

# **MOP for eNodeB Field Commissioning**

(For Backplane Connectivity between CEF and  
RAC)

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Reviewer</b>	<b>Remarks</b>
1.0	14-09-2023	Gaurav Kumar Upadhyaya	Vivek Kumar Sharma	First draft for front plane connectivity
2.0	18-09-2023	Gaurav Kumar Upadhyaya	Vivek Kumar Sharma	Second draft describing backplane connectivity configuration
2.1	05-10-2023	Gaurav Kumar Upadhyaya		Change from ELINE to ELAN configuration in CEF commissioning part.
3.0	25-10-2023	Gaurav Kumar Upadhyaya	Vivek Kumar Sharma	Describes whole eNB on-site commissioning process for Roll-Out sites including CEF and RAC local upgrade process.

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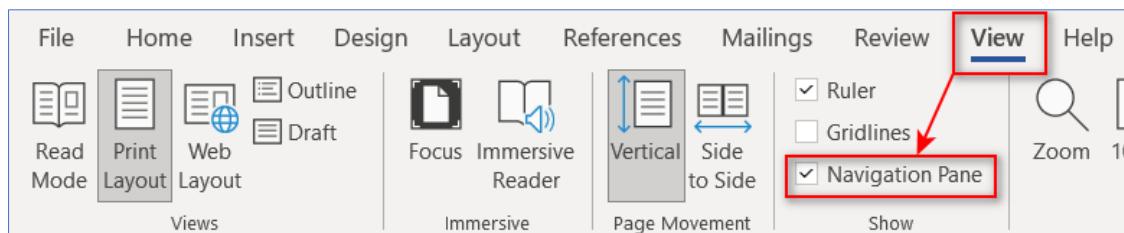
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**Table1: Basic flow of eNodeb Commissioning for backplane connectivity**

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**Note:** For ease of accessing different sections in the document it is suggested to enable “[Navigation Pane](#)” under “[View](#)” section of Microsoft Word. Page Zoom to may be set to **110%** for better visibility of the images.



# 1. Part-A: Required Tools, Software & Data

## (Preparation-before visiting the site)

Before going to the site location, Site Engineer **must have these tools and software beforehand** which will be required for successful site commissioning.

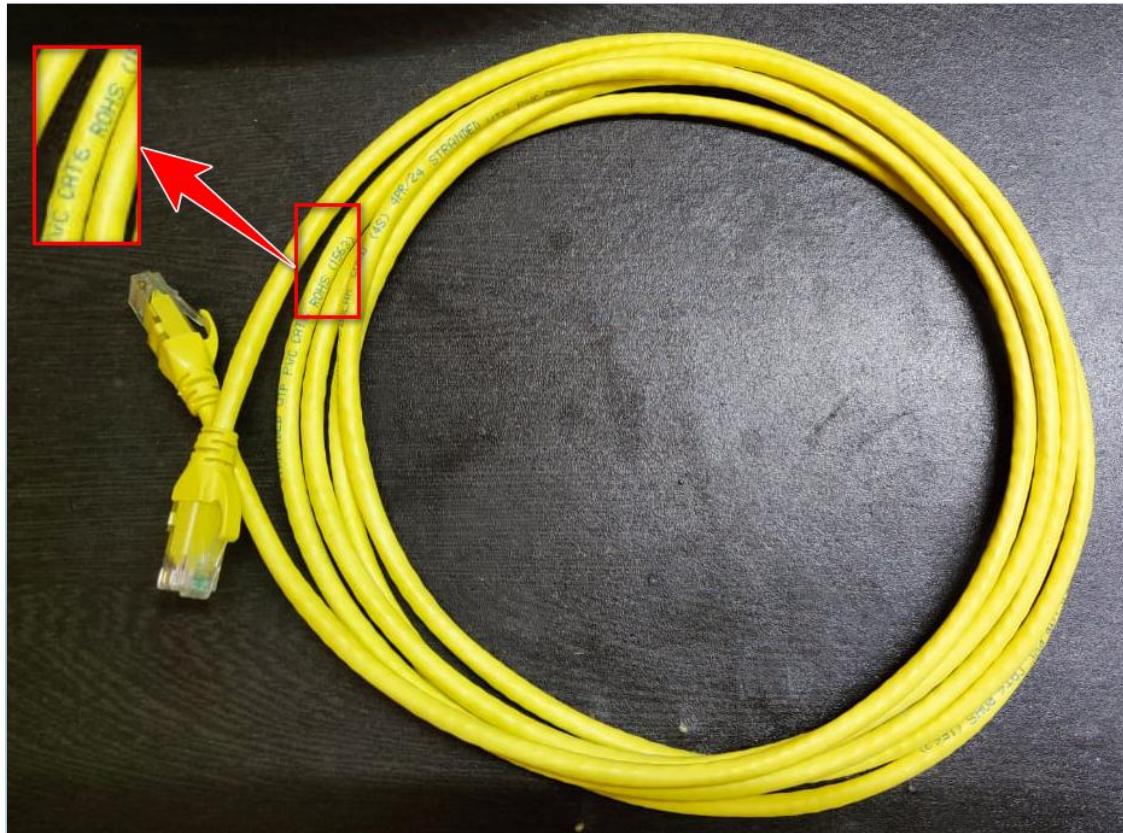
### 1.1 Laptop with administrative rights

Site Engineer must be carrying a laptop with windows OS with administrative rights as it would require to use Ethernet and USB port and it will be required to modify the IP of the Laptop as per commissioning process requirement.

### 1.2 CAT6 Ethernet Cable

Site Engineer must carry a CAT6 Ethernet Cable to site with them. This cable will be used for CEF and RAC card commissioning.

Image: 1-1

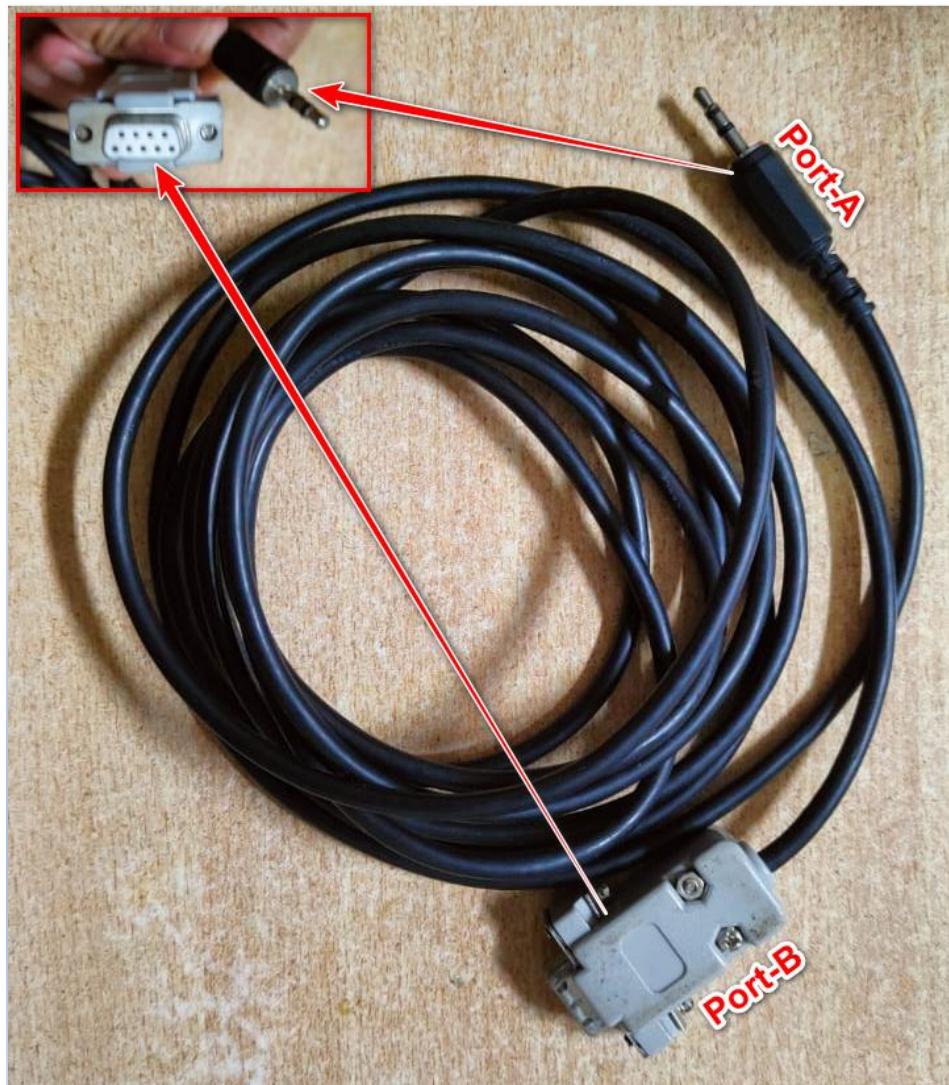


### 1.3 DIAG Cable along with BAFO vable(USB to Serial converter).

These cables will be required for commissioning of RAC card and for any troubleshooting related to CEF and RAC cards.

The cable shown in below picture is called DIAG cable and should be carried to site. On one side it has a 3.5mm Pin connector and a DB9 Female connector on the other side.

Image: I-2



Here **Port-A** (3.5 mm Jack) and **Port-B** is DB9 Female connector. Port-A will be connected to DIAG port in CEF/RAC card while Port-B will connect to a USB to Serial Converter.

In addition to the DIAG cable, another cable called **USB to Serial RS-232 DB-9 Converter Cable or BAFO Cable** will also be required.

It has a DB9 Male connector on one side and USB Port on other side.

The DB9 Male port connector will join to DIAG Cable Port-B (DB9 Female) and USB Port will be connected to Laptop USB Port. ([See Pic on next page](#))

*Image: 1-3*

#### 1.4 Electric SFP

An electric SFP will be required for connecting to RAC port P4 for RAC card file doanloading.

*Image: 1-4*

#### 1.5 MobaXterm SSH Tool

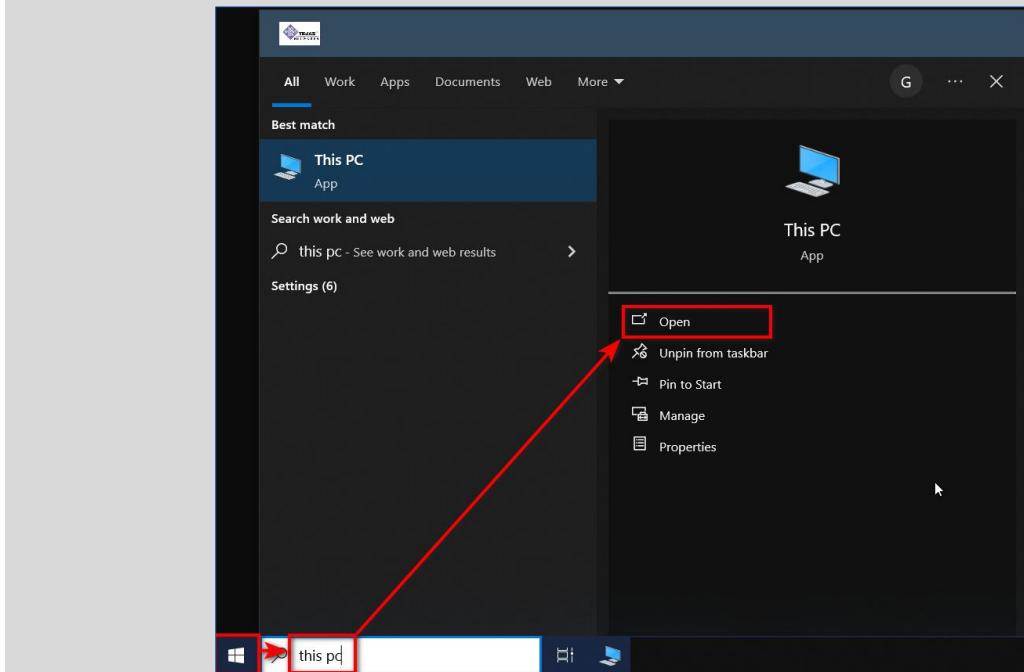
Site Engineers must have MobaXterm software installed on their laptop. This step should be completed before going to site. Download the software from below link and install it:

[https://download.mobatek.net/2332023092000531/MobaXterm\\_Portable\\_v23.3.zip](https://download.mobatek.net/2332023092000531/MobaXterm_Portable_v23.3.zip)

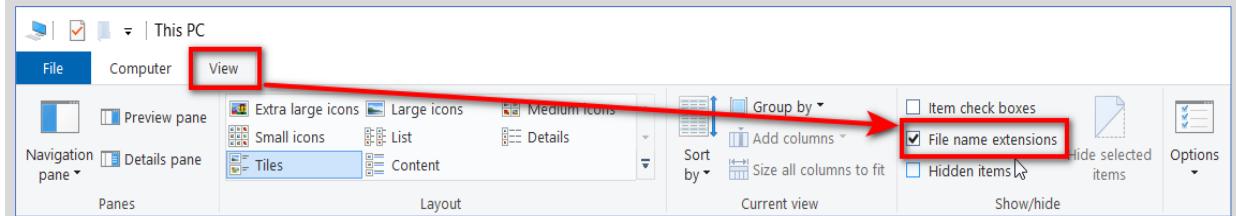
It can also be downloaded by searching MobaXterm on Google search .

## 1.6 eNodeB\_Comm\_Tool.exe Tool for RAC commissioning & JRE Installation:

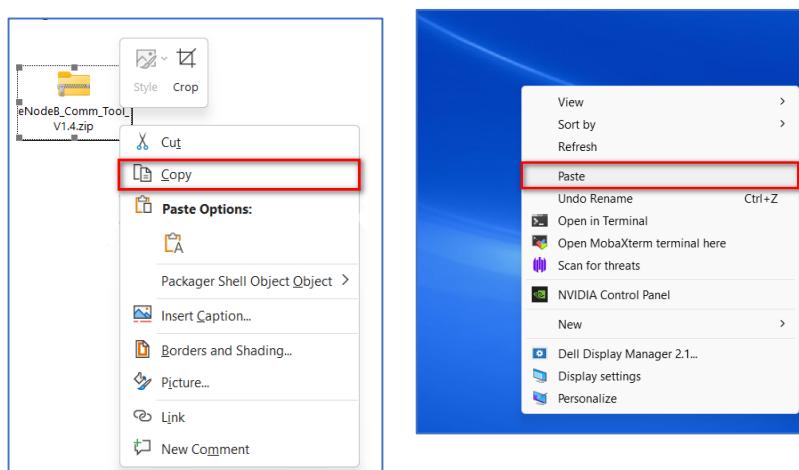
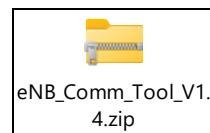
*Before going to this step, Pls enable File name extension visibility on Windows by below method.  
Go to Windows > type **This PC** > Open .*



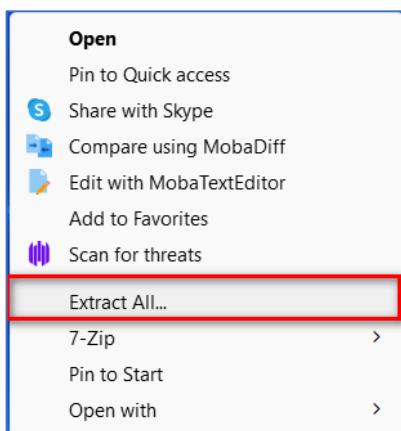
*On "This PC" option window go to View Option of on Top panel and check the **File name extensions** option*



The **eNB\_Comm\_Tool\_V1.4.exe** tool will be used for RAC card commissioning. Pls download this attached **eNB\_Comm\_Tool\_V1.4.zip** file.



To download the above attached file, Select the file and right click on the file, select **Copy** and go to computer's **Desktop** and paste it there.

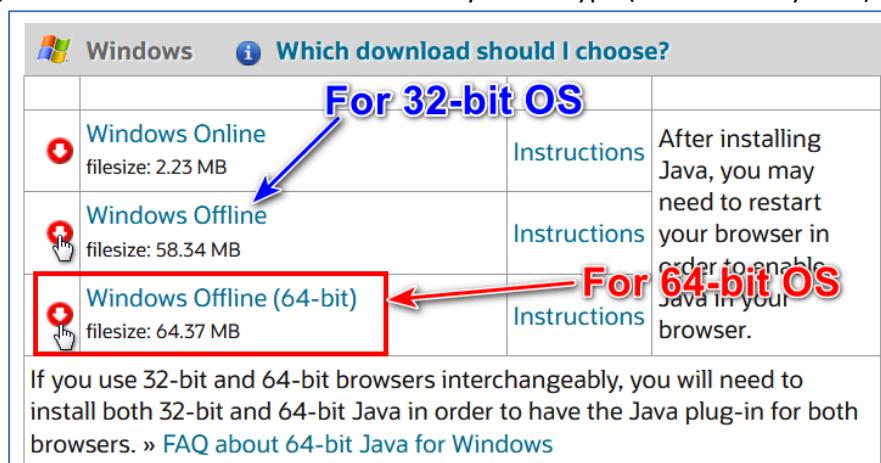


After pasting the file, **unzip** the file by right click-**Extract All**.

Download & Install JRE for the tool to work

<https://www.java.com/en/download/manual.jsp>

Go to this page and click on the Windows Offline for your OS type (32 or 64 bit system)

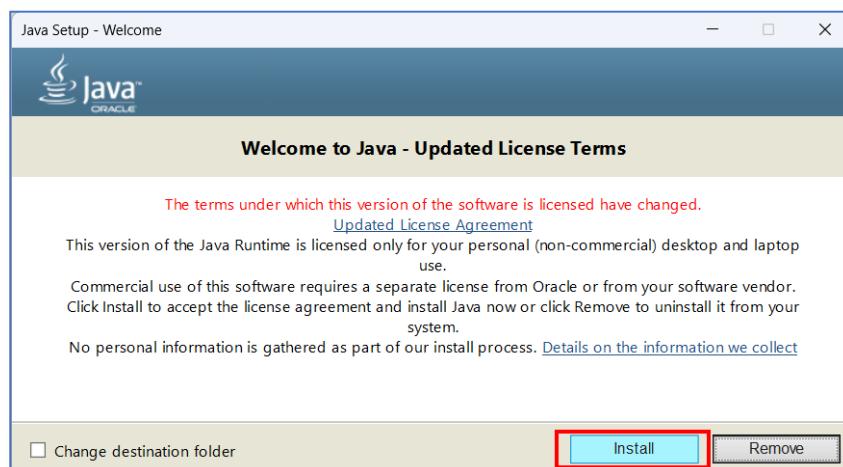


Which will download the file named something like below:

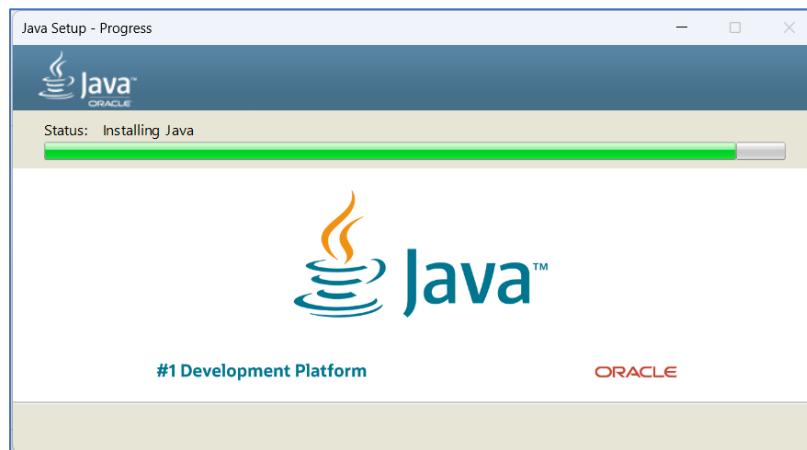
**For 64-bit OS:** [jre-8u391-windows-x64.exe](#) (Filename 8u391 can be different as per the release)

**For 32-bit OS:** [jre-8u391-windows-i586.exe](#) (Filename 8u391 can be different as per the release)

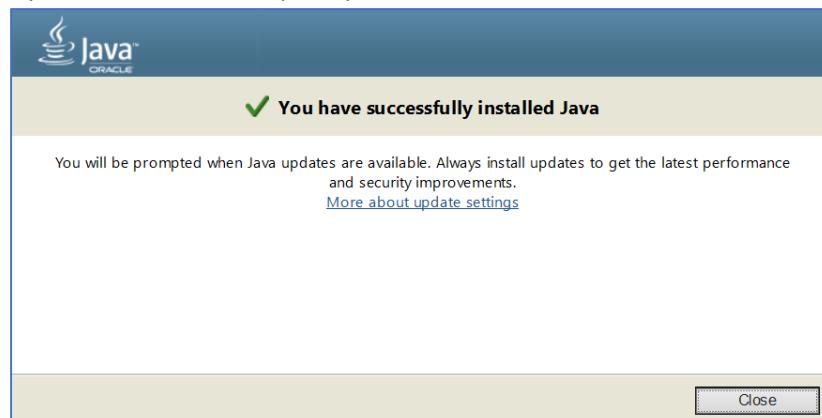
Double click the file to run the file and then Click on **Install**



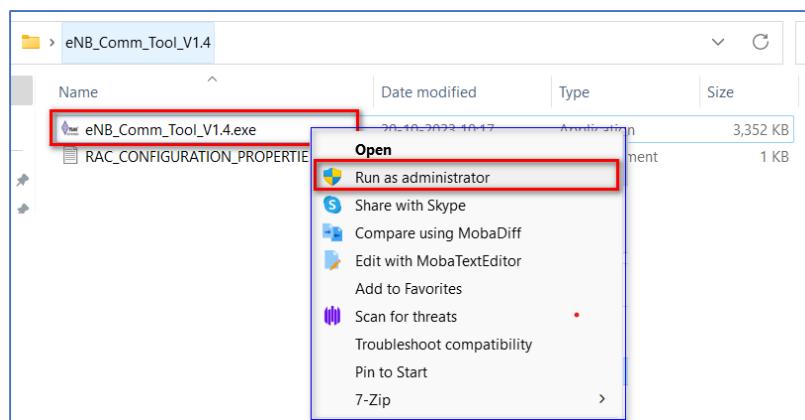
After which this will download and install java in background.



On successful completion it will show a prompt as below.



Now the **eNB\_Comm\_Tool\_V1.4.exe** should be able to run, go to **Desktop > eNB\_Comm\_Tool\_V1.4.exe**, right click and “Run as administrator”



After successful run, it will show a window like below

```

11:58:27,881 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - No compression will be used
11:58:27,882 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - Will use the pattern logs/%d{dd-MM-yyyy}.%i.log for the active file
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - The date pattern is 'dd-MM-yyyy' from file name pattern 'logs/%d{dd-MM-yyyy}.%i.log'.
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Roll-over at midnight.
11:58:27,891 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Setting initial period to Mon Oct 23 11:58:27 IST 2023
11:58:27,893 |-INFO in ch.qos.logback.core.model.processor.ImplicitModelHandler - Assuming default type [ch.qos.logback.classic.encoder.PatternLayoutEncoder] for [encoder] property
11:58:27,900 |-WARN in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Append mode is mandatory for RollingFileAppender. Defaulting to append=true.
11:58:27,908 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Active log file name: logs/DATE_23_10_2023_TIME_11_58_27_5827.log
11:58:27,908 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - File property is set to [logs/DATE_23_10_2023_TIME_11_58_27_5827.log]
11:58:27,908 |-INFO in ch.qos.logback.classic.model.processor.RootLoggerModelHandler - Setting level of ROOT logger to INFO
11:58:27,908 |-INFO in ch.qos.logback.core.model.processor.AppenderRefModelHandler - Attaching appender named [FILE] to Logger[ROOT]
11:58:27,908 |-INFO in ch.qos.logback.core.model.processor.DefaultProcessor@71423665 - End of configuration.
11:58:27,908 |-INFO in ch.qos.logback.classic.joran.JoranConfigurator@20398b7c - Registering current configuration as safe fallback point
Available COM Ports
=====
COM4
=====
Enter the COMM port

```

## 1.7 3C Daemon tool for configuring FTP server on PC.

To configure FTP server on a laptop, use the attached tool. Right click on the file and select **Copy** and then paste it on Desktop. Then unzip it using any unzip tool.



## 1.8 Site IP Plan

Site IP plan should also be acquired as it will be required for commissioning the eNodeB. A sample IP Plan of a site should have these below details:

- a) It will show Site details like Circle, SSA, SDCA and 4G Site ID. We have to use 4G Site ID during site commissioning

State	SSA	SDCA	IP ID	4G Site ID
Punjab	Amritsar	Amritsar	BSNLPAMP3AMI001	T4PUASRP9AMI001

- b) OAM IP, VLAN and its Gateway (GW) details. These details will be used during CEF Card commissioning. Like in below sample plan, **172.27.79.251** is IP & **479** is the VLAN to be assigned to CEF Card while **172.27.79.1** is IP for its GW while **/224** is subnet mask.

OAM HW GW	OAM HW IP	OAM HW VLAN
172.27.79.1/24	172.27.79.251	479

**Note:** The subnet mask shown here will depend upon the size of the pool assigned. Site Engineers can take help of below table to input subnet mask:

/24 = 255.255.255.0	/25 = 255.255.255.128	/26 = 255.255.255.192	/27 = 255.255.255.224
/28 = 255.255.255.240	/29 = 255.255.244.248	/30 = 255.255.255.252	

- c) RAC OAM IPs, VLAN and GW details and Subnet masks. These details will be used for RAC Card commissioning. B1, B41 and B28 are for different band RAC cards.

OAM RAC GW	OAM RAC B1	OAM RAC B41	OAM RAC B28	OAM RAC VLAN
172.27.80.1/24	172.27.80.251	172.27.80.252	172.27.80.253	480

OAM RAC B1 : Will be used for RAC for 2100 Mhz band. (Slot7)  
 OAM RAC B41 : Will be used for RAC for TDD 2600 Mhz band. (Slot1)  
 OAM RAC B28 : Will be used for RAC for 700 Mhz band. (Slot5)

- d) S1C and S1U IPs, VLAN and GW details and Subnet masks. The VLAN will be required during CEF commissioning.

S1C GW B1	S1C B1	S1C B41	S1C B28	S1C VLAN
172.27.65.1/24	172.27.65.251	172.27.65.252	172.27.65.253	465
S1U GW B1	S1U B1	S1U B41	S1U B28	S1U VLAN
172.27.67.1/24	172.27.67.251	172.27.67.252	172.27.67.253	467

## 1.9 Mozilla Firefox browser

It is suggested to install and use Mozilla Firefox browser for commissioning process.

## 1.10 Versions file for RAC and CEF for on-site Local upgrade

- a) Please collect below file for RAC upgrade from Tejas Team.

**Filename:** rac\_sw\_package\_R14Rel\_446G\_DFPGA\_C6\_001.tgz  
**Filesize:** 263650 KB

- b) Please collect below 3 files for CEF12T upgrade from Tejas Team.

Names of the 3 Files are as below

- catalog.xml (Filesize: 2 KB)
- cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img (Filesize: 123888 KB)
- fw\_cef12\_00\_00\_07.tgz (Filesize: 69156 KB)

## 2. Part-B: RAC Commissioning Process

### 2.1 BBU Cards Slot map and Card positioning

In the TJ1400 BBU, below is slot numbering diagram. Different slots are used for different type of cards.

Air Filter Unit	Slot 1	Slot 5	Slot 10
	Slot 2	Slot 6	
	Slot 3	Slot 7	
	Slot 4	Slot 8	

Table: 2-1

Slot No.	Supported Card Type
1, 3, 5, 6, 7	RAC
2, 4	CEF
8, 9	DPU23
10	FTU

**Note : Do not Power ON the BBU before positioning the CARDS as per below slot position diagram.**

First make sure that the Cards has been inserted as per Plan in the BBU. Below is the Card Position Scheme to be used on sites.

AIR-FILTER	RAC (Band 41) 	RAC (Band 28) 	FTU 
	UNUSED	UNUSED	
	UNUSED	RAC (Band 1/3/5) 	
	CEF12/CEF12T	DPU	

RAC B1 : Will be used for RAC for FDD 2100 Mhz band. (**Slot7**)

RAC B41 : Will be used for RAC for TDD 2600 Mhz band. (**Slot1**)

RAC B28 : Will be used for RAC for FDD 700 Mhz band. (**Slot5**)

## 2.2 Checking RAC version

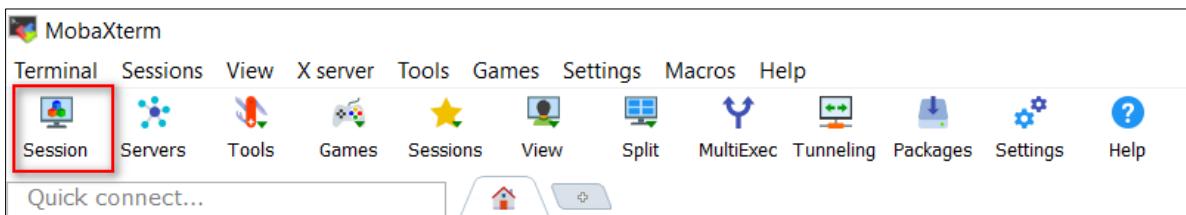
### 2.2.1 Connecting the DIAG Cable to RAC DIAG port & login to RAC

- a) Connect DIAG cable 3.5 mm Jack to **DIAG** port on RAC card, Join the USB to Serial extension cable with DIAG cable and connect the USB port to Laptop.

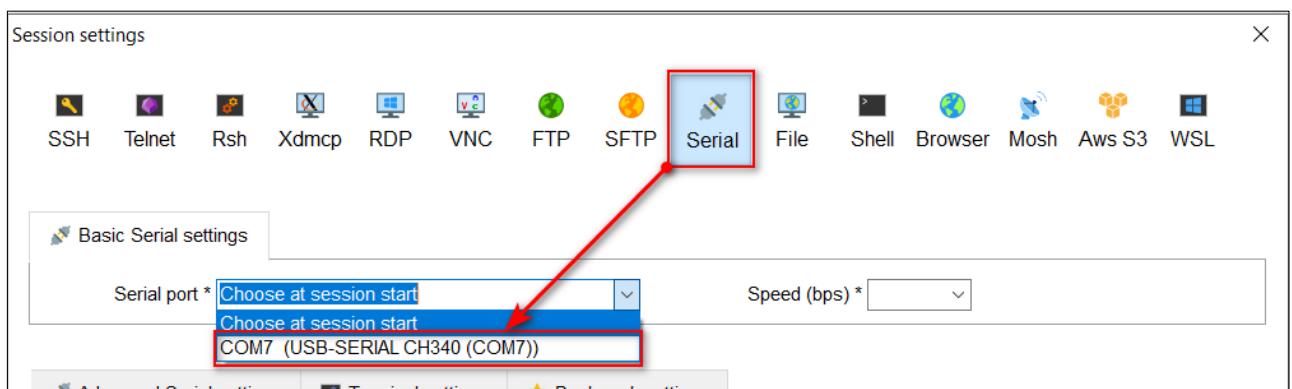


**Note:** If you are using DIAG cable for first time, then wait for 4-6 mins as driver may be under update in the background in windows.

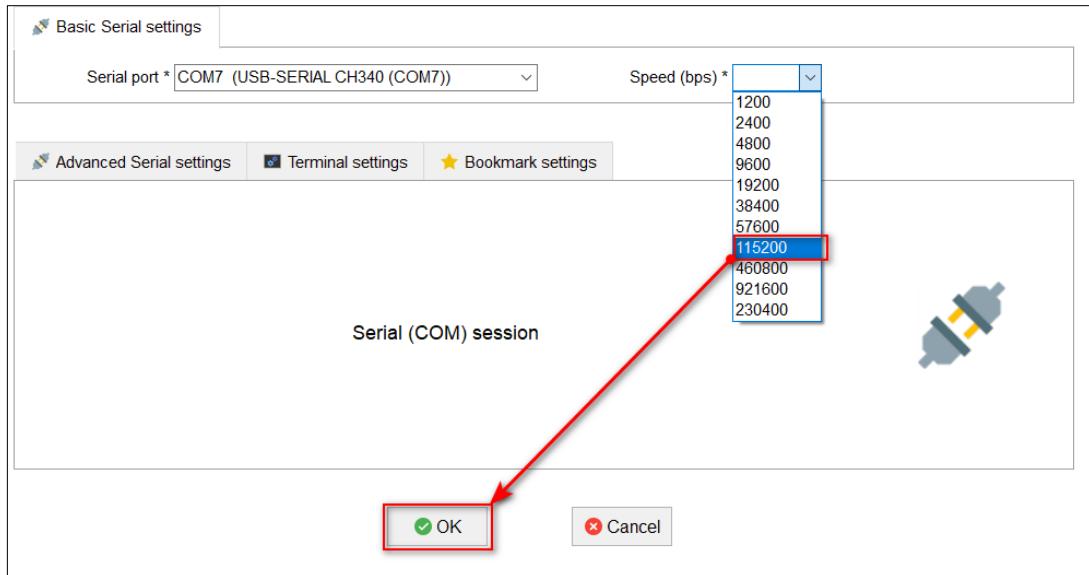
- b) Open MobaXterm Terminal and click on session.



On next interface select **Serial** option and on **Serial Port** option it will show a COM port (COM port ID can be different on different laptops), select the visible COM port (Like in the image it shows COM7, if it's not showing COM port then either the cable connection is not OK or the driver for USB to Serial cable is missing in the windows).

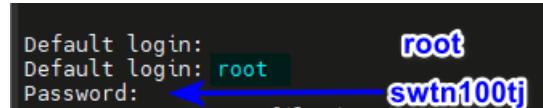


- c) Next in the **Speed (bps)** option select **115200** and click on **OK**.



## 2.2.2 Login to RAC and checking RAC version details

- a) Next it will login the terminal and it may ask for user & password, in username input **root**, in password input **swtn100tj** here. After successful login to root it will show a **-bash-4.3#** prompt which means login by root user is successful.



- b) Run command as below:

```
-bash-4.3# cat /etc/tejas/config/db/ver_info
-bash-4.3# cat /etc/tejas/config/db/ver_info
DATE: 01-01-2000 05:37:22
CAV_CFGA_VER: 0xc6
CAV_UBOOT_VER: UBOOT_2013_RACV2_00_00_03
CAV_LINUX_VER: LINUX_4_9_79_RACV2_00_00_02 ,Dec 05 2022 17:02:35
CAV_ROOTFS_VER: ROOTFS_RACV2_00_00_06 ,Apr 03 2023 16:01:07
CAV_INTG_SW_VER: CAV_sw_package_R14Rel_443C_FPGA_C6_001.tgz
RAC_SW_INT: CAV_sw_package_R14Rel_443C_FPGA_C6_001.tgz
RAC_SW_EXT: CAV_sw_package_R14Rel_443C_FPGA_C6_001.tgz
OAM_Version: OAM_14_16_44, Jul 14 2023 15:51:23
SNMP_AGT_VER: SNMP_AGT_14_14_7, Jul 14 2023 15:51:41
OAM_Client_1_Ver: OAM_Client1_14_16_44, Jul 14 2023 15:51:55
```

Check the **RAC\_SW\_INT**: if it will show **443C** then it needs to upgrade the version file using the method described in Steps 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 & 2.10.

## 2.3 Collecting RAC SOC MAC addresses

In this step, we will collect MAC address of RAC Card SOCs which connects to different sectors.

**Table: 2-2**

SN	SOC List	SOC IP	Ethernet Port	MAC address	Remarks
1	SOC1	170.1.1.4	eth1		Sector 0
2	SOC2	170.1.1.5	eth3		Sector 1
3	SOC2	170.1.1.5	eth1		Sector 1
4	SOC0	170.1.1.3	eth1		Sector 2

### 2.3.1 Preparing SOC wise list

Prepare a list like below and follow process mentioned ahead to collect the MAC address details:

**Table: 2-3**

SOC1 eth1	MAC Address:	(Get details by login to 170.1.1.4)
SOC2 eth3	MAC Address:	(Get details by login to 170.1.1.5)
SOC2 eth1	MAC Address:	(Get details by login to 170.1.1.5)
SOC0 eth1	MAC Address:	(Get details by login to 170.1.1.3)

To collect SOC MAC details, first login to the RACv2.7 using method mentioned in next steps and collect MAC address:

### 2.3.2 Collecting MAC address details

- a) After successful login to the RAC, **ssh** to the **SOC1 (IP: 170.1.1.4)** as below (directly copy the commands mentioned in blue coloured text):

**-bash# ssh root@170.1.1.4**

It will ask “Are you sure you want to continue connecting”, here input **yes**

Next it will ask for password, input: **swtn100tj**

After successful login run the command: **ifconfig**

It will display the output of the command, in the output find **HWaddr** of **eth1** and copy it's as highlighted in the blue box the image below and paste it in the **Table 2-3**. After copying the details input **exit** to logout from SOC1 the window

```

-bash-4.3# ssh root@170.1.1.4
The authenticity of host '170.1.1.4 (170.1.1.4)' can't be established.
ED25519 key fingerprint is SHA256:z6ktsAtqPzV/0gyLL2Dcv6I48GrEBNplrtgRHTtq7ig.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/.ssh' (Read-only file system).
Failed to add the host to the list of known hosts (/ssh/known_hosts).
root(null)@170.1.1.4's password: swtn100tj
root@TEJAS:~# ifconfig
cpri_cm0 Link encap:Ethernet HWaddr 00:53:4E:55:4C:30
    inet addr:167.254.1.254 Bcast:167.254.255.255 Mask:255.255.0.0
        inet6 addr: fe80::253:4e55ff:fe55:4c30/64 Scope:Link
        UP BROADCAST RUNNING MTU:1500 Metric:1
        RX packets:148 errors:0 dropped:0 overruns:0 frame:0
        TX packets:197 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:27714 (27.0 KiB) TX bytes:14940 (14.5 KiB)
        Interrupt:68

eth0      Link encap:Ethernet HWaddr 00:04:95:45:67:11
        UP BROADCAST MULTICAST MTU:1500 Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

eth1      Link encap:Ethernet HWaddr 00:04:95:77:72:FA
        inet addr:170.1.1.4 Bcast:170.1.255.255 Mask:255.255.255.0
        inet6 addr: fe80::204:95ff:fe77:72fa/64 Scope:Link
        UP BROADCAST MULTICAST MTU:1500 Metric:1
        RX packets:699077 errors:0 dropped:0 overruns:0 frame:0
        TX packets:667996 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000

```

1. SOC1 eth1

b) Next ssh to **SOC2 (IP: 170.1.1.5)**,

**-bash# ssh root@170.1.1.5**

Follow the same process as followed for SOC1 to login and input **ifconfig** to get the SOC2 eth3 and SOC2 eth1 MAC address details. Copy the MAC address one by one, first copy **eth3** MAC address and paste in front of **SOC2 eth3** and then copy **eth1** MAC address and paste it in front of **SOC2 eth1** in the **Table 2-3**. After collecting the details input **exit** to logout.

```

-bash-4.3# ssh root@170.1.1.5
The authenticity of host '170.1.1.5 (170.1.1.5)' can't be established.
ED25519 key fingerprint is SHA256:z6ktsAtqPzV/0gyLL2Dcv6I48GrEBNplrtgRHTtq7ig.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/.ssh' (Read-only file system).
Failed to add the host to the list of known hosts (/ssh/known_hosts).
root(null)@170.1.1.5's password: swtn100tj
root@TEJAS:~# ifconfig
cpri_cm0 Link encap:Ethernet HWaddr 00:53:4E:55:4C:30
          inet addr:168.254.1.254 Bcast:168.254.255.255 Mask:255.255.0.0
          inet6 addr: fe80::253:4eff:fe55:4c30/64 Scope:Link
            UP BROADCAST RUNNING MTU:1500 Metric:1
            RX packets:0 errors:0 dropped:0 overruns:0 frame:0
            TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
            Interrupt:68

eth0      Link encap:Ethernet HWaddr 00:04:95:77:72:F5
          inet6 addr: fe80::204:95ff:fe77:72f5/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
            RX packets:186514 errors:0 dropped:0 overruns:0 frame:0
            TX packets:36 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:11372057 (10.8 MiB) TX bytes:2616 (2.5 KiB)

eth1      Link encap:Ethernet HWaddr 00:04:95:77:72:F6
          inet6 addr: fe80::204:95ff:fe77:72f6/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
            RX packets:28 errors:0 dropped:0 overruns:0 frame:0
            TX packets:38 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:2040 (1.9 KiB) TX bytes:2796 (2.7 KiB)

3. SOC2 eth1

eth2      Link encap:Ethernet HWaddr 00:04:95:77:72:F7
          inet6 addr: fe80::204:95ff:fe77:72f7/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
            RX packets:44 errors:0 dropped:0 overruns:0 frame:0
            TX packets:38 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:3286 (3.2 KiB) TX bytes:2796 (2.7 KiB)

2. SOC2 eth3

eth3      Link encap:Ethernet HWaddr 00:04:95:77:72:F8
          inet addr:170.1.1.5 Bcast:170.1.255.255 Mask:255.255.0.0
          inet6 addr: fe80::204:95ff:fe77:72f8/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
            RX packets:345259 errors:0 dropped:0 overruns:0 frame:0
            TX packets:499998 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:115502478 (110.1 MiB) TX bytes:85962297 (81.9 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
            UP LOOPBACK RUNNING MTU:65536 Metric:1
            RX packets:456 errors:0 dropped:0 overruns:0 frame:0
            TX packets:456 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:17970 (17.5 KiB) TX bytes:17970 (17.5 KiB)

root@TEJAS:~# exit
logout
Connection to 170.1.1.5 closed.

```

- c) Next ssh to SOC0 (IP: 170.1.1.3),

```
-bash# ssh root@170.1.1.3
```

Follow the same process as followed for SOC1 to login and input **ifconfig** to get the SOC0 eth1 MAC address details. Copy **eth1** MAC address and paste in front of **SOC0 eth1** in the **Table 2-3**. After collecting the details input **exit** to logout.

```

-bash-4.3# ssh root@170.1.1.3
The authenticity of host '170.1.1.3 (170.1.1.3)' can't be established.
ED25519 key fingerprint is SHA256:z6ktsAtqPzV/0gyLL2Dcv6I48GrEBNplrtgRHTtq7ig.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Could not create directory '/.ssh' (Read-only file system).
Failed to add the host to the list of known hosts (/etc/ssh/known_hosts).
root(null)@170.1.1.3's password: swtn100tj
root@TEJAS:~# ifconfig
cpri_cm0 Link encap:Ethernet HWaddr 00:53:4E:55:4C:30
          inet addr:169.254.1.254 Bcast:169.254.255.255 Mask:255.255.0.0
          inet6 addr: fe80::253:4eff:fe55:4c30/64 Scope:Link
              UP BROADCAST RUNNING MTU:1500 Metric:1
              RX packets:0 errors:0 dropped:0 overruns:0 frame:0
              TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:1000
              RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
              Interrupt:68

eth0      Link encap:Ethernet HWaddr 00:04:95:45:67:01
          UP BROADCAST MULTICAST MTU:1500 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

eth1      Link encap:Ethernet HWaddr 00:04:95:77:72:F9
          inet addr:170.1.1.3 Bcast:170.1.255.255 Mask:255.255.0.0
          inet6 addr: fe80::204:95ff:fe77:72f9/64 Scope:Link
              UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
              RX packets:599693 errors:0 dropped:0 overruns:0 frame:0
              TX packets:578977 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:1000
              RX bytes:139292713 (132.8 MiB) TX bytes:96624893 (92.1 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
              UP LOOPBACK RUNNING MTU:65536 Metric:1
              RX packets:456 errors:0 dropped:0 overruns:0 frame:0
              TX packets:456 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:1000
              RX bytes:17970 (17.5 KiB) TX bytes:17970 (17.5 KiB)

root@TEJAS:~# exit
logout
Connection to 170.1.1.3 closed.
-bash-4.3#

```

### 2.3.3 Exit the window and MobaXterm.

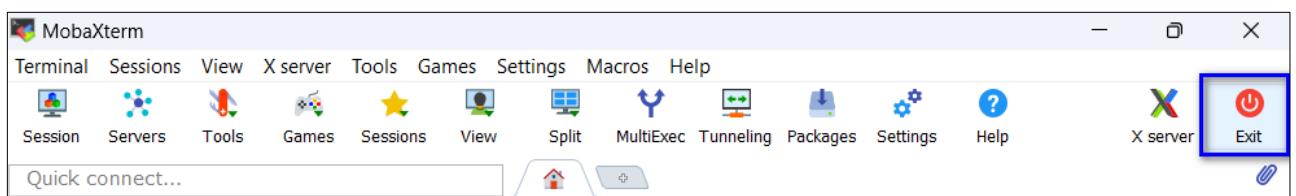
- a) NOTE: Input exit on each of the window until you reach the login interface.

```

root@TEJAS:~# exit ← exit
logout
Connection to 170.1.1.3 closed.
-bash-4.3# exit ← exit
Logout
Default login:| Do not enter anything further

```

- b) Then close the MobaXterm Windows by clicking on **Exit**



- c) After collecting the MAC address details the Table will be as below (*Here the MAC addresses are only as example, actual on-site MAC addresses will be different from these*). MAC address details will be used in next Step

SOC1 eth1	MAC Address:	00:04:95:77:72:FA
SOC2 eth3	MAC Address:	00:04:95:77:72:F8
SOC2 eth1	MAC Address:	00:04:95:77:72:F6
SOC0 eth1	MAC Address:	00:04:95:77:72:F9

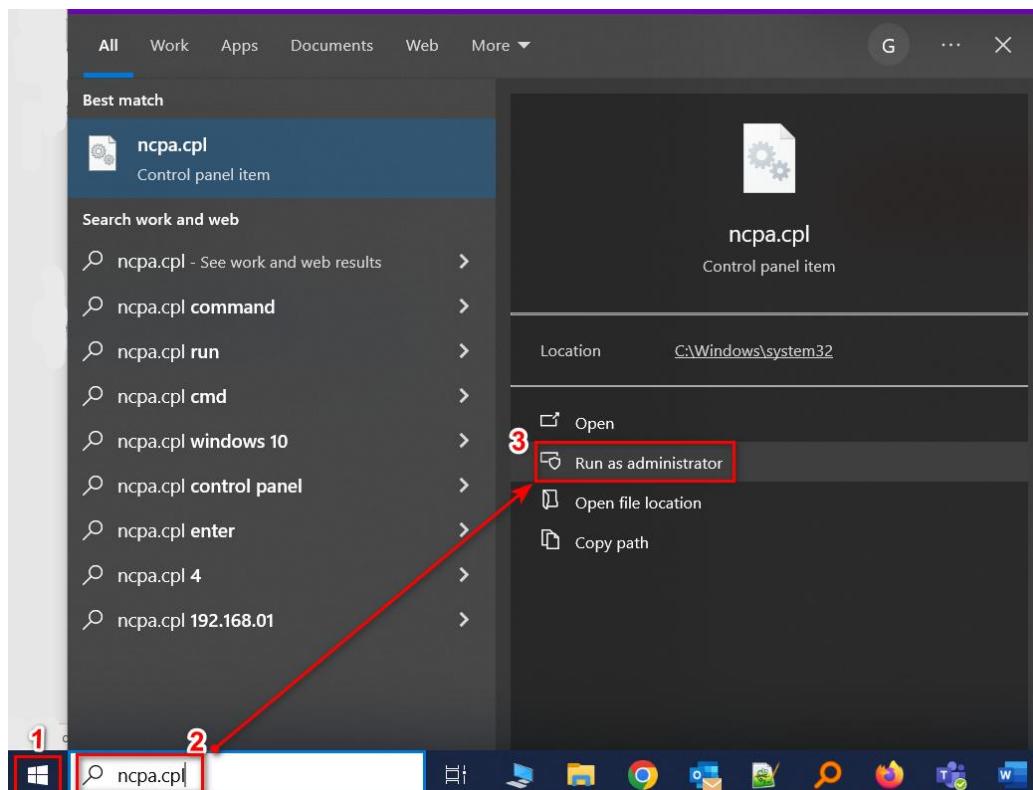
- d) Keep the **DIAG Cable connected to the RAC card** and **do not disconnect**.

## 2.4 Connecting the Ethernet Cable to RAC-P4 & Setting Laptop IP

- a) For RAC version upgrading, unplug the Optical SFP from port P4 (If it's there) from RAC card and connect the **Electric SFP** mentioned in [Step 1.4](#) to Port P4 of RAC card and connect ethernet cable to it and other end to laptop ethernet port.



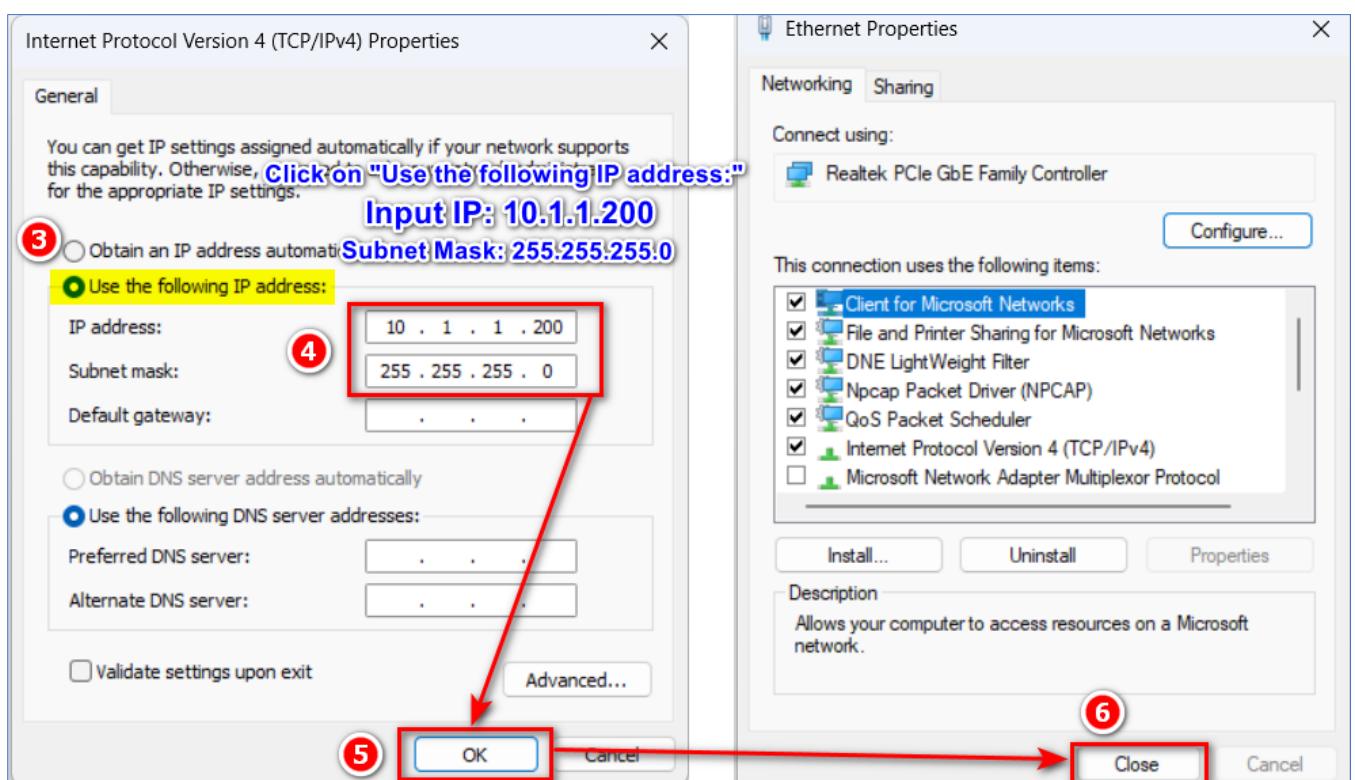
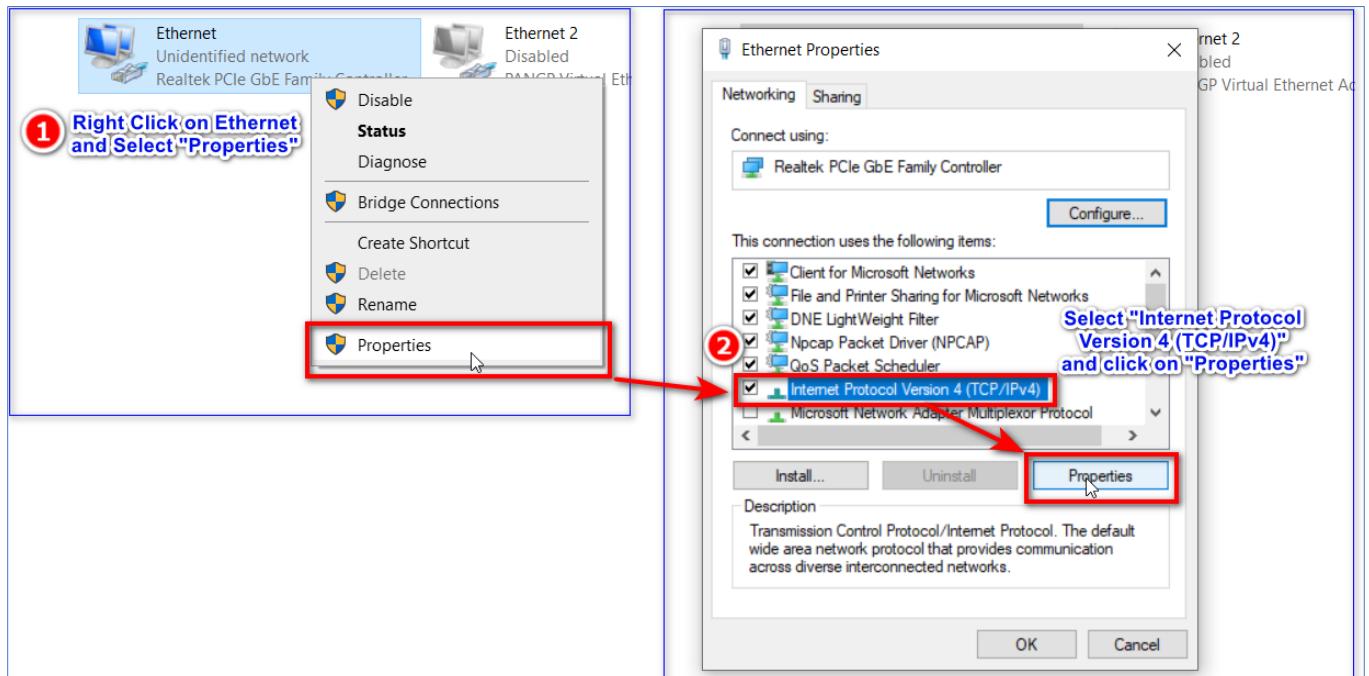
- b) Now set laptop IP as 10.1.1.200 and subnet mask as 255.255.255.0. To set IP, go to **Windows -> Search -> type ncpa.cpl -> Run as administrator**



- c) Now it will open Network Connections window, here right-click on the Ethernet icon to set Laptop IP. Follow the process as shown in next images.

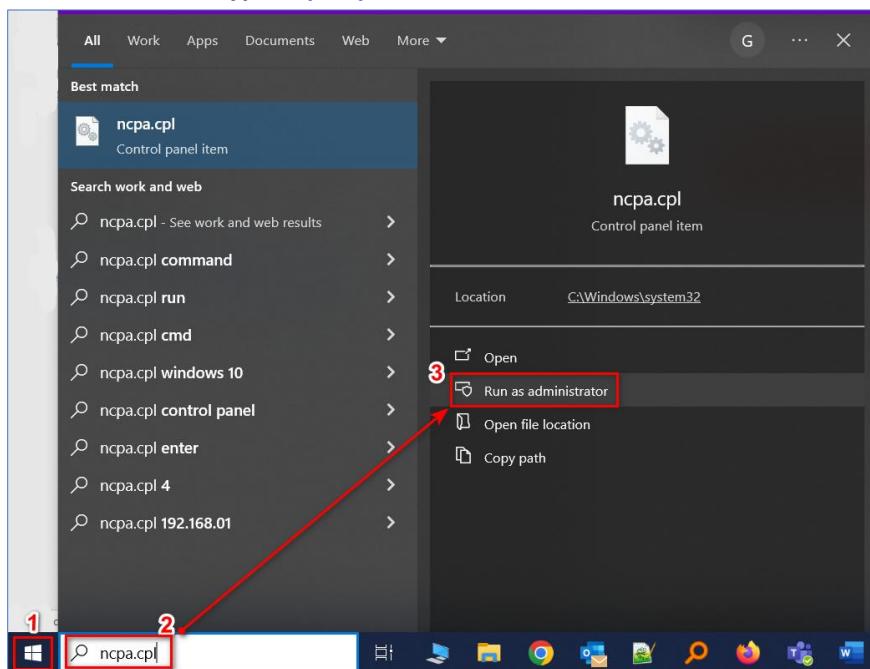
Laptop IP needed to be set as below:

**IP Address : 10.1.1.200**  
**Subnet Mask : 255.255.255.0**



## 2.5 Verifying the IP configuration

- a) Go to Windows -> Search -> type **ncpa.cpl** -> Run as administrator



- b) On the **Network Connections** window, check the Ethernet should show in **connected** state. Double click on **Ethernet** Icon



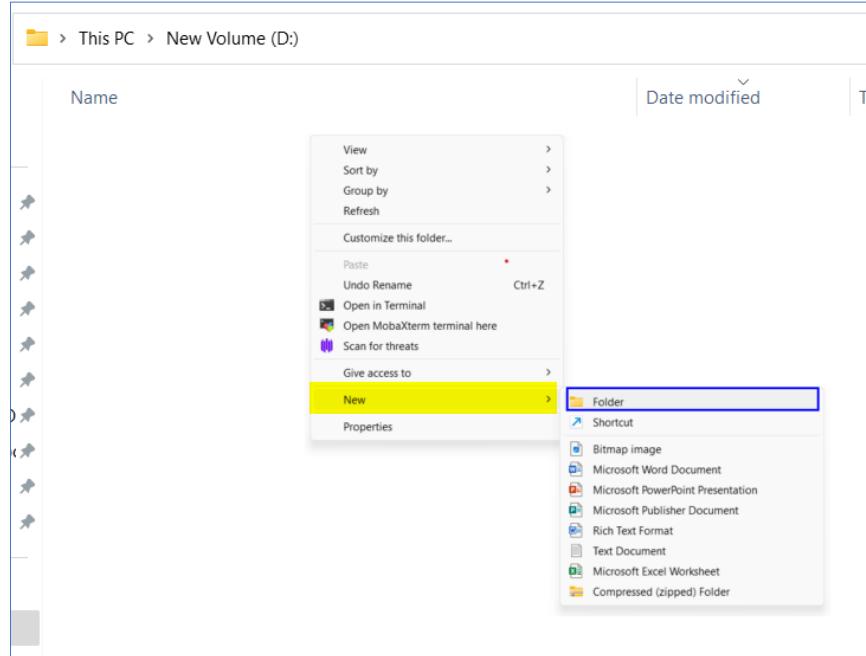
- c) On next window, click on Details option, it should show IP address as 10.1.1.200 and Subnet Mask as 255.255.255.0

Property	Value
Connection-specific DNS S...	
Description	Realtek PCIe GbE Family Controller
Physical Address	AC-1A-3D-9C-A5-C7
DHCP Enabled	No
<b>IPv4 Address</b>	<b>10.1.1.200</b>
<b>IPv4 Subnet Mask</b>	<b>255.255.255.0</b>
IPv4 Default Gateway	
IPv4 DNS Server	
IPv4 WINS Server	
NetBIOS over Tcpip Enabled	Yes
Link-local IPv6 Address	fe80::63ce:85b0:738c:c47f%24
IPv6 Default Gateway	
IPv6 DNS Server	fe80::1%24

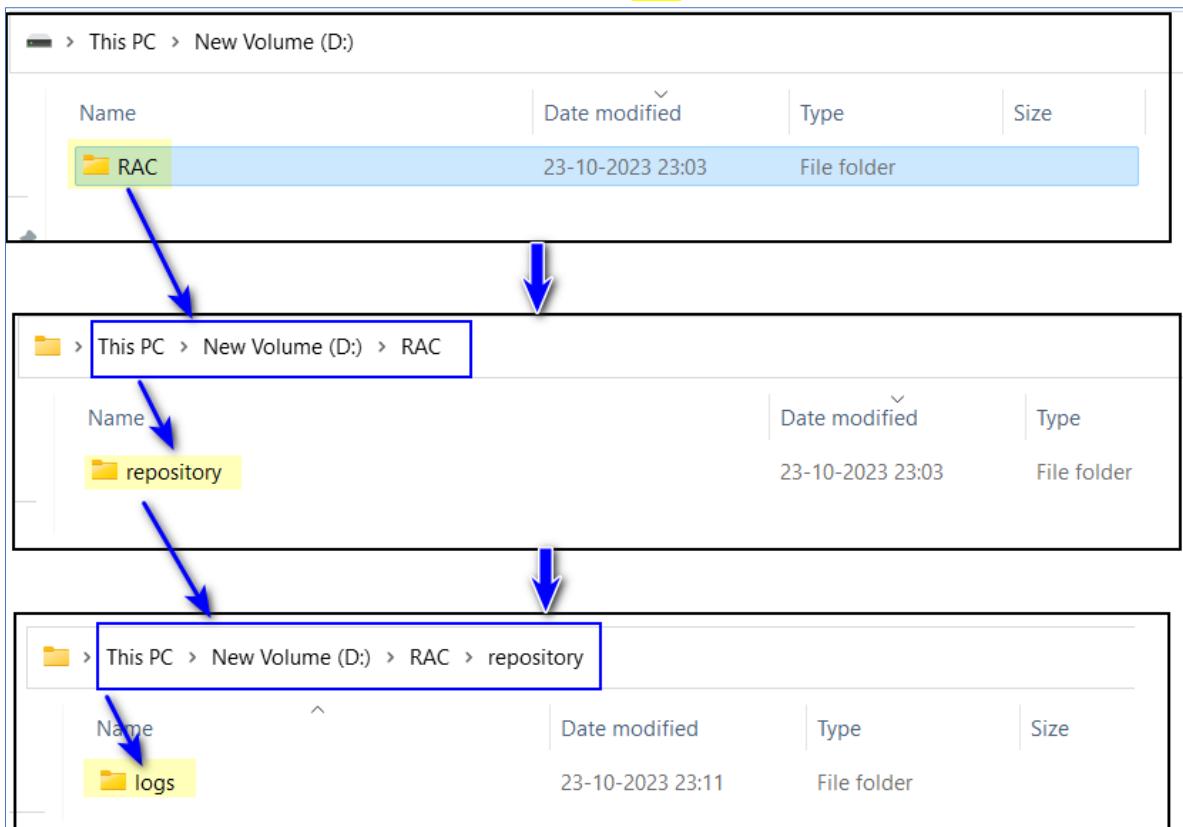
## 2.6 Collecting Version file and saving it in **D:\RAC\repository\logs** path.

In this step, RAC version file need to be copied under desired path in the Laptop/PC.

- First go to Directory D and create a folder named **RAC** (**Make sure the spelling should be correct**)



- Under RAC folder create another folder **repository** (**Make sure the spelling must be correct**)
- Then under repository folder create folder named **logs** (**Make sure the spelling must be correct**)

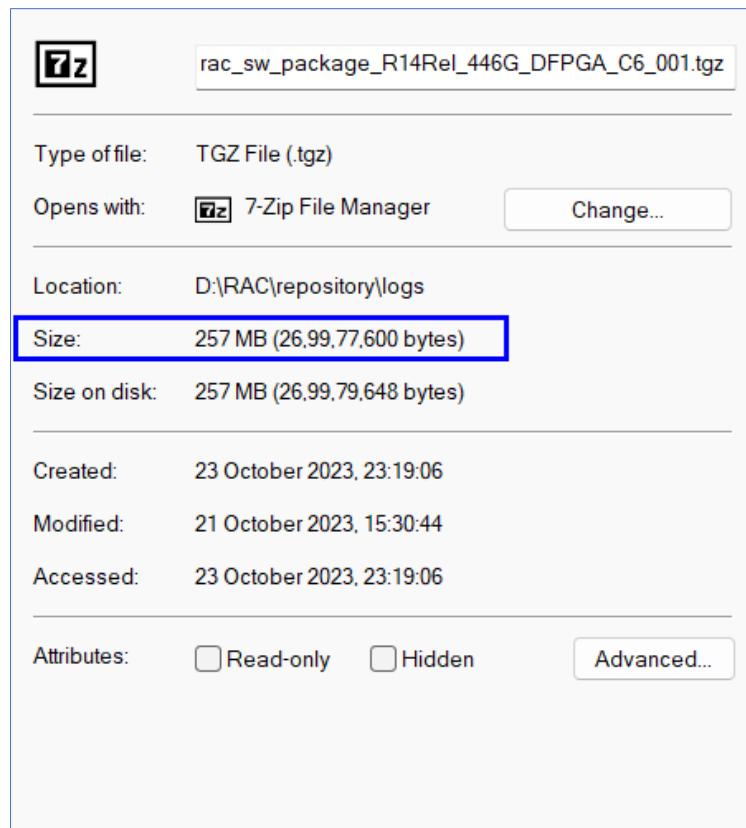


Now collect the version file (FILENAME: **rac\_sw\_package\_R14Rel\_446G\_DFPGA\_C6\_001.tgz**) from Local Tejas representative.

Place the file under **D:\RAC\repository\logs**. Need to ensure that the file size must be **263650 KB** (as shown in image)

Name	Date modified	Type	Size
<b>rac_sw_package_R14Rel_446G_DFPGA_C6_001.tgz</b>	21-10-2023 15:30	TGZ File	2,63,650 KB

To verify the file size, right click on the file to check Properties of the file. Match the file **Size** should show **26,99,77,600 bytes**

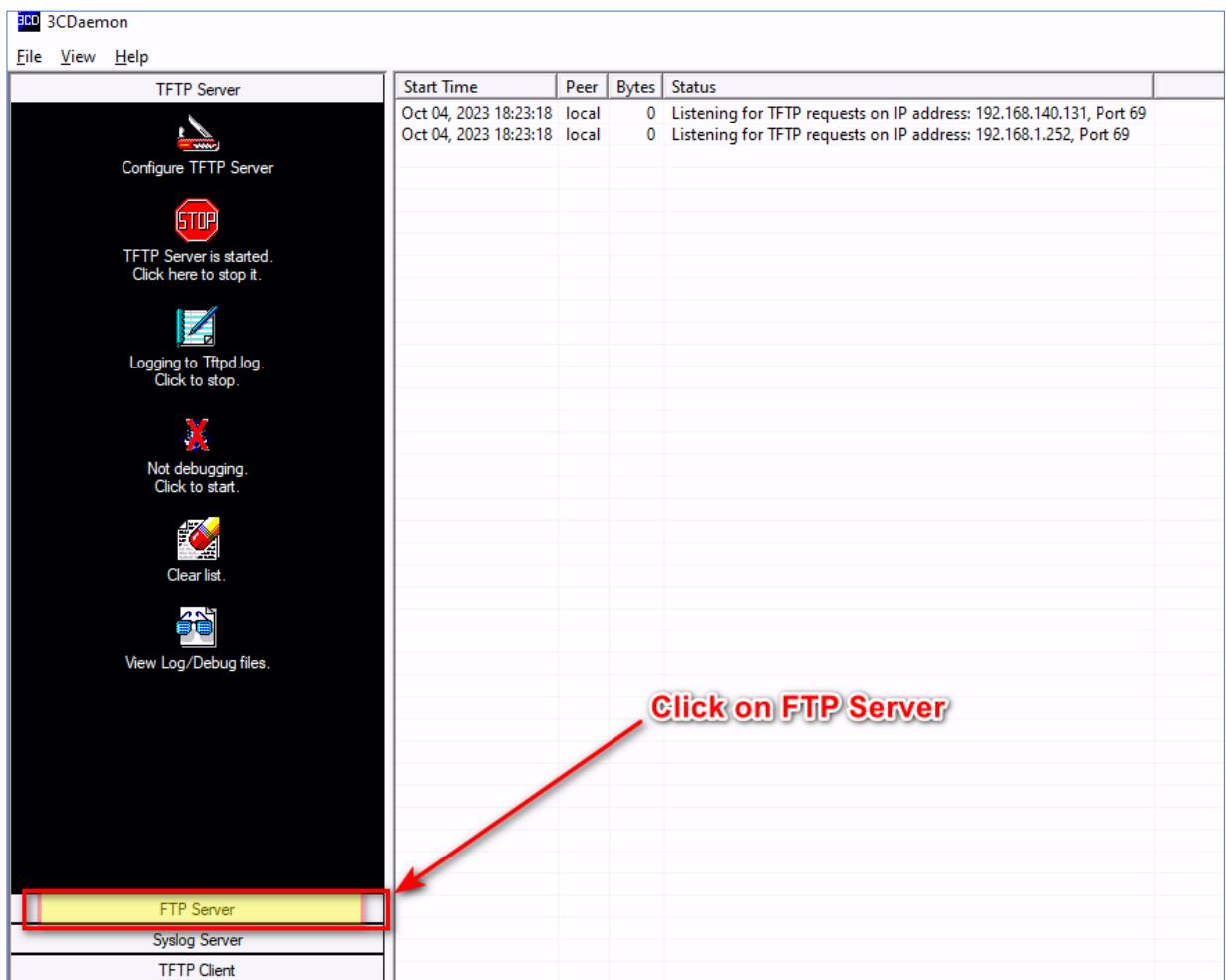


## 2.7 Setting FTP server using 3CDaemon tool

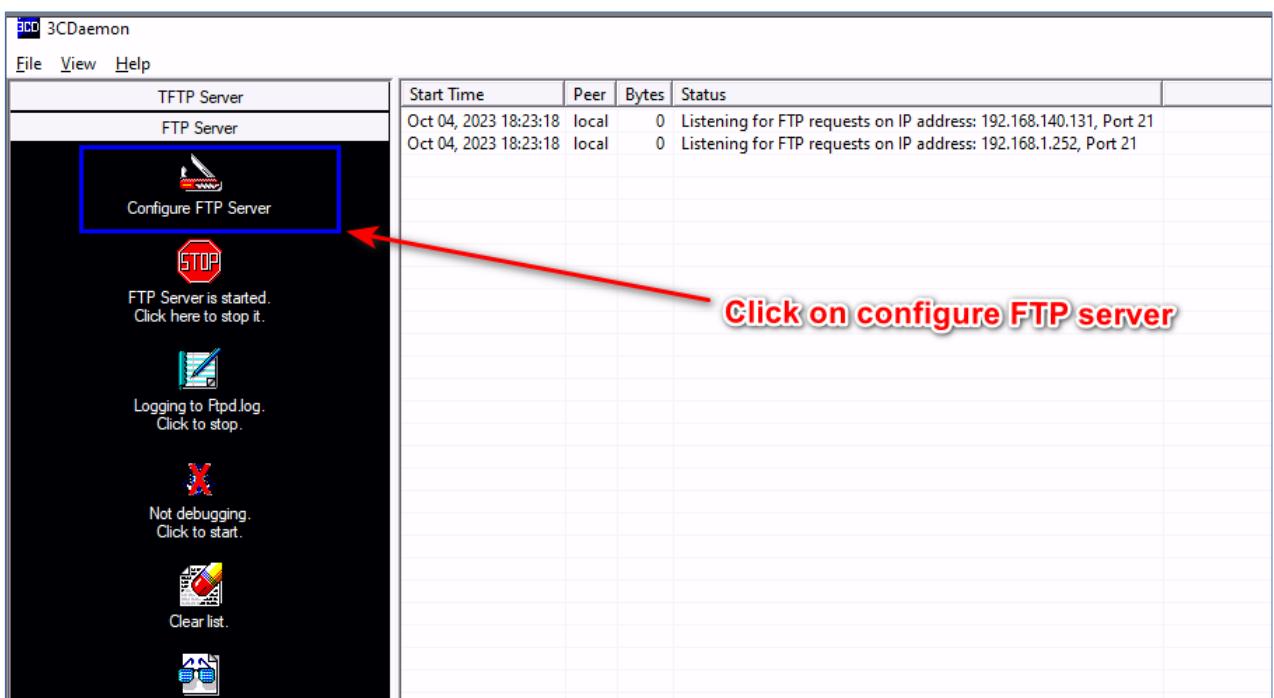
- Collect the 3CDaemon tool from [Step 1.8](#) in this document and unzip it on the Desktop. Inside the unzipped folder double-click the file named **3CDaemon.EXE**

Name	Date modified	Type	Size
Help	23-10-2023 23:35	File folder	
<b>3CDaemon.EXE</b>	28-06-2000 22:48	Application	556 KB
3CDaemon.ini	23-10-2023 23:36	Configuration setti...	1 KB
3CDaemon.revisions.txt	08-06-2000 00:55	Text Document	10 KB
Ftpd.log	03-06-2016 01:05	Text Document	0 KB
NoAccess.ftp	10-08-2010 21:46	FTP File	0 KB
Profiles.ftp	23-10-2023 14:19	FTP File	1 KB
Tftpd.log	03-06-2016 01:05	Text Document	0 KB
TFTPHost.ini	02-06-2014 04:25	Configuration setti...	1 KB

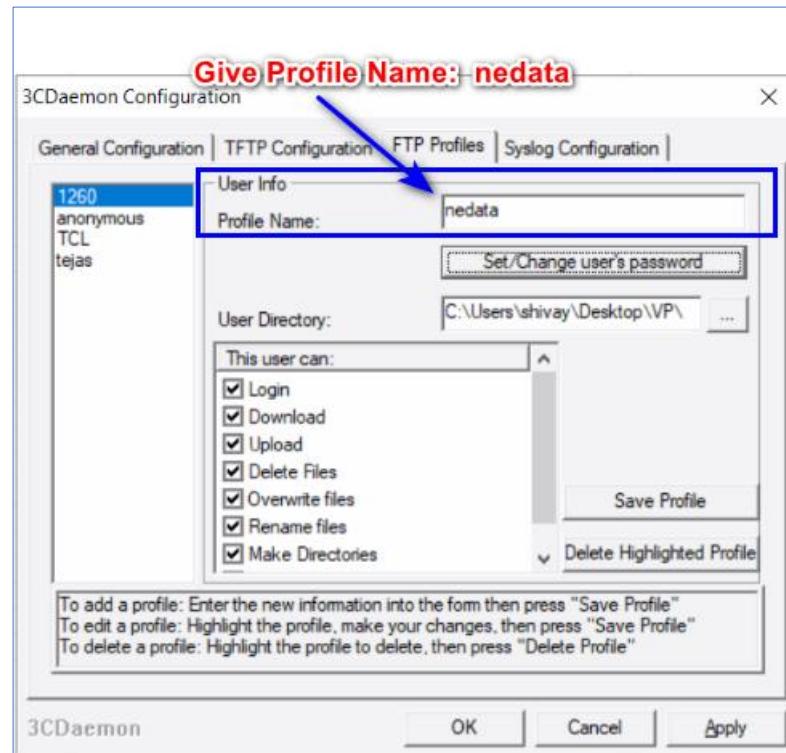
- b) It will open **3C Daemon tool** interface, and on the left pane click on **FTP server** option.



- c) Next click on “Configure FTP Server”

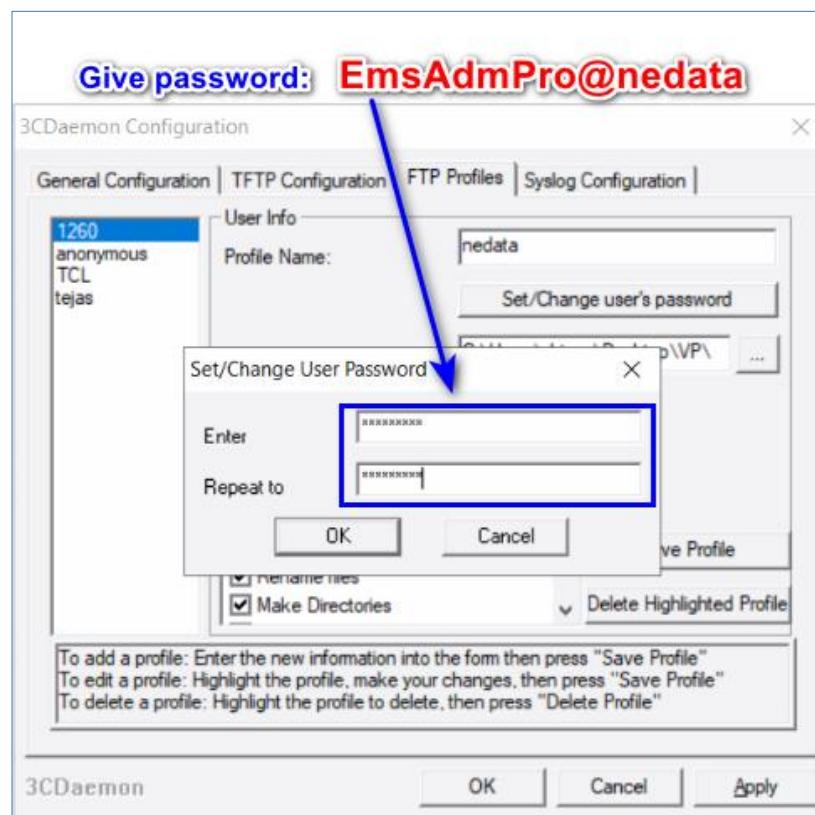


- d) Next in the Profile Name box, type **nedata**

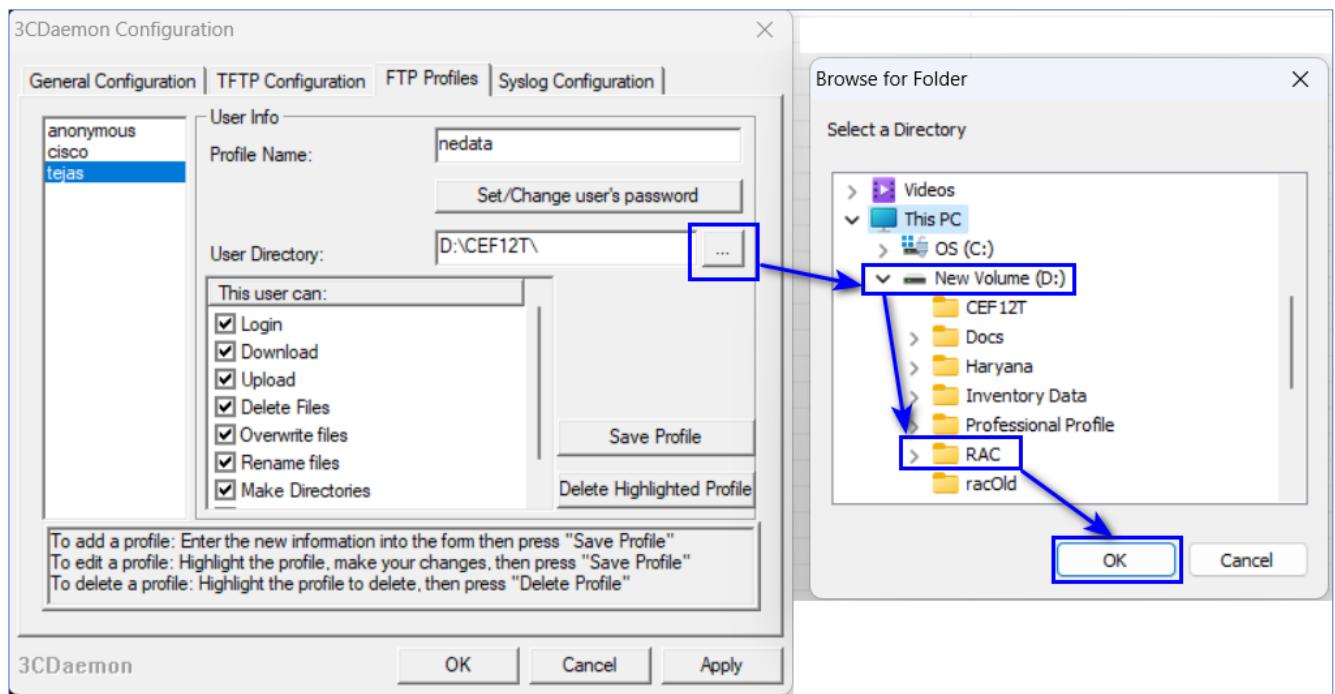


Next click on **Set/Change user's password**, & in the next widow input **EmsAdmPro@nedata** in both **Enter** and **Repeat to** options. Then click on **OK**

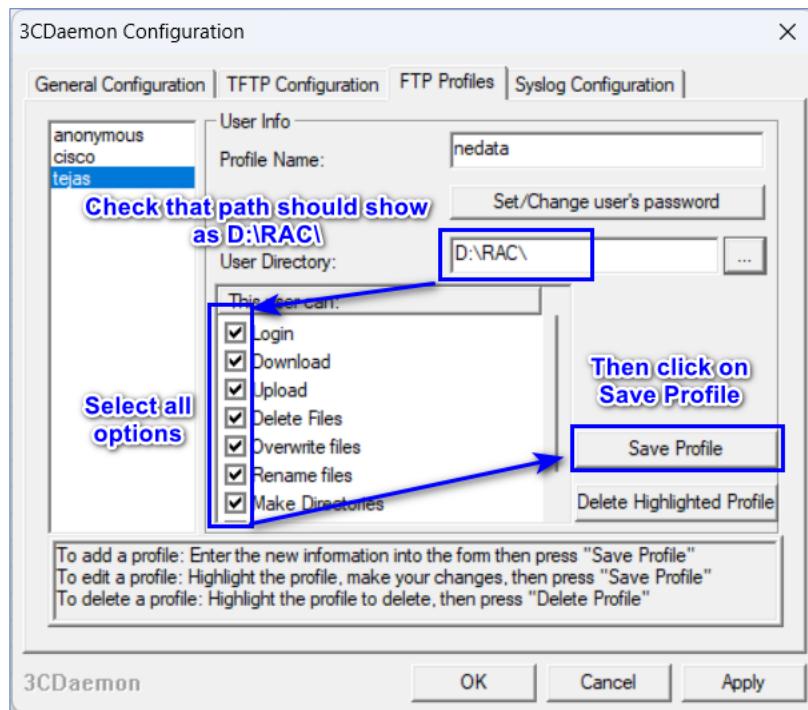
(Copy the red coloured text from document and paste there in the box to avoid any typing mistake)



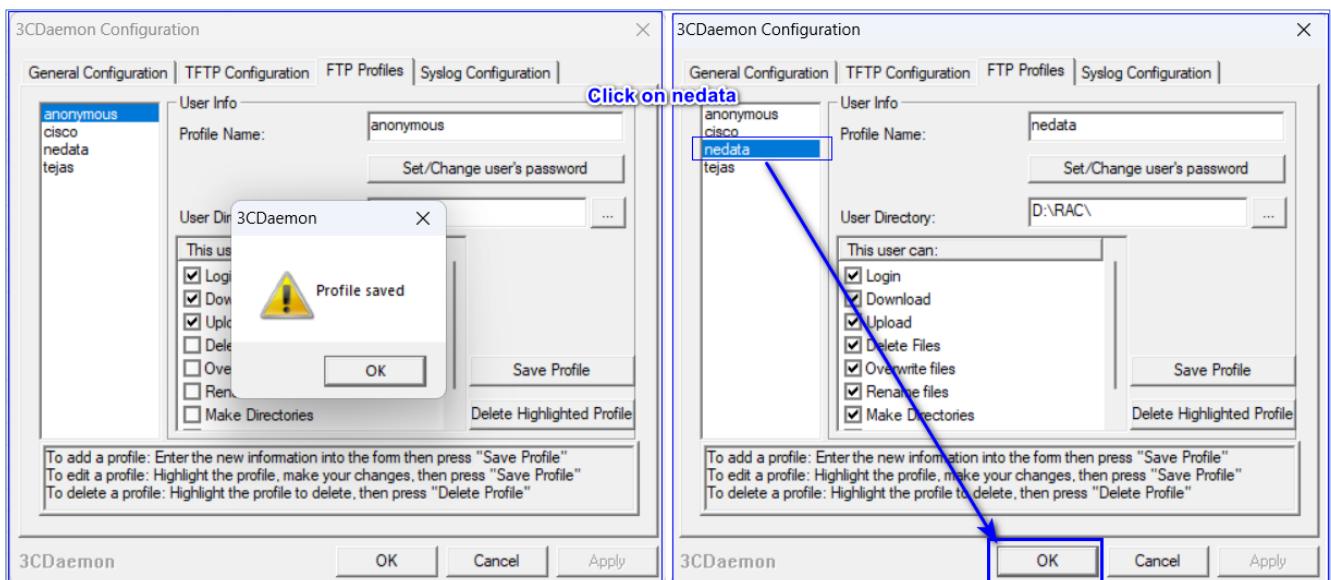
- e) Next click on the right-side box on **User Directory** option, select the path as **D:\RAC** and click on **OK**.



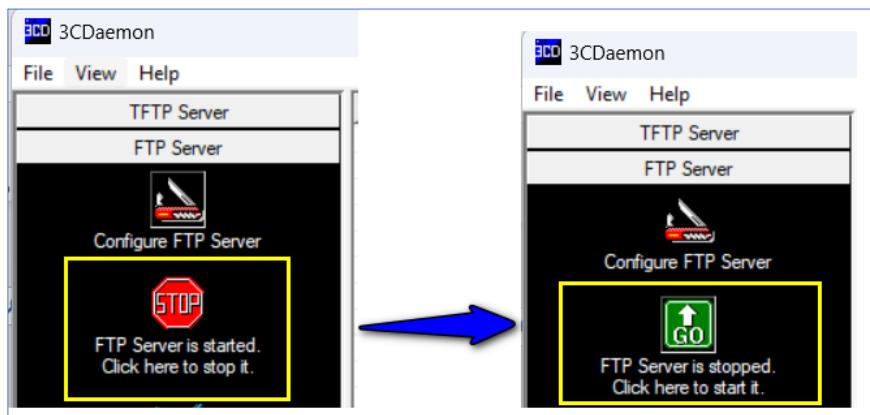
- f) Next verify the path it should show as **D:\RAC\** and check all options on by one in the “**User Directory**” box, then click on **Save Profile** option.



After the successful profile save, it will show a prompt as “**Profile Saved**”, after this click on **nedata** in left side box and then click on **OK**, as shown in next images.



- g) Next got to 3CDaemon interface left pane and click on “**FTP server is started. Click here to stop it.**” And then **click on the same option again** to start the FTP server.



After the FTP server is successfully started, it should show “**Listening for FTP requests on IP address: 10.1.1.200, Port 21**”

The image shows a screenshot of the 3CDaemon interface with a table of log entries.

**Log Table:**

Start Time	Peer	Bytes	Status
Oct 24, 2023 00:02:52	local	0	Stopped FTP Server
Oct 23, 2023 23:38:42	local	0	Listening for FTP requests on IP address: 192.168.1.86, Port 21
Oct 23, 2023 23:38:42	local	0	Listening for FTP requests on IP address: 10.1.1.200, Port 21
Oct 23, 2023 23:38:42	local	0	Listening for FTP requests on IP address: 10.254.20.73, Port 21

## 2.8 Setting RAC IP using eNB\_Comm\_Tool.exe

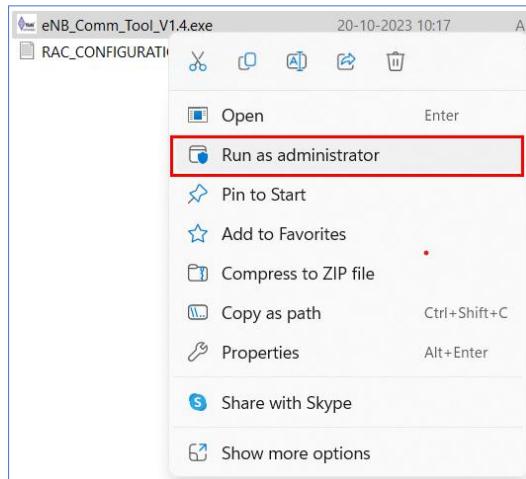
- a) Copy this attached **RAC.txt** file from below here and save it under **D:\RAC** folder.



Verify the file should be there after pasting it.

This PC > New Volume (D:) > RAC			
Name	Date modified	Type	Size
RAC.txt	23-10-2023 16:25	Text Document	1 KB
repository	23-10-2023 23:11	File folder	

- b) Run eNB\_Comm\_Tool.exe, Go to the folder where tool is saved. Right click on the file and select “Run as administrator”



- c) After running it will show an interface as below. Here types the COM port as per available COM port list. In the below image **COM4** is the available COM port so COM4 has been typed and enter was pressed.

```

11:58:27,881 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - No compression will be used
11:58:27,882 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - Will use the pattern logs/%d{dd-MM-yyyy}.%i.log for the active file
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - The date pattern is 'dd-MM-yyyy' from file name pattern 'logs/%d{dd-MM-yyyy}.%i.log'.
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Roll-over at midnight.
11:58:27,891 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Setting initial period to Mon Oct 23 11:58:27 IST 2023
11:58:27,893 |-INFO in ch.qos.logback.core.model.processor.ImplicitModelHandler - Assuming default type [ch.qos.logback.classic.encoder.PatternLayoutEncoder] for [encoder] property
11:58:27,968 |-WARN in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Append mode is mandatory for RollingFileAppender. Defaulting to append=true.
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Active log file name: logs/DATE_23_10_2023_TIME_11_58_27_5827.log
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - File property is set to [logs/DATE_23_10_2023_TIME_11_58_27_5827.log]
11:58:27,990 |-INFO in ch.qos.logback.classic.model.processor.RootLoggerModelHandler - Setting level of ROOT logger to INFO
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.AppendRefModelHandler - Attaching appender named [FILE] to Logger[ROOT]
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.DefaultProcessor@71423665 - End of configuration.
11:58:27,990 |-INFO in ch.qos.logback.classic.joran.JoranConfigurator@20398b7c - Registering current configuration as safe fallback point
Available COM Ports
=====
COM4
=====
Enter the COMM port
COM4

```

**On the Interface it will show available COM ports  
As here it shows available COM port as COM4**

**Type COM4 below the option "Enter the COMM port"**

- d) Next will show a list of Choices for next step. Here input **2** and press **Enter**.

```
Available COM Ports
=====
COM4
=====
Enter the COMM port
COM4
COM port is available
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
2
Enter the properties file name with Path.
For Example: c:\temp\RacProperties.txt
Enter 2 to commissioning using file
```

- e) Next it will ask to Enter the properties file name. Here input **D:\RAC\RAC.txt** (Make sure the file is already copied from 3.7 (a) and pasted to **D:\RAC** folder) and press **Enter**. It will display the “Input Summary”, verify the details which should show as below:

```
BACKHAUL_INTERFACE_IP=10.1.1.100
BACKHAUL_INTERFACE_NETMASK=255.255.255.0
BACKHAUL_INTERFACE_GATEWAY=10.1.1.1
EMS_SERVER_IP=10.1.1.200
```

After verifying details, under the **Enter Your Choice** input **1** to Confirm and press **enter** to Continue the process.

```
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
2
Enter the properties file name with Path.
For Example: c:\temp\RacProperties.txt
d:\rac\rac.txt ###### Configuration Input Summary ######
ENODEB_NAME      : Tejas-eNodeB-TEST
BACKHAUL_INTERFACE_IP   : 10.1.1.100
BACKHAUL_INTERFACE_NETMASK  : 255.255.255.0
BACKHAUL_INTERFACE_GATEWAY  : 10.1.1.1
EMS_SERVER_IP    : 10.1.1.200
CLOCK_SOURCE     : FREERUN
ENODEB_MANAGEMENT_SERVER_VLANID  :
ENODEB_MANAGEMENT_SERVER_INTERFACE_IP  :
ENODEB_MANAGEMENT_SERVER_INTERFACE_NETMASK  :
ENODEB_MANAGEMENT_SERVER_GATEWAY  :
ENODEB_S1SIGLINK_SERVER_VLANID  :
ENODEB_S1SIGLINK_SERVER_INTERFACE_IP  :
ENODEB_S1SIGLINK_SERVER_INTERFACE_NETMASK  :
ENODEB_S1SIGLINK_SERVER_GATEWAY  :
ENODEB_SGW_SERVER_VLANID  :
ENODEB_SGW_SERVER_INTERFACE_IP  :
ENODEB_SGW_SERVER_INTERFACE_NETMASK  :
ENODEB_SGW_SERVER_GATEWAY  :

Enter your choice
1 - To Confirm
0 - To Reset
1
```

Type the file name as  
D:\RAC\RAC.txt  
Then press Enter

After this it should show the IP details as per the RAC.txt file

Verify IPs, it should show exactly same as this image

Next type 1 to confirm and Enter

- f) After this the Tool will start commissioning process, which may take around 5-7 minutes to complete.

```

Enter your choice
1 - To Confirm
0 - To Reset
1
Successfully logged in to Node
Got access to Node
Got CLI access
##### Configuring eNodeB Interface IP... #####
IPInterfaceIPAddress: 10.1.1.100
IPInterfaceSubnetMask: 255.255.255.0
IPInterfaceGateway 10.1.1.1
##### Configured eNodeB Interface IP... #####
##### Configuring Clock Source #####
ClockSource: FREERUN
##### Configured Clock source #####
##### Configuring eNodeB Name #####
HNBN Name: Tejas-eNodeB-TEST
##### Configured eNodeB Name #####
##### Configuring EMS Server #####
EMS Server: 10.1.1.200
##### Configured EMS Server #####
##### Commissioning eNodeB state #####
##### eNodeB state Commissioned #####
##### Configuring FTP Server #####
FTP Server IP: 10.1.1.200
##### Configured FTPServer #####
##### Restarting eNodeB #####
Waiting for Node to restart...
-
```

Next commissioning process will start.  
Wait for some time for tool  
to show output as below

```

IPInterfaceGateway 10.1.1.1
##### Configured eNodeB Interface IP... #####
##### Configuring Clock Source #####
ClockSource: FREERUN
##### Configured Clock source #####
##### Configuring eNodeB Name #####
HNBN Name: Tejas-eNodeB-TEST
##### Configured eNodeB Name #####
##### Configuring EMS Server #####
EMS Server: 10.1.1.200
##### Configured EMS Server #####
##### Commissioning eNodeB state #####
##### eNodeB state Commissioned #####
##### Configuring FTP Server #####
FTP Server IP: 10.1.1.200
##### Configured FTPServer #####
##### Restarting eNodeB #####
Waiting for Node to restart...
##### eNodeB Restarted #####
Exiting CLI Access
VLAN parameters are not available to Configure.
Successfully logged in to Node
Got access to Node
Got CLI access
Checking eNodeB status in EMCLI...
-----
eNBStatus      = ENB_SM_COMMISIONED
Up_Time        = days- 0 time- 00:26:22
eNBName        = Tejas-eNodeB-TEST
S1AP_Status    = Link Down !!!
Cell_Status_0   = Sector not available
Cpri_Link_Status_0 = Link Down !!!
L1_L2_Sync_Status_0 = Link Down !!!
RRH_Present_Status_0 = Not Present !!!
Cell_Status_1   = Sector not available
Cpri_Link_Status_1 = Link Down !!!
L1_L2_Sync_Status_1 = Link Down !!!
RRH_Present_Status_1 = Not Present !!!
Cell_Status_2   = Sector not available
Cpri_Link_Status_2 = Link Down !!!
L1_L2_Sync_Status_2 = Link Down !!!
RRH_Present_Status_2 = Not Present !!!
-----
```

Keep waiting for 5-10 mins.  
The tool will output the  
progress as shown

- g) Check the response shown in tool and press **9** and **Enter** to exit from the tool

```

4 packets transmitted, 0 received, +4 errors, 100% packet loss, time 3071ms
pipe 4
-bash-4.3#
Matching String: 100% packet loss
Gateway IP address: 10.1.1.1 is Not reachable
Checking whether EMS server is reachable

PING 10.1.1.200 (10.1.1.200) 56(84) bytes of data.
64 bytes from 10.1.1.200: icmp_seq=1 ttl=128 time=1.34 ms
64 bytes from 10.1.1.200: icmp_seq=2 ttl=128 time=1.49 ms
64 bytes from 10.1.1.200: icmp_seq=3 ttl=128 time=1.50 ms
64 bytes from 10.1.1.200: icmp_seq=4 ttl=128 time=1.48 ms

--- 10.1.1.200 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 1.347/1.455/1.500/0.078 ms
-bash-4.3#
Matching String: 0% packet loss
IP : 10.1.1.200 is reachable
EMS Server IP address: 10.1.1.200 is reachable
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
9

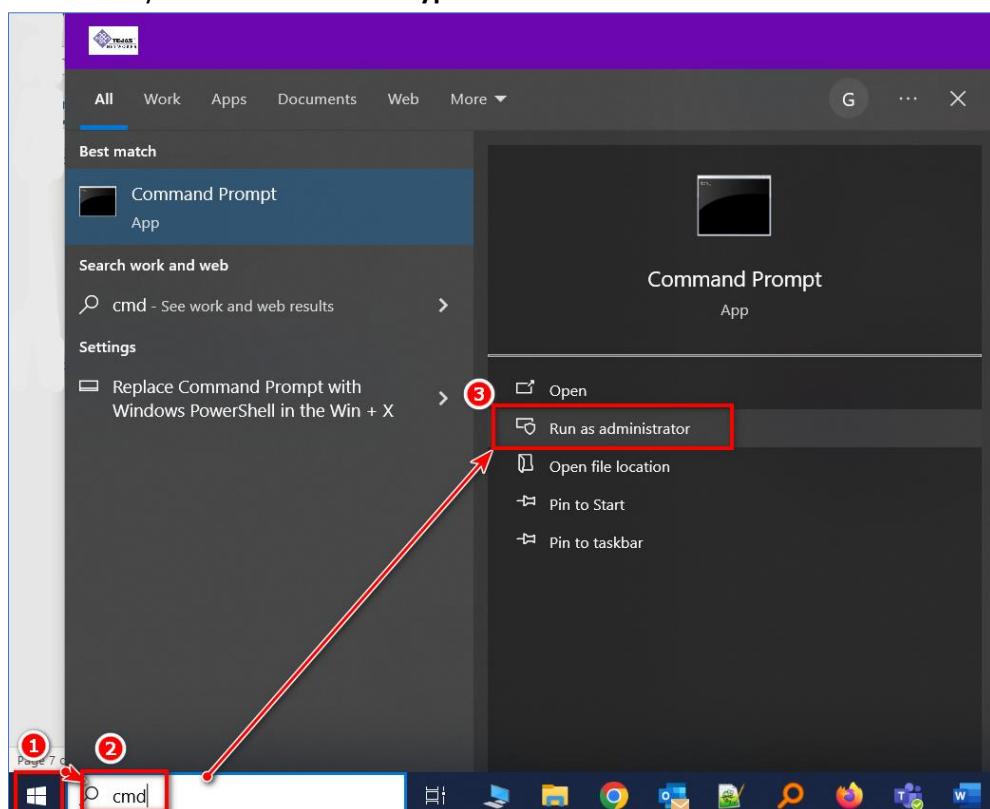
```

**After successful progress it should show the ping to 10.1.1.200, which should show successful ping.**

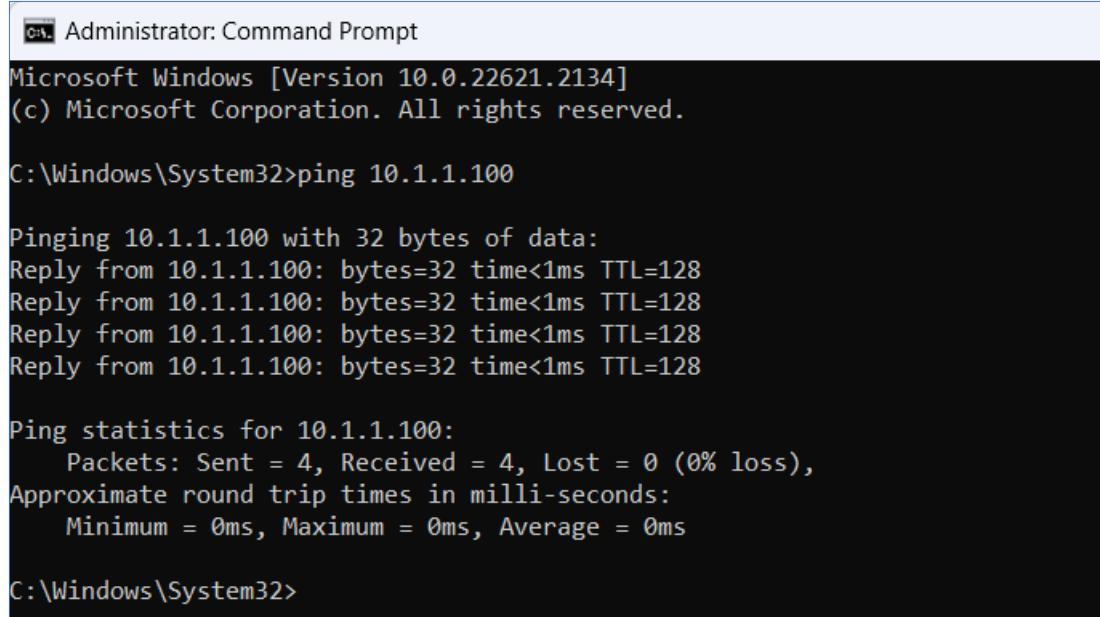
**Now the tool's work is finished. Press 9 and Enter to exit from the tool**

## 2.9 Checking IP ping status

- a) After setting IP address for Laptop and Connecting the CAT6 Ethernet cable from Laptop Ethernet Ports to Electric SFP which is inserted at Port P4 on RAC card, check the ping status of the card to verify connectivity status. Go to **Start > type CMD > Run as administrator**.



- b) In the command prompt window, check the ping status of IP: 10.1.1.100 (RAC IP) by command **ping 10.1.1.100**. If the ping is OK, it will show below result:



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.22621.2134]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>ping 10.1.1.100

Pinging 10.1.1.100 with 32 bytes of data:
Reply from 10.1.1.100: bytes=32 time<1ms TTL=128

Ping statistics for 10.1.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Windows\System32>
```

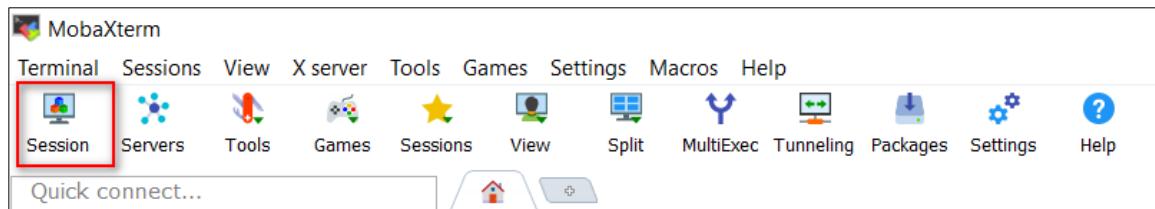
If the Ping result is **not OK** and the result shows “**Request timed out.**” Or “**Destination host unreachable.**” then things to check are:

- 1) Check the cable connection should be on P4 Port on RAC card.
- 2) Check the IP and netmask configuration of the laptop. Laptop IP should be **10.1.1.200** and subnet mask should be **255.255.255.0**.
- 3) Wait for 5 mins more to check the ping status then.
- 4) The “Act” and “Sts” LED on RAC card should be Green Stable for card to get ping.
- 5) If the result show “**General failure.**” and the ethernet (LAN) connection is not up. Check RAC board status it should be powered ON and Electric SFP is properly inserted. Also check Cable connection if it is inserted properly at both ends and not loose.

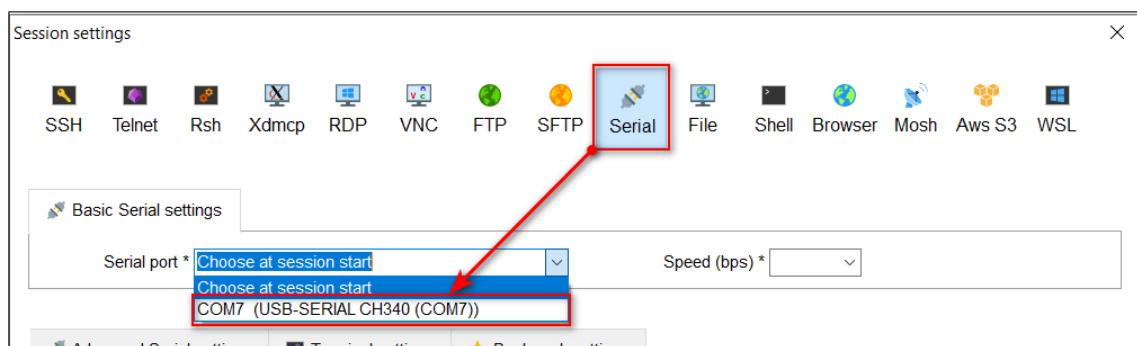
## 2.10 Downloading version file to RAC using MobaXterm Tool.

### 2.10.1 Connecting the RAC and running upgrade commands.

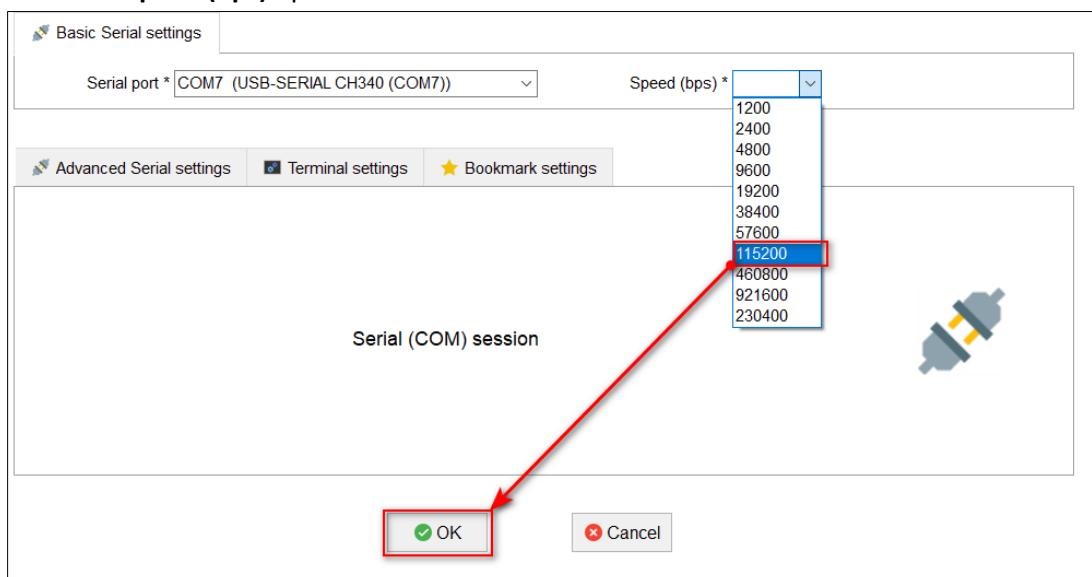
- a) Open MobaXterm Terminal and click on session.



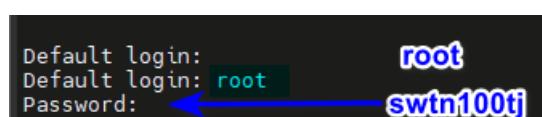
- b) On next interface select **Serial** option and on **Serial Port** option it will show a COM port (COM port ID can be different on different laptops), select the visible COM port.



- c) Next in the **Speed (bps)** option select **115200** and click on **OK**.



- d) Next it will login the terminal and it may ask for user & password, in username input **root**, in password input **swtn100tj** here. After successful login to root it will show a **-bash-4.3#** prompt which means login by root user is successful.



- e) Run command as below (copy the **Blue Coloured** command and paste directly on MobaXterm window):

```
-bash-4.3# cd /usr/sbin/tejas
-bash-4.3# source emcli_export_script.sh
-bash-4.3# ./lte_EMCli
```

- f) It will show an interface like `LTE_EMCLI #>` as shown in next image.

```
-bash-4.3# cd /usr/sbin/tejas
-bash-4.3# source emcli_export_script.sh
-bash-4.3# ./lte_EMCli

*****EMCLI BUILD INFO*****
EMCLI START TIME      : [2000-01-03][00:41:17:926]
EMCLI TAG NAME        : TAG_EMCLI_RAC_28072022AR14Rev12
EMCLI VERSION NUMBER  : OAM_EMCLI_14_12
PLATFORM VERSION       : NA
EMCLI SELF PID         : 4969
EMCLI BUILD TIME       : Jul  7 2023 06:33:39
*****EMCLI BUILD INFO END*****

Welcome to LTE eNodeB Interface

Please issue " Show Status " to know the current status of all sectors

Enter your command
LTE_EMCLI #>
```

- g) Next run the command to download version file.

Under the `LTE_EMCLI #>` interface run below command. (Copy & Paste blue coloured text command directly) after which press **Enter**.

`LTE_EMCLI #> eNB Upgrade SWPackage rac_sw_package_R14Rel_446G_DFPGA_C6_001.tgz`

```
-bash-4.3# ./lte_EMCli

*****EMCLI BUILD INFO*****
EMCLI START TIME      : [2000-01-03][00:41:17:926]
EMCLI TAG NAME        : TAG_EMCLI_RAC_28072022AR14Rev12
EMCLI VERSION NUMBER  : OAM_EMCLI_14_12
PLATFORM VERSION       : NA
EMCLI SELF PID         : 4969
EMCLI BUILD TIME       : Jul  7 2023 06:33:39
*****EMCLI BUILD INFO END*****

Welcome to LTE eNodeB Interface

Please issue " Show Status " to know the current status of all sectors

Enter your command
LTE_EMCLI #>eNB Upgrade SWPackage rac_sw_package_R14Rel_446G_DFPGA_C6_001.tgz
```

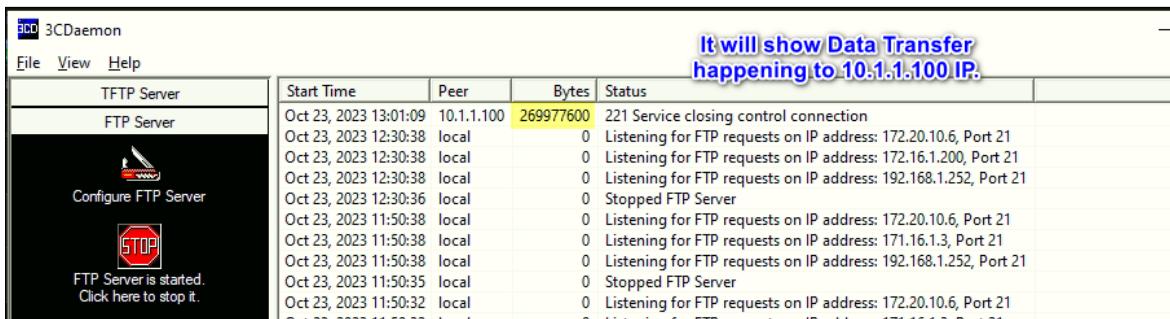
- h) After pressing enter it will ask for confirmation here press **Y** and **Enter** to continue. It will output result as **Command Successful**.

```
-bash-4.3# ./lte_EMCLI
*****
EMCLI BUILD INFO ****
EMCLI START TIME : [2000-01-03][00:41:17:926]
EMCLI TAG NAME : TAG_EMCLI_RAC_28072022AR14Rev12
EMCLI VERSION NUMBER : OAM_EMCLI_14_12
PLATFORM VERSION : NA
EMCLI SELF PID : 4969
EMCLI BUILD TIME : Jul 7 2023 06:33:39
*****EMCLI BUILD INFO END*****
After pressing Y
it will show successful result
Welcome to LTE eNodeB Interface

Please issue " Show Status " to know the current status of all sectors

Enter your command
LTE_EMCLI #>eNB Upgrade SWPackage rac_sw_package_R14Rel_446G_DFPGA_C6_001.tgz
Do you want to proceed with SWPackage[Y/N]:Y
-----
Command successful
LTE_EMCLI #>
```

- i) Now go to 3CDaemon tool window and check whether file transfer is happening.



Start Time	Peer	Bytes	Status
Oct 23, 2023 13:01:09	10.1.1.100	269977600	221 Service closing control connection
Oct 23, 2023 12:30:38	local	0	Listening for FTP requests on IP address: 172.20.10.6, Port 21
Oct 23, 2023 12:30:38	local	0	Listening for FTP requests on IP address: 172.16.1.200, Port 21
Oct 23, 2023 12:30:38	local	0	Listening for FTP requests on IP address: 192.168.1.252, Port 21
Oct 23, 2023 12:30:36	local	0	Stopped FTP Server
Oct 23, 2023 11:50:38	local	0	Listening for FTP requests on IP address: 172.20.10.6, Port 21
Oct 23, 2023 11:50:38	local	0	Listening for FTP requests on IP address: 171.16.1.3, Port 21
Oct 23, 2023 11:50:38	local	0	Listening for FTP requests on IP address: 192.168.1.252, Port 21
Oct 23, 2023 11:50:35	local	0	Stopped FTP Server
Oct 23, 2023 11:50:32	local	0	Listening for FTP requests on IP address: 172.20.10.6, Port 21

- j) It may take around 2-3 minutes for file to transfer after successful transfer it will show results as below on MobaXterm Window. After which RAC card will go to reboot.

```

LTE_EMCLI #>

-----[1]-----
AlarmTime      = 03.01.2000 00:42:27.758373
AlarmIdentifier = 2006
AlarmTransactionId = 939
ManagedObjectInstance = Sec_X
ManagedObjectClass = SEC_IND
AlarmCategory = 2_CmdResponse
Severity = Cleared
AdditionalText = File Download Completed, Performing eNodeB Software Upgrade#


-----[2]-----
AlarmTime      = 03.01.2000 00:42:27.758373
AlarmIdentifier = 2006
AlarmTransactionId = 939
ManagedObjectInstance = Sec_X
ManagedObjectClass = SEC_IND
AlarmCategory = 2_CmdResponse
Severity = Cleared
AdditionalText = File Download Completed, Performing eNodeB Software Upgrade#


-----[3]-----
AlarmTime      = 03.01.2000 00:43:08.129416
AlarmIdentifier = 2006
AlarmTransactionId = 940
ManagedObjectInstance = Sec_X
ManagedObjectClass = SEC_IND
AlarmCategory = 2_CmdResponse
Severity = Cleared
AdditionalText = eNB Upgrade SWPackage Success# Check the MobaXterm window and look for these results. Successful file download will show these 4 results.

-----[4]-----
AlarmTime      = 03.01.2000 00:43:08.129416
AlarmIdentifier = 2006
AlarmTransactionId = 940
ManagedObjectInstance = Sec_X
ManagedObjectClass = SEC_IND
AlarmCategory = 2_CmdResponse
Severity = Cleared
AdditionalText = eNB Upgrade SWPackage Success#

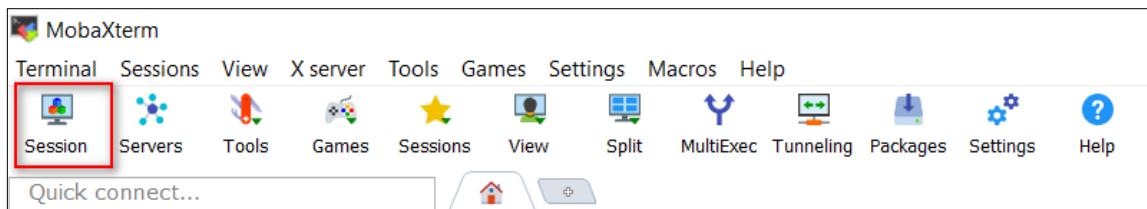
```

**Note:** 5 minutes after the successful command result, we can **remove the Ethernet Cable** and **Use it to Commission the CEF Card** next as it will take around 30 mins for RAC to come to working.

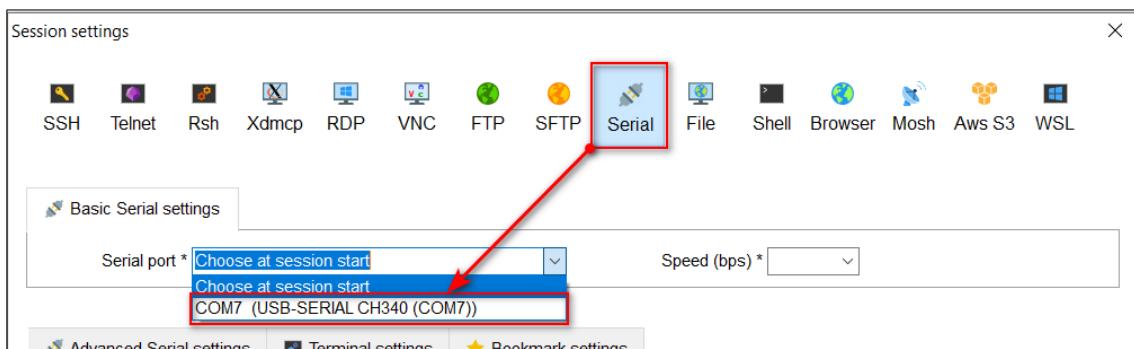
Go To Step 3 : [Pact-C: CEF Commissioning Process](#) & come back after the CEF commissioning is completed.

#### 2.10.2 Verifying version upgrade of RAC card.

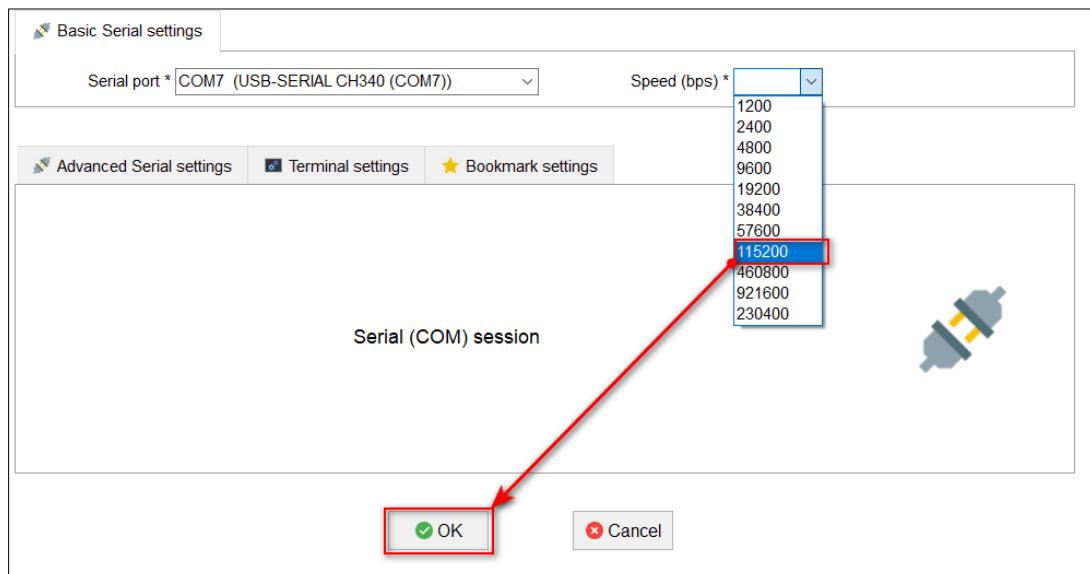
- After 30 minutes of previous step, login to Serial connection in the terminal



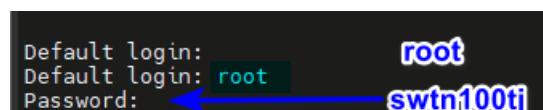
On next interface select **Serial** option and on **Serial Port** option it will show a COM port (COM port ID can be different on different laptops), select the visible COM port.



- b) Next in the **Speed (bps)** option select **115200** and click on **OK**.



- c) and it will ask for user & password, in username input **root**, in password input **swtn100tj** here. After successful login to root it will show a **-bash-4.3#** prompt which means login by root user is successful.



- d) Run command as below:

```
-bash-4.3# cat /etc/tejas/config/db/ver_info
```

```

Default login:
Default login: root
Password:
/etc/tacacs/server file is missing
-bash-4.3# cat /etc/tejas/config/db/ver_info ← Run command to check the version
DATE: 03-01-2000 06:43:34
CAV_CFPGA_VER: 0xc6
CAV_UBOOT_VER: UBOOT_2013_RACV2_00_00_03
CAV_LINUX_VER: LINUX_4_9_79_RACV2_00_00_03 ,Aug 05 2023 21:30:16
CAV_ROOTFS_VER: ROOTFS_RACV2_00_00_07 ,Aug 05 2023 21:14:07
CAV_INTG_SW_VER: CAV_sw_package_R14Rel_446G_DFPGA_C6_001.enc
RAC_SW_INT: rac_sw_package_R14Rel_446G_DFPGA_C6_001.tgz ←
RAC_SW_EXT: rac_sw_package_R14Rel_446G_DFPGA_C6
OAM_Version: OAM_14_16_59, Sep 29 2023 20:38:10
SNMP_AGT_VER: SNMP_AGT_14_16_50, Sep 13 2023 16:02:36
OAM_Client_2_Ver: OAM_Client2_14_16_44, Jul 14 2023 15:51:55
SEC_2_K2K_UBOOT_VER: UBOOT_K2K_V2_00_01_01
SEC_2_K2K_LINUX_VER: LINUX_K2K_V2_00_00_08, RT Fri Aug 25 15:41:31 UTC 2023
SEC_2_K2K_INTG_SW_VER: k2k_sw_package_R14Rel_443C_FPGA_C6_001.tgz
SEC_2_K2K_ROOTFS_VER: ROOTFS_K2K_V2_00_00_08
SEC_2_K2K_MIDDLE_WARE: MW_1_1
OAM_Client_0_Ver: OAM_Client0_14_16_44, Jul 14 2023 15:51:55
SEC_0_K2K_UBOOT_VER: UBOOT_K2K_V2_00_01_01
SEC_0_K2K_LINUX_VER: LINUX_K2K_V2_00_00_08, RT Fri Aug 25 15:41:31 UTC 2023
SEC_0_K2K_INTG_SW_VER: k2k_sw_package_R14Rel_443C_FPGA_C6_001.tgz
SEC_0_K2K_ROOTFS_VER: ROOTFS_K2K_V2_00_00_08
SEC_0_K2K_MIDDLE_WARE: MW_1_1
OAM_Client_1_Ver: OAM_Client1_14_16_44, Jul 14 2023 15:51:55

```

Check the **RAC\_SW\_INT**: It will show the version number as **446G** then the upgrade is successful.

- Exit the window and MobaXterm.

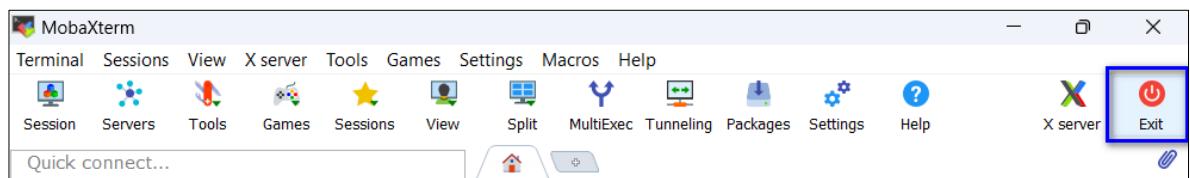
**NOTE:** Input **exit** on each of the window until you reach the login interface.

```

root@TEJAS:~# exit ← exit
logout
Connection to 170.1.1.3 closed.
-bash-4.3# exit ← exit
Logout
Default login:| Do not enter anything further

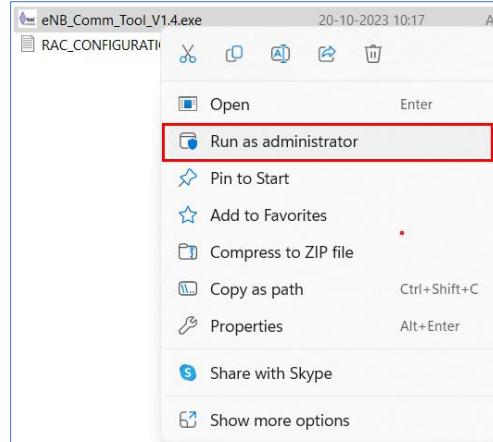
```

- Then close the MobaXterm Windows by clicking on **Exit**



### 2.10.3 Reverting the RAC to default state using eNB\_Comm\_Tool.

- a) Run eNB\_Comm\_Tool.exe, Go to the folder where tool is saved. Right click on the file and select "Run as administrator"



- b) After running it will show an interface as below. Here types the COM port as per available COM port list. In the below image **COM4** is the available COM port so COM4 has been typed and enter was pressed.

On the Interface it will show available COM ports  
As here it shows available COM port as 'COM4'

Type COM4 below the option "Enter the COMM port"

```

11:58:27,881 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - No compression will be used
11:58:27,882 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - Will use the pattern logs/%d{dd-MM-yyyy}.%i.log for the active file
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - The date pattern is 'dd-MM-yyyy' from file name pattern 'logs/%d{dd-MM-yyyy}.%i.log'.
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Roll-over at midnight.
11:58:27,891 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Setting initial period to Mon Oct 23 11:58:27 IST 2023
11:58:27,893 |-INFO in ch.qos.logback.core.model.processor.ImplicitModelHandler - Assuming default type [ch.qos.logback.classic.encoder.PatternLayoutEncoder] for [encoder] property
11:58:27,968 |-WARN in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Append mode is mandatory for RollingFileAppender. Defaulting to append=true.
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Active log file name: logs/DATE_23_10_2023_TIME_11_58_27_5827.log
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - File property is set to [logs/DATE_23_10_2023_TIME_11_58_27_5827.log]
11:58:27,990 |-INFO in ch.qos.logback.classic.model.processor.RootLoggerModelHandler - Setting level of ROOT logger to INFO
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.AppenderRefModelHandler - Attaching appender named [FILE] to Logger[ROOT]
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.DefaultProcessor@71423665 - End of configuration.
11:58:27,990 |-INFO in ch.qos.logback.classic.joran.JoranConfigurator@20398b7c - Registering current configuration as safe fallback point
Available COM Ports
=====
COM4
=====
Enter the COMM port
COM4

```

- c) Next will show a list of Choices for next step. Here input **5** and press **Enter**.

```

13:41:13,261 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FI
2023_TIME_13_41_13_4113.log]
13:41:13,262 |-INFO in ch.qos.logback.classic.model.processor.RootLoggerM
NFO
13:41:13,262 |-INFO in ch.qos.logback.core.model.processor.AppenderRefMod
Logger[ROOT]
13:41:13,262 |-INFO in ch.qos.logback.core.model.processor.DefaultProcess
13:41:13,263 |-INFO in ch.qos.logback.classic.joran.JoranConfigurator@203
fe fallback point

Available COM Ports
=====
COM4
=====
Enter the COMM port
COM4
COM port is available
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
5

```

**Input 5  
to start decommission  
process**

- d) Next it will start the Decommission process.

```

Available COM Ports
=====
COM4
=====
Enter the COMM port
COM4
COM port is available
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
5
Successfully logged in to Node
Got access to Node

```

- e) After a wait for 5-7 minutes, it will show output as “**Completed eNodeB decommissioning process**” which means decommissioning is successful. On the Choice List Prompt type **9** and **Enter** to exit from the tool interface.

```
CIE: Link timeout on port 2, probably the slot is empty
mes r
bi mount
set: BIFS (ubi0:0): UBIFS: mounted UBI device 0, volume 0, name "rootfs"
UBIFS (ubi0:0): LEB size: 1040384 bytes (1016 KiB), min./max. ootfs update
UBIFS (ubi3:0): background

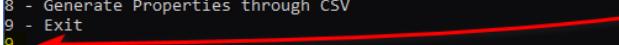
Mounting /var/tmp/backup          2:39m  ]
etwork.ini file exists

S
Mounting CAV_sw_package_R14Rel_446G_DFPGA_C6_001.tgz      [      SUCCESS ] eth0 MAC = 00:04
:95:77:6b:8b
eth1 MAC = 00:04:95:77:6b:8c
Bringing up RAC interface eth0 <[60G           [ ←[1;32m Starting TEJAS DAEMONS [SU

Default login: ##### Completed eNodeB decommissioning process #####
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
9
```

**After a duration of 5-7 minutes  
It will show output of  
"Completed eNodeB decommissioning Process"**

**Next Input:9  
and press Enter  
to exit from the Tool**

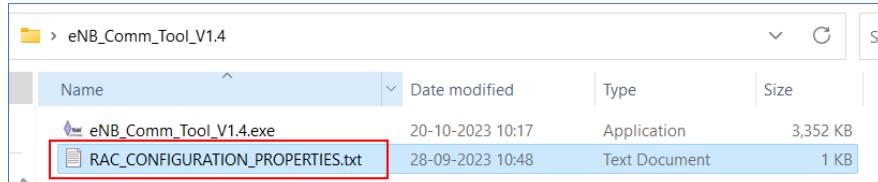


## 2.11 RAC Commissioning with 3 IPs and 3 VLANs using eNB\_Comm\_Tool.exe.

### 2.11.1 Obtaining RAC\_CONFIGURATION\_PROPERTIES.txt File

In the **eNB\_Comm\_Tool.exe tool**, now we can configure IPs in the RAC with the help of a properties file (**RAC\_CONFIGURATION\_PROPERTIES.txt**).

The file can be found inside the folder of **eNB\_Comm\_Tool** folder.



Also attaching in this doc, Pls copy it from here in save under the directory **D:\RAC**



### 2.11.2 Preparing RAC\_CONFIGURATION\_PROPERTIES.txt File for site commissioning

- In this step we will prepare the Properties file before doing RAC commissioning. Open the properties file in Notepad it will show all default values.

```

ENODEB_NAME=Tejas-eNodeB-NMS
BACKHAUL_INTERFACE_IP=172.25.17.147
BACKHAUL_INTERFACE_NETMASK=255.255.255.0
BACKHAUL_INTERFACE_GATEWAY=172.25.17.1
EMS_SERVER_IP=192.168.24.221
CLOCK_SOURCE=FREERUN
ENODEB_MANAGEMENT_SERVER_VLANID=
ENODEB_MANAGEMENT_SERVER_INTERFACE_IP=
ENODEB_MANAGEMENT_SERVER_INTERFACE_NETMASK=
ENODEB_MANAGEMENT_SERVER_GATEWAY=
ENODEB_S1SIGLINK_SERVER_VLANID=
ENODEB_S1SIGLINK_SERVER_INTERFACE_IP=
ENODEB_S1SIGLINK_SERVER_INTERFACE_NETMASK=
ENODEB_S1SIGLINK_SERVER_GATEWAY=
ENODEB_SGW_SERVER_VLANID=
ENODEB_SGW_SERVER_INTERFACE_IP=
ENODEB_SGW_SERVER_INTERFACE_NETMASK=
ENODEB_SGW_SERVER_GATEWAY=

```

For inputting subnet mask take help from below table:

**Note:** The subnet mask shown here will depend upon the size of the pool assigned. Site Engineers can take help of below table to input subnet mask:

/24 = 255.255.255.0	/25 = 255.255.255.128	/26 = 255.255.255.192	/27 = 255.255.255.224
/28 = 255.255.255.240	/29 = 255.255.244.248	/30 = 255.255.255.252	

- b) Fill all IP details from the shared IP plan. Fill first 6 options from shown guide.

(Here shown example of a site. Do not copy the details shown here. Fill eNodeB name and IP as per on-site IP plan Only)

SN	Required Data	Text Input (Example)	Remarks
1	ENODEB_NAME=	T4PB01FEP09ZIR002	eNodeB Name as per IP Plan
2	BACKHAUL_INTERFACE_IP=	10.144.67.53	RAC OAM IP as per IP Plan
3	BACKHAUL_INTERFACE_NETMASK=	255.255.255.192	Subnet Mask as per IP Plan
4	BACKHAUL_INTERFACE_GATEWAY=	10.144.67.1	RAC OAM GW as per IP Plan
5	EMS_SERVER_IP=	10.149.138.135	EMS IP, Contact TCS/Tejas for it
6	CLOCK_SOURCE=	EXTERNAL	Keep it as EXTERNAL

ENODEB\_NAME=T4PB01FEP09ZIR002  
 BACKHAUL\_INTERFACE\_IP=10.144.67.53  
 BACKHAUL\_INTERFACE\_NETMASK=255.255.255.192  
 BACKHAUL\_INTERFACE\_GATEWAY=10.144.67.1  
 EMS\_SERVER\_IP=10.149.138.135  
 CLOCK\_SOURCE=EXTERNAL

Input eNodeB Name  
 InterFace IP  
 Netmask  
 Gateway  
 as show from IP Plan

Confirm EMS Server IP from Tejas Team  
 Keep Clock source as EXTERNAL

4G Site ID	OAM RAC IP Pool	Management GW IP	eNodeB Management IP & Subnet	OAM RAC B1(L2100)	OAM RAC B28(L700)	OAM RAC B41(L2500)
T4PB01FEP09ZIR002	10.144.67.0/26	10.144.67.1/26	10.144.67.53	10.144.67.54	10.144.67.55	846

- c) Fill next 4 options for Management related information from shown guide

SN	Required Data	Text Input (Example)	Remarks
7	ENODEB_MANAGEMENT_SERVER_VLANID=	846	RAC OAM VLAN ID as per IP Plan
8	ENODEB_MANAGEMENT_SERVER_INTERFACE_IP=	10.144.67.53	RAC OAM IP as per IP Plan
9	ENODEB_MANAGEMENT_SERVER_INTERFACE_NETMASK=	255.255.255.192	Subnet Mask as per IP Plan
10	ENODEB_MANAGEMENT_SERVER_GATEWAY=	10.144.67.1	RAC OAM GW as per IP Plan

ENODEB\_MANAGEMENT\_SERVER\_VLANID=846  
 ENODEB\_MANAGEMENT\_SERVER\_INTERFACE\_IP=10.144.67.53  
 ENODEB\_MANAGEMENT\_SERVER\_INTERFACE\_NETMASK=255.255.255.192  
 ENODEB\_MANAGEMENT\_SERVER\_GATEWAY=10.144.67.1

Fill Management VLAN  
 IP, NETMASK & GATEWAY  
 from IP plan as shown

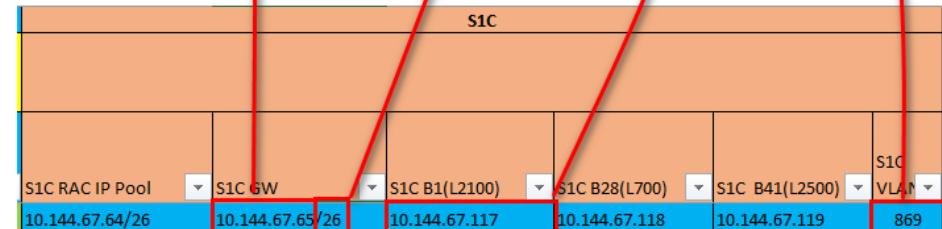
4G Site ID	OAM RAC IP Pool	Management GW IP	eNodeB Management IP & Subnet	OAM RAC B1(L2100)	OAM RAC B28(L700)	OAM RAC B41(L2500)	eNodeB VLAN
T4PB01FEP09ZIR002	10.144.67.0/26	10.144.67.1/26	10.144.67.53	10.144.67.54	10.144.67.55	846	VLAN

- d) Next 4 options are for S1C(Towards MME) connection, fill details as shown from shown guide

SN	Required Data	Text Input (Example)	Remarks
11	ENODEB_S1SIGLINK_SERVER_VLANID=	869	RAC S1C VLAN ID as per IP Plan
12	ENODEB_S1SIGLINK_SERVER_INTERFACE_IP=	10.144.67.117	RAC S1C IP as per IP Plan
13	ENODEB_S1SIGLINK_SERVER_INTERFACE_NETMASK=	255.255.255.192	RAC S1C Subnet Mask as per IP Plan
14	ENODEB_S1SIGLINK_SERVER_GATEWAY=	10.144.67.65	RAC S1C GW as per IP Plan

ENODEB\_S1SIGLINK\_SERVER\_VLANID=869  
 ENODEB\_S1SIGLINK\_SERVER\_INTERFACE\_IP=10.144.67.117  
 ENODEB\_S1SIGLINK\_SERVER\_INTERFACE\_NETMASK=255.255.255.192  
 ENODEB\_S1SIGLINK\_SERVER\_GATEWAY=10.144.67.65

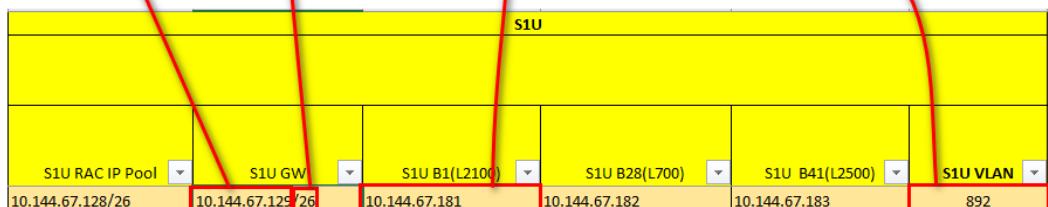
Fill S1 Link related  
 Info, VLAN, INTERFACE IP,  
 NETMASK & GW as shown



- e) Final 4 options are for S1U (Towards SGW) connection, fill details as shown from shown guide

SN	Required Data	Text Input (Example)	Remarks
15	ENODEB_SGW_SERVER_VLANID=	892	RAC S1U VLAN ID as per IP Plan
16	ENODEB_SGW_SERVER_INTERFACE_IP=	10.144.67.181	RAC S1U IP as per IP Plan
17	ENODEB_SGW_SERVER_INTERFACE_NETMASK=	255.255.255.192	RAC S1U Subnet Mask as per IP Plan
18	ENODEB_SGW_SERVER_GATEWAY=	10.144.67.129	RAC S1U GW as per IP Plan

ENODEB\_SGW\_SERVER\_VLANID=892  
 ENODEB\_SGW\_SERVER\_INTERFACE\_IP=10.144.67.181  
 ENODEB\_SGW\_SERVER\_INTERFACE\_NETMASK=255.255.255.192  
 ENODEB\_SGW\_SERVER\_GATEWAY=10.144.67.129



- f) After completed 18 details are filled then verify the details and create a folder named tejas under D: drive and save the file with name as SITEID under the directory **D:\tejas**. Like in this example the File is saved as **SITEID.txt** (For example it is saved as ZIR002.txt)

File Edit View

```

ENODEB_NAME=T4PB01FEP09ZIR002
BACKHAUL_INTERFACE_IP=10.144.67.53
BACKHAUL_INTERFACE_NETMASK=255.255.255.192
BACKHAUL_INTERFACE_GATEWAY=10.144.67.1
EMS_SERVER_IP=10.149.138.135
CLOCK_SOURCE=EXTERNAL
ENODEB_MANAGEMENT_SERVER_VLANID=846
ENODEB_MANAGEMENT_SERVER_INTERFACE_IP=10.144.67.53
ENODEB_MANAGEMENT_SERVER_INTERFACE_NETMASK=255.255.255.192
ENODEB_MANAGEMENT_SERVER_GATEWAY=10.144.67.1
ENODEB_S1SIGLINK_SERVER_VLANID=869
ENODEB_S1SIGLINK_SERVER_INTERFACE_IP=10.144.67.117
ENODEB_S1SIGLINK_SERVER_INTERFACE_NETMASK=255.255.255.192
ENODEB_S1SIGLINK_SERVER_GATEWAY=10.144.67.65
ENODEB_SGW_SERVER_VLANID=892
ENODEB_SGW_SERVER_INTERFACE_IP=10.144.67.181
ENODEB_SGW_SERVER_INTERFACE_NETMASK=255.255.255.192
ENODEB_SGW_SERVER_GATEWAY=10.144.67.129

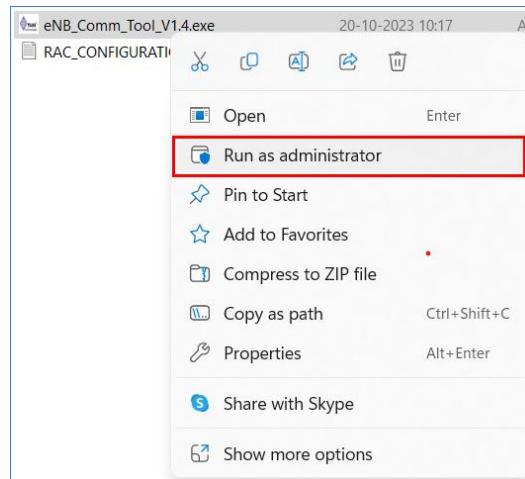
```

This PC > New Volume (D:) > tejas

Name	Date modified	Type	Size
ZIR002.txt	28-09-2023 10:48	Text Document	1 KB

### 2.11.3 RAC Commissioning using PROPERTIES File with eNB\_Comm\_Tool.exe

- Run eNB\_Comm\_Tool.exe, Go to the folder where tool is saved. Right click on the file and select "Run as administrator"



- After running it will show an interface as below. Here types the COM port as per available COM port list. In the below image **COM4** is the available COM port so COM4 has been typed and enter was pressed.

```

11:58:27,881 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - No compression will be used
11:58:27,882 |-INFO in c.q.l.core.rolling.SizeAndTimeBasedRollingPolicy@1401132667 - Will use the pattern logs/%d{dd-MM-yyyy}.%i.log for the active file
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - The date pattern is 'dd-MM-yyyy' from file name pattern 'logs/%d{dd-MM-yyyy}.%i.log'.
11:58:27,888 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Roll-over at midnight.
11:58:27,891 |-INFO in ch.qos.logback.core.rolling.SizeAndTimeBasedFNATP@2ac273d3 - Setting initial period to Mon Oct 23
11:58:27 IST 2023
11:58:27,893 |-INFO in ch.qos.logback.core.model.processor.ImplicitModelHandler - Assuming default type [ch.qos.logback.classic.encoder.PatternLayoutEncoder] for [encoder] property
11:58:27,968 |-WARN in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Append mode is mandatory for RollingFileAppender. Defaulting to append=true.
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - Active log file name: logs/DATE_23_10_2023_TIME_11_58_27_5827.log
11:58:27,988 |-INFO in ch.qos.logback.core.rolling.RollingFileAppender[FILE] - File property is set to [logs/DATE_23_10_2023_TIME_11_58_27_5827.log]
11:58:27,990 |-INFO in ch.qos.logback.classic.model.processor.RootLoggerModelHandler - Setting level of ROOT logger to INFO
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.AppenderRefModelHandler - Attaching appender named [FILE] to Logger[ROOT]
11:58:27,990 |-INFO in ch.qos.logback.core.model.processor.DefaultProcessor@71423665 - End of configuration.
11:58:27,990 |-INFO in ch.qos.logback.classic.joran.JoranConfigurator@20398b7c - Registering current configuration as safe fallback point

```

**On the Interface it will show available COM ports  
As here it shows available COM port as COM4**

**Type COM4 below the option "Enter the COMM port"**

- c) Next will show a list of Choices for next step. Here input **2** and press **Enter**.

```

Available COM Ports
=====
COM4
=====
Enter the COMM port      After inputting COM port name,  
it will show a list of options.
COM4
COM port is available
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
2
Enter the properties file name with Path.
For Example: c:\temp\RacProperties.txt
Enter 2 to commissioning using file

```

- d) Next it will ask to Enter the properties file name. As we had already prepared the file in last step (Step 3.10.2) and saved that file as **SITEID.txt** so here input **D:\tejas\SITEID.txt where SITEID is actual SITE ID (D:\tejas\ZIR002.txt is the example here)** (Make sure the file is already copied and pasted to **D:\tejas\ folder**) and press **Enter**. It will display the “Input Summary”, verify the details which should show as below:

```

Enter the properties file name with Path.
For Example: c:\temp\RacProperties.txt
d:\tejas\ZIR002.txt
##### Configuration Input Summary #####
ENODEB_NAME : T4PB01FEP09ZIR002
BACKHAUL_INTERFACE_IP : 10.144.67.53
BACKHAUL_INTERFACE_NETMASK : 255.255.255.192
BACKHAUL_INTERFACE_GATEWAY : 10.144.67.1
EMS_SERVER_IP : 10.149.138.135
CLOCK_SOURCE : EXTERNAL
ENODEB_MANAGEMENT_SERVER_VLANID : 846
ENODEB_MANAGEMENT_SERVER_INTERFACE_IP : 10.144.67.53
ENODEB_MANAGEMENT_SERVER_INTERFACE_NETMASK : 255.255.255.192
ENODEB_MANAGEMENT_SERVER_GATEWAY : 10.144.67.1
ENODEB_S1SIGLINK_SERVER_VLANID : 869
ENODEB_S1SIGLINK_SERVER_INTERFACE_IP : 10.144.67.117
ENODEB_S1SIGLINK_SERVER_INTERFACE_NETMASK : 255.255.255.192
ENODEB_S1SIGLINK_SERVER_GATEWAY : 10.144.67.65
ENODEB_SGW_SERVER_VLANID : 892
ENODEB_SGW_SERVER_INTERFACE_IP : 10.144.67.181
ENODEB_SGW_SERVER_INTERFACE_NETMASK : 255.255.255.192
ENODEB_SGW_SERVER_GATEWAY : 10.144.67.129

Enter your choice
1 - To Confirm
0 - To Reset
1

```

Input File path as  
D:\tejas\SITEID.txt

For example here it is D:\tejas\ZIR002.txt

Match and verify the  
details here with the actual  
IP Plan before submitting

After verifying the details  
Input 1 and Press  
Enter to confirm.

- e) Next the tool will start commissioning and will display the result of each step. **Do not enter anything here**. The tool will wait after “Waiting for Node to restart..” for several minutes.

```

Enter your choice
1 - To Confirm
0 - To Reset
1
Successfully logged in to Node
Got access to Node
Got CLI access
##### Configuring eNodeB Interface IP... #####
IPInterfaceIPAddress: 10.144.67.53
IPInterfaceSubnetMask: 255.255.255.192
IPInterfaceGateway 10.144.67.1
##### Configured eNodeB Interface IP... #####
##### Configuring Clock Source #####
ClockSource: EXTERNAL
##### Configured Clock source #####
##### Configuring eNodeB Name #####
HNBName: T4PB01FEP09ZIR002
##### Configured eNodeB Name #####
##### Configuring EMS Server #####
EMS Server: 10.149.138.135
##### Configured EMS Server #####
##### Commissioning eNodeB state #####
##### eNodeB state Commissioned #####
##### Configuring FTP Server #####
FTP Server IP: 10.149.138.135
##### Configured FTPServer #####
##### Restarting eNodeB #####
Waiting for Node to restart...

```

After pressing 1 and Enter  
the commissioning process will start  
The tool will show output  
of the steps one by one

- f) Keep waiting for process to continue. After few minutes tool will configure MGMT, S1C and SGW links related details and node will be restarted 2<sup>nd</sup> time. **Nothing to be done manually here. Just observe** the output shown on the tool.

```

#####
Configuring Clock Source #####
ClockSource: EXTERNAL
#####
Configured Clock source #####
#####
Configuring eNodeB Name #####
HNBN Name: T4PB01FEP09ZIR002
#####
Configured eNodeB Name #####
#####
Configuring EMS Server #####
EMS Server: 10.149.138.135
#####
Configured EMS Server #####
#####
Commissioning eNodeB state #####
#####
eNodeB state Commissioned #####
#####
Configuring FTP Server #####
FTP Server IP: 10.149.138.135
#####
Configured FTPServer #####
#####
Restarting eNodeB #####
Waiting for Node to restart...
#####
eNodeB Restarted #####
Exiting CLI Access
Successfully logged in to Node
Got access to Node
#####
Configuring ENB Management Server details #####
#####
Configured ENB Management Server details #####
#####
Configuring ENB S1SigLink Server details #####
#####
Configured ENB S1SigLink Server details #####
#####
Configuring ENB SGW Server details #####
#####
Configured ENB SGW Server details #####
Got CLI access
#####
Restarting eNodeB #####
Waiting for Node to restart...

```

After first restart  
It will configure MGMT, S1 & SWG related details and again the node will restart.

Just observe the Output which tool shows.  
Nothing to be done manually here

- g) After the 2<sup>nd</sup> time restart the tool will output result of commissioning and will display the result of each step. Check for the output like below:

**eNBStatus = ENB\_SM\_COMMISIONED**

and in the last lines

**Node is in COMMISSIONED STATE**

This means the commission is **successful**.

```

Waiting for Node to restart...
#####
eNodeB Restarted #####
Exiting CLI Access
Successfully logged in to Node
Got access to Node
Got CLI access
Checking eNodeB status in EMCLI...
-----
eNBStatus      = ENB_SM_COMMISIONED
Up_Time        = days- 0 time- 00:15:07
eNBName        = T4PB01FEP09ZIR002
Clock_Sync_Status = IN_SYNC
S1AP_Status    = Link Down !!!
Cell_Status_0   = Sector not available
Cpri_Link_Status_0 = Link Down !!!
L1_L2_Sync_Status_0 = Link Down !!!
RRH_Present_Status_0 = Not Present !!!
Cell_Status_1   = Sector not available
Cpri_Link_Status_1 = Link Down !!!
L1_L2_Sync_Status_1 = Link Down !!!
RRH_Present_Status_1 = Not Present !!!
Cell_Status_2   = Sector not available
Cpri_Link_Status_2 = Link Down !!!
L1_L2_Sync_Status_2 = Link Down !!!
RRH_Present_Status_2 = Not Present !!!
-----
Node is in COMMISSIONED STATE
Exiting CLI Access
Checking whether IP address is configured on ETH0 interface...

```

After 2nd restart the tool will show out as this.  
In the last shows Node is in COMMISSIONED STATE

This indicates that the RAC commissioning is successful

```

-bash-4.3#
IP address: 10.144.67.53 is Configured on ETH1 interface
Checking whether gateway is reachable...
PING 10.144.67.1 (10.144.67.1) 56(84) bytes of data.
From 10.144.67.53 icmp_seq=1 Destination Host Unreachable
From 10.144.67.53 icmp_seq=2 Destination Host Unreachable
From 10.144.67.53 icmp_seq=3 Destination Host Unreachable
From 10.144.67.53 icmp_seq=4 Destination Host Unreachable

--- 10.144.67.1 ping statistics ---
4 packets transmitted, 0 received, +4 errors, 100% packet loss, time 3060ms
pipe 4
-bash-4.3#
Matching String: 100% packet loss
Gateway IP address: 10.144.67.1 is Not reachable
Checking whether EMS server is reachable

PING 10.149.138.135 (10.149.138.135) 56(84) bytes of data.
64 bytes from 10.149.138.135: icmp_seq=1 ttl=58 time=10.2 ms
64 bytes from 10.149.138.135: icmp_seq=2 ttl=58 time=11.4 ms
64 bytes from 10.149.138.135: icmp_seq=3 ttl=58 time=11.4 ms
64 bytes from 10.149.138.135: icmp_seq=4 ttl=58 time=11.5 ms

--- 10.149.138.135 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 10.294/11.174/11.518/0.525 ms
-bash-4.3#
Matching String: 0% packet loss
IP : 10.149.138.135 is reachable
EMS Server IP address: 10.149.138.135 is reachable
Enter your Choice
1 - Commission through live CLI
2 - Commission through Properties file
3 - Restart
4 - Commission Status
5 - Decommission
6 - Reboot Node [Linux reboot]
7 - Generate Properties through live CLI
8 - Generate Properties through CSV
9 - Exit
9

```

Tool will ping the GW & EMS by itslef and show the result. If the Transmission is through, the ping would be successful

This complete the RAC commissioning process, in the last the List of Choice will display, Enter 9 & Press ENTER to exit



## 2.12 Verification of RAC IP commissioning

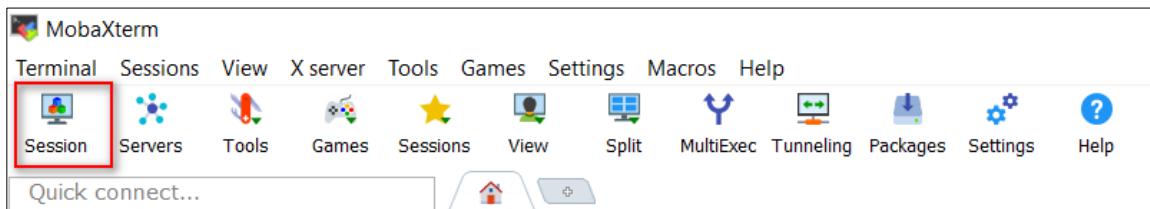
From this step we can confirm that the RAC commissioning was successful.

- Connect DIAG cable 3.5 mm Jack to Diag port on RAC card, connect USB to Serial extension cable with DIAG cable and connect the USB port to Laptop.

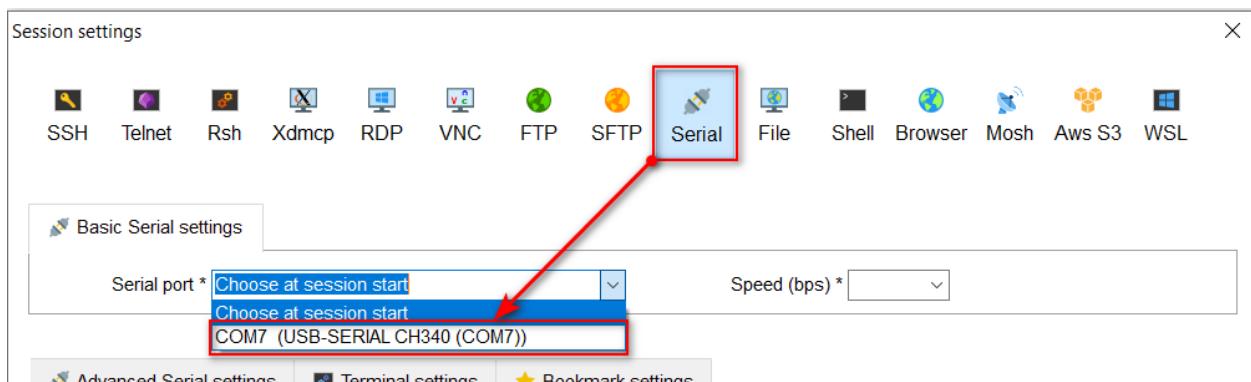


**Note :** When using DIAG cable for first time, then wait for 4-6 mins for driver to be updated in the Laptop.

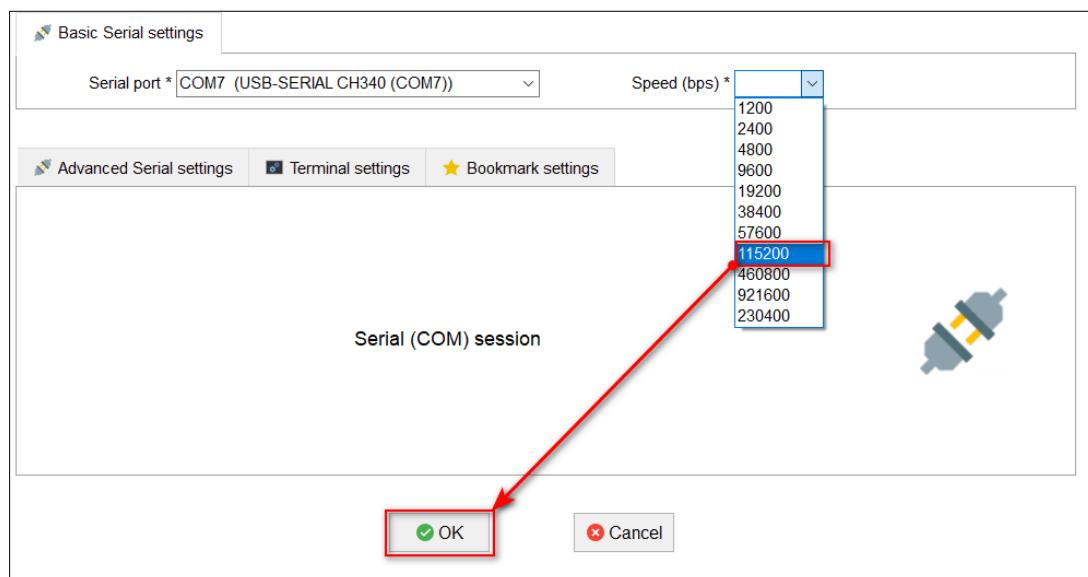
- Open MobaXterm Terminal and click on session.



- On next interface select Serial option and on Serial Port it will show a COM port (COM port ID can be different on different laptops), select the visible COM port (Like in the image it shows COM7).



- d) Next in the **Speed (bps)** option select **115200** and click on **OK**.



- e) On the next interface, input command **ifconfig** to display the IP configured in the RAC Card as below, if all 3 VLANs and the related IP can be seen then the RAC commissioning is successful.:

```

-bash-4.3#
-bash-4.3# ifconfig
eth0      Link encap:Ethernet HWaddr 00:04:95:77:72:F3
          inet addr:192.168.1.254 Bcast:192.168.1.255 Mask:255.255.255.0
          inet6 addr: fe80::5cc0:e8ff:fe01:72d9/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:242 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b) TX bytes:11944 (11.6 Kb)

eth1      Link encap:Ethernet HWaddr 00:04:95:77:72:F4
          inet addr:172.27.80.251 Bcast:172.27.80.255 Mask:255.255.255.0
          inet6 addr: fe80::e4a0:3dff:fe97:47f5/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:3615982 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2454702 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:604103849 (576.1 Mb) TX bytes:626934565 (597.8 Mb)

eth1.465  Link encap:Ethernet HWaddr 00:04:95:77:72:F4
          inet addr:172.27.65.251 Bcast:0.0.0.0 Mask:255.255.255.0
          inet6 addr: fe80::204:95ff:fe77:72f4/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:163303 errors:0 dropped:0 overruns:0 frame:0
          TX packets:14743 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:9193811 (8.7 Mb) TX bytes:3136323 (2.9 Mb)

eth1.467  Link encap:Ethernet HWaddr 00:04:95:77:72:F4
          inet addr:172.27.67.251 Bcast:0.0.0.0 Mask:255.255.255.0
          inet6 addr: fe80::204:95ff:fe77:72f4/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:32428 errors:0 dropped:0 overruns:0 frame:0
          TX packets:74 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1413400 (1.3 Mb) TX bytes:5112 (4.9 Kb)

eth1.480  Link encap:Ethernet HWaddr 00:04:95:77:72:F4
          inet addr:172.27.80.251 Bcast:0.0.0.0 Mask:255.255.255.0
          inet6 addr: fe80::204:95ff:fe77:72f4/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:55704 errors:0 dropped:0 overruns:0 frame:0
          TX packets:32582 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:3753722 (3.5 Mb) TX bytes:10269681 (9.7 Mb)

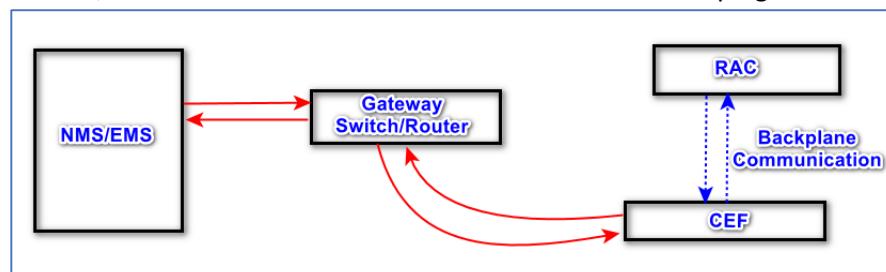
eth1:11   Link encap:Ethernet HWaddr 00:04:95:77:72:F4
          inet addr:170.1.1.2 Bcast:170.1.1.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.255.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING MTU:65536 Metric:1
          RX packets:44424 errors:0 dropped:0 overruns:0 frame:0
          TX packets:44424 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1
          RX bytes:13687522 (13.0 Mb) TX bytes:13687522 (13.0 Mb)

-bash-4.3#

```

And to check the IP communication, if the transmission is through and we are able to ping CEF OAM GW from CEF card, then to check RAC communication we can test the ping status.



First login to RAC using DIAG cable and change user to root by command `su`, next it will ask for root password, input: `swtn100tj` and press enter. After successful login it will show a # prompt which means login with root user is successful. Here input the command : `ping xx.xx.xx.xx` (where `xx.xx.xx.xx` is RAC OAM GW IP). In the below example its `172.27.80.1` and its ping is successful.

```
-bash-5.0$ 
-bash-5.0$ su
Password: swtn100tj
bash-5.0# 
bash-5.0# ping 172.27.80.1
PING 172.27.80.1 (172.27.80.1): 56 data bytes
64 bytes from 172.27.80.1: icmp_seq=0 ttl=64 time=1.941 ms
64 bytes from 172.27.80.1: icmp_seq=1 ttl=64 time=1.626 ms
64 bytes from 172.27.80.1: icmp_seq=2 ttl=64 time=1.608 ms
64 bytes from 172.27.80.1: icmp_seq=3 ttl=64 time=1.595 ms
64 bytes from 172.27.80.1: icmp_seq=4 ttl=64 time=1.836 ms
64 bytes from 172.27.80.1: icmp_seq=5 ttl=64 time=1.585 ms
64 bytes from 172.27.80.1: icmp_seq=6 ttl=64 time=1.585 ms
64 bytes from 172.27.80.1: icmp_seq=7 ttl=64 time=3.192 ms
64 bytes from 172.27.80.1: icmp_seq=8 ttl=64 time=1.556 ms
64 bytes from 172.27.80.1: icmp_seq=9 ttl=64 time=1.820 ms
64 bytes from 172.27.80.1: icmp_seq=10 ttl=64 time=1.595 ms
64 bytes from 172.27.80.1: icmp_seq=11 ttl=64 time=1.577 ms
^C--- 172.27.80.1 ping statistics ---
12 packets transmitted, 12 packets received, 0% packet loss
round-trip min/avg/max/stddev = 1.556/1.793/3.192/0.439 ms
```

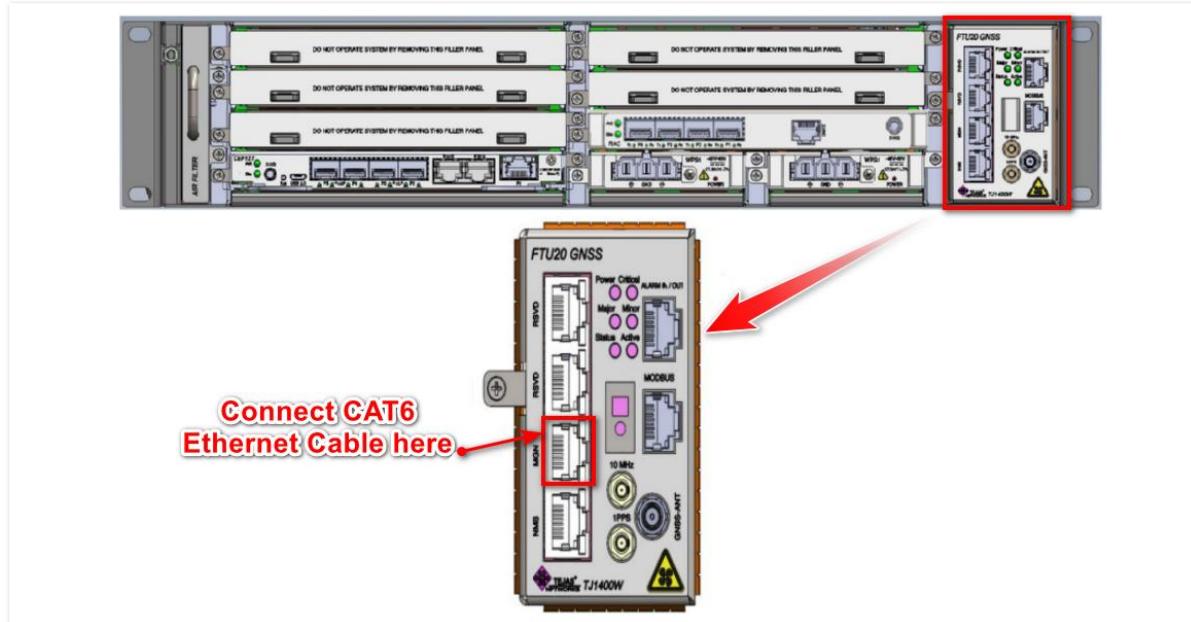
We can also check the ping status of EMS from RAC card in a similar way.

```
-bash-5.0$ 
-bash-5.0$ su
Password: swtn100tj
bash-5.0# 
bash-5.0# ping 192.168.129.85
PING 192.168.129.85 (192.168.129.85): 56 data bytes
64 bytes from 192.168.129.85: icmp_seq=0 ttl=60 time=2.090 ms
64 bytes from 192.168.129.85: icmp_seq=1 ttl=60 time=1.707 ms
64 bytes from 192.168.129.85: icmp_seq=2 ttl=60 time=1.880 ms
64 bytes from 192.168.129.85: icmp_seq=3 ttl=60 time=1.333 ms
64 bytes from 192.168.129.85: icmp_seq=4 ttl=60 time=1.625 ms
64 bytes from 192.168.129.85: icmp_seq=5 ttl=60 time=1.633 ms
64 bytes from 192.168.129.85: icmp_seq=6 ttl=60 time=1.666 ms
64 bytes from 192.168.129.85: icmp_seq=7 ttl=60 time=3.247 ms
64 bytes from 192.168.129.85: icmp_seq=8 ttl=60 time=1.699 ms
^C--- 192.168.129.85 ping statistics ---
9 packets transmitted, 9 packets received, 0% packet loss
round-trip min/avg/max/stddev = 1.333/1.876/3.247/0.521 ms
bash-5.0#
```

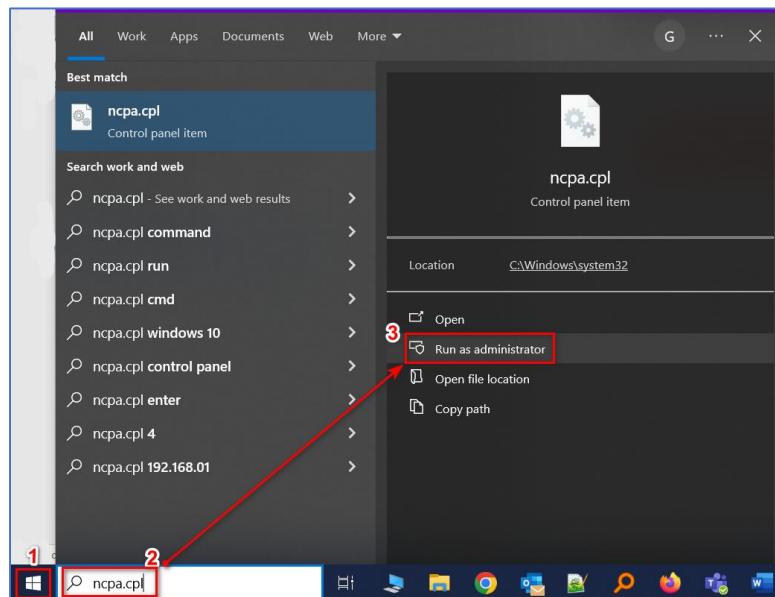
### 3. Part-C: CEF Commissioning Process

#### 3.1 Connecting the Ethernet Cable to FTU & Setting Laptop IP

To commissioning CEF card, first connect one end of CAT6 Ethernet cable to **MGN** port on **FTU** card of TJ1400 BBU and other end to Laptop Ethernet Port.



Next set your laptop IP as 192.168.1.252 and subnet mask as 255.255.255.0. To set IP, go to **Windows** -> **Search** -> type **ncpa.cpl** -> **Run as administrator**

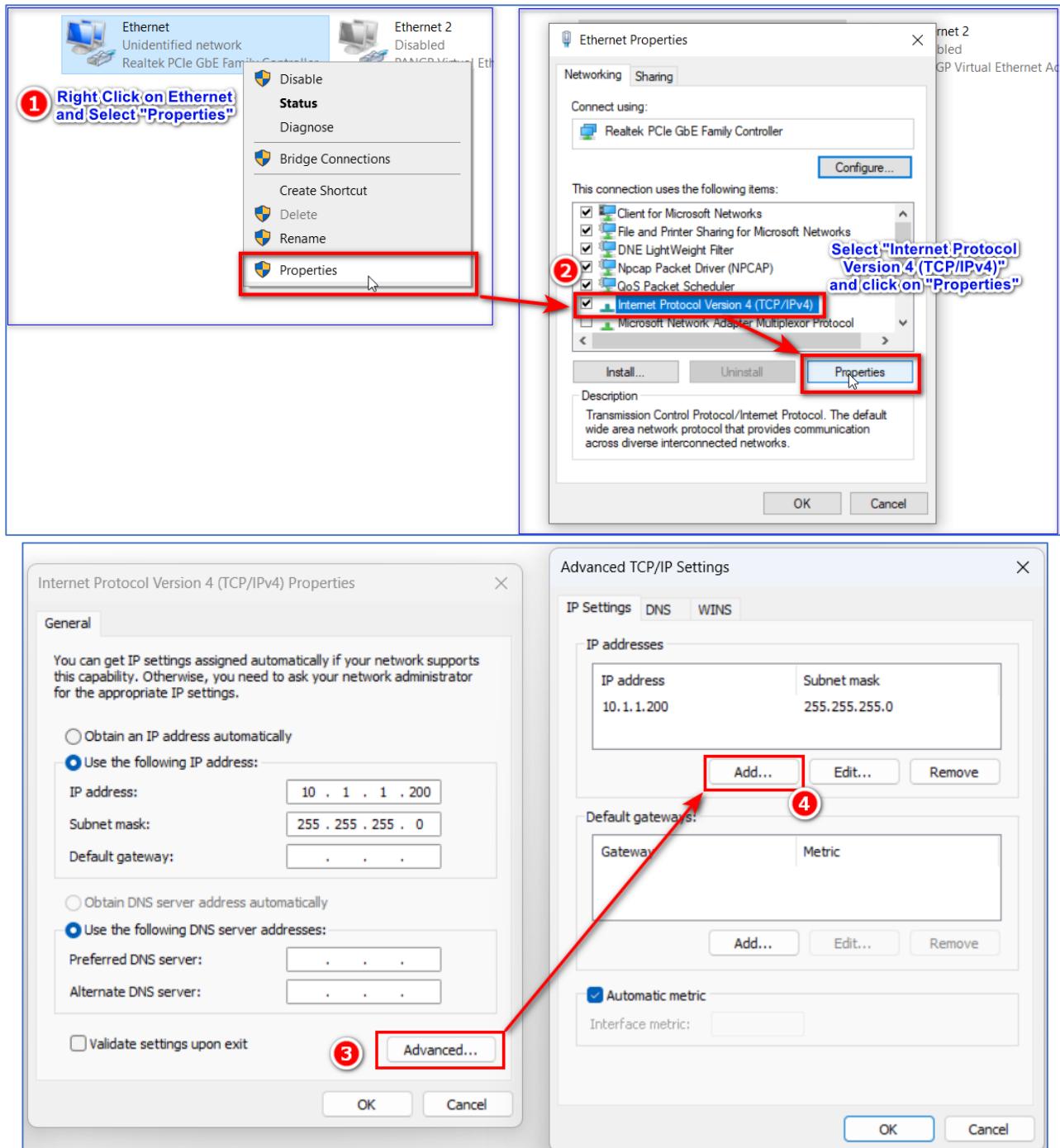


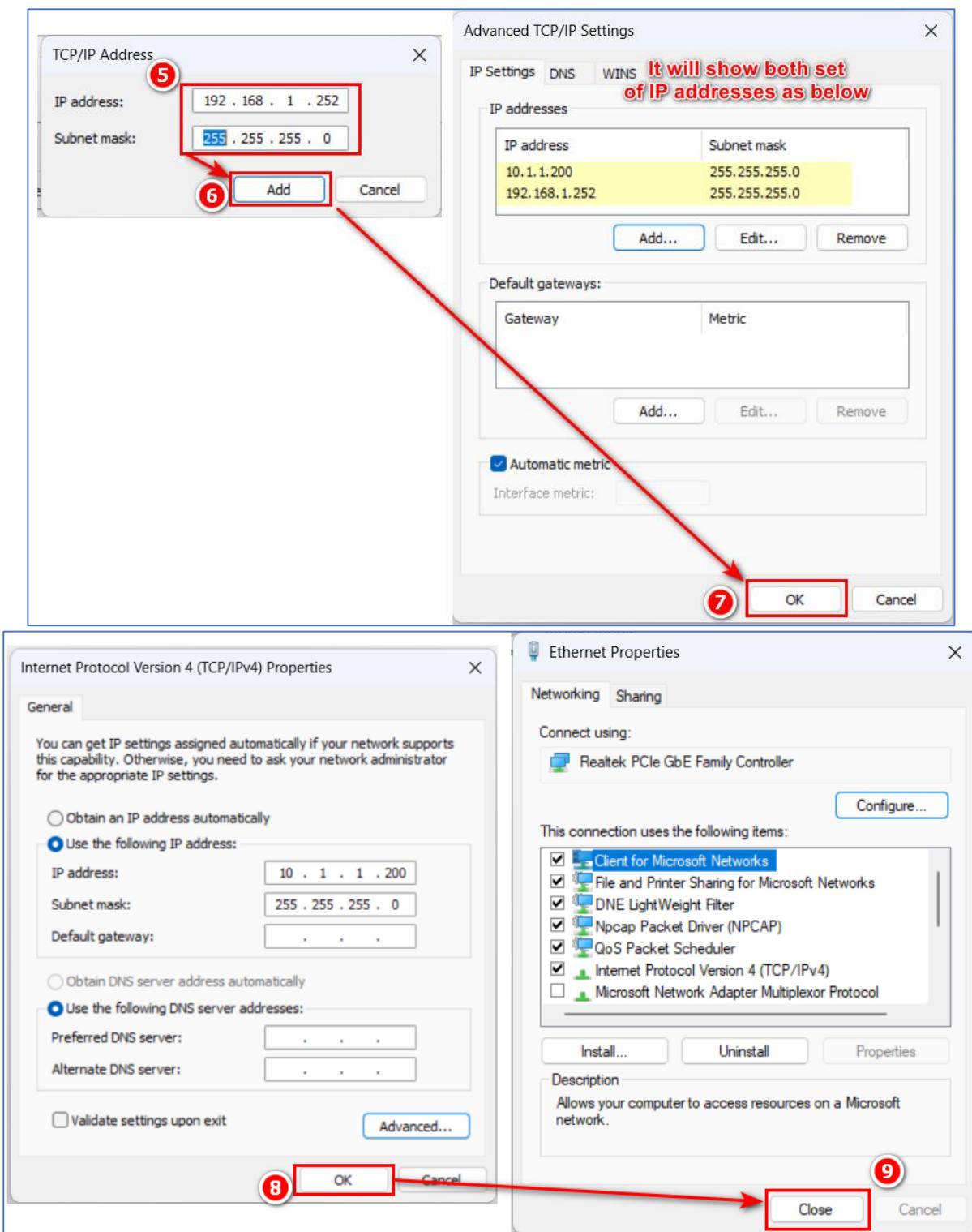
Next it will open Network Connections window, here right-click on the Ethernet icon to set Laptop IP. Follow the process as shown in next images.

Laptop IP needed to be set as below:

**IP Address : 192.168.1.252**

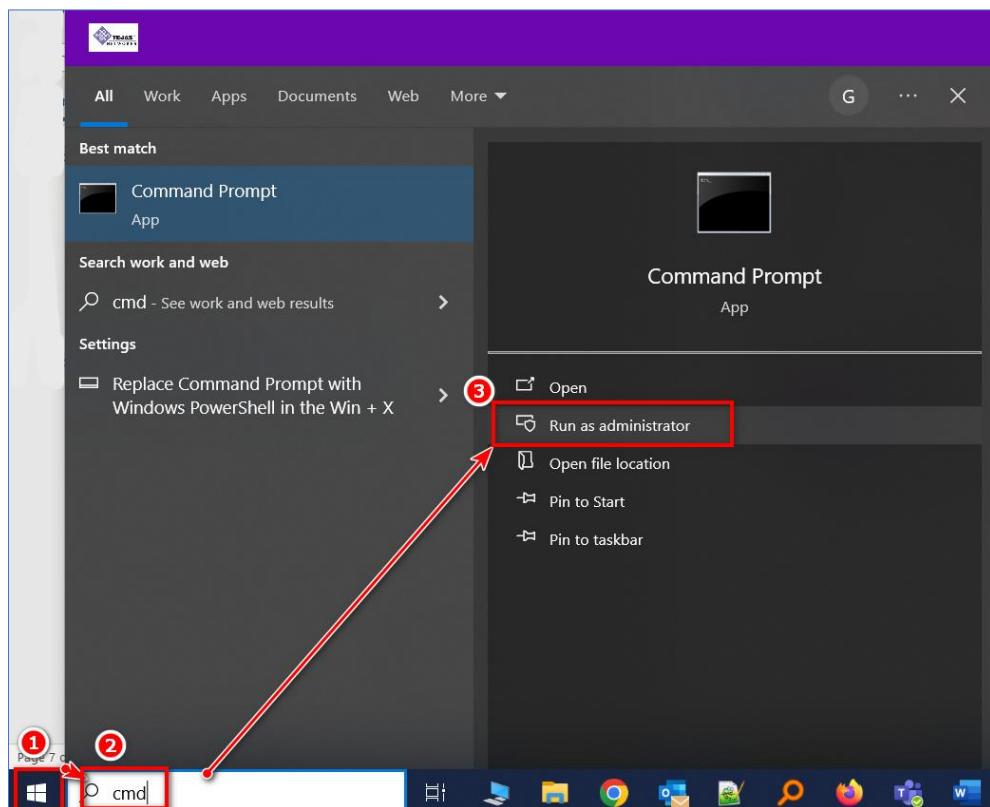
**Subnet Mask : 255.255.255.0**





### 3.2 Checking IP ping status

After setting IP address for Laptop and Connecting the CAT6 Ethernet cable from Laptop Ethernet Ports to MGN Port on FTU Card check the ping status of the card to verify connectivity status. Go to **Start > type CMD > Run as administrator**.



In the command prompt window, check the ping status of IP: 192.168.1.254 (CEF card default IP) by command [ping 192.168.1.254 -t](#). If the ping is OK, it will show below result:

```
C:\Windows\system32>ping 192.168.1.254 -t

Pinging 192.168.1.254 with 32 bytes of data:
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time<1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
Reply from 192.168.1.254: bytes=32 time=1ms TTL=64
```

If the Ping result is not OK (The result shows “**Request timed out.**” Or “**Destination host unreachable.**”) then things to check are:

- 1) Check the cable connection should be on MGN on FTU card.
- 2) Check the IP and netmask configuration of the laptop. Laptop IP should be 192.168.1.252 and subnet mask should be 255.255.255.0
- 3) If the equipment is just Powered On, then wait for at least 15 mins to check the ping status.
- 4) The “Act” and “Sts” LED on CEF card should be Green Stable for card to get ping.
- 5) If the result show “**General failure.**” and the ethernet (LAN) connection is not up. Check FTU board status it should be powered ON and Cable connection if it is inserted properly at both ends and not loose.

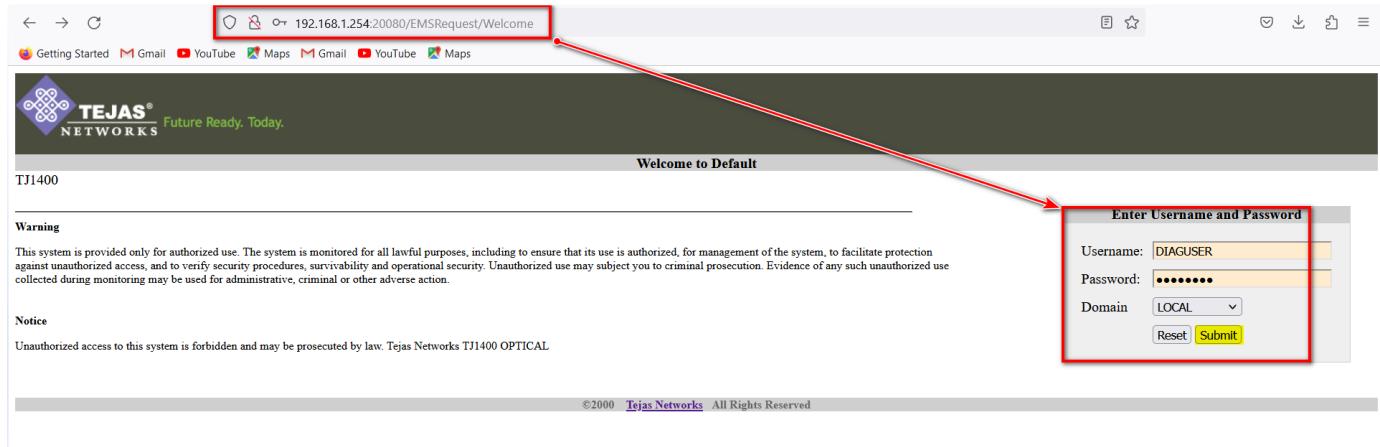
### 3.3 Initial Configuration of the CEF Card

Open the Mozilla Firefox browser and type or Copy-Paste the below command in the address bar:

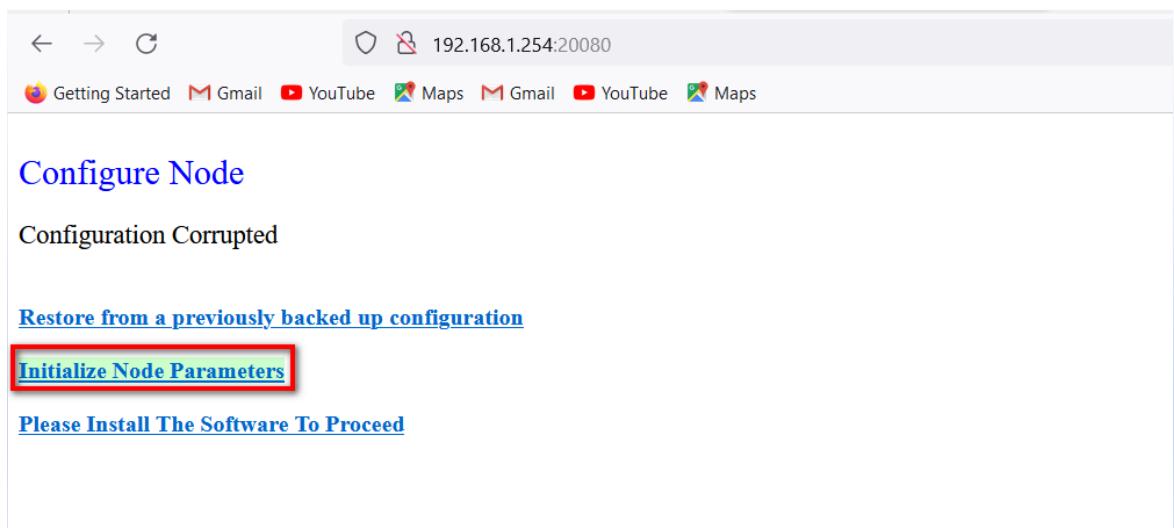
<http://192.168.1.254:20080>

Then a Welcome page will be displayed, Login this page by input the username/password and click submit (See next image)

Username : DIAGUSER  
Password : j72e#05t



After successful login below page will be displayed, click on the “Initialize Node Parameters” option.



After which next page will be displayed, fill in the details as received in the IP Plan (See next 2 images as guide).

Below are the details in IP Plan which need to input:

State	SSA	SDCA	IP ID	4G Site ID	2G Site	OAM HW GW	OAM HW IP	OAM HW VLAN
Punjab	Amritsar	Amritsar	TEST	CDOT_FS6F_eNodeB	TEST	172.27.79.1/24	172.27.79.251	179

Below image shows to which details and parameters to be filled and set as per on-site IP Plan.

### Initialize Node Parameters

Name	CDOR_FS6F_eNodeB	Fill here 4G Site ID as given in the IP plan sheet
Node Configuration	ADM	
Node Product Code	TII400_Type-7SR	
Router ID	172.27.79.251	
Ethernet IP Address	192.168.1.254	24 Fill the OAM HW IP here as given in the IP plan sheet
Data Path Mode	SDH	NOTE: DO NOT CHANGE THIS IP !!!!
Select PTN Mode	Yes	
Zero Touch Provisioning State	Zero Touch Provisioning Idle	
IBC VLAN Used for ZTP	100	
Node Connections Mode	Higher Order + Lower Order	Select "Yes" in PTN Mode, Select "AU4" in AU Mode and select "Enable" in CEM Status
AU Mode	AU4	
CEM Status	Enable	
CEM Mode	Centralized	
Date and Time		
Month	August	21
Year	2023	16
Time	27	
NE Time zone		
Timezone	India	
Secondary Time zone		
Display Enable	Enable	
Secondary Time Zone	India	

**Submit**

After filling details as above and setting Date and Time click on **Submit** which will display next page.

Verify the modifications Like **Name** and **Router ID** with the IP Plan details and then click on "**Accept Valid Modifications**"

### Are You Sure?

#### Modifications

Object	Attribute	Value	Warnings	Reboot Required	Traffic affecting
SYSTEM-1	Name	CDOR_FS6F_eNodeB		No	No
SYSTEM-1	Router ID	172.27.79.251	Yes	No	
SYSTEM-1	Data Path Mode	SDH	Yes	Yes	
SYSTEM-1	PTN+GPON	Yes	No	Yes	
SYSTEM-1	AU Mode	AU4	Yes	Yes	
SYSTEM-1	Timezone	IST-5:30:0	No	No	
SYSTEM-1	Date	08/30/2023	No	No	
SYSTEM-1	Time	15:03:56	No	No	
SYSTEM-1	SecondaryTimezone	IST-5:30:0	No	No	
CEF12-1-4	CEM Configuration	Enable	No	Yes	
CEF12-1-4	CEM Centralized or Destributed mode	Centralized	No	Yes	

**Reject modification** **Accept Valid Modifications**

Next the result page will be displayed.

## Are You Sure - Accept Changes

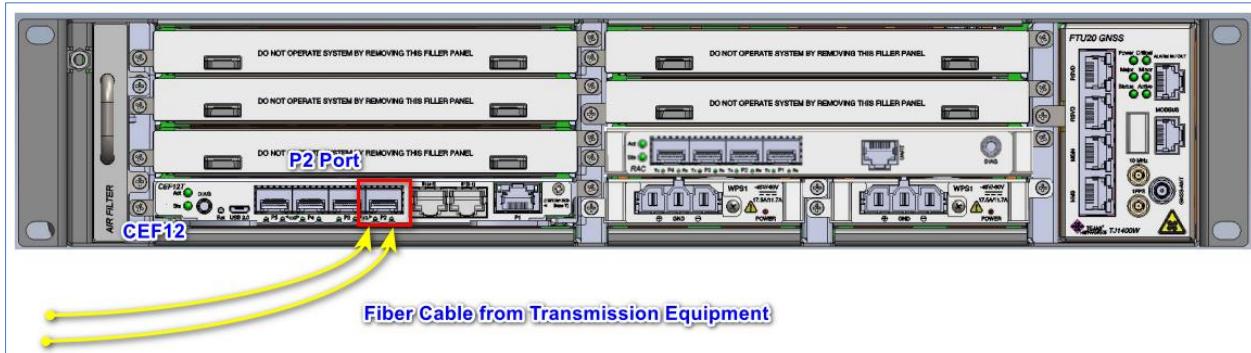
**Modifications**

<b>Object</b>	<b>Attribute</b>	<b>Value</b>	<b>Warnings</b>	<b>Reboot required</b>	<b>Traffic affecting</b>
<b>SYSTEM-1</b>	Name	CDOR_FS6F_eNodeB	Successfully Modified	No	No
<b>SYSTEM-1</b>	Router ID	172.27.79.251	Cold Reboot started	Yes	No
<b>SYSTEM-1</b>	Data Path Mode	SDH	Cold Reboot started	Yes	Yes
<b>SYSTEM-1</b>	PTN+GPON	Yes	Successfully Modified	No	Yes
<b>SYSTEM-1</b>	AU Mode	AU4	Cold Reboot started	Yes	Yes
<b>SYSTEM-1</b>	Timezone	IST-5:30:0	Successfully Modified	No	No
<b>SYSTEM-1</b>	Date	08/30/2023	Successfully Modified	No	No
<b>SYSTEM-1</b>	Time	15:03:56	Successfully Modified	No	No
<b>SYSTEM-1</b>	SecondaryTimezone	IST-5:30:0	Successfully Modified	No	No
<b>CEF12-1-4</b>	CEM Configuration	Enable	Successfully Modified	No	Yes
<b>CEF12-1-4</b>	CEM Centralized or Distributed mode	Centralized	Successfully Modified	No	Yes

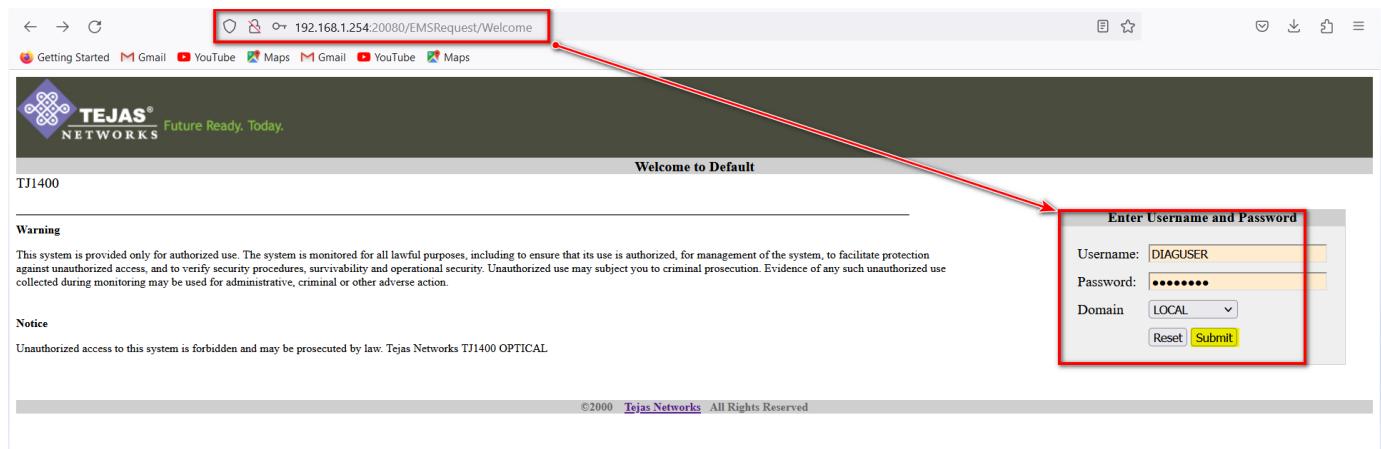
After this the CEF will go to reboot and it will be required to wait for about **8-10 mins** to login the CEF again.

### 3.4 Enabling NTP Server connectivity and configure NTP IP.

It is to be followed that Media/TX connectivity from BSNL Transmission equipment will be done on the P2 port of CEF12T/CEF12. Do the fiber connections as shown in below image:



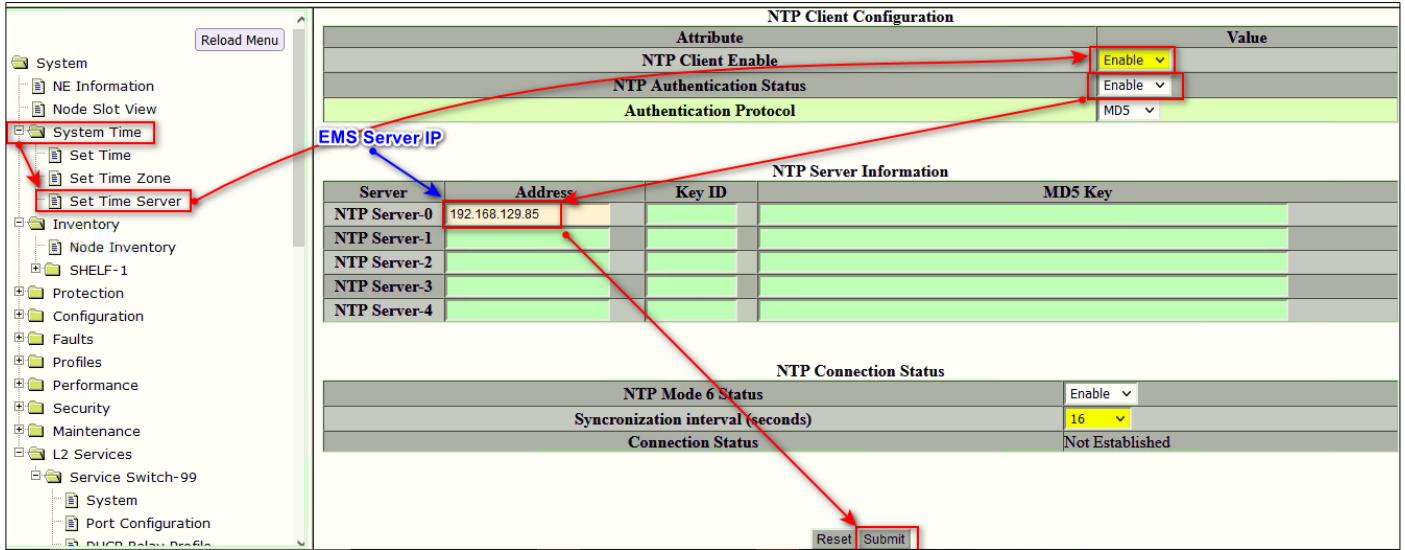
After finishing above cable connection and CEF initial configuration in [step 2.4](#) and a waiting period of 8-10 mins of reboot, Check and Login to the CEF again



Verify the configuration status by Clicking on **System > NE Information** option. It should show the updated configuration as **Name & Router ID** which we had input in step 2.4.

Name	Value
Node Product Code	TJ1400-7 eNodeB
Product Type	BBU
Router ID	172.27.79.251
Ethernet IP Address	192.168.1.254
MAC Address	00:04:95:a4:3f:0c
Contact	Name of contact person
Location	The location of this device
Rack ID	1
SoftwareVersion	10.0
Zero Touch Provisioning State	Zero Touch Provisioning Idle

For setting NTP client mode go to **System Time > Set Timer Server**. On the **NTP Client Configuration** page change **NTP Client Mode** to **Enable**, also **Enable** the **NTP Authentication Status**. Input the **NMS/EMS Server IP** in front of the **NTP Server-0** option and click on **Submit**.



It will show a result as below:

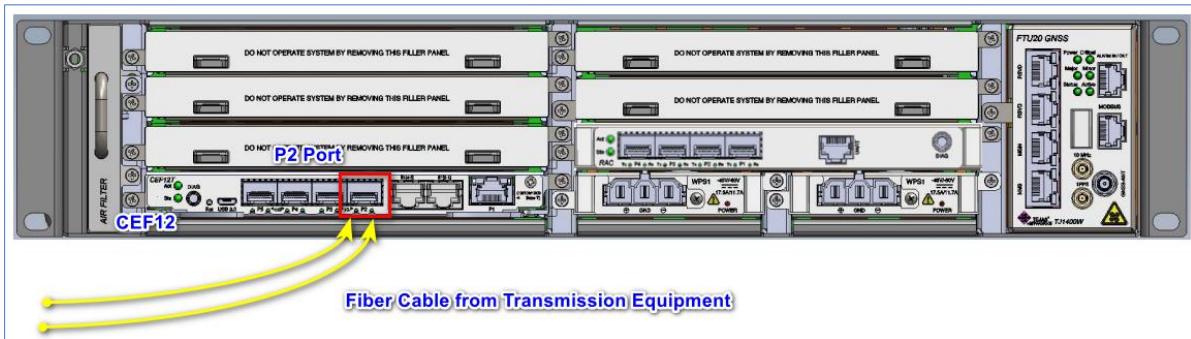
### New NTP Configuration

NTP Client Configuration	
Attribute	Value
NTP Client Enable	Enable
NTP Authentication Status	Enable
Synchronization interval (seconds)	16

NTP Server Configuration	
NTP Server-0	192.168.129.85

### 3.5 Enabling Ports on CEF card for Media Connectivity.

- A) It is to be followed that Media/TX connectivity from BSNL Transmission equipment will be done on the P2 port of CEF12T/CEF12. Verify the fiber connections as shown in below image:



- B) Now to enable Ports of CEF card, go to **Inventory > Node Inventory > Slot 4** (Slot no. of CEF)

Shelf Id	Shelf Mode	Chassis Type	MAC Address	Valid Status	Operational Status
1	Master	TJ1400-7 eNodeB	00:04:95:a4:3f:0c	Valid	<span style="color: green;">●</span>

CHASSIS 1 (TJ1400-7 eNodeB)						
Slot	Card type	Operational Status	Equipment	Part Number	Serial Number	
0	BackPlane	UP	Present	142-PCA000119-E	AI-2222-10-0074	
4	CEF12T	UP	Present	611-PCA000158-E	AY-2623-23-0405	
7	RAC	UP	Present	611-PCA000081-E	AO-2523-26-0340	
8	WPS1	UP	Present	611-PCA000155-E	AO-2423-11-1092	
9	WPS1	UP	Present	611-PCA000155-E	AO-2323-11-1321	
10	FTU20GNSS	UP	Present	611-PCA000156-E	AQ-2423-16-0044	

- C) After clicking on Slot4, it will show below page, here click on “**Ports**” which will open the Ports page.

#### Carrier Ethernet Fabric Control Card

Shelf	1
Slot	4
Equipment	Present
Part Number	611-PCA000158-E
Serial Number	AY-2623-23-0405
Software Version	10.0
Temperature (degrees C)	37 ° C [ Maximum allowed Temperature 100 Deg C ]
Redundancy Status	Primary

Ports      Configure CEM

- D) Here we will enable **ETH-1-4-2 (Physical Port P2)** port on which TX Media is connected. Click on **ETH-1-4-2** to go to next page.

*Note: Here the ETH 1-X-Y is used to name the port, were X=Slot no. and Y= Port ID.*

#### Ports on Card Shelf : 1 Slot: 4

Ports			
Port name	Admin status	Operational status	Protect status
ETH-1-4-1	DOWN	DOWN	unprotected
ETH-1-4-2	DOWN	DOWN	unprotected
ETH-1-4-3	DOWN	DOWN	unprotected
ETH-1-4-4	DOWN	DOWN	unprotected
ETH-1-4-5	DOWN	DOWN	unprotected
E1-1-4-501	DOWN	DOWN	unprotected
E1-1-4-502	DOWN	DOWN	unprotected
E1-1-4-503	DOWN	DOWN	unprotected
E1-1-4-504	DOWN	DOWN	unprotected

CEF Port-P2 is connected to Transmission Equipment

Its Logical port is ETH-1-4-2

Click on ETH-1-4-2

[Back to card page](#)

On provisioning Ethernet page, change the **Admin Status** to “Up” and click on **Submit**.

**Provisioning Ethernet Interface Port - ETH-1-4-2**

<b>Admin Status</b>	Up
<b>Alarm Reporting Status</b>	Report
<b>Link Status</b>	Down
<b>MTU (Bytes)</b>	9616 Bytes
<b>Laser</b>	PGEFC-1-4-2
<b>Flow Control</b>	Manual Tx-Rx
<b>Link Integrity Status</b>	Off
<b>Threshold Enable for 15min/1-Day Interval</b>	Disable
<b>Medium Type</b>	1000 Base-SX
<b>LAN Circuit Identifier</b>	
<b>LINK-FLAP Protect</b>	Disable
<b>Error Down Status</b>	False

**Reset** **Submit**

On next page select **Accept Valid Modifications**, after which Result page will be displayed.

**Are You Sure?**

Modifications					
Object	Attribute	Value	Warnings	Reboot Required	Traffic affecting
ETH-1-4-2	Admin Status	Up	No	Yes	

Reject modification **Accept Valid Modifications**

Verify the changes are made successfully and then click to **Back to ports Page**.

**Are You Sure - Accept Changes**

Modifications					
Object	Attribute	Value	Warnings	Reboot required	Traffic affecting
ETH-1-4-2	Admin Status	Up	Successfully Modified	No	Yes

**Back**  
**Back to ports page**

On the Ports Page, the port ETH-1-4-2 should show in Up status. If the Operation status shows down then need to check the fiber connection on CEF P2 Port.

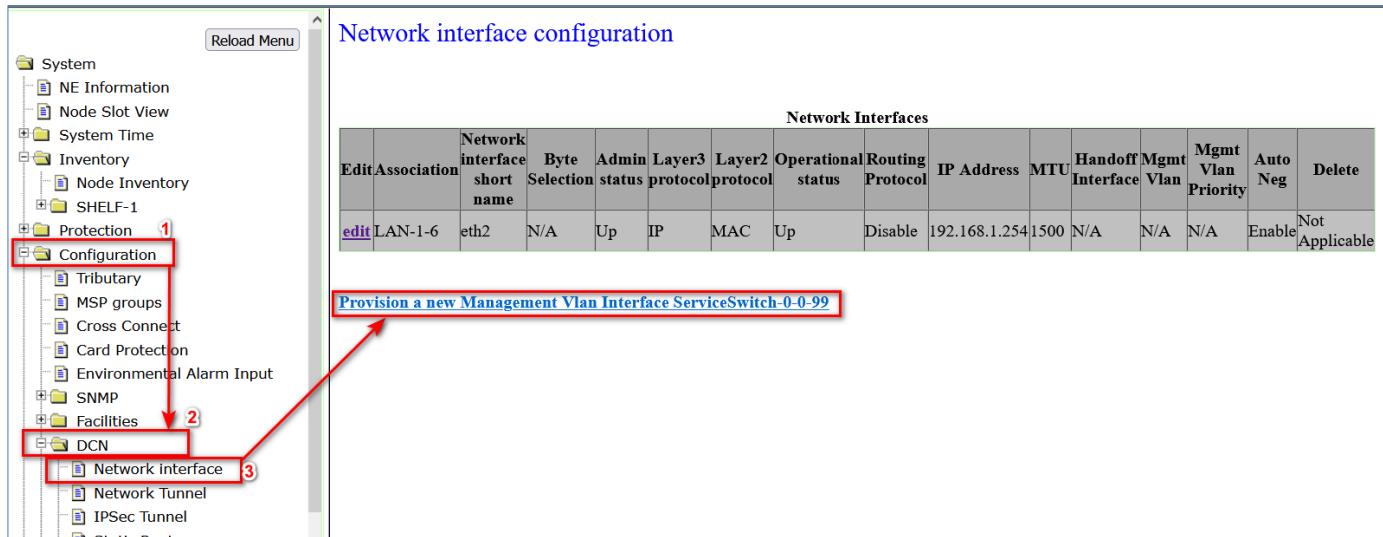
**Ports on Card Shelf : 1 Slot: 4**

Port name	Admin status	Ports		Protect status
		Operational status		
ETH-1-4-1	DOWN	DOWN		unprotected
ETH-1-4-2	UP	UP		unprotected
ETH-1-4-3	DOWN	DOWN		unprotected
ETH-1-4-4	DOWN	DOWN		unprotected
ETH-1-4-5	DOWN	DOWN		unprotected
E1-1-4-501	DOWN	DOWN		unprotected
E1-1-4-502	DOWN	DOWN		unprotected
E1-1-4-503	DOWN	DOWN		unprotected
E1-1-4-504	DOWN	DOWN		unprotected

**Back to card page**

### 3.6 IP & VLAN Configuration on ETH-1-4-2 (CEF port P2)

Next step is to configure IP address and VLAN on port ETH-1-4-2. On left menu panel, click on **Configuration > DCN > Network Interface > Provision a new Management Vlan Interface ServiceSwitch-0-0-99**



On next page, Input IP and VLAN details as per IP plan (Follow the next image)

State	SSA	SDCA	IP ID	4G Site ID	2G Site	OAM HW GW	OAM HW IP	OAM HW VLAN	
Punjab	Amritsar	Amritsar	BSNLPAAMP3AMI001	T4PUASRP9AMI001	AMI001	172.27.79.1	24	172.27.79.251	479

After clicking **Next**, another page will show up, here click on **Submit**.

**Edit Network Interface**

Port Selected	ETH-1-4-2
Mgmt VLAN	479
Broadcast Interface	Enable
Mgmt Vlan Priority	6
Network interface short name	v14_5_479
Association	ETH-1-4-2
Admin Status	Up
Layer 3	
L3 Protocol	IP
IP Address	172.27.79.251/24
MTU	1400
Forwarding Type	
Forwarding Type	Routing
OSPF	
OSPF	Disable
Hello Interval (sec)	10
Router Dead Interval (sec)	30
Area Id	0.0.0.1
OSPF Cost	1
OSPF Authentication Mode	Disable Authentication
OSPF Authentication Password/Key	
Proxy ARP	
Proxy ARP	Disable

[Cancel](#) [Submit](#)

[Back to Network Interface Page](#)

On next page it will ask for confirmation, here select **Accept Valid Modifications**

**Are You Sure?**

Modifications					
Object	Attribute	Value	Warnings	Reboot Required	Traffic affecting
L2Interface-2 Parameters	Port Vlan ID	479	No	No	No
L2Interface-2 Parameters	Acceptable Frame Policy	Accept All	No	No	No

[Reject modification](#) [Accept Valid Modifications](#)

On next page the result of the step will be displayed.

**Are You Sure - Accept Changes**

Modifications					
Object	Attribute	Value	Warnings	Reboot required	Traffic affecting
L2Interface-2 Parameters	Port Vlan ID	479	Successfully Modified	No	No
L2Interface-2 Parameters	Acceptable Frame Policy	Accept All	Successfully Modified	No	No

[Back](#)

To verify the configuration, go to **Configuration > DCN > Network Interface** and there you can check the newly added Interface and its IP address and Mgmt VLAN details.

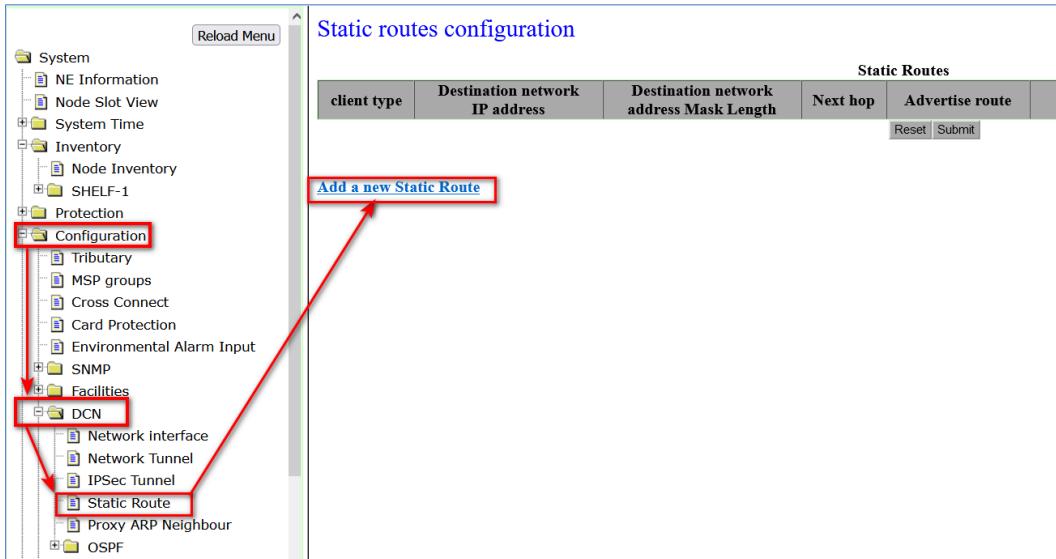
**Network interface configuration**

	Association	Network interface short name	Byte Selection	Admin status	Layer3 protocol	Layer2 protocol	Operational status	Routing Protocol	IP Address	MTU	Handoff	Mgmt Interface	Mgmt Vlan	Mgmt Vlan Priority	Auto Neg	Delete
<a href="#">edit</a>	LAN-1-6	eth2	N/A	Up	IP	MAC	Up	Disable	192.168.1.254	1500	N/A	N/A	N/A	Enable	Not Applicable	
<a href="#">edit</a>	ETH-1-4-2	v14_5_479	N/A	Up	IP	N/A	N/A	Disable	172.27.79.251	1400	Enable	479	N/A	N/A	<a href="#">Delete</a>	

[Provision a new Management Vlan Interface ServiceSwitch-0-0-99](#)

### 3.7 Adding Static Route

To add static route, on left side pane, go to **Configuration > DCN > Static Route > Add a new Static Route**



Here on this page select the interface **ETH-1-4-2** and input details as below. Follow the image and submit:

**Destination Network IP Address** : **0.0.0.0**  
**Destination Network Address Mask length** : **0**  
**Next Hop IP Address** : **same as OAM HW GW IP in the IP plan**

**Creating Static Route**

<b>Ip addr Type</b>	IPV4	<b>Select Interface ETH-1-4-2</b>									
<b>Network Interface</b>	① ETH-1-4-2(vl4_2_479)	<b>Input Destination as 0.0.0.0 and Mask as 0 for default route</b>									
<b>Destination Network IP Address</b>	② 0.0.0.0										
<b>Destination Network Address Mask Length</b>	③ 0										
<b>Next Hop IP Address</b>	④ 172.27.79.1										
<b>Advertise Route</b>	⑤ Enable	<b>Check IP Plan and Input OAM HW GW here</b>									
<b>Submit</b>		⑥									
<input type="button" value="Reset"/> <input type="button" value="Submit"/> <table border="1"> <tr> <td>OAM HW GW</td> <td>OAM HW IP</td> <td>OAM HW VLAN</td> </tr> <tr> <td>172.27.79.1</td> <td>24</td> <td>172.27.79.251</td> </tr> <tr> <td>479</td> <td></td> <td></td> </tr> </table>			OAM HW GW	OAM HW IP	OAM HW VLAN	172.27.79.1	24	172.27.79.251	479		
OAM HW GW	OAM HW IP	OAM HW VLAN									
172.27.79.1	24	172.27.79.251									
479											
<a href="#">Back to Static Route Page</a>											

After submitting it will show result and by clicking on **View Static Routes** the added route can be verified.

**Creating Static Route - Result**

Successfully Created A Static Route  
[Add another Static Route](#)  
[View Static Routes](#)

**Static routes configuration**

Static Routes							
client type	Destination network IP address	Destination network address Mask Length	Next hop	Advertise route	Network Interface Name	Operational Status	delete
ALL	0.0.0.0	0	172.27.79.1	Enable	vl4_2_479	UP	<input type="checkbox"/>

### 3.8 Editing switching parameters for ETH-1-4-2.

In this step, switching parameters will be edited for **ETH-1-4-2** port.

- A) To edit switching parameter, on left side pane, Click on **L2 Services > Port Configurations** and in the table go to the **edit** option under **Switching Parameters** for **ETH-1-4-2** port.

View Port	Admin Status	Link Status	Port Type	Port Mode	MEP Status	Performance Counters	Switching Parameters	Physical Parameters
<a href="#">BPETH-1-1-1</a>	Up		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">view</a>
<a href="#">ETH-1-4-1</a>	Down		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">edit</a>
<a href="#">ETH-1-4-2</a>	Up		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">edit</a>
<a href="#">ETH-1-4-3</a>	Up		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">edit</a>
<a href="#">ETH-1-4-4</a>	Down		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">edit</a>
<a href="#">ETH-1-4-5</a>	Down		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">edit</a>
<a href="#">CEM-ETH-1-4-51</a>	Up		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">view</a>
<a href="#">CPU PORT</a>	Up		802.1q Port	Regular	-NA-	-NA-	<a href="#">edit</a>	<a href="#">view</a>
<a href="#">BPETH-1-7-1</a>	Up		802.1q Port	Regular	-NA-	<a href="#">Performance Counters</a>	<a href="#">edit</a>	<a href="#">view</a>

On the next page, in the **Acceptable Frame Policy** option select **Accept All** and click **Submit** (See next image)

#### Edit ETH-1-4-2 Switching Parameters

IfIndex	8192
ifNum	3000
MAC Address	00:04:95:a4:3f:0c
Port Type	802.1q port {dot1q Port}
Port Mode	Regular_mode
Enable Probe Port	Disable
Enable MPLS	Disable
Enable Link Integrity	Disable
<b>Untag VLAN List</b>	
Port Vlan ID	256
Port default priority	0
PVID Egress Untag	Enable
<b>Acceptable Frame Policy</b>	
CTAG	0x8100

After submitting it will ask to verify, match the details with IP plan and then click on **Accept Valid Modifications**

#### Are You Sure?

Modifications					
Object	Attribute	Value	Warnings	Reboot Required	Traffic affecting
L2Interface-2 Parameters	Acceptable Frame Policy	Accept All		No	No

[Reject modification](#) [Accept Valid Modifications](#)

Next it will show the result page.

#### Are You Sure - Accept Changes

Modifications					
Object	Attribute	Value	Warnings	Reboot required	Traffic affecting
L2Interface-2 Parameters	Acceptable Frame Policy	Accept All	Successfully Modified	No	No

[Back](#)

## 3.9 CEF12T Version check and Upgrade (Only for CEF12T sites)

This step is only for sites where CEF12T is supplied, for CEF12 only site proceed to next step : [Step 3.10](#)

### 3.9.1 Checking CEF12T running version

On the Left pane go to **Maintenance > Load Availability**. Check the Software Image it shows the result as **cef12-arm64-REL\_10\_0\_13\_a79\_34.squash.img** then it needs to be upgraded to **cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img**.

If the result already shows as **cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img** then this step is excluded and move on to next step, [Step 3.10](#)

File type	File name
Software Image	cef12-arm64-REL_10_0_13_a79_34.squash.img
Firmware Image	fw_cef12_00_00_07.tgz
Catalog	catalog.xml
Unified Tarkit Available	true

### 3.9.2 Collecting CEF12T version file for upgrade

- Create a folder under D-drive in your computer and name it as **CEF12T** and copy the 3 required files (Collect files from Tejas representative) under CEF12T folder.

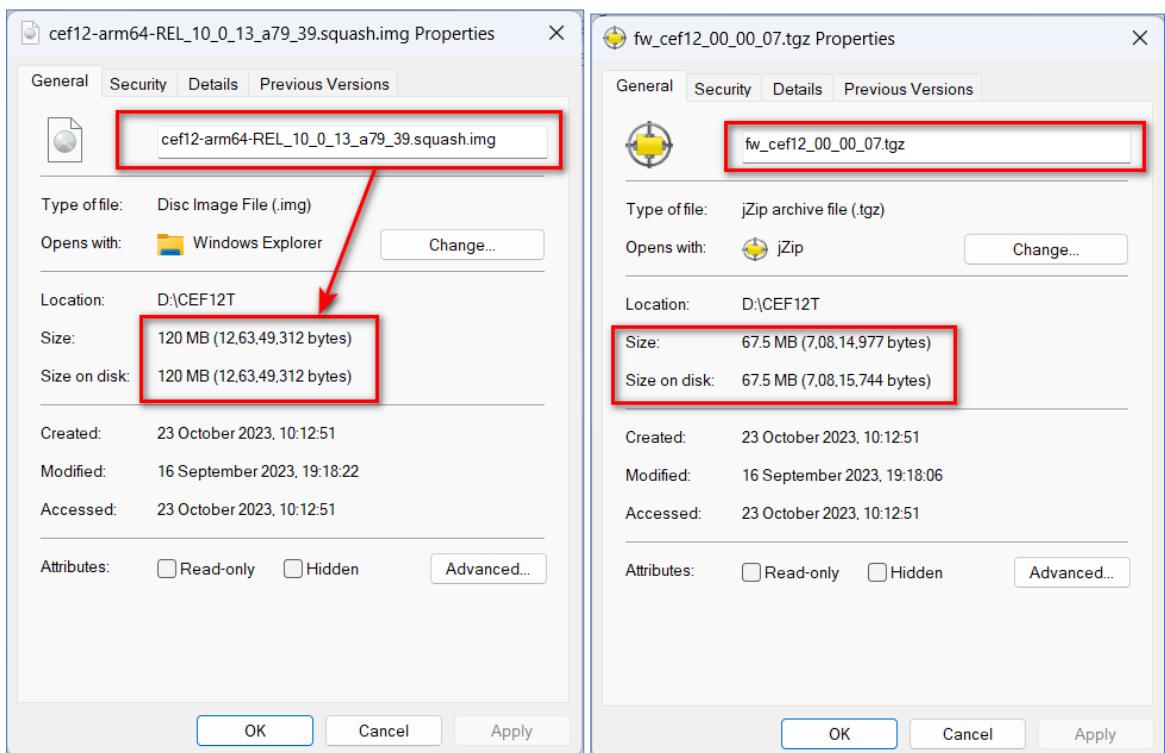
Names of the 3 Files are as below

- **catalog.xml**
- **cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img**
- **fw\_cef12\_00\_00\_07.tgz**

*Note: Check the size of each file should match the size as shown in image.*

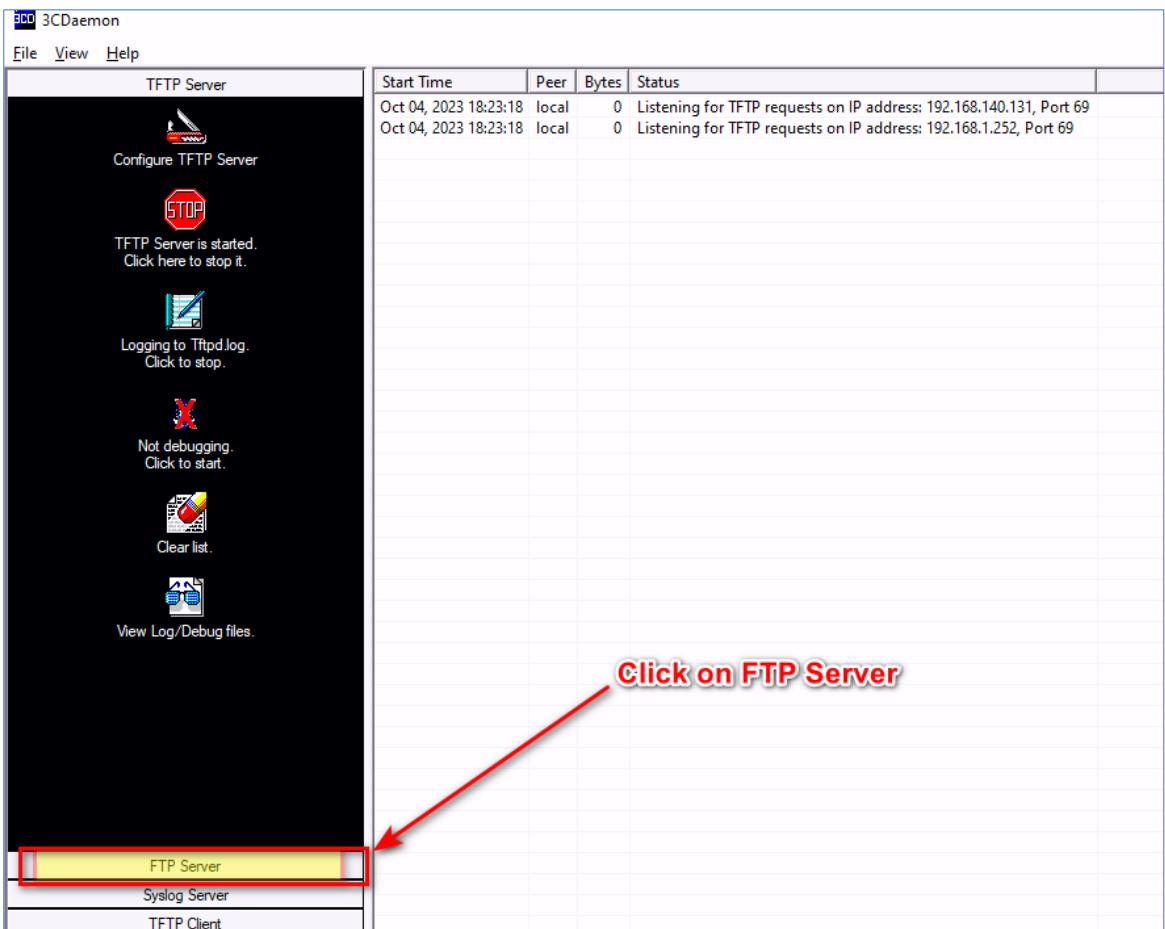
Name	Date modified	Type	Size
catalog.xml	16-09-2023 19:17	Microsoft Edge HT...	2 KB
cef12-arm64-REL_10_0_13_a79_39.squash.img	16-09-2023 19:18	Disc Image File	1,23,388 KB
fw_cef12_00_00_07.tgz	16-09-2023 19:18	jZip archive file	69,156 KB

- Right click on the file to see Properties, match the size of both files.

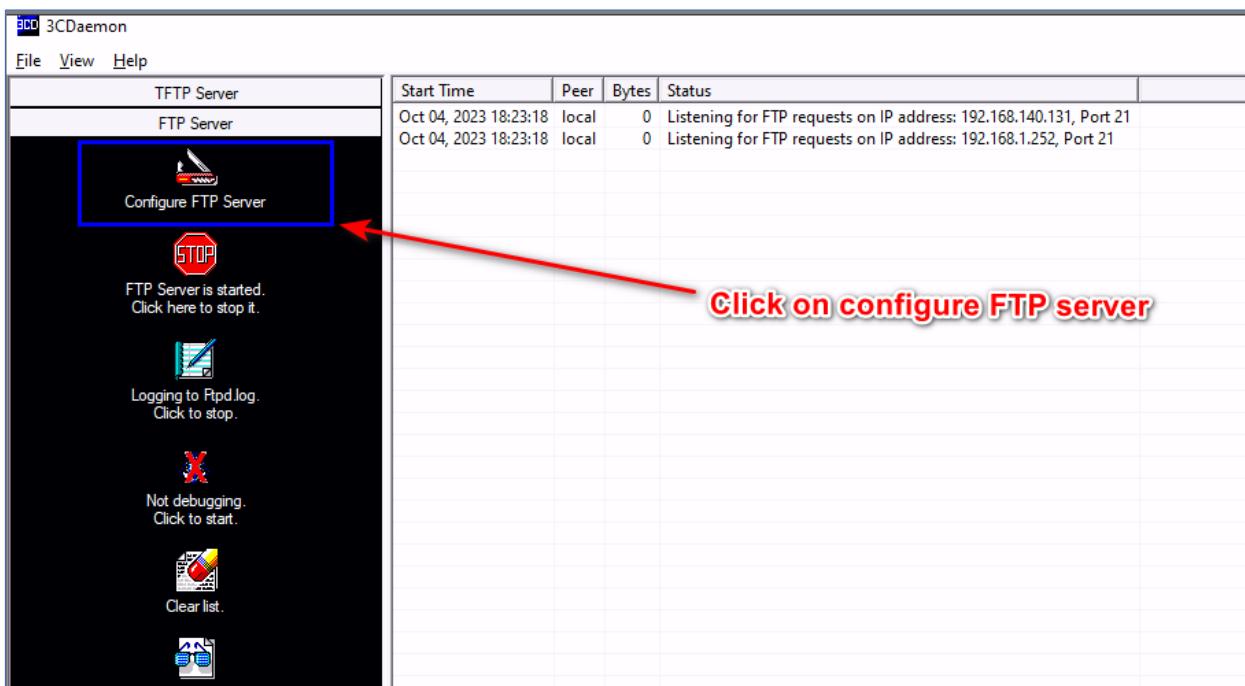


### 3.9.3 Setting FTP server on Laptop

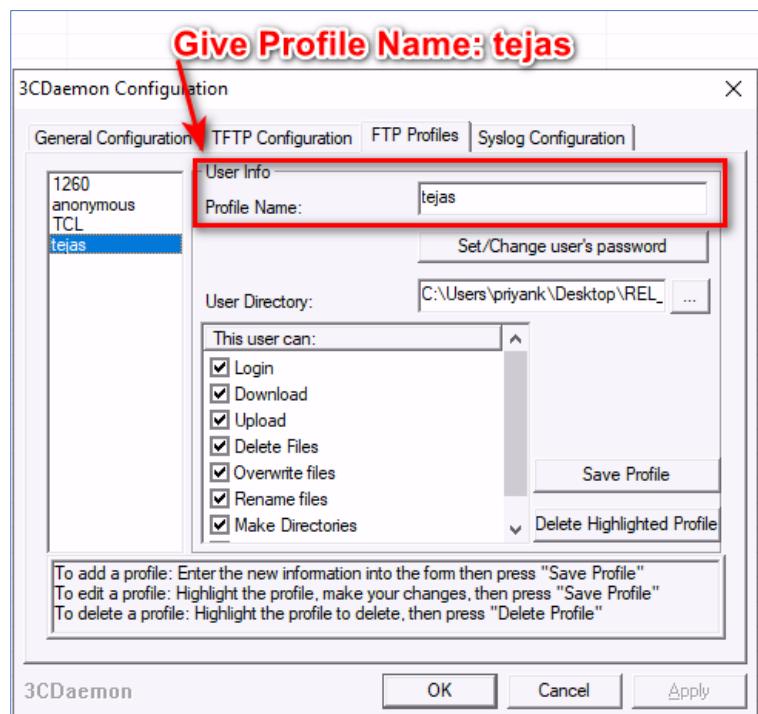
- a) Open **3C Daemon** tool interface, and on the left pane click on **FTP server** option.



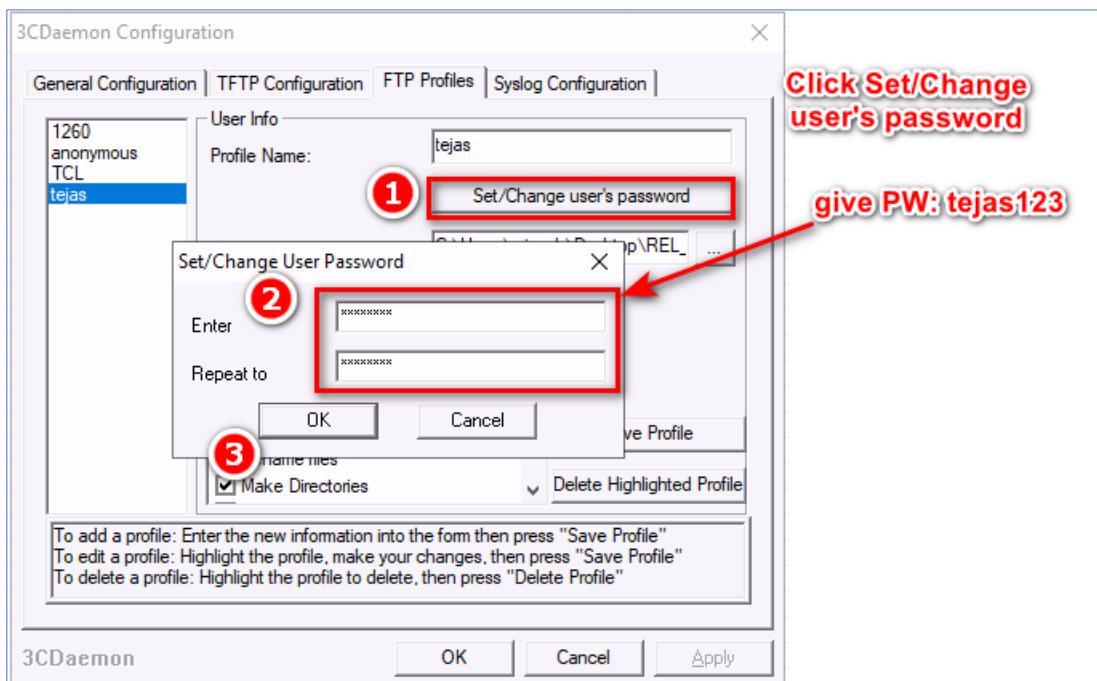
- b) Next click on “Configure FTP Server”



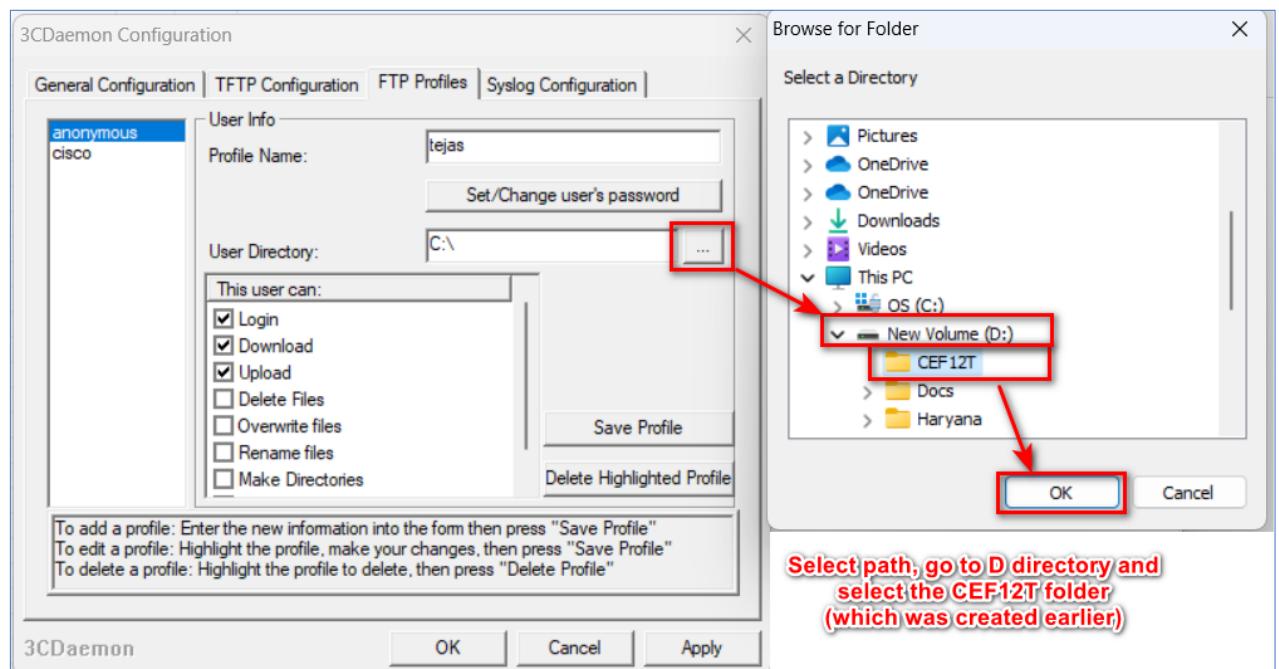
- c) Next in the Profile Name box, type **tejas**



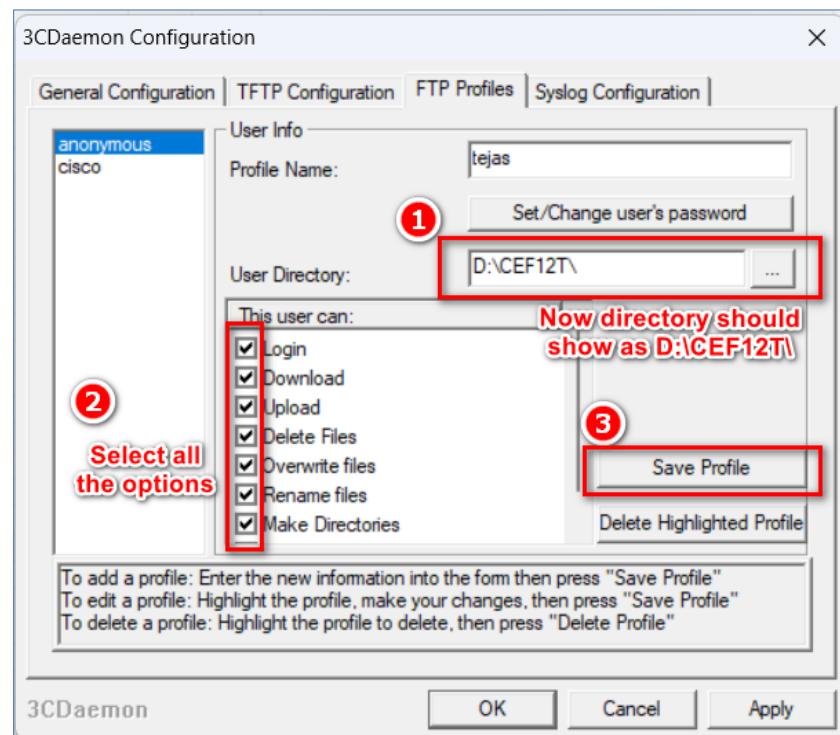
- d) Next click on **Set/Change user's password**, & in the next widow input **tejas123** in both *Enter* and *Repeat to* options. Then click on **OK**



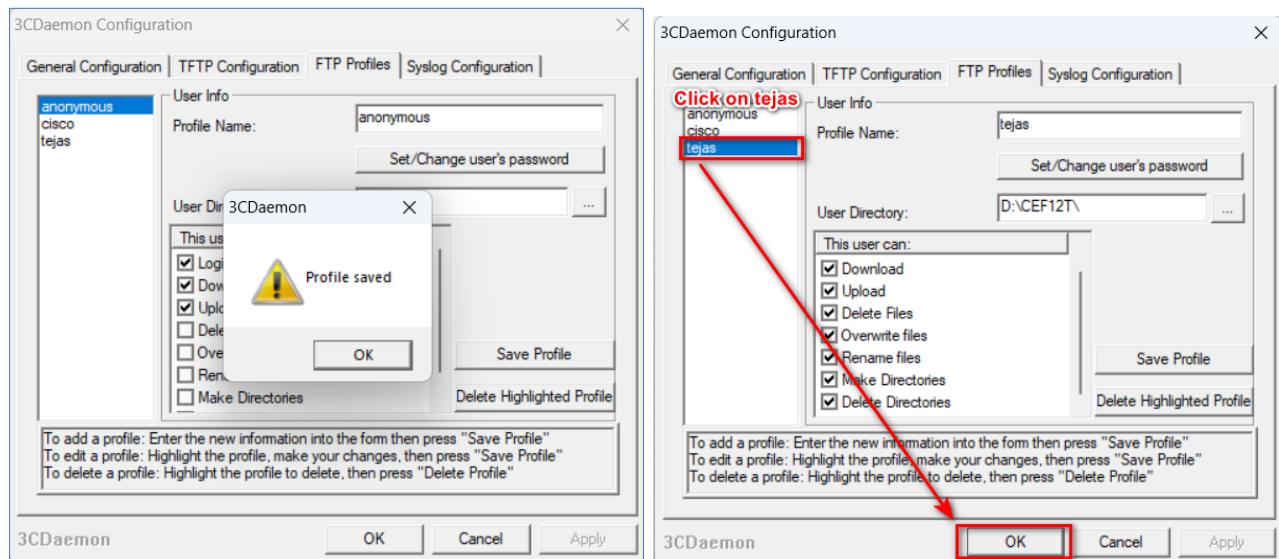
- e) Next click on the right-side box on **User Directory** option, select the path as **D:\CEF12T** and click on **OK**



- f) Next verify the path it should show as **D:\CEF12T\** and check all options on by one in the "**User Directory**" box, then click on **Save Profile** option.

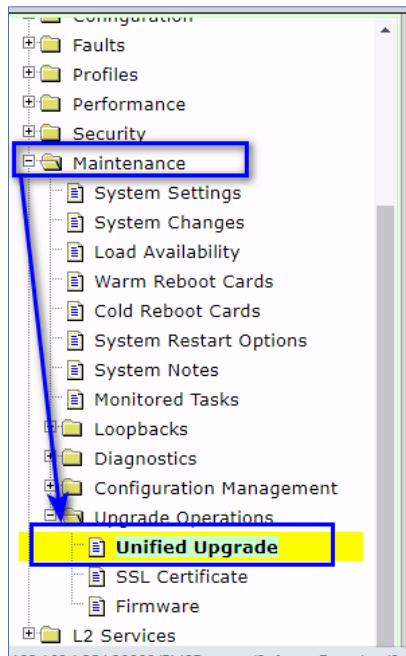


- g) After the successful save, it will show a prompt as “**Profile Saved**”, after this click on **tejas** in left side box and then click on **OK**, as shown in next images.



### 3.9.4 Initiating Upgrade through Unified Upgrade

- a) On the Left side pane Go to **Maintenance > Upgrade Operations > Unified Upgrade** option and click on it.



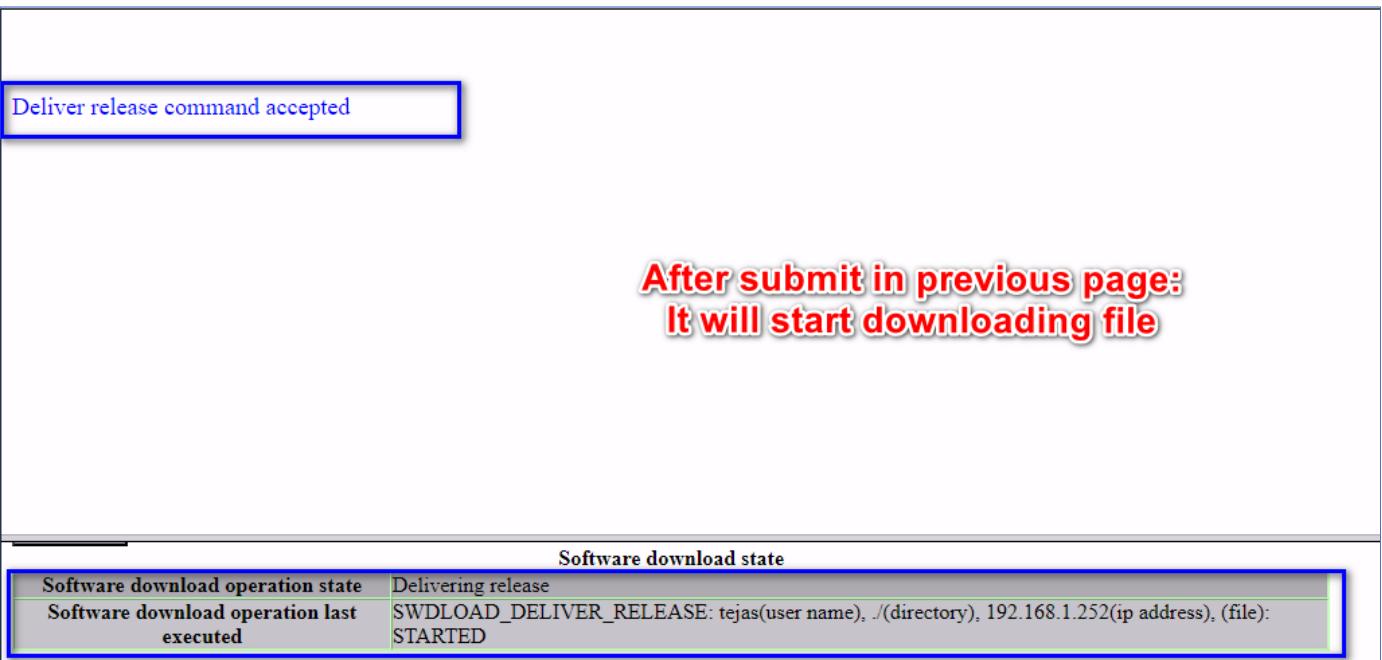
- b) Next it will show a window with title “Software download”, here for Software download operation option select **Deliver release from remote machine**. Then input details as below

Username :	<b>tejas</b>	(Same as we set the username in FTP server setting)
Password :	<b>tejas123</b>	(Same as we set the username in FTP server setting)
IP address :	<b>192.168.1.252</b>	(Same as your Laptop IP address)
FTP port :		(Keep Blank)
Directory :	<b>./</b>	(Input . followed by /)

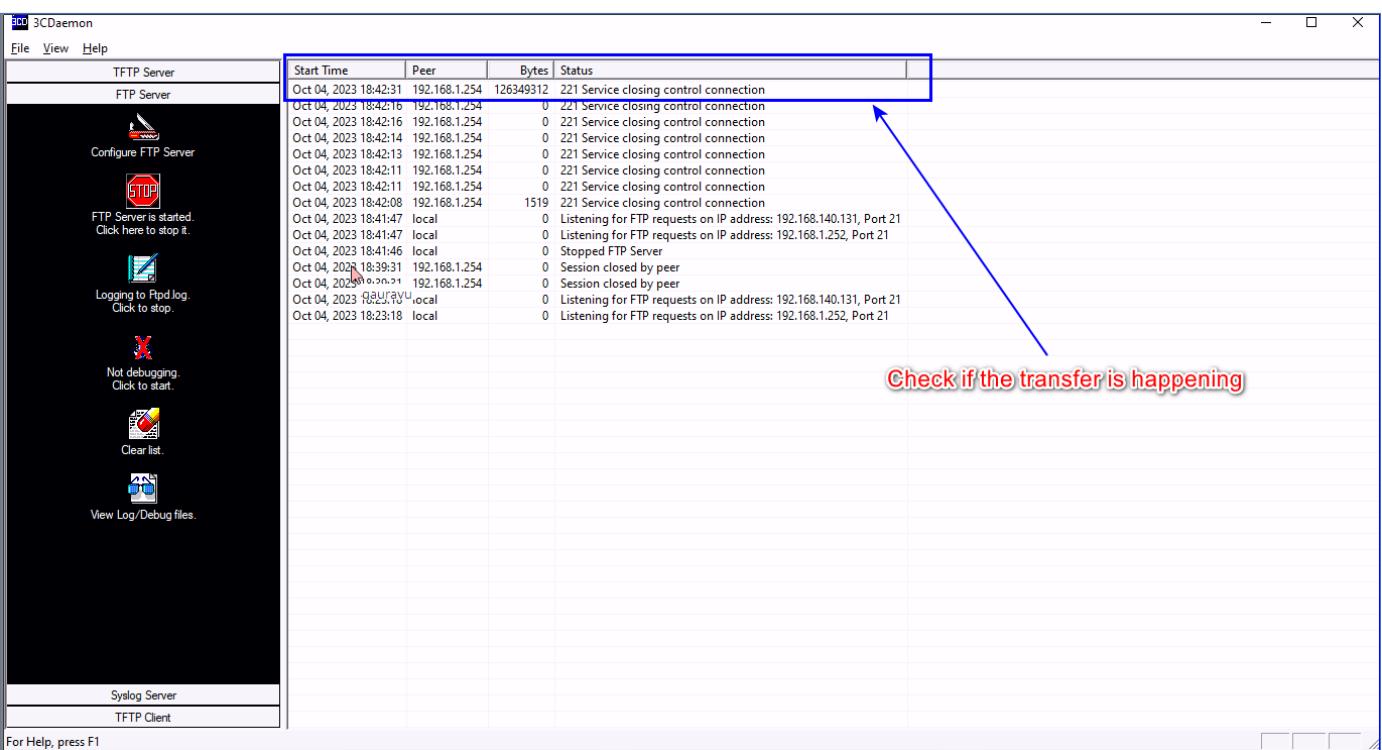
After filling all the details, verify it and click on **Submit**.

The screenshot shows the 'Software download' configuration window. The 'Software download operation' dropdown is set to 'Deliver release from remote machine' (1). The 'Username' field contains 'tejas' (2), the 'Password' field contains 'tejas123' (3), and the 'IP address' field contains '192.168.1.252' (4). The 'Directory' field has a placeholder './' (5). The 'Submit' button is highlighted with a red box (6). A red annotation at the bottom left of the window says 'here input ./ only'.

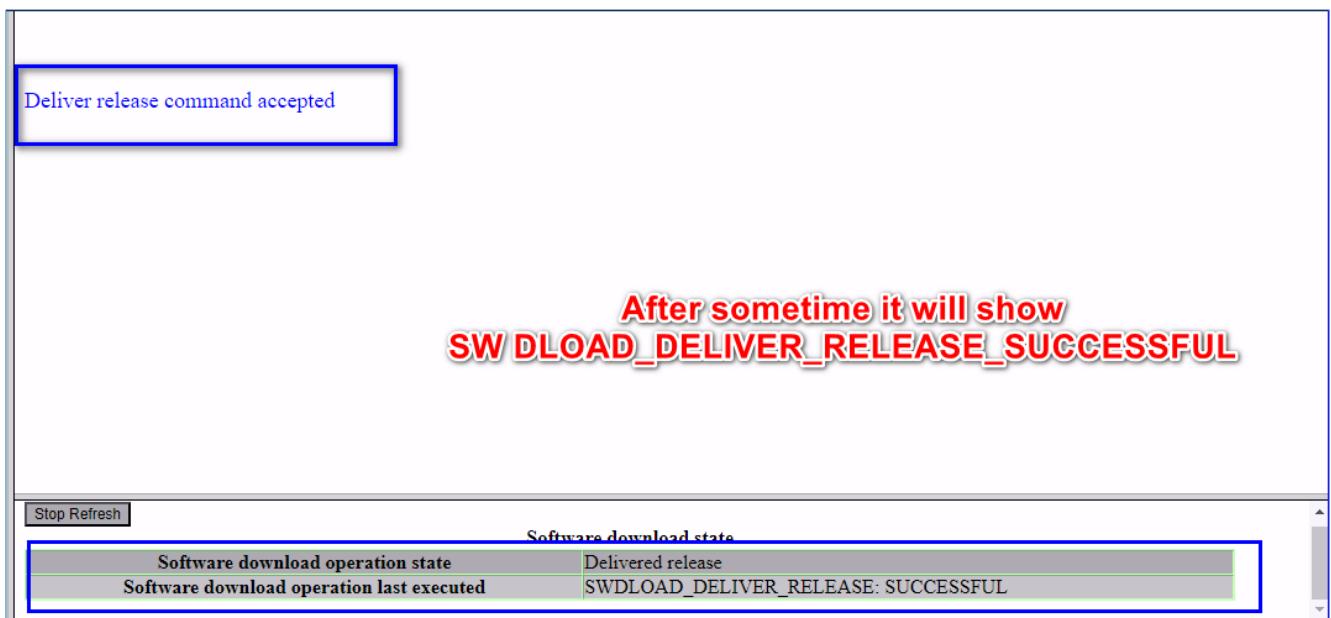
- c) Next it will show result as **Deliver release command accepted** and in the **Software download state** window on the bottom of the page, it will display **SWDLOAD\_DELIVER\_RELEASE: as STARTED**



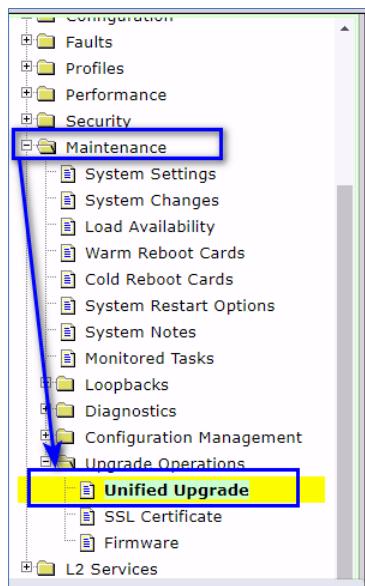
- d) Now go to 3CDaemon Tool window and check the file download should have been initiated.



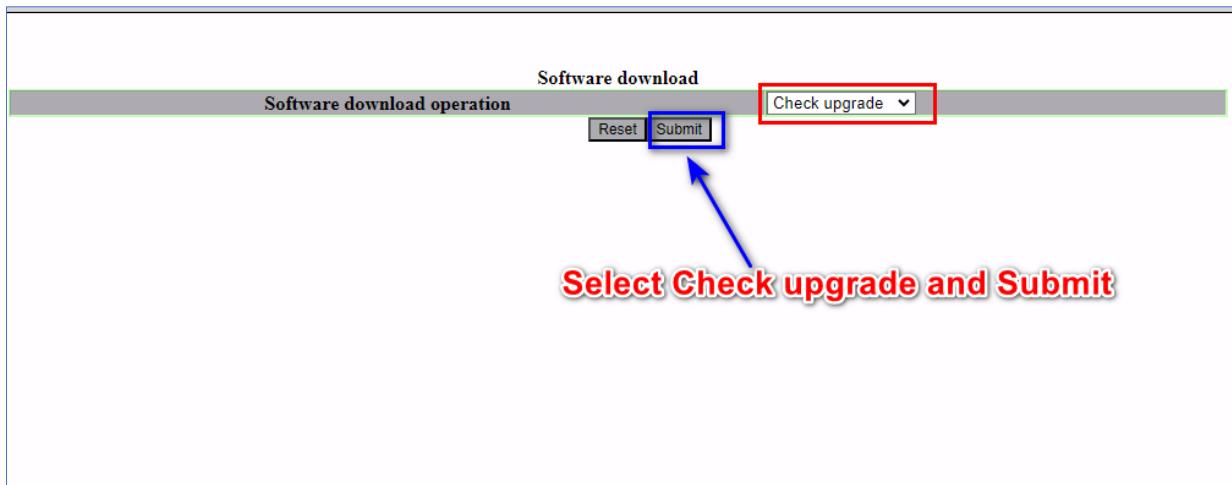
- e) After few minutes in the **Software download state** window on the bottom of the page, it will display **SWDLOAD\_DELIVER\_RELEASE:** as **SUCCESSFUL**



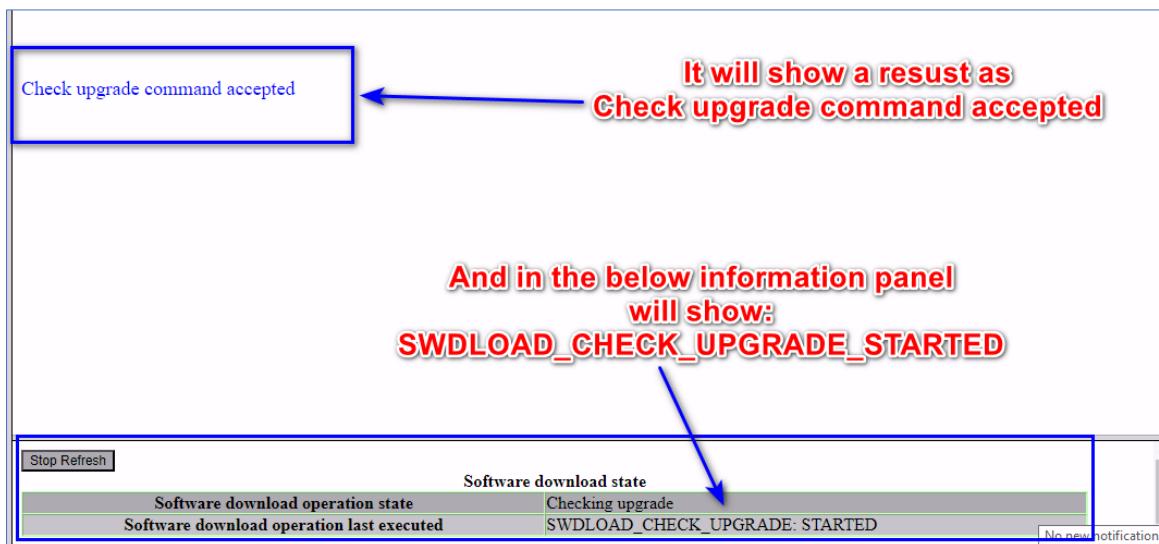
- f) Again, Go to Maintenance > Upgrade Operations > Unified Upgrade option and click on it.



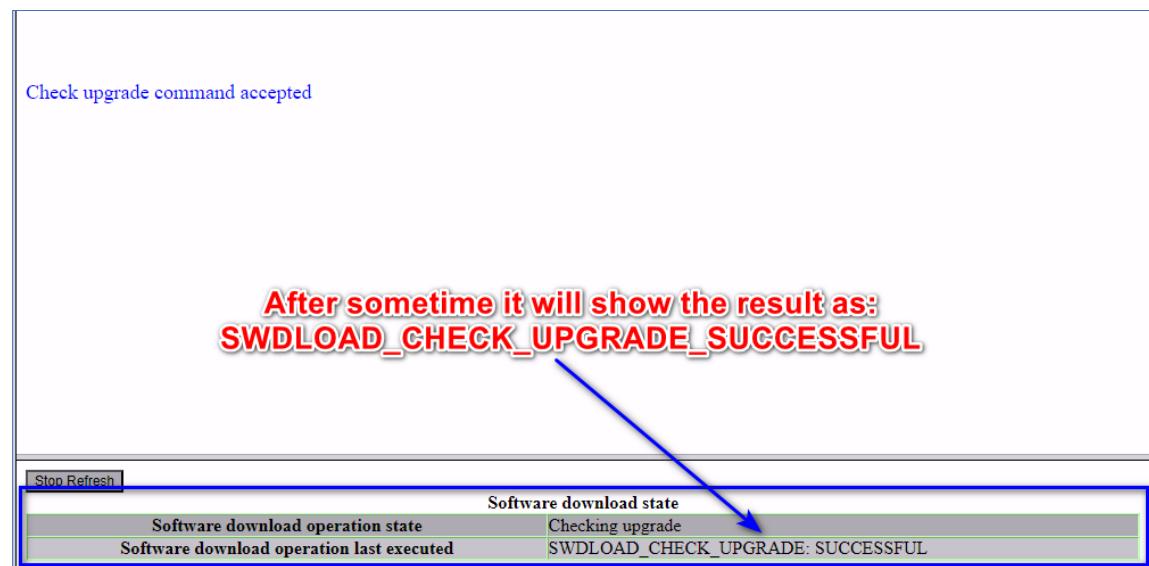
- g) Now the Software download page will show **Check Upgrade** option, select it and click on **Submit**.



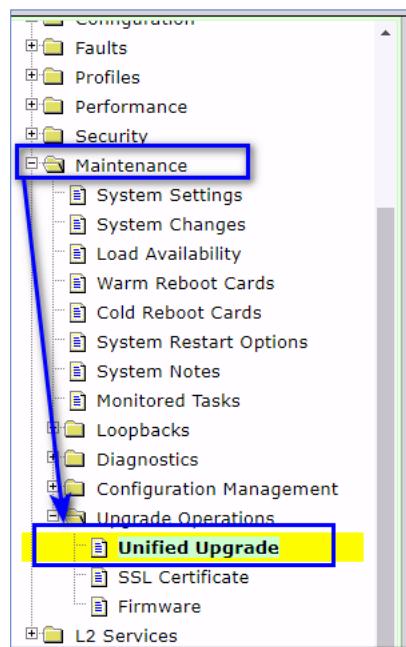
- h) Next it will show results as shown in the next image.



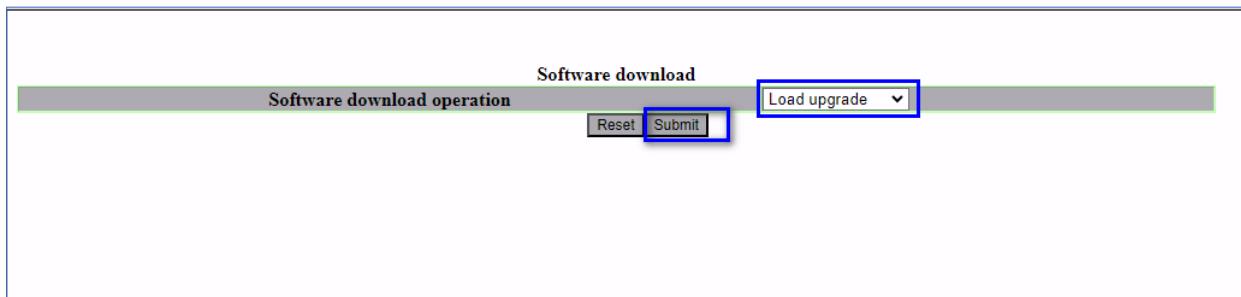
- i) After some time, it will show results as **SWDLOAD\_CHECK\_UPGRADE: SUCCESSFUL**



- j) Again, Go to Maintenance > Upgrade Operations > Unified Upgrade option and click on it.



- k) Now the Software download page will show **Load Upgrade** option, select it and click on **Submit**.



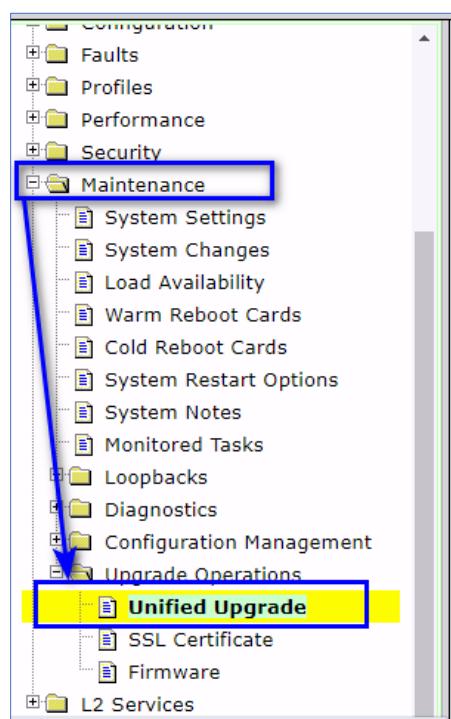
- l) Now the Software download page will show **Load Upgrade Complete** output option, and under **Software download state** the result is displayed as **SWDLOAD\_LOAD\_UPGRADE: SUCCESSFUL**

A screenshot of the same software download interface. At the top, a message box displays 'Load upgrade completed'. Below the header, there is a section labeled 'Software download state' with two rows of information:

Software download operation state	Loaded upgrade
Software download operation last executed	SWDLOAD_LOAD_UPGRADE: SUCCESSFUL

A red annotation text 'After sometime it will show a result as:  
SWDLOAD\_LOAD\_UPGRADE: SUCCESSFUL' is overlaid on the screen, with a blue arrow pointing to the 'Software download state' section.

- m) Again, Go to Maintenance > Upgrade Operations > Unified Upgrade option and click on it.



- n) Now the Software download page will show **Invoke Upgrade** option, select it and select **Upgrade with Cold Reboot** and click on **Submit**.

This operation may reboot the NE if successful  
*Enabling Automatic FPGA upgrade might cause delay in enabling NE reachability, based on card population*

Software download	
Software download operation	<input type="button" value="Invoke upgrade"/>
Automatic FPGA Upgrade	<input type="checkbox"/>
Upgrade with Cold Reboot	<input checked="" type="checkbox"/>
<input type="button" value="Reset"/> <input type="button" value="Submit"/>	

This operation may reboot the NE if successful  
*Enabling Automatic FPGA upgrade might cause delay in enabling NE reachability, based on card population*

Software download	
Software download operation	<input type="button" value="Invoke upgrade"/>
Automatic FPGA Upgrade	<input type="checkbox"/>
Upgrade with Cold Reboot	<input checked="" type="checkbox"/>
<input type="button" value="Reset"/> <input type="button" value="Submit"/>	

- o) Now the Software download page will show **Invoke Upgrade accepted. Rebooting the NE to invoke the new software...** result and under Software download state it will show **SWDLOAD\_INVOKE\_UPGRADE: STARTED**  
**After this node will restart and it will take 10-15 minutes to restore**

Invoke upgrade accepted. Rebooting the NE to invoke the new software...

Here it will show result:  
**Invoke Upgrade Accepted. Rebooting the NE to invoke the new software...**

**After sometime it will show result:  
**SWDLOAD\_INVOKE\_UPGRADE: STARTED****

Software download state	
Software download operation state	Invoking upgrade
Software download operation last executed	SWDLOAD_INVOKE_UPGRADE: STARTED

### 3.9.5 Verifying the upgrade result

On the Left pane go to **Maintenance > Load Availability**. Check the Software Image it shows the result as **cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img** then the upgrade is **Successful**.

The screenshot shows the left navigation pane and the main content area. The left pane has a tree view with various system categories like System, Maintenance, and Configuration. The 'Maintenance' node is expanded, and its child 'Load Availability' node is selected and highlighted with a yellow background. A blue arrow points from the text 'On the Left pane go to Maintenance > Load Availability.' to this highlighted node. The main content area displays a table titled 'Load Availability' with four rows:

File type	File name
Software Image	<b>cef12-arm64-REL_10_0_13_a79_39.squash.img</b>
Firmware Image	<b>fw_cef12_00_00_07.tgz</b>
Catalog	<b>catalog.xml</b>
Unified Taskit Available	<b>true</b>

A blue arrow also points from the text 'Check the Software Image it shows the result as cef12-arm64-REL\_10\_0\_13\_a79\_39.squash.img then the upgrade is Successful.' to the 'File name' column of the first row in the table.

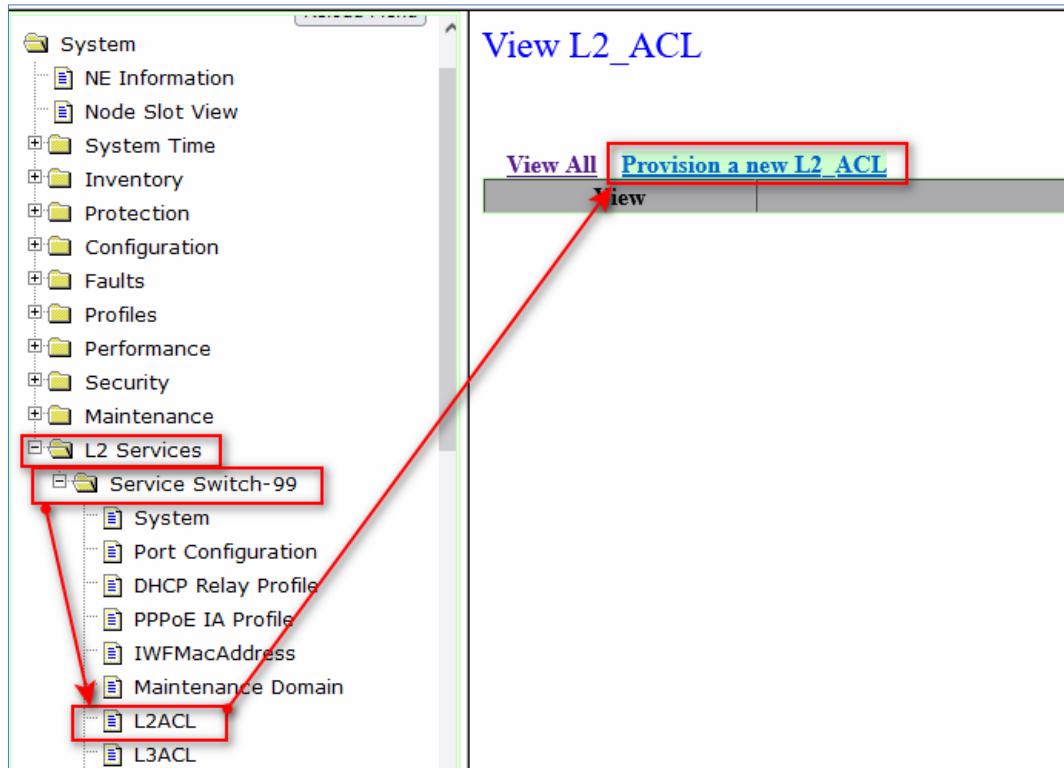
### 3.10 CEF12 L2 ACL Service Configuration

In this step L2 ACL will be created and under L2 ACL all 4 SOC will be added whose MAC addresses were collected in the [step 2.3](#).

Return to Mozilla Browser where CEF is already login. (If not showing CEF window then again login to CEF with the help of guide in Step 2.4 of this doc)

#### 3.10.1 Creating L2 ACL

In the left pane go to **L2 Services > Service Switch-99 > L2ACL > Provision a new L2 ACL**.



On next page give **L2 ACL Name** as '**SOC\_BP**' and click on **Create**.

This is a 'Provision New L2\_ACL' dialog. It has a text input field for 'L2 ACL Name' containing 'SOC\_BP'. Below the input field is a 'Create' button, which is also highlighted with a red box. At the bottom of the dialog are 'View All' and 'Provision a new L2\_ACL' buttons.

On next page verify the details and click on **Yes**.

This is a confirmation dialog titled 'Are You Sure?'. It asks 'Do you want to provision a new L2\_ACL with the following Attributes ?'. Below is a table with one row:

Attribute	Value
ACL Name	SOC_BP

At the bottom are 'No' and 'Yes' buttons, with 'Yes' highlighted with a red box. Navigation buttons 'View All' and 'Provision a new L2\_ACL' are at the very bottom.

Next it will show the successful creation result. Here click on **View All** to go to the L2 ACL page.

### Provision new L2\_ACL - result

Successfully Created L2\_ACL

[View All](#) [Provision a new L2\\_ACL](#)

#### 3.10.2 Creating 1<sup>st</sup> ACE for SOC1\_ETH1

On the view L2 ACL page, for SOC\_BP L2 ACL, click on the **edit** option

[View L2\\_ACL](#)

View All	Provision a new L2_ACL	View	L2 ACL Name	Edit	All
			SOC_BP	<a href="#">edit</a>	<input type="checkbox"/>
<a href="#">Delete</a>					

On the Edit L2\_ACL-0-0-99-1 page, click on **Create L2 ACE**.

[Edit L2\\_ACL-0-0-99-1](#)

L2 ACL Name		SOC_BP													
		<a href="#">Reset</a>	<a href="#">Submit</a>												
<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">View All</a> <a href="#">Provision a new L2_ACL</a>															
<b>L2 ACE</b>															
L2 ACE Name	Match Action	ACE Current Position	CVLANID Range	SPVLANID Range	PBit Range	Source MAC Address	Source MAC Mask	Destination MAC Address	Destination MAC Mask	Ether Type	Ether Type Value	Edit	Delete		
<a href="#">Create L2 ACE</a>															

On next page which is **Provision New L2\_ACE** page, we will create 4 ACE for all 4 MAC addresses one by one.

First we will create ACE for SOC1\_ETH1, so give **L2 ACE Name** as **SOC1\_ETH1** and at **Source MAC Address** option, copy the SOC1-eth1 MAC address from the table which was collected in previous step (Also shown below) and **Paste** in this option (For example here its **00:04:95:77:72:FA**).

SOC1 eth1	MAC Address:	00:04:95:77:72:FA
SOC2 eth3	MAC Address:	00:04:95:77:72:F8
SOC2 eth1	MAC Address:	00:04:95:77:72:F6
SOC0 eth1	MAC Address:	00:04:95:77:72:F9

**Note:** The actual site MAC address will be different from the above table. Pls input the details carefully according to the On-Site collected data in Step 2.10.3

In the **Source MAC Mask** option, input **FF:FF:FF:FF:FF:FF**. Next in the **Match Action** option, select **deny** and click on **Create**.

### Provision New L2\_ACE

L2 ACE	
L2 ACE Name	SOC1_ETH1 <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">1</span>
CVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
SPVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
PBit Range (should be a single value or single range)	
Source MAC Address	00:04:95:77:72:FA <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">2</span>
Source MAC Mask	FF:FF:FF:FF:FF:FF <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">3</span>
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
Ether Type	User Value <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">4</span>
Ether Type Value (in Hexadecimal)	0x0

L2 ACE Action	
Match Action	deny <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">5</span>

[Create](#) [Back to L2\\_ACL-0-0-99-1](#)

On the next page verify the details and click on **Yes**.

### Are You Sure?

Do you want to provision a new L2\_ACE with the following Attributes ?

Attribute	Value
L2 ACE Name	SOC1_ETH1
Match Action	2
CVLANID Range	
SPVLANID Range	
PBit Range	
Source MAC Address	00:04:95:77:72:FA
Source MAC Mask	FF:FF:FF:FF:FF:FF
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
MatchEtherTypeKey	User Value
Ether Type Value	0x0

[No](#) [Yes](#) [Back to L2\\_ACL-0-0-99-1](#)

After which it will show successful creation result. Here click on **Back to L2\_ACL-0-0-99-1**

### Provision new L2\_ACE - result

Successfully Created L2\_ACE

[Back to L2\\_ACL-0-0-99-1](#)

### 3.10.3 Creating 2<sup>nd</sup> ACE for SOC2\_ETH3

Now we have return to **Edit L2\_ACL\_0-0-99-1** page, here we will create ACE for 2<sup>nd</sup> SOC for **SOC2-eth3**, on the page click on **Create L2 ACE** option.

**Edit L2\_ACL-0-0-99-1**

L2 ACL Name	SOC_BP												
<input type="button" value="Reset"/> <input type="button" value="Submit"/>													
<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">View All</a> <a href="#">Provision a new L2_ACL</a>													
<b>L2 ACE</b>													
L2 ACE Name	Match Action	ACE Current Position	CVLANID Range	SPVLANID Range	PBit Range	Source MAC Address	Source MAC Mask	Destination MAC Address	Destination MAC Mask	Ether Type	Ether Type Value	Edit	Delete
SOC1_ETH1	deny	1	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F8	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>

[Create L2 ACE](#)

On next page give **L2 ACE Name** as **SOC2\_ETH3** and at **Source MAC Address** option, copy the SOC2-eth3 MAC address from the data collected and paste it in this option (For example here its **00:04:95:77:72:F8**). In the **Source MAC Mask** option, input **FF:FF:FF:FF:FF:FF**. Next in the **Match Action** option, select **deny** and click on **Create**.

**Provision New L2\_ACE**

L2 ACE	
L2 ACE Name	SOC2_ETH3 <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">1</span>
CVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
SPVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
PBit Range (should be a single value or single range)	
Source MAC Address	00:04:95:77:72:F8 <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">2</span>
Source MAC Mask	FF:FF:FF:FF:FF:FF <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">3</span>
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
Ether Type	User Value
Ether Type Value (in Hexadecimal)	0x0

L2 ACE Action	
Match Action	deny <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">4</span>
Create	<span style="border: 1px solid red; border-radius: 50%; padding: 2px;">5</span>

[Back to L2\\_ACL-0-0-99-1](#)

On the next page verify the details and click on **Yes**.

**Are You Sure?**

Do you want to provision a new L2\_ACE with the following Attributes ?

Attribute	Value
L2 ACE Name	SOC2_ETH3
Match Action	2
CVLANID Range	
SPVLANID Range	
PBit Range	
Source MAC Address	00:04:95:77:72:F8
Source MAC Mask	FF:FF:FF:FF:FF:FF
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
MatchEtherTypeKey	User Value
Ether Type Value	0x0

[Back to L2\\_ACL-0-0-99-1](#)

After which it will show successful creation result. Here click on **Back to L2\_ACL-0-0-99-1**

### Provision new L2\_ACE - result

Successfully Created L2\_ACE

[Back to L2\\_ACL-0-0-99-1](#)

#### 3.10.4 Creating 3<sup>rd</sup> ACE for SOC2\_ETH1

It will return to **Edit L2\_ACL-0-0-99-1** page, here click on **Create L2 ACE**.

[Edit L2\\_ACL-0-0-99-1](#)

L2 ACL Name		SOC_BP			Reset	Submit							
<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">View All</a> <a href="#">Provision a new L2_ACL</a>													
<b>L2 ACE</b>													
L2 ACE Name	Match Action	ACE Current Position	CVLANID Range	SPVLANID Range	PBit Range	Source MAC Address	Source MAC Mask	Destination MAC Address	Destination MAC Mask	Ether Type	Ether Type Value	Edit	Delete
<a href="#">SOC1_ETH1</a>	deny	1	0 - 0	0 - 0	0 - 0	00:04:95:77:72:FA	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC2_ETH3</a>	deny	2	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F8	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>

[Create L2 ACE](#)

On next page give **L2 ACE Name** as **SOC2\_ETH1**, at **Source MAC Address** option, copy the SOC2-eth1 MAC address from collected data and paste it in this option (For example here its **00:04:95:77:72:F6**). In the **Source MAC Mask** option, input **FF:FF:FF:FF:FF:FF**. Next in the **Match Action** option, select **deny** and click on **Create**.

[Provision New L2\\_ACE](#)

L2 ACE	
<b>L2 ACE Name</b> <span style="border: 1px solid red; padding: 2px;">SOC2_ETH1</span> <span style="color: red; font-size: 2em; vertical-align: middle;">1</span>	
<b>CVLANID Range (Ranges should be separated by ',' example: 4,5-25)</b>	
<b>SPVLANID Range (Ranges should be separated by ',' example: 4,5-25)</b>	
<b>PBit Range (should be a single value or single range)</b>	
<b>Source MAC Address</b> <span style="border: 1px solid red; padding: 2px;">00:04:95:77:72:F6</span> <span style="color: red; font-size: 2em; vertical-align: middle;">2</span>	
<b>Source MAC Mask</b> <span style="border: 1px solid red; padding: 2px;">FF:FF:FF:FF:FF:FF</span> <span style="color: red; font-size: 2em; vertical-align: middle;">3</span>	
<b>Destination MAC Address</b> <span style="border: 1px solid red; padding: 2px;">00:00:00:00:00:00</span>	
<b>Destination MAC Mask</b> <span style="border: 1px solid red; padding: 2px;">00:00:00:00:00:00</span>	
<b>Ether Type</b> User Value	
<b>Ether Type Value (in Hexadecimal)</b> 0x0	
L2 ACE Action	
<b>Match Action</b> <span style="border: 1px solid red; padding: 2px;">deny</span> <span style="color: red; font-size: 2em; vertical-align: middle;">4</span>	
<span style="border: 1px solid red; padding: 2px;">Create</span> <span style="color: red; font-size: 2em; vertical-align: middle;">5</span>	

[Back to L2\\_ACL-0-0-99-1](#)

On the next page verify the details and click on **Yes**.

### Are You Sure?

Do you want to provision a new L2\_ACE with the following Attributes ?

Attribute	Value
L2 ACE Name	SOC2_ETH1
Match Action	2
CVLANID Range	
SPVLANID Range	
PBit Range	
Source MAC Address	00:04:95:77:72:F6
Source MAC Mask	FF:FF:FF:FF:FF:FF
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
MatchEtherTypeKey	User Value
Ether Type Value	0x0

No Yes

[Back to L2\\_ACL-0-0-99-1](#)

After which it will show successful creation result. Here click on [Back to L2\\_ACL-0-0-99-1](#)

### Provision new L2\_ACE - result

Successfully Created L2\_ACE

[Back to L2\\_ACL-0-0-99-1](#)

### 3.10.5 Creating 3<sup>rd</sup> ACE for SOC2\_ETH1

It will return to [Edit L2\\_ACL-0-0-99-1](#) page, click on [Create L2 ACE](#).

### Edit L2\_ACL-0-0-99-1

L2 ACL Name SOC\_BP

[Reset](#) [Submit](#)

[View](#) [Edit](#) [Delete](#) [View All](#) [Provision a new L2 ACL](#)

#### L2 ACE

L2 ACE Name	Match Action	ACE Current Position	CVLANID Range	SPVLANID Range	PBit Range	Source MAC Address	Source MAC Mask	Destination MAC Address	Destination MAC Mask	Ether Type	Ether Type Value	Edit	Delete
<a href="#">SOC1_ETH1</a>	deny	1	0 - 0	0 - 0	0 - 0	00:04:95:77:72:FA	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC2_ETH3</a>	deny	2	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F8	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC2_ETH1</a>	deny	3	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F6	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>

[Create L2 ACE](#)

Now we will create 4<sup>th</sup> SOC and last ACE for **SOC2-eth1**.

On next page give **L2 ACE Name** as **SOC0\_ETH1**, at **Source MAC Address** option, copy the SOC0-eth1 MAC address from collected data and paste it in this option (For example here its **00:04:95:77:72:F9**). In the **Source MAC Mask** option, input **FF:FF:FF:FF:FF:FF**. Next in the **Match Action** option, select **deny** and click on [Create](#).

[Provision New L2\\_ACE](#)

L2 ACE	
L2 ACE Name	SOC0_ETH1 <span style="border: 2px solid red; border-radius: 50%; padding: 2px;">1</span>
CVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
SPVLANID Range (Ranges should be separated by ',' example: 4,5-25)	
PBit Range (should be a single value or single range)	
Source MAC Address	00:04:95:77:72:F9 <span style="border: 2px solid red; border-radius: 50%; padding: 2px;">2</span>
Source MAC Mask	FF:FF:FF:FF:FF:FF <span style="border: 2px solid red; border-radius: 50%; padding: 2px;">3</span>
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
Ether Type	User Value
Ether Type Value (in Hexadecimal)	0x0

L2 ACE Action	
Match Action	deny <span style="border: 2px solid red; border-radius: 50%; padding: 2px;">4</span>
Create	<span style="border: 2px solid red; border-radius: 50%; padding: 2px;">5</span>

[Back to L2\\_ACL-0-0-99-1](#)

On the next page verify the details and click on **Yes**.

[Are You Sure?](#)

Do you want to provision a new L2\_ACE with the following Attributes ?

Attribute	Value
L2 ACE Name	SOC0_ETH1
Match Action	2
CVLANID Range	
SPVLANID Range	
PBit Range	
Source MAC Address	00:04:95:77:72:F9
Source MAC Mask	FF:FF:FF:FF:FF:FF
Destination MAC Address	00:00:00:00:00:00
Destination MAC Mask	00:00:00:00:00:00
MatchEtherTypeKey	User Value
Ether Type Value	0x0

Yes

[Back to L2\\_ACL-0-0-99-1](#)

After which it will show successful creation result. Here click on **Back to L2\_ACL-0-0-99-1**

[Provision new L2\\_ACE - result](#)

Successfully Created L2\_ACE

[Back to L2\\_ACL-0-0-99-1](#)

On the next page verify all MAC addresses, it should be same as it was collected in **Table 2-4** (on page 30).

## Edit L2\_ACL-0-0-99-1

L2 ACL Name	SOC_BP	<input type="button" value="Reset"/>	<input type="button" value="Submit"/>
-------------	--------	--------------------------------------	---------------------------------------

[View](#) [Edit](#) [Delete](#) [View All](#) [Provision a new L2\\_ACL](#)

### L2 ACE

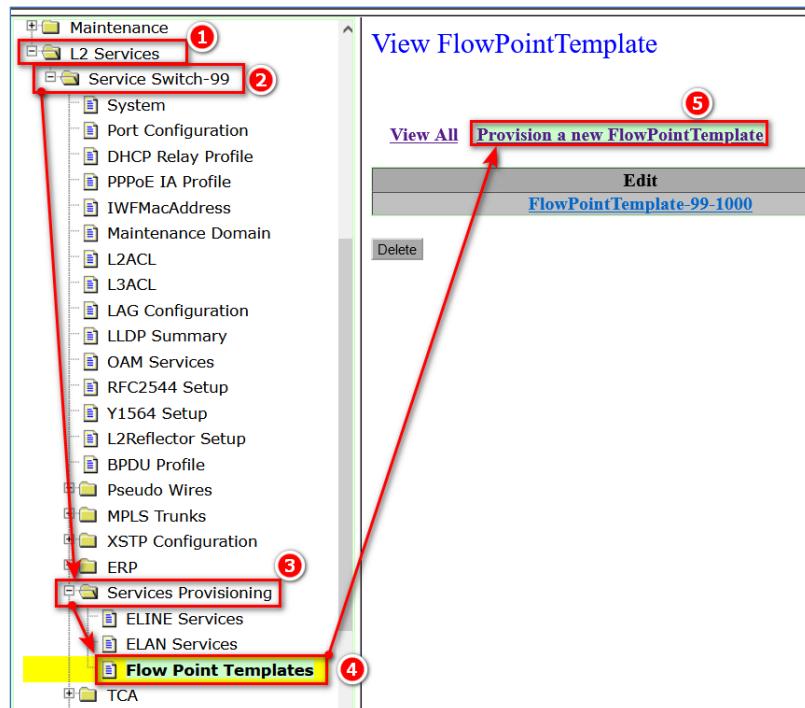
L2 ACE Name	Match Action	ACE Current Position	CVLANID Range	SPVLANID Range	PBit Range	Source MAC Address	Source MAC Mask	Destination MAC Address	Destination MAC Mask	Ether Type	Ether Type Value	Edit	Delete
<a href="#">SOC1_ETH1</a>	Deny	1	0 - 0	0 - 0	0 - 0	00:04:95:77:72:FA	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC2_ETH3</a>	Deny	2	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F8	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC2_ETH1</a>	Deny	3	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F6	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>
<a href="#">SOC0_ETH1</a>	Deny	4	0 - 0	0 - 0	0 - 0	00:04:95:77:72:F9	FF:FF:FF:FF:FF:FF	00:00:00:00:00:00	00:00:00:00:00:00	User Value	0x0	<a href="#">edit</a>	<a href="#">delete</a>

[Create L2 ACE](#)

### 3.11 Creating Flow Point for each VLAN (3 VLANs)

In this step 3 Flow points (One each for OAM, S1C and S1U VLAN) will be created for RAC cards.

- A) First create a Flow point for OAM VLAN. On the left pane go to **L2 Services > Service Switch-99 > Services Provisioning > Flow Point Templates > Provision a new FlowPointTemplate**.



On next page Input the **Template Description** as **MGMT**, which means we will enter OAM VLAN here then Select **FPTemplateType** as **CVLAN** and **CVLAN range** to be input from IP Plan same as **OAM RAC VLAN**. After filling details click on **Create**

Provision New FlowPointTemplate																			
<input type="checkbox"/> Enable VLAN Translation																			
<table border="1"> <tr> <td>FlowPointTemplate Description</td> <td>① MGMT</td> </tr> <tr> <td>FPTemplateType</td> <td>② CVLAN</td> </tr> <tr> <td>CVLAN Range</td> <td>③ 703</td> </tr> </table>					FlowPointTemplate Description	① MGMT	FPTemplateType	② CVLAN	CVLAN Range	③ 703									
FlowPointTemplate Description	① MGMT																		
FPTemplateType	② CVLAN																		
CVLAN Range	③ 703																		
<input type="text" value="Enter VLAN Ranges separated by commas. For example, VLAN Range: 4,5-25,...(no space between commas)"/>																			
<input type="button" value="Create"/>																			
<a href="#">View All</a> <a href="#">Provision a new FlowPointTemplate</a>																			
<table border="1"> <thead> <tr> <th>Q</th> <th>R</th> <th>S</th> <th>T</th> <th>U</th> </tr> </thead> <tbody> <tr> <td>OAM RAC GW</td> <td>OAM RAC B1</td> <td>OAM RAC B41</td> <td>OAM RAC B28</td> <td>OAM RAC VLAN</td> </tr> <tr> <td>10.144.4.65/26</td> <td>10.144.4.66</td> <td>10.144.4.85</td> <td>10.144.4.104</td> <td>703</td> </tr> </tbody> </table>					Q	R	S	T	U	OAM RAC GW	OAM RAC B1	OAM RAC B41	OAM RAC B28	OAM RAC VLAN	10.144.4.65/26	10.144.4.66	10.144.4.85	10.144.4.104	703
Q	R	S	T	U															
OAM RAC GW	OAM RAC B1	OAM RAC B41	OAM RAC B28	OAM RAC VLAN															
10.144.4.65/26	10.144.4.66	10.144.4.85	10.144.4.104	703															

After successful creation a result will be displayed as below, here click on **Provision a new FlowPointTemplate** to create another Flow Point Template.

### Provision new FlowPointTemplate - result

Successfully created FlowPoint Template and FP Class Rules. :

[View All](#) [Provision a new FlowPointTemplate](#)

- B) On the new Template creation page, Input the **Template Description** as **MME** as this is the VLAN used for S1C path, **FPTemplateType** as **CVLAN** and **CVLAN range** to be input from IP Plan same as **S1C VLAN**. After filling details click on **Create**

**Provision New FlowPointTemplate**

Enable VLAN Translation

FlowPointTemplate Description	① <b>MME</b>
FPTemplateType	② <b>CVLAN</b>
CVLAN Range	③ <b>707</b>

Enter VLAN Ranges separated by commas. For example, VLAN Range: 4-5,25, (no space between commas)

**Create** (4)

[View All](#) [Provision a new FlowPointTemplate](#)

S1C GW B1	S1C B1	S1C B41	S1C B28	S1C VLAN
10.144.5.65/26	10.144.5.66	10.144.5.85	10.144.5.104	707

After successful creation a result will be displayed as below, here click on **Provision a new FlowPointTemplate** to create 3rd Flow Point Template for S1U.

### Provision new FlowPointTemplate - result

Successfully created FlowPoint Template and FP Class Rules. :

[View All](#) [Provision a new FlowPointTemplate](#)

- C) On the new Template creation page, Input the **Template Description** as **SGW** as this is the VLAN used for S1U path, **FPTemplateType** as **CVLAN** and **CVLAN range** to be input from IP Plan same as **S1U VLAN**. After filling details click on **Create**

**Provision New FlowPointTemplate**

Enable VLAN Translation

FlowPointTemplate Description	① <b>SGW</b>
FPTemplateType	② <b>CVLAN</b>
CVLAN Range	③ <b>760</b>

Enter VLAN Ranges separated by commas. For example, VLAN Range: 4-5,25, (no space between commas)

**Create** (4)

[View All](#) [Provision a new FlowPointTemplate](#)

S1U GW B1	S1U B1	S1U B41	S1U B28	S1U VLAN
10.144.6.65/26	10.144.6.66	10.144.6.85	10.144.6.104	760

After successful creation a result will be displayed as below, here click on **View All** to check the created Flow Point Template.

Provision new FlowPointTemplate - result

Successfully created FlowPoint Template and FP Class Rules. :

[View All](#) [Provision a new FlowPointTemplate](#)

View FlowPointTemplate

[View All](#) [Provision a new FlowPointTemplate](#)

Edit	FPTemplate type	Description	All
<a href="#">FlowPointTemplate-99-1</a>	CVLAN	MGMT	<input type="checkbox"/>
<a href="#">FlowPointTemplate-99-2</a>	CVLAN	MME	<input type="checkbox"/>
<a href="#">FlowPointTemplate-99-3</a>	CVLAN	SGW	<input type="checkbox"/>
<a href="#">FlowPointTemplate-99-1000</a>	NONE	FPTemplate for TLS use	<input type="checkbox"/>

[Delete](#)

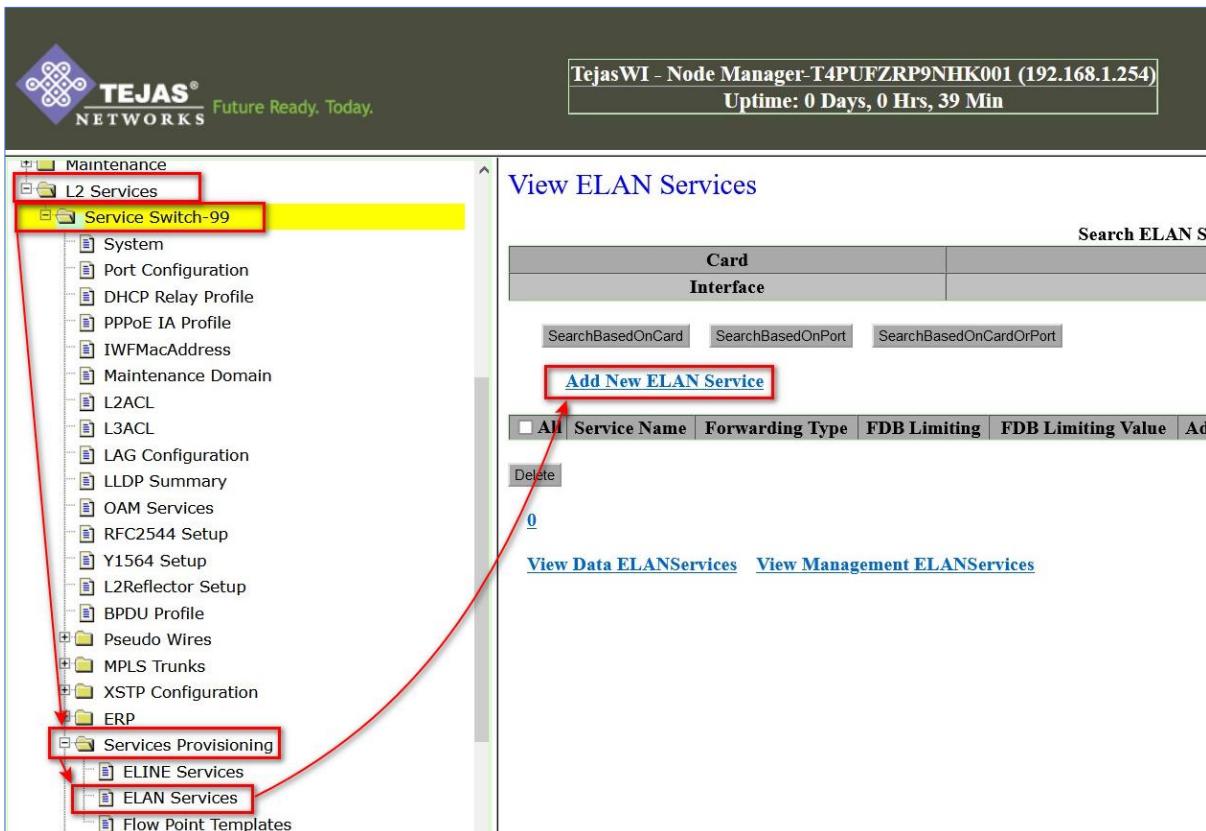
### 3.12 Creating ELAN services between ETH-1-4-2 & BPETH-1-7-1 for all 3 VLANs

This is the final step for CEF commissioning. Now VLAN forwarding will be done where ELAN service will be created for the **Port P2 of CEF (ETH-1-4-2** where TX media is connected) & backplane port of Slot7 RAC card (**BPETH-1-7-1**).

**Note:** select the BPETH port as per RAC card slot, if RAC card is for B28 then it will be inserted in **Slot 5** its BPETH port will be **BPETH-1-5-1** & If the RAC is inserted in **Slot 1**, the BPETH port will be **BPETH-1-1-1**

#### 3.12.1 Creating ELAN service for MGMT VLAN (Towards EMS):

The first ELAN service will be created for RAC MGMT VLAN, for creating ELAN services, on the left pane go to **L2 Services > Service Switch-99 > Services Provisioning > ELAN Services > Add New ELAN Service** (As shown in the next image)



- . On the “Provision New ELAN Service” page, input **Service Name** as **MGMT** and click on **Create**

### Provision New ELAN Service

VBI Service Type	ELAN_EVC
Service Name	<input type="text" value="MGMT"/>
Trail Identifier	0
CustomerName	Customer1
Forwarding Type	CVLAN_Forwarding
FDB Limiting	Disable
FDB Limiting Value	
FDB Limiting Action	
VBI Admin State	Up
MVR State	Disable
MVLAN	
Group Address Low	
Group Address High	
IGMP Snooping profile	none
MLD Snooping profile	none
<a href="#">Create</a>	

On the result page, click on **Back to Service MGMT**.

Provision new ELAN Service - result

Successfully Created EVC

[Back to Service MGMT](#)

[Back to View ELAN Service\(s\)](#)

Next will show to the “**Edit ELAN Service: MGMT**” page, here click on **Add New FlowPoint** to add Interfaces as shown in next step image.

### Edit ELAN Service : MGMT

Service Name	MGMT
Trail Identifier	0
Customer Name	Customer1
VBI Service Type	ELAN_EVC
Forwarding Type	CVLAN Forwarding
FDBLimiting State	Disable
FDBLimiting Value	
FDBLimiting Action	
Admin State	Up
MacFF User Defined Gateway Entry Refresh	
<a href="#">Refresh Gateway Info</a>	
FDB Configuration	
<a href="#">Add Static Unicast FDB entry</a>	<a href="#">View Static Unicast FDB entries</a>
<a href="#">Add Static Multicast FDB entry</a>	<a href="#">View Static Multicast FDB entries</a>
<a href="#">View Dynamic Unicast Fdb Entries</a>	
<a href="#">View Dynamic Multicast Fdb Entries</a>	
FlowPoint Configuration	
Split Horizon Group Id	<a href="#">Add new FlowPoint</a>
FlowPoint	PM Counters
FlowPoint Template	MEPS
MIPS	Admin State
IGMP Profile	MLD Profile
Delete	
IGMP Snooping Configuration	
IGMP Snooping profile	none

On the “**Provision New FlowPoint**” page, in the **Interface** option select **BPETH-1-7-1** (Which is Backplane Interface for RAC card in slot 7) and under **FlowPoint Template** option select **MGMT**. On same page under **Ingress L2 ACL** option select **SOC\_BP** and click on **Create**.

### Provision New FlowPoint

<b>Service Name</b>	MGMT
<b>FlowPoint Type</b>	dot1q Interface
<b>Type of Traffic Flowing through this Flow Point Interface</b>	Data Traffic BPETH-1-7-1
<b>FlowPoint Mode</b>	New Group
<b>Tunnel Group</b>	MGMT
<b>LocalAttachment</b>	
<b>PseudoWire Group</b>	
<b>Split Horizon Group Id</b>	
<b>FlowPointTemplate</b>	<a href="#">view Create FPTemplate</a>
<b>TPID used while Adding/Swapping CTAG/STAG</b>	
<b>FP Admin State</b>	admin_up
<b>FP Loop Detection Action</b>	None
<b>Error Disable</b>	false
<b>TCA Profile</b>	None
<b>Ingress QoS</b>	
<b>Trust IngressColour</b>	false
<b>Colour Source</b>	None
<b>Ingress Bandwidth Profile</b>	None
<b>Hierarchical Meter Sharing Mode</b>	MODE_NONE
<b>Policer DropAction</b>	Drop_None
<b>Trust IngressPriority</b>	false
<b>Ingress PrioritySource</b>	Trust_None
<b>Remark DSCP</b>	false
<b>Default CoS Queue Id</b>	0
<b>Ingress Priority to cosQ Mapping Profile</b>	None
<b>Security</b>	
<b>Ingress L2 ACL</b>	SOC_BP
<b>Ingress L3 ACL</b>	None
<b>Broadcast Storm Control Profile</b>	None
<b>DLF Flood Control Profile</b>	None
<b>ICMP Flood Control Profile</b>	None
<b>TCP Sync Flood Control Profile</b>	None
<b>Egress QoS</b>	
<b>Remark Priority And DEI</b>	false
<b>Egress Priority Mapping Profile</b>	None
<b>IGMP Snooping</b>	
<b>IGMP Snooping profile</b>	none
<b>Enable Multicast Router Port</b>	false
<b>MLD Snooping</b>	
<b>MLD Snooping profile</b>	none
<b>DHCP Relay</b>	
<b>DHCP Snooping</b>	DHCP_Snooping_Disable
<b>DHCPv6 Snooping</b>	DHCPv6_Snooping_Disable
<b>Trusted Port</b>	DHCP_Trusted_Disable
<b>MacFF</b>	
<b>Mac-Force Forwarding</b>	MacFF_Disable
<b>IP Antispoofing</b>	IPAntiSpoofing_Disable
<b>IP Antispoofing Filter</b>	MAC_Filter
<b>PPPoE IA</b>	
<b>PPPoE Snooping</b>	PPPoE_Snooping_Disable
<b>PPPoE Trusted Port</b>	PPPoE_Trusted_Disable
<b>Create</b>	

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

### Are You Sure?

Do you want to provision a new FlowPoint with the following Attributes ?

Attribute	Value
Interface	BPETH-1-7-1
Local Attachment	0
Type of Traffic Flowing through this Flow Point	FPTemplate-0-0-99-1
FlowPointTemplate	
Egress TPID	1
FlowPoint Mode	0
Split Horizon Group Id	Unknown
AdminState	None
ActionOnLoopDetect	0
Error Disable	0
Trust IngressColour	0
Ingress Priority Mapping ProfileID	0
Remark Prio And DEI	0
Egress Priority Mapping ProfileID	0
IngressColourSource	None
Trust IngressPriority	0
IngressPrioritySource	Trust None
Remark DSCP	0
PolicerDropAction	Drop None
CoS Queue Id	0
Ingress Bandwidth Profile	None
sharingMode	MODE_NONE
TCA Profile	None
Ingress L2 ACL	L2_ACL-0-0-99-1

After successful creation a result will be displayed as below, here click on **Back to MGMT** to go back to “Edit ELAN Service: MGMT” page again.

### Provision new FlowPoint - result

Successfully Created FlowPoint

[Back to MGMT](#)

On the “Edit ELAN Service : MGMT” page, here it will show the added Flowpoint with name **MGMT::FP\_BPETH-1-7-1** and its Flowpoint Template as **MGMT**. Here click on **Add New FlowPoint** to add **ETH-1-4-2** on which the Transmission/Media connection has been done on the CEF card.

### Edit ELAN Service : MGMT

Service Name	MGMT
Trail Identifier	0
Customer Name	Customer1
VBI Service Type	ELAN_EVC
Forwarding Type	CVLAN Forwarding
FDBLimiting State	Disable
FDBLimiting Value	
FDBLimiting Action	
Admin State	Up

MacFF User Defined Gateway Entry Refresh

#### Refresh Gateway Info

#### FDB Configuration

<a href="#">Add Static Unicast FDB entry</a>	<a href="#">View Static Unicast FDB entries</a>	<a href="#">View Dynamic Unicast Fdb Entries</a>
<a href="#">Add Static Multicast FDB entry</a>	<a href="#">View Static Multicast FDB entries</a>	<a href="#">View Dynamic Multicast Fdb Entries</a>

#### FlowPoint Configuration

Split Horizon Group Id	FlowPoint	PM Counters	FlowPoint Template	MEPS	MIPS	Admin State	IGMP Profile	MLD Profile	Delete
1	MGMT::FP_BPETH-1-7-1	Performance Counters	MGMT	N.A.	MIPS	admin_up	N.A.	N.A.	<a href="#">delete</a>

On the “Provision New FlowPoint” page, in the **Interface** option select **ETH-1-4-2** (Which is the interface for TX/Media connectivity on CEF) and under **FlowPoint Template** option select **MGMT** and click on **Create**.

**Provision New FlowPoint**

Service Name	MGMT	
FlowPoint Type	dot1q Interface	
Type of Traffic Flowing through this Flow Point	Data Traffic	
Interface	ETH-1-4-2	
FlowPoint Mode	Only 2 option to select for ETH-1-4-2.	
Tunnel Group		
LocalAttachment		
PseudoWire Group		
Split Horizon Group Id	New Group	
FlowPointTemplate	MGMT	
TPID used while Adding/Swapping CTAG/STAG	view Create FPTemplate	
FP Admin State	admin_up	
FP Loop Detection Action	None	
Error Disable	false	
TCA Profile	None	
<b>Ingress QoS</b>		
Trust IngressColour	false	
Colour Source	None	
Ingress Bandwidth Profile	None	
Hierarchical Meter Sharing Mode	MODE_NONE	
Policer DropAction	Drop_None	
Trust IngressPriority	false	
Ingress PrioritySource	Trust_None	
Remark DSCP	false	
Default CoS Queue Id	0	

No need to select SOC\_BP in "Ingress L2 ACL" Option.

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

**Are You Sure?**

Do you want to provision a new FlowPoint with the following Attributes ?	
Attribute	Value
Interface	ETH-1-4-2
Local Attachment	
Type of Traffic Flowing through this Flow Point	0
FlowPointTemplate	FPTemplate-0-0-99-1
Egress TPID	
FlowPoint Mode	1
Split Horizon Group Id	0
AdminState	Unknown
ActionOnLoopDetect	None
Error Disable	0
Trust IngressColour	0
Ingress Priority Mapping ProfileID	0
Remark Prio And DEI	0
Egress Priority Mapping ProfileID	0
IngressColourSource	None
Trust IngressPriority	0
IngressPrioritySource	Trust None
Remark DSCP	0
PolicerDropAction	Drop None
CoS Queue Id	0
Ingress Bandwidth Profile	None
sharingMode	MODE_NONE
TCA Profile	None
Ingress L2 ACL	None
Ingress L3 ACL	None
Egress L3 ACL	

After successful creation a result will be displayed as below, here click on **Back to MGMT** to go back to “Edit ELAN Service: MGMT” page again.



On “Edit ELAN Service: MGMT”, we can verify the added FlowPoints, it should show 2 FlowPoints, one for **BPETH-1-7-1** and other for **ETH-1-4-2**

Edit ELAN Service : MGMT

Service Name	MGMT
Trail Identifier	0
Customer Name	Customer1
VBI Service Type	ELAN_EVC
Forwarding Type	CVLAN Forwarding
FDBLimiting State	Disable
FDBLimiting Value	
FDBLimiting Action	
Admin State	Up

MacFF User Defined Gateway Entry Refresh

Refresh Gateway Info

FDB Configuration	
Add Static Unicast FDB entry	View Static Unicast FDB entries
Add Static Multicast FDB entry	View Static Multicast FDB entries View Debug Info
	View Dynamic Unicast Fdb Entries
	View Dynamic Multicast Fdb Entries

FlowPoint Configuration

Split Horizon Group Id	Add new FlowPoint	PM Counters	FlowPoint Template	MEPS	MIPS	Admin State	IGMP Profile	MLD Profile	Delete
1	FlowPoint	Performance Counters	MGMT	N.A.	MIPS	admin_up	N.A.	N.A.	<a href="#">delete</a>
2	MGMT:FP_BPETH-1-7-1	Performance Counters	MGMT	MEPS	MIPS	admin_up	N.A.	N.A.	<a href="#">delete</a>
	MGMT:FP_ETH-1-4-2								

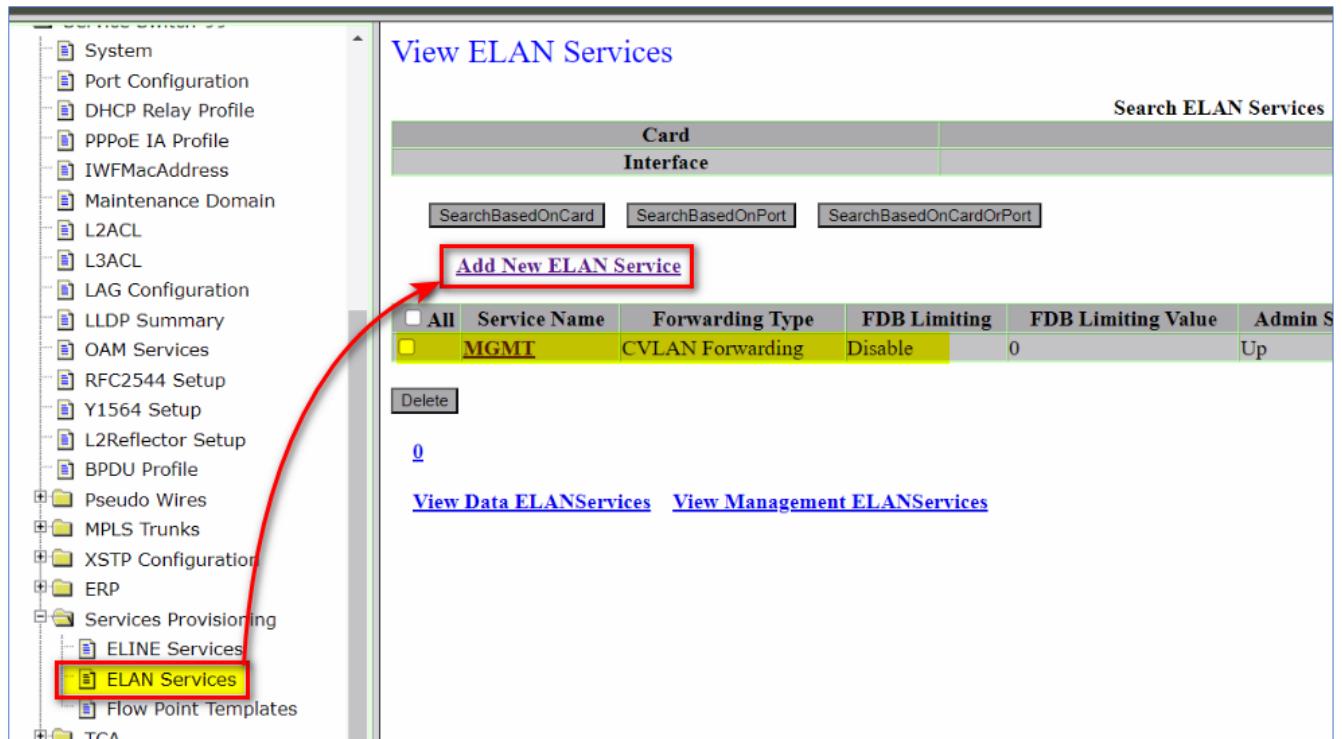
IGMP Snooping Configuration

IGMP Snooping profile	none
-----------------------	------

MLD Snooping Configuration

### 3.12.2 Creating ELAN service for S1C VLAN (Towards MME):

Second ELAN service will be created for RAC S1C VLAN which will be used for traffic towards MME.  
 On the left pane go to **L2 Services > Service Switch-99 > Services Provisioning > ELAN Services > Add New ELAN Service** (As shown in the next image)



The screenshot shows the 'View ELAN Services' interface. On the left, there is a navigation tree with various service categories. The 'ELAN Services' node under 'Services Provisioning' is highlighted with a yellow box and has a red arrow pointing to it from the main content area. The main content area displays a table of existing ELAN services. One row is highlighted with a yellow background, showing the service name 'MGMT', forwarding type 'CVLAN Forwarding', FDB Limiting state 'Disable', and Admin State 'Up'. Below the table, there are links to 'View Data ELANServices' and 'View Management ELANServices'.

Card	Interface				
All	Service Name	Forwarding Type	FDB Limiting	FDB Limiting Value	Admin S
<input checked="" type="checkbox"/>	MGMT	CVLAN Forwarding	Disable	0	Up

[Delete](#)

[0](#)

[View Data ELANServices](#) [View Management ELANServices](#)

On the “Provision New ELAN Service” page input **Service Name** as **MME** and click on **Create**

**Provision New ELAN Service**

VBI Service Type	ELAN_EVC
Service Name	MME
Trail Identifier	0
CustomerName	Customer1
Forwarding Type	CVLAN_Forwarding
FDB Limiting	Disable
FDB Limiting Value	
FDB Limiting Action	
VBI Admin State	Up
MVR State	Disable
MVLAN	
Group Address Low	
Group Address High	
IGMP Snooping profile	none
MLD Snooping profile	none
<b>Create</b>	

On the result page, click on **Back to Service MME**.

**Provision new ELAN Service - result**

Successfully Created EVC

**Back to Service MME**

**Back to View ELAN Service(s)**

Next will show to the “**Edit ELAN Service: MME**” page, here click on **Add New FlowPoint** to add Interfaces as shown in next step image.

**Edit ELAN Service : MME**

Service Name	MME
Trail Identifier	0
Customer Name	Customer1
VBI Service Type	ELAN_EVC
Forwarding Type	CVLAN Forwarding
FDBLimiting State	Disable
FDBLimiting Value	
FDBLimiting Action	
Admin State	Up
MacFF User Defined Gateway Entry Refresh	
<b>Refresh Gateway Info</b>	
<b>FDB Configuration</b>	
<a href="#">Add Static Unicast FDB entry</a>	<a href="#">View Static Unicast FDB entries</a>
<a href="#">Add Static Multicast FDB entry</a>	<a href="#">View Static Multicast FDB entries</a>
<a href="#">View Dynamic Unicast Fdb Entries</a>	
<a href="#">View Dynamic Multicast Fdb Entries</a>	
<b>FlowPoint Configuration</b>	
<b>Split Horizon Group Id</b>	<b>Add new FlowPoint</b>
FlowPoint	PM Counters FlowPoint Template MEPS MIPS Admin State IGMP Profile MLD Profile Delete
<b>IGMP Snooping Configuration</b>	
IGMP Snooping profile	none
<b>MLD Snooping Configuration</b>	

On the “**Provision New FlowPoint**” page, in the **Interface** option select **BPETH-1-7-1** (Which is Backplane Interface for RAC card in slot 7) and under **FlowPoint Template** option select **MME**. On same page under **Ingress L2 ACL** option select **SOC\_BP** and click on **Create**.

## Provision New FlowPoint

Service Name	MME
FlowPoint Type	dot1q Interface
Type of Traffic Flowing through this Flow Point	Data Traffic
Interface	BPETH-1-7-1
FlowPoint Mode	
Tunnel Group	
LocalAttachment	
PseudoWire Group	
Split Horizon Group Id	New Group
FlowPointTemplate	MME
TPID used while Adding/Swapping CTAG/STAG	
FP Admin State	admin_up
FP Loop Detection Action	None
Error Disable	false
TCA Profile	None

## Ingress QoS

Trust IngressColour	false
Colour Source	None
Ingress Bandwidth Profile	None
Hierarchical Meter Sharing Mode	MODE_NONE
Policer DropAction	Drop_None
Trust IngressPriority	false
Ingress PrioritySource	Trust_None
Remark DSCP	false
Default CoS Queue Id	0
Ingress Priority to cosQ Mapping Profile	None

## Ingress QoS

Trust IngressColour	false
Colour Source	None
Ingress Bandwidth Profile	None
Hierarchical Meter Sharing Mode	MODE_NONE
Policer DropAction	Drop_None
Trust IngressPriority	false
Ingress PrioritySource	Trust_None
Remark DSCP	false
Default CoS Queue Id	0
Ingress Priority to cosQ Mapping Profile	None

## Security

Ingress L2 ACL	SOC_BP
Ingress L3 ACL	None
Broadcast Storm Control Profile	None
DLF Flood Control Profile	None
ICMP Flood Control Profile	None
TCP Sync Flood Control Profile	None

## Egress QoS

Remark Priority And DEI	false
Egress Priority Mapping Profile	None

## IGMP Snooping

IGMP Snooping profile	none
Enable Multicast Router Port	false

## MLD Snooping

MLD Snooping profile	none
----------------------	------

## DHCP Relay

DHCP Snooping	DHCP_Snooping_Disable
DHCPv6 Snooping	DHCPv6_Snooping_Disable
Trusted Port	DHCP_Trusted_Disable

## MacFF

Mac-Force Forwarding	MacFF_Disable
IP Antispoofing	IPAntiSpoofing_Disable
IP Antispoofing Filter	MAC_Filter

## PPPOE IA

PPPoE Snooping	PPPoE_Snooping_Disable
PPPoE Trusted Port	PPPoE_Trusted_Disable

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

[Are You Sure?](#)

Do you want to provision a new FlowPoint with the following Attributes ?	
Attribute	Value
Interface	BPETH-1-7-1
Local Attachment	0
Type of Traffic Flowing through this Flow Point	0
FlowPointTemplate	FPTemplate-0-0-99-2
Egress TPID	
FlowPoint Mode	1
Split Horizon Group Id	0
AdminState	Unknown
ActionOnLoopDetect	None
Error Disable	0
Trust IngressColour	0
Ingress Priority Mapping ProfileID	0
Remark Prio And DEI	0
Egress Priority Mapping ProfileID	0
IngressColourSource	None
Trust IngressPriority	0
IngressPrioritySource	Trust None
Remark DSCP	0
PolicerDropAction	Drop None
CoS Queue Id	0
Ingress Bandwidth Profile	None
sharingMode	MODE_NONE
TCA Profile	None
Ingress L2 ACL	L2_ACL-0-0-99-1
Ingress L3 ACL	None
Egress L3 ACL	

After successful creation a result will be displayed as below, here click on **Back to MME** to go back to “Edit ELAN Service: MME” page again.



On the “Edit ELAN Service: MME” page, here it will show the added Flowpoint with name **MME::FP\_BPETH-1-7-1** and its Flowpoint Template as **MME**.

Here click on **Add New FlowPoint** to add **ETH-1-4-2** on which the Transmission/Media connection has been done on the CEF card.

On the “**Provision New FlowPoint**” page, in the **Interface** option select **ETH-1-4-2** (Which is the interface for TX/Media connectivity on CEF) and under **FlowPoint Template** option select **MME** and click on **Create**. Keep **Ingress L2 ACL** as **None**.

Provision New FlowPoint	
<b>Service Name</b>	
<b>FlowPoint Type</b>	dot1q Interface
<b>Type of Traffic Flowing through this Flow Point</b>	Data Traffic
<b>Interface</b>	ETH-1-4-2
<b>FlowPoint Mode</b>	
<b>Tunnel Group</b>	
<b>Local Attachment</b>	
<b>PseudoWire Group</b>	
<b>Split Horizon Group Id</b>	New Group
<b>FlowPointTemplate</b>	MME
<b>TPID used while Adding/Swapping CTAG/STAG</b>	
<b>FP Admin State</b>	admin_up
<b>FP Loop Detection Action</b>	None
<b>Error Disable</b>	false
<b>TCA Profile</b>	None
<b>Ingress QoS</b>	
<b>Trust IngressColour</b>	false
<b>Colour Source</b>	None
<b>Ingress Bandwidth Profile</b>	None
<b>Hierarchical Meter Sharing Mode</b>	MODE_NONE
<b>Policer DropAction</b>	Drop_None
<b>Trust IngressPriority</b>	false
<b>Ingress PrioritySource</b>	Trust_None
<b>Remark DSCP</b>	false
<b>Default CoS Queue Id</b>	0
<b>Ingress Priority to cosQ Mapping Profile</b>	None
<b>Security</b>	
<b>Ingress L2 ACL</b>	None
<b>Ingress L3 ACL</b>	None
<b>Broadcast Storm Control Profile</b>	None

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

Are You Sure?	
Do you want to provision a new FlowPoint with the following Attributes ?	
Attribute	Value
<b>Interface</b>	ETH-1-4-2
<b>Local Attachment</b>	
<b>Type of Traffic Flowing through this Flow Point</b>	0
<b>FlowPointTemplate</b>	FPTemplate-0-0-99-2
<b>Egress TPID</b>	
<b>FlowPoint Mode</b>	1
<b>Split Horizon Group Id</b>	0
<b>AdminState</b>	Unknown
<b>ActionOnLoopDetect</b>	None
<b>Error Disable</b>	0
<b>Trust IngressColour</b>	0
<b>Ingress Priority Mapping ProfileID</b>	0
<b>Remark Prio And DEI</b>	0
<b>Egress Priority Mapping ProfileID</b>	0
<b>IngressColourSource</b>	None
<b>Trust IngressPriority</b>	0
<b>IngressPrioritySource</b>	Trust None
<b>Remark DSCP</b>	0
<b>PolicerDropAction</b>	Drop None
<b>CoS Queue Id</b>	0
<b>Ingress Bandwidth Profile</b>	None
<b>sharingMode</b>	MODE_NONE
<b>TCA Profile</b>	None
<b>Ingress L2 ACL</b>	None
<b>Ingress L3 ACL</b>	None
<b>Egress L3 ACL</b>	

After successful creation a result will be displayed as below, here click on **Back to MME** to go back to “**Edit ELAN Service: MME**” page again.

### Provision new FlowPoint - result

Successfully Created FlowPoint

[Back to MME](#)

On “**Edit ELAN Service: MME**”, we can verify the added FlowPoints, it should show 2 FlowPoints, one for **BPETH-1-7-1** and other for **ETH-1-4-2**

Edit ELAN Service : MME																																																																																																																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Service Name</td> <td colspan="9">MME</td> </tr> <tr> <td>Trail Identifier</td> <td colspan="9">0</td> </tr> <tr> <td>Customer Name</td> <td colspan="9">Customer1</td> </tr> <tr> <td>VBI Service Type</td> <td colspan="9">ELAN_EVC</td> </tr> <tr> <td>Forwarding Type</td> <td colspan="9">CVLAN Forwarding</td> </tr> <tr> <td>FDBLimiting State</td> <td colspan="9">Disable</td> </tr> <tr> <td>FDBLimiting Value</td> <td colspan="9"></td> </tr> <tr> <td>FDBLimiting Action</td> <td colspan="9"></td> </tr> <tr> <td>Admin State</td> <td colspan="9">Up</td> </tr> </table>										Service Name	MME									Trail Identifier	0									Customer Name	Customer1									VBI Service Type	ELAN_EVC									Forwarding Type	CVLAN Forwarding									FDBLimiting State	Disable									FDBLimiting Value										FDBLimiting Action										Admin State	Up																																										
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### 3.12.3 Creating ELAN service for S1U VLAN (Towards SGW):

Second ELAN service will be created for RAC S1U VLAN which will be used for traffic towards MME.  
On the left pane go to **L2 Services > Service Switch-99 > Services Provisioning > ELAN Services > Add New ELAN Service** (As shown in the next image)

View ELAN Services																																				
Search ELAN Services																																				
Card		Interface																																		
						ALL ALL																														
<input type="button" value="SearchBasedOnCard"/> <input type="button" value="SearchBasedOnPort"/> <input type="button" value="SearchBasedOnCardOrPort"/>																																				
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><input type="checkbox"/> All</td> <td>Service Name</td> <td>Forwarding Type</td> <td>FDB Limiting</td> <td>FDB Limiting Value</td> <td>Admin State</td> <td>IGMP Snooping Profile</td> <td>MLD Snooping Profile</td> <td>MVR State</td> </tr> <tr> <td><input type="checkbox"/> MGMT</td> <td>CVLAN Forwarding</td> <td>Disable</td> <td>0</td> <td>Up</td> <td>None</td> <td>None</td> <td>None</td> <td>None</td> </tr> <tr> <td><input type="checkbox"/> MME</td> <td>CVLAN Forwarding</td> <td>Disable</td> <td>0</td> <td>Up</td> <td>None</td> <td>None</td> <td>None</td> <td>None</td> </tr> </table>										<input type="checkbox"/> All	Service Name	Forwarding Type	FDB Limiting	FDB Limiting Value	Admin State	IGMP Snooping Profile	MLD Snooping Profile	MVR State	<input type="checkbox"/> MGMT	CVLAN Forwarding	Disable	0	Up	None	None	None	None	<input type="checkbox"/> MME	CVLAN Forwarding	Disable	0	Up	None	None	None	None
<input type="checkbox"/> All	Service Name	Forwarding Type	FDB Limiting	FDB Limiting Value	Admin State	IGMP Snooping Profile	MLD Snooping Profile	MVR State																												
<input type="checkbox"/> MGMT	CVLAN Forwarding	Disable	0	Up	None	None	None	None																												
<input type="checkbox"/> MME	CVLAN Forwarding	Disable	0	Up	None	None	None	None																												
<input type="button" value="Delete"/>																																				
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<a href="#">View Data ELANServices</a> <a href="#">View Management ELANServices</a>																																				

On the “**Provision New ELAN Service**” page input **Service Name** as **SGW** and click on **Create**

### Provision New ELAN Service

On the result page, click on **Back to Service SGW**.



Next will show to the “**Edit ELAN Service: SGW**” page, here click on **Add New FlowPoint** to add Interfaces as shown in next step image.

On the “**Provision New FlowPoint**” page, in the **Interface** option select **BPETH-1-7-1** (Which is Backplane Interface for RAC card in slot 7) and under **FlowPoint Template** option select **SGW**. On same page under **Ingress L2 ACL** option select **SOC\_BP** and click on **Create**.

### Provision New FlowPoint

<b>Service Name</b>	SGW
<b>FlowPoint Type</b>	dot1q Interface
<b>Type of Traffic Flowing through this Flow Point</b>	Data Traffic
<b>Interface</b>	BPETH-1-7-1
<b>FlowPoint Mode</b>	
<b>Tunnel Group</b>	
<b>LocalAttachment</b>	
<b>PseudoWire Group</b>	
<b>Split Horizon Group Id</b>	New Group
<b>FlowPointTemplate</b>	SGW
<b>TPID used while Adding/Swapping CTAG/STAG</b>	
<b>FP Admin State</b>	admin_up
<b>FP Loop Detection Action</b>	None
<b>Error Disable</b>	false
<b>TCA Profile</b>	None
<b>Ingress QoS</b>	
<b>Trust IngressColour</b>	false
<b>Colour Source</b>	None
<b>Ingress Bandwidth Profile</b>	None
<b>Hierarchical Meter Sharing Mode</b>	MODE_NONE
<b>Policer DropAction</b>	Drop_None
<b>Trust IngressPriority</b>	false
<b>Ingress PrioritySource</b>	Trust_None
<b>Remark DSCP</b>	false
<b>Default CoS Queue Id</b>	0
<b>Ingress Priority to cosQ Mapping Profile</b>	None
<b>Hierarchical Meter Sharing Mode</b>	
<b>Policer DropAction</b>	Drop_None
<b>Trust IngressPriority</b>	false
<b>Ingress PrioritySource</b>	Trust_None
<b>Remark DSCP</b>	false
<b>Default CoS Queue Id</b>	0
<b>Ingress Priority to cosQ Mapping Profile</b>	None
<b>Security</b>	
<b>Ingress L2 ACL</b>	SOC_BP
<b>Ingress L3 ACL</b>	None
<b>Broadcast Storm Control Profile</b>	None
<b>DLF Flood Control Profile</b>	None
<b>ICMP Flood Control Profile</b>	None
<b>TCP Sync Flood Control Profile</b>	None
<b>Egress QoS</b>	
<b>Remark Priority And DEI</b>	false
<b>Egress Priority Mapping Profile</b>	None
<b>IGMP Snooping</b>	
<b>IGMP Snooping profile</b>	none
<b>Enable Multicast Router Port</b>	false

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

### Are You Sure?

Do you want to provision a new FlowPoint with the following Attributes ?

Attribute	Value
Interface	BPETH-1-7-1
Local Attachment	0
Type of Traffic Flowing through this Flow Point	FPTemplate-0-0-99-3
FlowPointTemplate	
Egress TPID	
FlowPoint Mode	1
Split Horizon Group Id	gauravu
AdminState	Unknown
ActionOnLoopDetect	None
Error Disable	0
Trust IngressColour	0
Ingress Priority Mapping ProfileID	0
Remark Prio And DEI	0
Egress Priority Mapping ProfileID	0
IngressColourSource	None
Trust IngressPriority	0
IngressPrioritySource	Trust None
Remark DSCP	0
PolicerDropAction	Drop None
CoS Queue Id	0
Ingress Bandwidth Profile	None
sharingMode	MODE_NONE
TCA Profile	None
Ingress L2 ACL	L2_ACL-0-0-99-1
Ingress L3 ACL	
Egress L3 ACL	None

After successful creation a result will be displayed as below, here click on **Back to SGW** to go back to “Edit ELAN Service: SGW” page again.

### Provision new FlowPoint - result

Successfully Created FlowPoint

[Back to SGW](#)

Next, on the “Edit ELAN Service: SGW” page, here it will show the added Flowpoint with name **SGW::FP\_BPETH-1-7-1** and its Flowpoint Template as **MME**.

Here click on **Add New FlowPoint** to add **ETH-1-4-2** on which the Transmission/Media connection has been done on the CEF card.

**Edit ELAN Service : SGW**

Service Name	SGW
Trail Identifier	0
Customer Name	Customer1
VBI Service Type	ELAN_EVC
Forwarding Type	CVLAN Forwarding
FDBLimiting State	Disable
FDBLimiting Value	
FDBLimiting Action	
Admin State	Up

MacFF User Defined Gateway Entry Refresh

[Refresh Gateway Info](#)

FDB Configuration	
<a href="#">Add Static Unicast FDB entry</a>	<a href="#">View Static Unicast FDB entries</a>
<a href="#">Add Static Multicast FDB entry</a>	<a href="#">View Static Multicast FDB entries</a>
	<a href="#">View Dynamic Unicast Fdb Entries</a>
	<a href="#">View Dynamic Multicast Fdb Entries</a>
	<a href="#">View Debug Info</a>

FlowPoint Configuration

Split Horizon Group Id	FlowPoint	PM Counters	FlowPoint Template	MEPS	MIPS	Admin State	IGMP Profile	MLD Profile	Delete
1	<a href="#">SGW::FP_BPETH-1-7-1</a>	<a href="#">Performance Counters</a>	<a href="#">SGW</a>	N.A.	<a href="#">MIPS</a>	admin_up	N.A.	N.A.	<a href="#">delete</a>

IGMP Snooping Configuration

IGMP Snooping profile	none
-----------------------	------

On the “Provision New FlowPoint” page, in the **Interface** option select **ETH-1-4-2** (Which is the interface for TX/Media connectivity on CEF) and under **FlowPoint Template** option select **SGW** and click on **Create**. Keep **Ingress L2 ACL** as **None**.

**Provision New FlowPoint**

Service Name	SGW
FlowPoint Type	dot1q Interface
Type of Traffic Flowing through this Flow Point	Data Traffic
Interface	<b>ETH-1-4-2</b>
FlowPoint Mode	
Tunnel Group	
LocalAttachment	
PseudoWire Group	
Split Horizon Group Id	New Group <b>SGW</b>
FlowPointTemplate	<a href="#">view Create FPTemplate</a>
TPID used while Adding/Swapping CTAG/STAG	
FP Admin State	admin_up
FP Loop Detection Action	None
Error Disable	false
TCA Profile	None

**Ingress QoS**

Trust IngressColour	false
Colour Source	None
Ingress Bandwidth Profile	None
Hierarchical Meter Sharing Mode	MODE_NONE
Policer DropAction	Drop_None
Trust IngressPriority	false
Ingress PrioritySource	Trust_None
Remark DSCP	false
Default CoS Queue Id	0
Ingress Priority to cosQ Mapping Profile	None

**Security**

Ingress L2 ACL	None
Ingress L3 ACL	None
Broadcast Storm Control Profile	None

On the next page it will ask for confirmation of the details selected on previous page. After verifying the details click on option **Yes**.

## Are You Sure?

Do you want to provision a new FlowPoint with the following Attributes ?	
Attribute	Value
Interface	ETH-1-4-2
Local Attachment	
Type of Traffic Flowing through this Flow Point	0
FlowPointTemplate	FPTemplate-0-0-99-3
Egress TPID	
FlowPoint Mode	1
Split Horizon Group Id	0
AdminState	Unknown
ActionOnLoopDetect	None
Error Disable	0
Trust IngressColour	0
Ingress Priority Mapping ProfileID	0
Remark Prio And DEI	0
Egress Priority Mapping ProfileID	0
IngressColourSource	None
Trust IngressPriority	0
IngressPrioritySource	Trust None
Remark DSCP	0
PolicerDropAction	Drop None
CoS Queue Id	0
Ingress Bandwidth Profile	None
sharingMode	MODE_NONE
TCA Profile	None
Ingress L2 ACL	None
Ingress L3 ACL	None
Egress L3 ACL	

After successful creation a result will be displayed as below, here click on **Back to MME** to go back to “Edit ELAN Service: MME” page again to check the created services.

## Provision new FlowPoint - result

Successfully Created FlowPoint

[Back to SGW](#)

On “Edit ELAN Service: SGW” page, we can verify the added FlowPoints, it should show 2 FlowPoints, one for **BPETH-1-7-1** and other for **ETH-1-4-2**

Edit ELAN Service : SGW																	
Service Name	SGW																
Trail Identifier	0																
Customer Name	Customer1																
VBI Service Type	ELAN_EVC																
Forwarding Type	CVLAN Forwarding																
FDBLimiting State	Disable																
FDBLimiting Value																	
FDBLimiting Action																	
Admin State	Up																
MacFF User Defined Gateway Entry Refresh																	
Refresh Gateway Info																	
FDB Configuration																	
<a href="#">Add Static Unicast FDB entry</a>		<a href="#">View Static Unicast FDB entries</a>			<a href="#">View Dynamic Unicast Fdb Entries</a>												
<a href="#">Add Static Multicast FDB entry</a>		<a href="#">View Static Multicast FDB entries</a>			<a href="#">View Dynamic Multicast Fdb Entries</a>												
<a href="#">View Debug Info</a>																	
FlowPoint Configuration																	
Split Horizon Group Id		<a href="#">Add new FlowPoint</a>		PM Counters		FlowPoint Template		MEPS									
1		<b>SGW::FP_BPETH-1-7-1</b>		<a href="#">Performance Counters</a>		SGW		N.A.									
2		<b>SGW::FP_ETH-1-4-2</b>		<a href="#">Performance Counters</a>		SGW		MEPS									
IGMP Snooping Configuration																	
IGMP Snooping profile																	
none																	
MLD Snooping Configuration																	
MLD Snooping profile																	
none																	

Now we can verify all ELAN services by clicking on ELAN Services, in the next image it shows the created ELAN services.

The screenshot shows the 'View ELAN Services' interface. On the left, there is a navigation tree with various network configuration options. Under 'Services Provisioning', the 'ELINE Services' node is expanded, and its child 'ELAN Services' node is highlighted with a red box. The main panel displays a table titled 'View ELAN Services' with the following data:

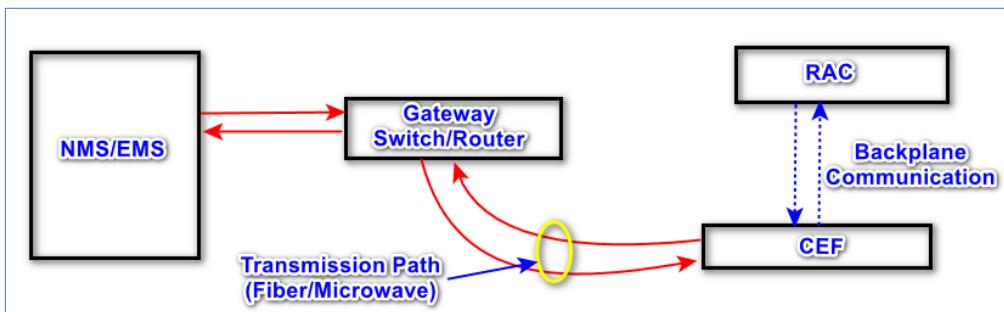
Card	Interface	Search ELAN Services							
All	All								
<input type="checkbox"/> All	<input type="checkbox"/> Service Name	<input type="checkbox"/> Forwarding Type	<input type="checkbox"/> FDB Limiting	<input type="checkbox"/> FDB Limiting Value	<input type="checkbox"/> Admin State	<input type="checkbox"/> IGMP Snooping Profile	<input type="checkbox"/> MLD Snooping Profile	<input type="checkbox"/> MVR State	
<input type="checkbox"/> MGMT	CVLAN Forwarding	Disable	0	Up	None	None	None	None	
<input type="checkbox"/> MME	CVLAN Forwarding	Disable	0	Up	None	None	None	None	
<input type="checkbox"/> SGW	CVLAN Forwarding	Disable	0	Up	None	None	None	None	

Below the table, there are buttons for 'Delete' and 'Add New ELAN Service'. At the bottom, there are links to 'View Data ELAN Services' and 'View Management ELAN Services'.

### 3.13 Verification of NMS/EMS communication from CEF.

Follow these steps to verify if the IP configuration of CEF is OK and the IP communication. We can verify it by in 2 Steps:

1. Ping the CEF OAM Gateway IP
2. Ping the EMS IP.



To verify Gateway IP ping, Login to CEF and go to **Maintenance > Diagnostics > DCN Monitor > System > Ping** And input the **CEF OAM Gateway GW IP** (For example its 172.27.79.1 shown here) and click on **Start ping**. If the transmission is through then this IP should ping first.

The screenshot shows the 'Ping' interface under the 'Maintenance > Diagnostics > DCN Monitor > System > Ping' menu. The left sidebar shows a navigation tree with various maintenance and diagnostics options. The main panel displays a ping command window with the following details:

Ping / ping6 [172.27.79.1] c [10] -s [64] start ping stop

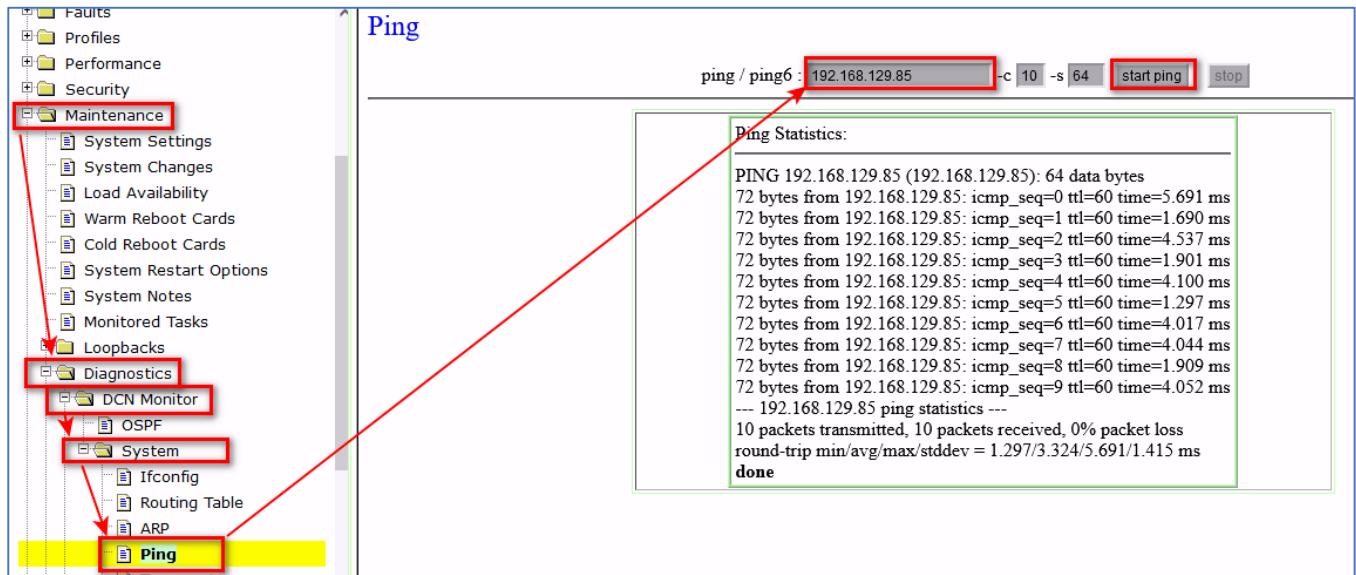
The output window shows the ping statistics:

```

PING 172.27.79.1 (172.27.79.1): 64 data bytes
72 bytes from 172.27.79.1: icmp_seq=0 ttl=64 time=4.945 ms
72 bytes from 172.27.79.1: icmp_seq=1 ttl=64 time=1.636 ms
72 bytes from 172.27.79.1: icmp_seq=2 ttl=64 time=1.899 ms
72 bytes from 172.27.79.1: icmp_seq=3 ttl=64 time=5.234 ms
72 bytes from 172.27.79.1: icmp_seq=4 ttl=64 time=14.952 ms
72 bytes from 172.27.79.1: icmp_seq=5 ttl=64 time=4.520 ms
72 bytes from 172.27.79.1: icmp_seq=6 ttl=64 time=4.553 ms
72 bytes from 172.27.79.1: icmp_seq=7 ttl=64 time=1.894 ms
72 bytes from 172.27.79.1: icmp_seq=8 ttl=64 time=4.558 ms
72 bytes from 172.27.79.1: icmp_seq=9 ttl=64 time=3.989 ms
--- 172.27.79.1 ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max/stddev = 1.636/4.818/14.952/3.619 ms
done

```

Next input the EMS IP (For example its 192.168.129.85 shown here) and click on **start ping**. If the Gateway ping is OK then this IP ping also should be successful.



After successful commissioning of CEF card, return back to RAC upgrade step [2.10.2 Verifying version upgrade of RAC card](#). (If the process is not completed yet). Continue from there till the [2.12 Verification of RAC IP commissioning](#)