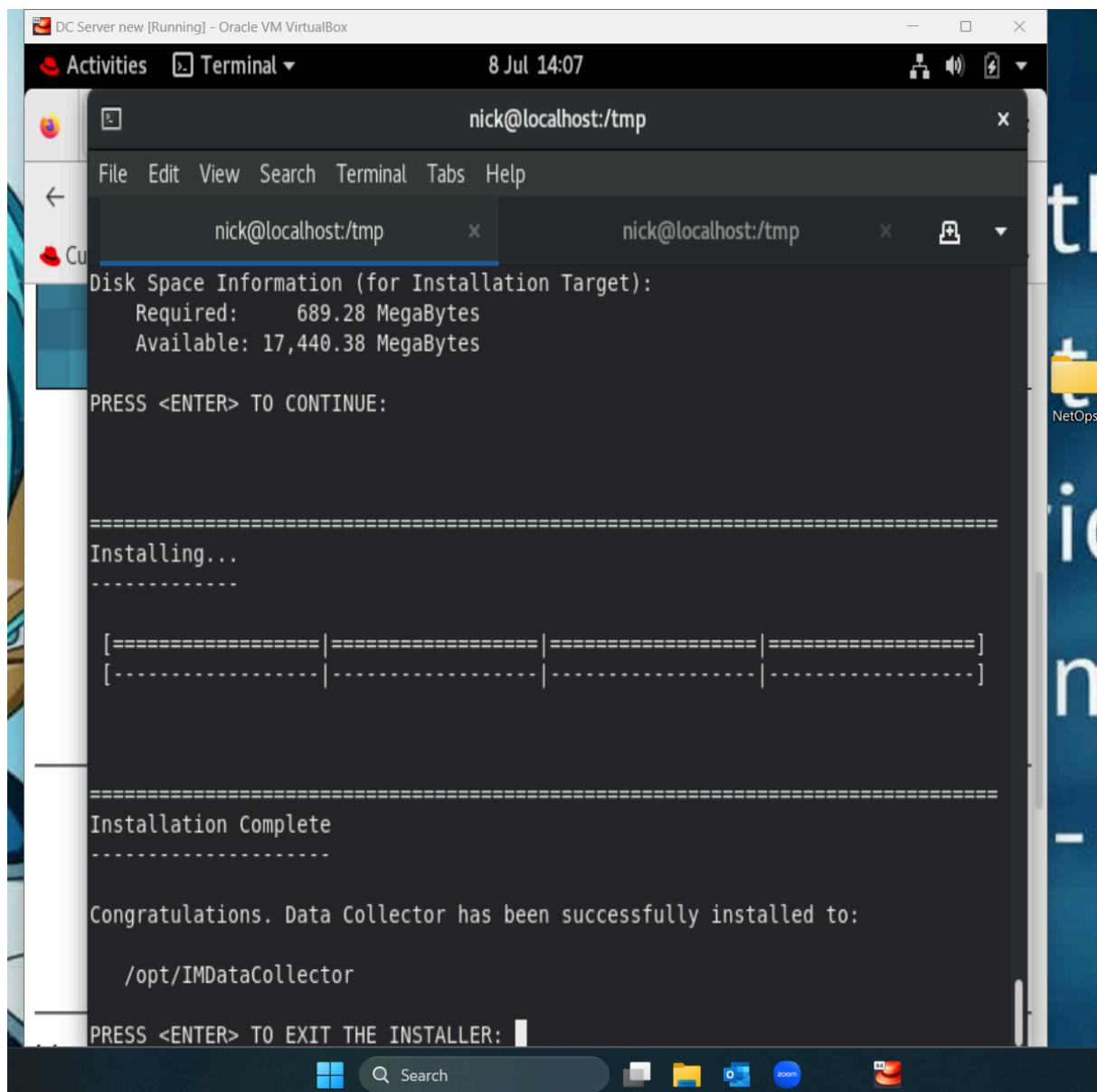
Firewall-cmd –reload

DC server connects to DA server on port 8581. We see a webpage with a download link for install.bin (DC installation file)

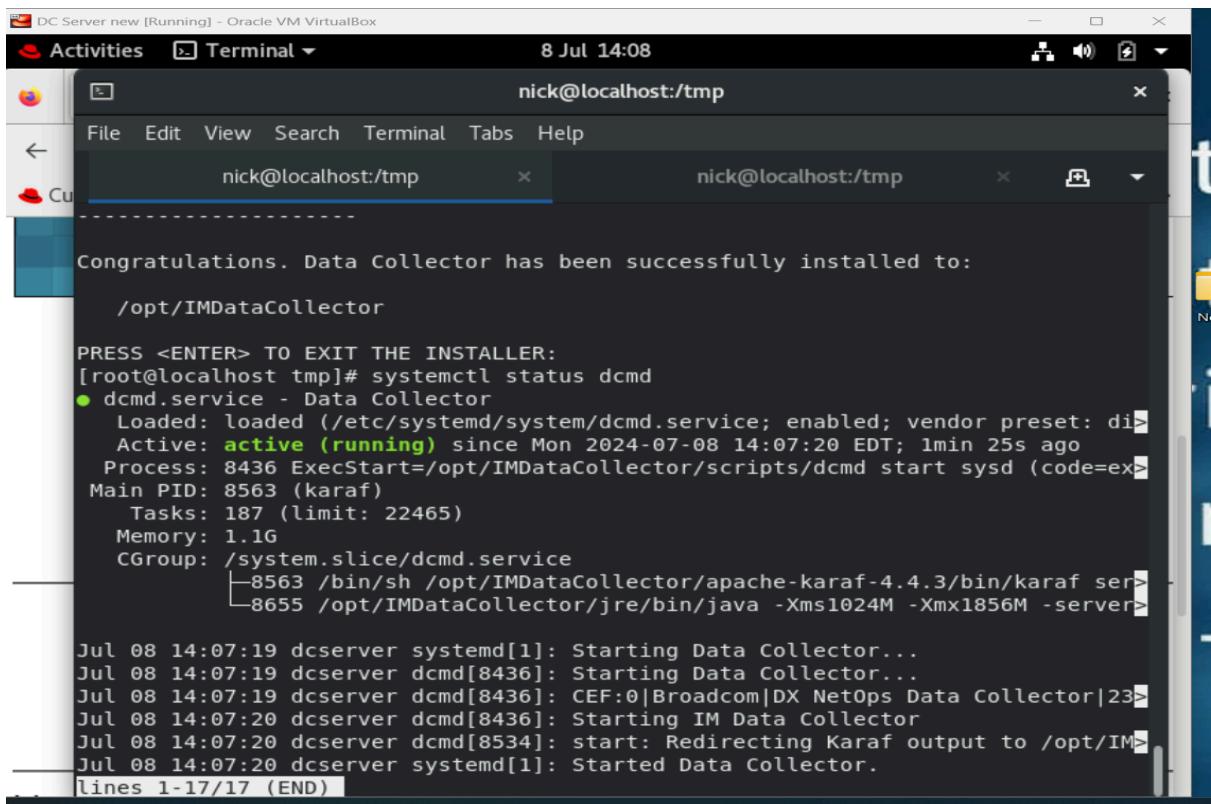


```
Chmod a+x install.bin
```

```
./install.bin
```



Verification of the DC Daemon running



```
DC Server new [Running] - Oracle VM VirtualBox
Activities Terminal 8 Jul 14:08
nick@localhost:/tmp

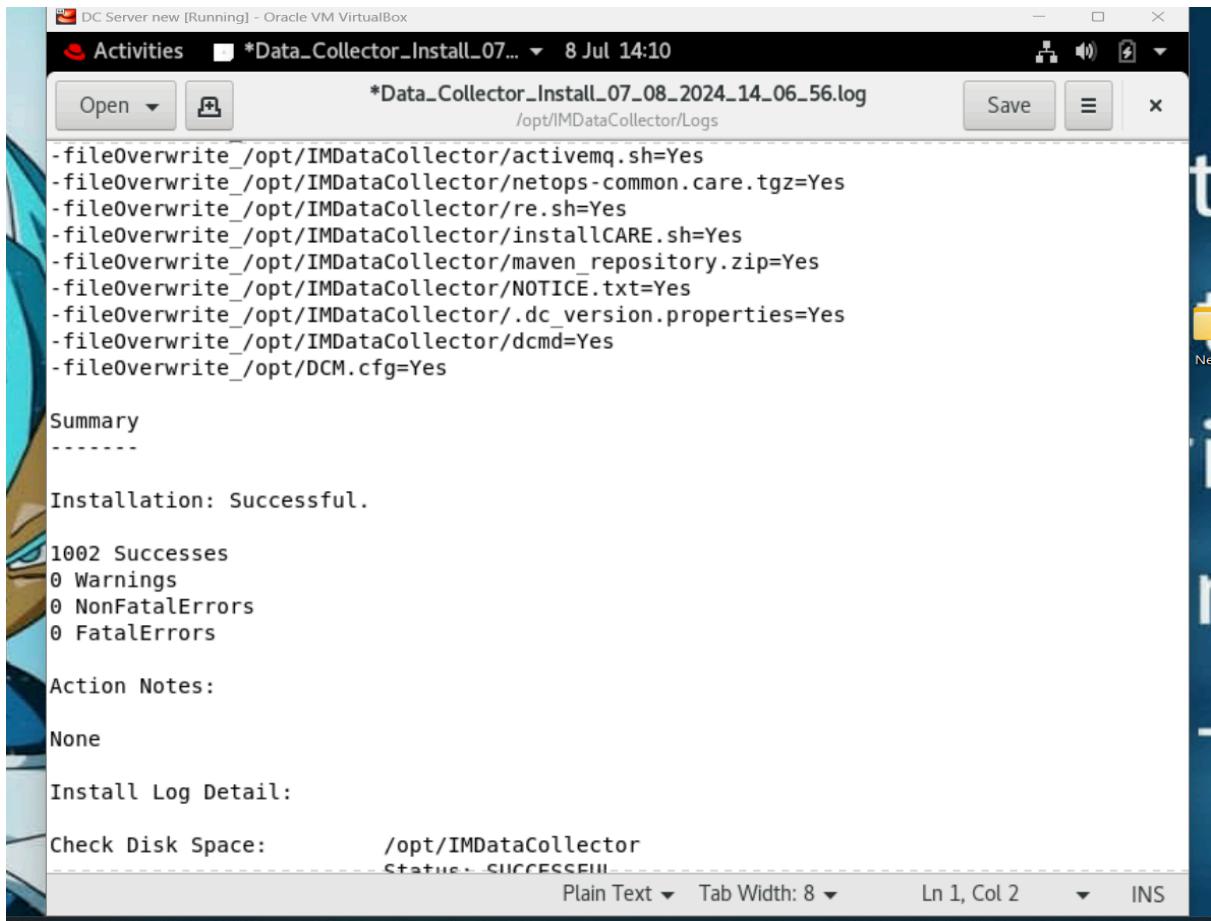
File Edit View Search Terminal Tabs Help
nick@localhost:/tmp nick@localhost:/tmp

Congratulations. Data Collector has been successfully installed to:
/opt/IMDataCollector

PRESS <ENTER> TO EXIT THE INSTALLER:
[root@localhost tmp]# systemctl status dcmd
● dcmd.service - Data Collector
  Loaded: loaded (/etc/systemd/system/dcmd.service; enabled; vendor preset: disabled)
  Active: active (running) since Mon 2024-07-08 14:07:20 EDT; 1min 25s ago
    Process: 8436 ExecStart=/opt/IMDataCollector/scripts/dcmd start sysd (code=exited, pid=8563)
   Main PID: 8563 (karaf)
      Tasks: 187 (limit: 22465)
     Memory: 1.1G
        CPU: 8563 /bin/sh /opt/IMDataCollector/apache-karaf-4.4.3/bin/karaf server>
              8655 /opt/IMDataCollector/jre/bin/java -Xms1024M -Xmx1856M -server>

Jul 08 14:07:19 dcserver systemd[1]: Starting Data Collector...
Jul 08 14:07:19 dcserver dcmd[8436]: Starting Data Collector...
Jul 08 14:07:19 dcserver dcmd[8436]: CEF:0|Broadcom|DX NetOps Data Collector|23>
Jul 08 14:07:20 dcserver dcmd[8436]: Starting IM Data Collector
Jul 08 14:07:20 dcserver dcmd[8534]: start: Redirecting Karaf output to /opt/IMDataCollector/logs/dc.log...
Jul 08 14:07:20 dcserver systemd[1]: Started Data Collector.
lines 1-17/17 (END)
```

Logs review with 0 errors



```
DC Server new [Running] - Oracle VM VirtualBox
Activities *Data_Collector_Install_07... 8 Jul 14:10
*Data_Collector_Install_07_08_2024_14_06_56.log
/opt/IMDataCollector/Logs

Open Save
-----
```

-fileOverwrite_/opt/IMDataCollector/activemq.sh=Yes
-fileOverwrite_/opt/IMDataCollector/netops-common.care.tgz=Yes
-fileOverwrite_/opt/IMDataCollector/re.sh=Yes
-fileOverwrite_/opt/IMDataCollector/installCARE.sh=Yes
-fileOverwrite_/opt/IMDataCollector/maven_repository.zip=Yes
-fileOverwrite_/opt/IMDataCollector/NOTICE.txt=Yes
-fileOverwrite_/opt/IMDataCollector/.dc_version.properties=Yes
-fileOverwrite_/opt/IMDataCollector/dcmand=Yes
-fileOverwrite_/opt/DCM.cfg=Yes

Summary

Installation: Successful.

1002 Successes
0 Warnings
0 NonFatalErrors
0 FatalErrors

Action Notes:

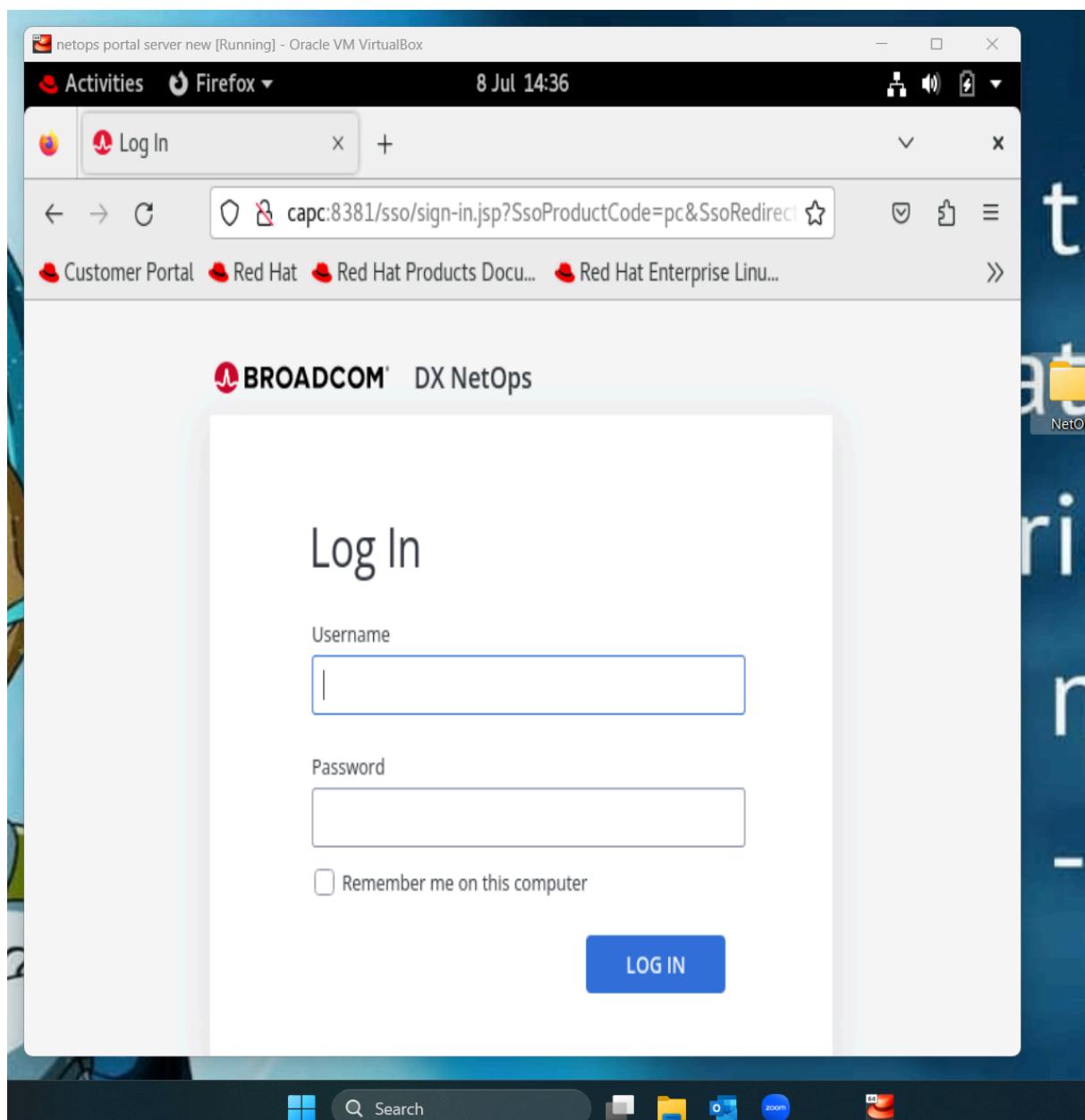
None

Install Log Detail:

Check Disk Space: /opt/IMDataCollector
Status: SUCCESSFUL

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- DX NETOPS PORTAL LOGIN PAGE on NetOps Portal Server - Final preview.



Conclusion and Closing Statement

The technical task was genuinely an amazing experience and the learning curve of this installation process has piqued my interest in working within the Network Operations vertical of the IT Industry. I was always strongly inclined towards getting a role in network security and the NetOps verticals can aid my understanding and learning process towards networking, creating highly secure network infrastructures and understanding troubleshooting network errors.

I have successfully installed all 4 components of the NetOps CA Performance Center and started from scratch as per 08/07/2024. If given a chance, I would love to work at Data Edge and you shall see credibility and propensity towards learning whatever is expected.

This internship is more than important for myself, it is a proving ground to enter the IT industry in Ireland after a career change and I have worked very hard to achieve my level of knowledge and hard skills. I have aced some of the most credible certifications all by myself and performed this given task while running 2 part time jobs and attending college full time. I assure you that I am a very honest, focused and hardworking person.

I hope you would consider my candidature favourably.