

Installing CMX 10.5 on Cisco MSE 3375

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Introduction

This document will guide network administrators through the installation of Cisco CMX 10.5 image on Cisco 3375 MSE appliance. This process also includes the instructions on how to set up Cisco Integrated Management Controller (CIMC) that is required for the installation.

It is not possible to upgrade from CMX 10.2, 10.3 or 10.4 to 10.5. A fresh new installation is required. If you try to upgrade directly, the following error message will pop up:

"MD5 did not match, looks like the cmx file is corrupt. Please download fresh and try again."

Upgrade from 10.5 version to a newer version (e.g. from 10.5.0-206 to 10.5.1-26) can be done in the CMX web interface under System->Settings->Upgrade

In order to avoid hitting the [CSCvn64747](#) when installing the 10.5.1-26, it is recommended to first install the 10.5.0 and then upgrade to 10.5.1-26

Prerequisites

Requirements

Cisco 3375 MSE appliance

Cisco CMX 10.5 ISO file (downloaded from <https://software.cisco.com>)

Components Used

Components used in this guide:

- Cisco 3375 with CIMC version 4.0(1a)
- Cisco Connected Mobile Experiences version 10.5.1-27
- MacBook running MacOS Mojave and Google Chrome as Web Browser

Installation

CIMC configuration and KVM launch

Step 1 Plug in monitor into the VGA port and keyboard into the USB port at the back of the appliance. Power on the machine. Press F8 during the boot screen to enter CIMC configuration utility:

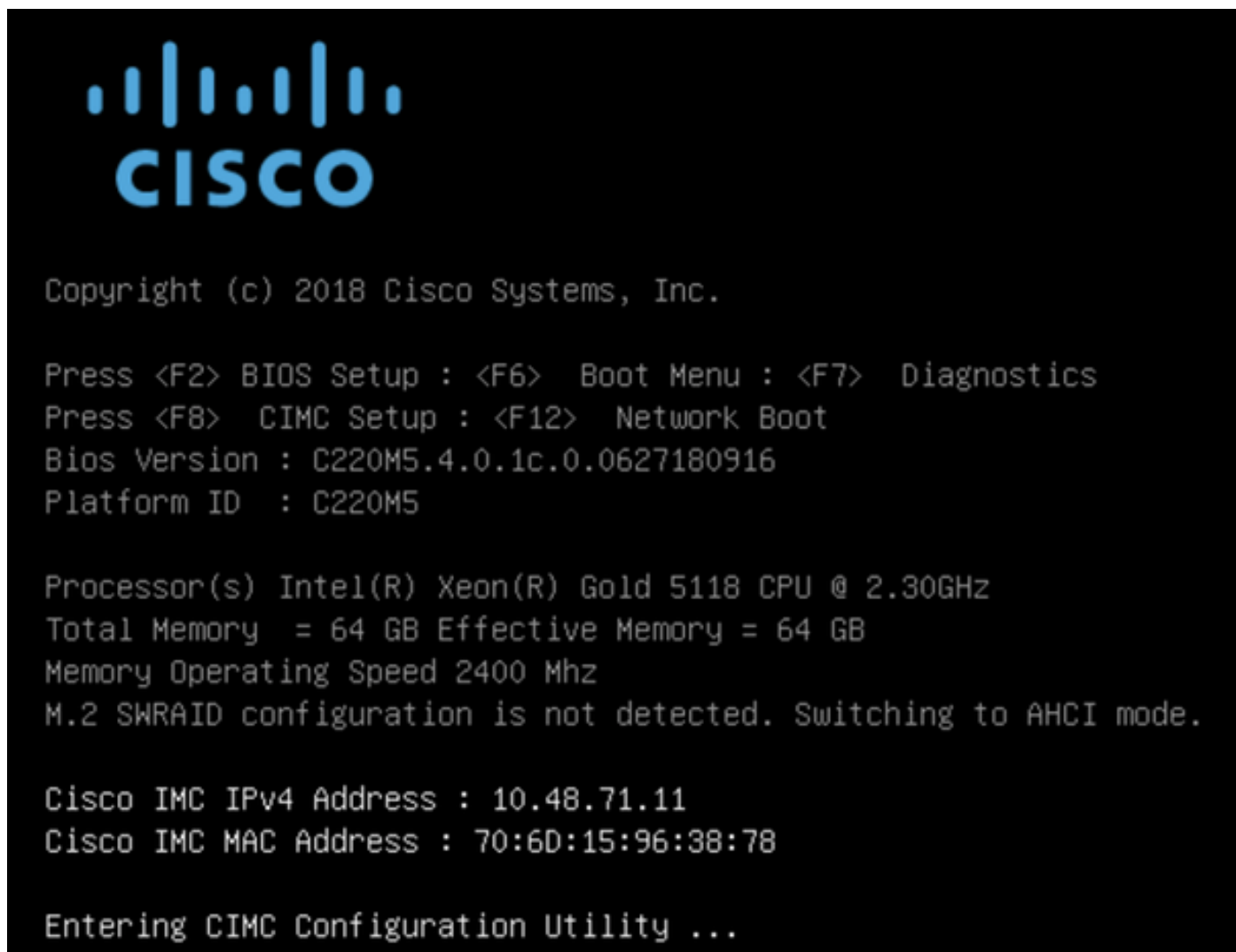


Figure 1. Boot screen

Step 2 Configure the CIMC parameters, press F10 to save and wait 45 seconds for changes to be applied. Press F5 to refresh and verify the settings have been applied. Click ESC to exit.

```
Cisco IMC Configuration Utility Version 2.0 Cisco Systems, Inc.
*****
NIC Properties
NIC mode                               NIC redundancy
Dedicated:      [X]                   None:           [X]
Shared LOM:     [ ]                   Active-standby: [ ]
Cisco Card:
  Riser1:       [ ]                   Active-active:  [ ]
  Riser2:       [ ]                   VLAN (Advanced)
  MLom:         [ ]                   VLAN enabled:   [ ]
Shared LOM Ext: [ ]                   VLAN ID:        1
                                           Priority:        0
IP (Basic)
IPV4:           [X]                   IPV6:           [ ]
DHCP enabled    [ ]
CIMC IP:        10.48.71.11
Prefix/Subnet:  255.255.255.128
Gateway:        10.48.71.1
Pref DNS Server: 0.0.0.0
Smart Access USB
Enabled         [ ]
*****
<Up/Down>Selection  <F10>Save  <Space>Enable/Disable  <F5>Refresh  <ESC>Exit
<F1>Additional settings
```

Figure 2. Cisco IMC Configuration Utility

To get access to CIMC from your network, connect the MSE 3375 to the switch via management port located on the back side of the device:

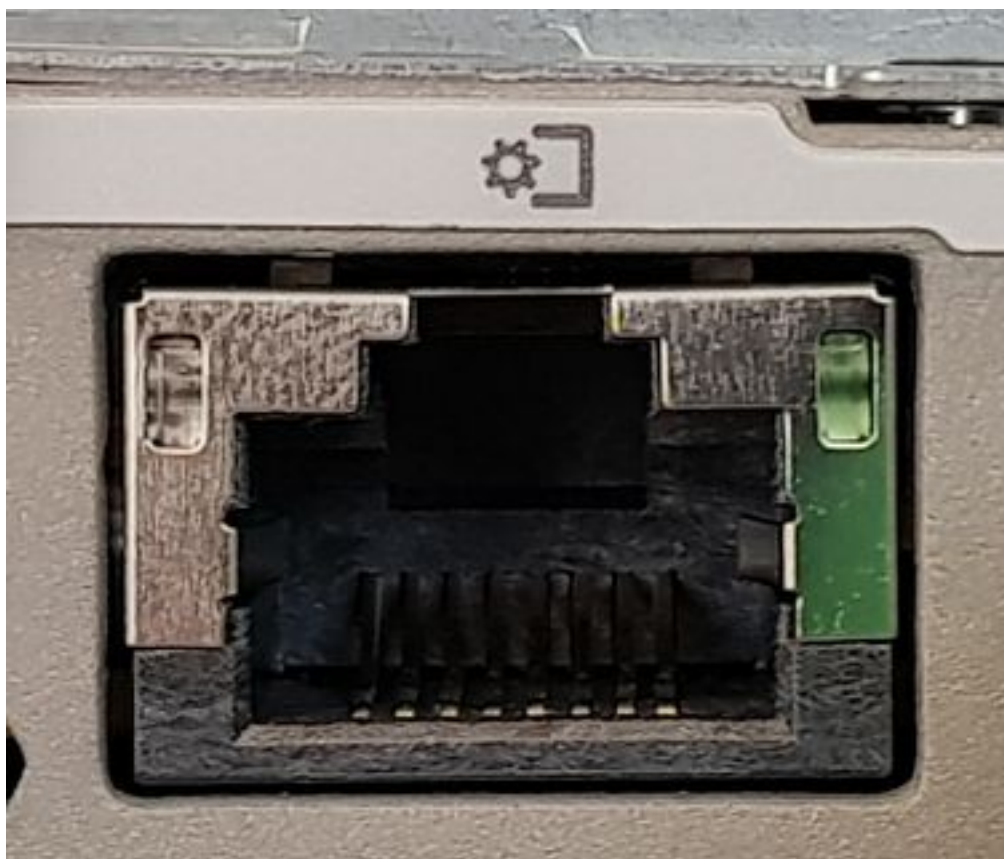


Figure 3. Management port

Step 3 In the Chrome Web Browser, go to http://<cimc_ip_address>. When logging in for the first time, the default username will be *admin*. The default password is *password*. If you are running CIMC version 4.0(1a), the login screen will look like this:



Figure 4. CIMC login screen

Step 4 Once you log in, press **Launch KVM Console** in the top right corner. CIMC v4 supports both HTML and Java based KVM. Java version 1.6.0_14 or later is required to run Java based KVM. This tutorial will be using an HTML one.



Figure 5. Launching KVM console

If pop-ups in your browser are blocked, make sure to press on a link to get forwarded:

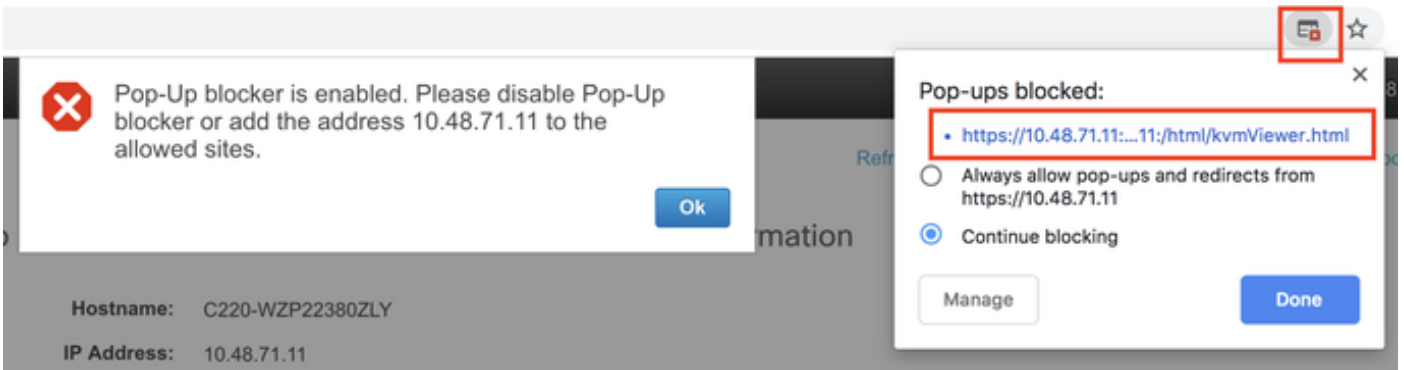


Figure 6. Pop-up being blocked

Step 5 Once the KVM has launched, press on Virtual Media and Activate Virtual Devices. After virtual devices are activated, the dropdown menu will expand and additional options will show up. Press MAP CD/DVD in order to map the CMX 10.5 ISO file:

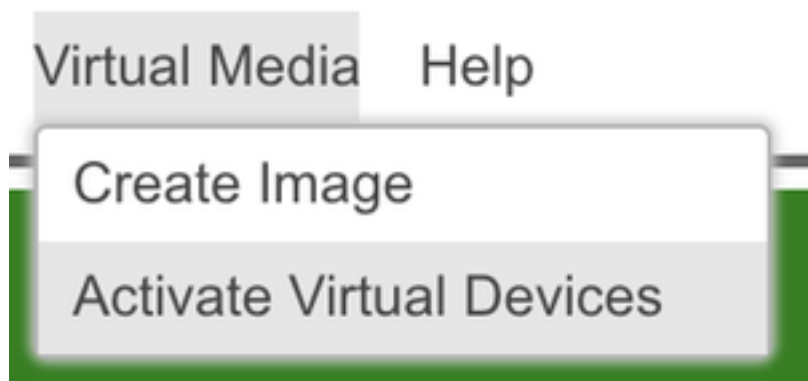


Figure 7. Activate Virtual Devices

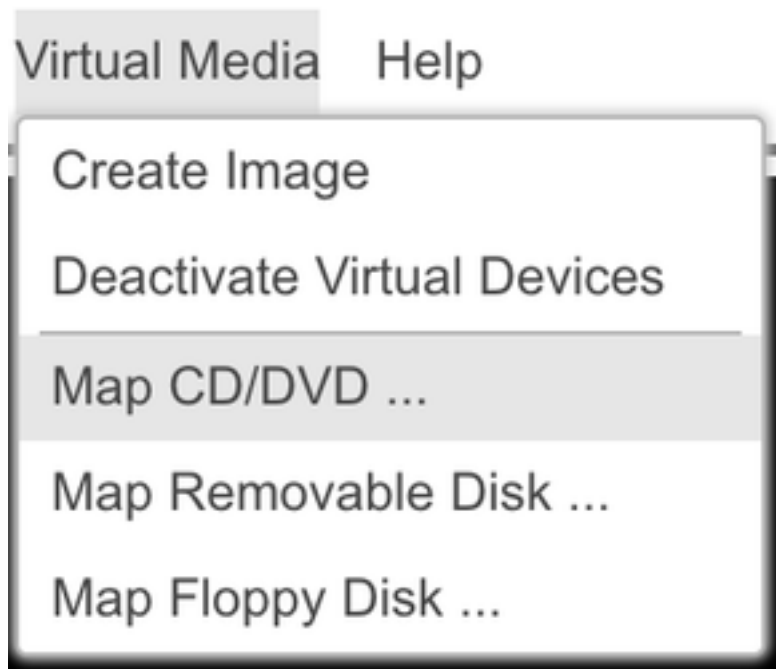


Figure 8. Map CD/DVD

Step 6 Navigate to and select the downloaded CMX image and press Map Drive. Once pressed, the Virtual Media menu will expand again to show what image is mapped:

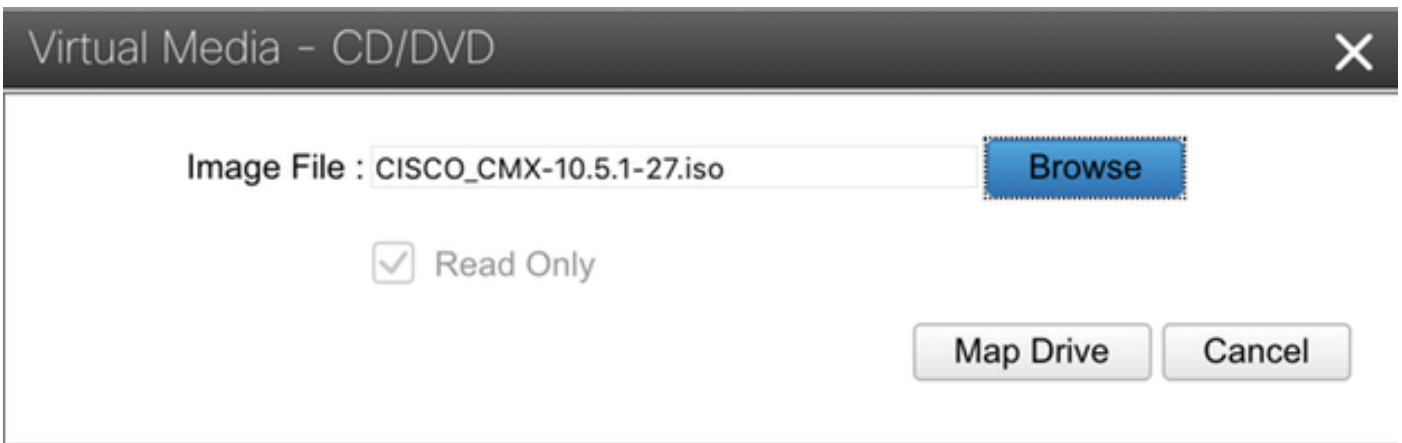


Figure 9. Mapping the drive



Figure 10. Mapped CMX image

Step 7 After checking the image is properly attached, go to Power tab and select Reset System (warm boot) to reset the appliance. During the boot process press F7 to start the installation of the mapped image:

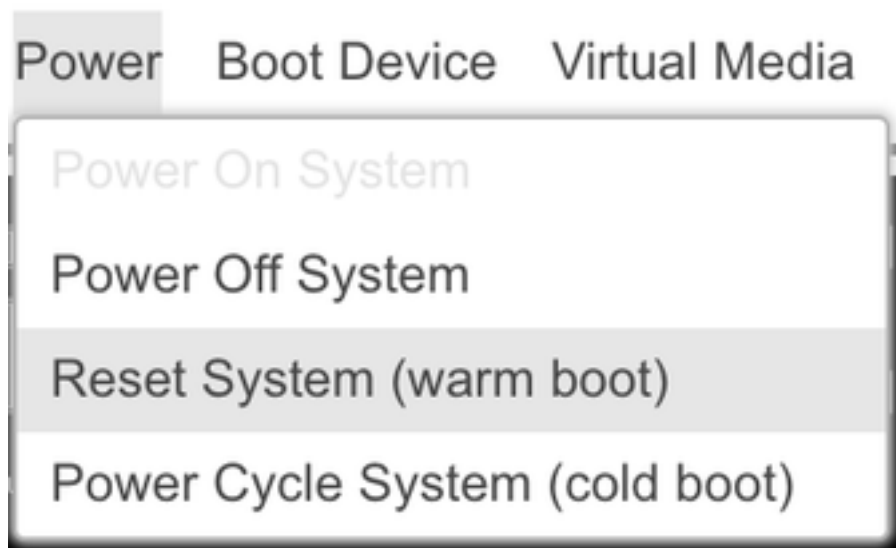


Figure 11. Restarting the appliance



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Press <F2> BIOS Setup : <F6> Boot Menu : <F7> Diagnostics
Press <F8> CIMC Setup : <F12> Network Boot
Bios Version : C220M5.4.0.1c.0.0627180916
Platform ID : C220M5

Processor(s) Intel(R) Xeon(R) Gold 5118 CPU @ 2.30GHz
Total Memory = 64 GB Effective Memory = 64 GB
Memory Operating Speed 2400 Mhz
M.2 SWRAID configuration is not detected. Switching to AHCI mode.

Cisco IMC IPv4 Address : 10.48.71.11
Cisco IMC MAC Address : 70:6D:15:96:38:78

Diagnostics requested. System looks for SDU bootable in Flex Util/Virtual Media

Figure 12. CIMC boot selection menu

CMX image installation

Step 1 Select Install CMX using current console to continue the installation. Once selected, the installation scripts will start loading:

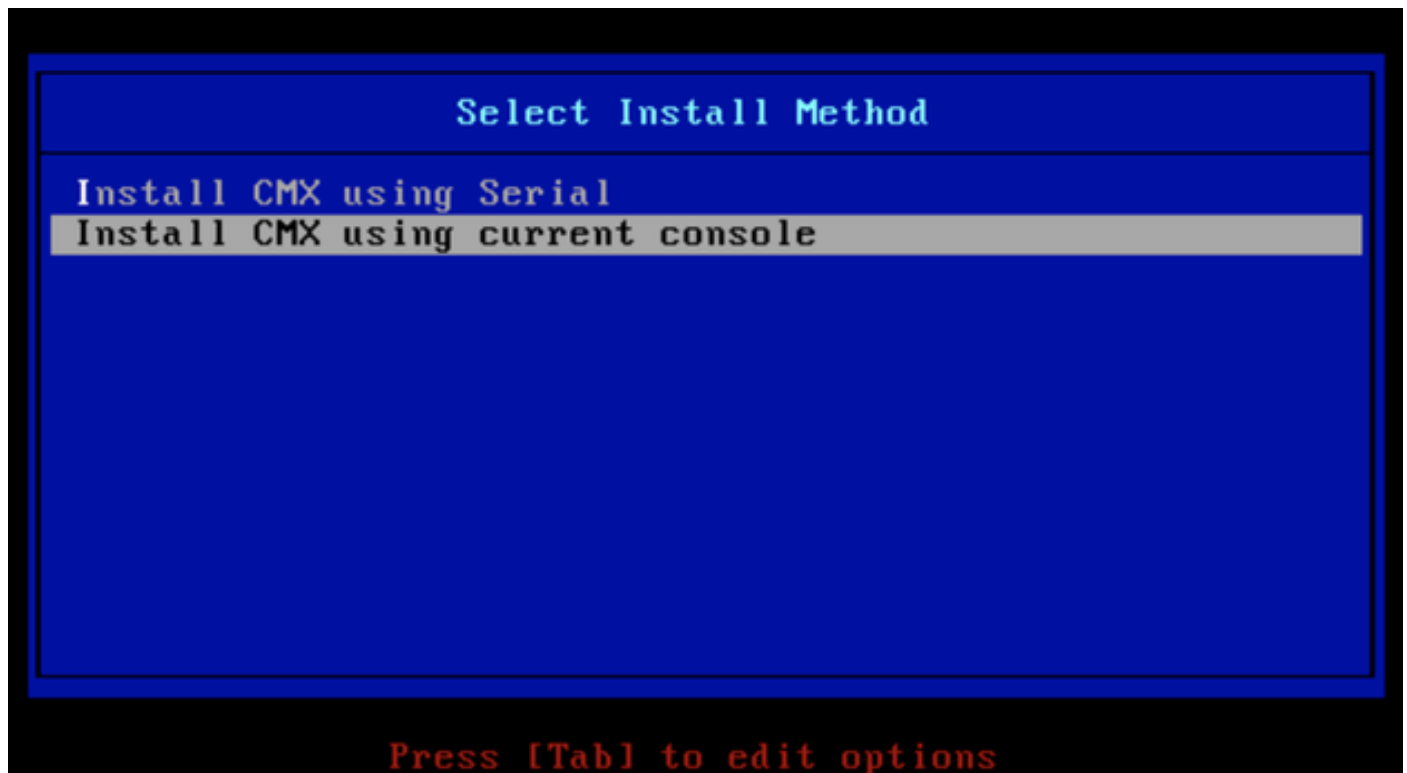


Figure 13. Continue installation in the current KVM

```
[ OK ] Unmounted /mnt/sysimage/dev/shm.
[ OK ] Failed unmounting /mnt/sysimage/opt.
[ OK ] Unmounted Configuration File System.
[ OK ] Unmounted Temporary Directory.
[ OK ] Unmounted /mnt/sysimage/tmp.
[ OK ] Unmounted /mnt/sysimage/boot.
[ OK ] Unmounted /mnt/sysimage/proc.
[ OK ] Unmounted /mnt/sysimage/var.
[ OK ] Unmounted /mnt/sysimage/home/cmxadmin.
[ OK ] Stopped target Swap.
      Deactivating swap /dev/sda6...
      Unmounting /mnt/sysimage/dev...
[ OK ] Deactivated swap /dev/disk/by-uuid/11298e53-1a2b-4dac-999f-1f88482f141e.
[ OK ] Deactivated swap /dev/disk/by-path/pci-0000:67:00.0-scsi-0:2:0:0-part6.
[ OK ] Deactivated swap /dev/disk/by-id/wwn-0x6cc167e972f8878823d7ac322e6f958a-part6.
[ OK ] Deactivated swap /dev/disk/by-id/scsi-36cc167e972f8878823d7ac322e6f958a-part6.
[ OK ] Deactivated swap /dev/sda6.
[ OK ] Unmounted /mnt/sysimage/mnt/cmx.
[ OK ] Unmounted /mnt/sysimage/sys/fs/selinux.
      Unmounting /mnt/sysimage/sys...
[ OK ] Unmounted /mnt/sysimage/run.
[ OK ] Unmounted /mnt/sysimage/dev.
[ OK ] Unmounted /mnt/sysimage/sys.
      Unmounting /mnt/sysimage...
[ OK ] Failed unmounting /mnt/sysimage.
[ OK ] Reached target Unmount All Filesystems.
[ OK ] Stopped target Local File Systems (Pre).
[ OK ] Stopped Create Static Device Nodes in /dev.
      Stopping Create Static Device Nodes in /dev...
      Stopping Monitoring of LVM2 mirrors, snapshots etc. using dmeventd or progress polling...
[ OK ] Stopped Remount Root and Kernel File Systems.
      Stopping Remount Root and Kernel File Systems...
[ OK ] Stopped Collect Read-Ahead Data.
      Stopping Collect Read-Ahead Data...
[ OK ] Stopped Monitoring of LVM2 mirrors, snapshots etc. using dmeventd or progress polling.
      Stopping LVM2 metadata daemon...
[ OK ] Stopped LVM2 metadata daemon.
[ OK ] Started Restore /run/initramfs.
[ OK ] Reached target Shutdown.
dracut Warning: Killing all remaining processes
Rebooting.
```

Figure 14. CentOS installation script trace

Step 2 Once the installer starts, it will ask for a confirmation. Type in **yes** and then press **Enter** to proceed with the installation. "Yes" might appear in the left upper corner:

```
*****
*                            *                               WARNING
*                            *                               This process will reset
yes_ drives and install a new system *                       *
*                            *                               * Do y
ou wish to continue? ( Type the entire word "yes" to proceed.) *
*                            *
*****
Proceed with install:
```

Figure 15. Prompt to continue the installation might not be aligned


```

*Disable PD Fail history so no manual intervention required in rebuilding dropped volume**
=====
**Changes drive in state Unconfigured-
=====
Installation                **Ignore errors in case drives are already good**
                                RAID10 virtual drive sucessfully created
1)  Language settings                2)  Time settings                Now configur
   (English (United States))                (America/Los_Angeles timezone)
3)  Installation source            4)  Software selection
   (Local media)                            (Minimal Install)operly**
5)  Installation Destination        6)  Kdump
   (Custom partitioning selected)          (Kdump is enabled)        RAID10 virtual drive configured and working...
7)  Network configuration            8)  User creation
   (Not connected)                        (No user will be created)
=====
Progress
Setting up the installation environment
.
Creating disklabel on /dev/sda
.
Creating xfs on /dev/sda2
.
Creating xfs on /dev/sda5
.
Creating swap on /dev/sda6
.
Creating xfs on /dev/sda3
.
Creating xfs on /dev/sda1
.
Running pre-installation scripts
.
Starting package installation process
Preparing transaction from installation source
Installing libgcc (1/293)
Installing grub2-common (2/293)
Installing centos-release (3/293)
Installing setup (4/293)
Installing filesystem (5/293)
Installing basesystem (6/293)
Installing grub2-pc-modules (7/293)
Installing bind-license (8/293)
Installing ncurses-base (9/293)
Installing firewalld-filessystem (10/293)
Installing tzdata (11/293)
Installing glibc-common (12/293)

```

Figure 16. Once Enter is pressed, the installation will start

Step 3 The CMX installation process should take around 20-30 minutes:

```

Running post-installation scripts
Mounted /dev/cdrom
Sun Jan 28 14:11:26 PST 2019
Copying CMX Image file to base location
This may take 20-30 minutes...please wait.
..

```

Figure 17. Installation takes 20-30 minutes

CMX initial setup

Step 1 Once the installation is complete, the machine is going to automatically reboot. This time, do not press any key while booting.

Step 2 Log into CMX using the default credentials (cmxadmin/cisco) as displayed on top:



Figure 18. Logging in for the first time

Step 3 You will be prompted to change password for root and cmxadmin users. Password specifications must be met:

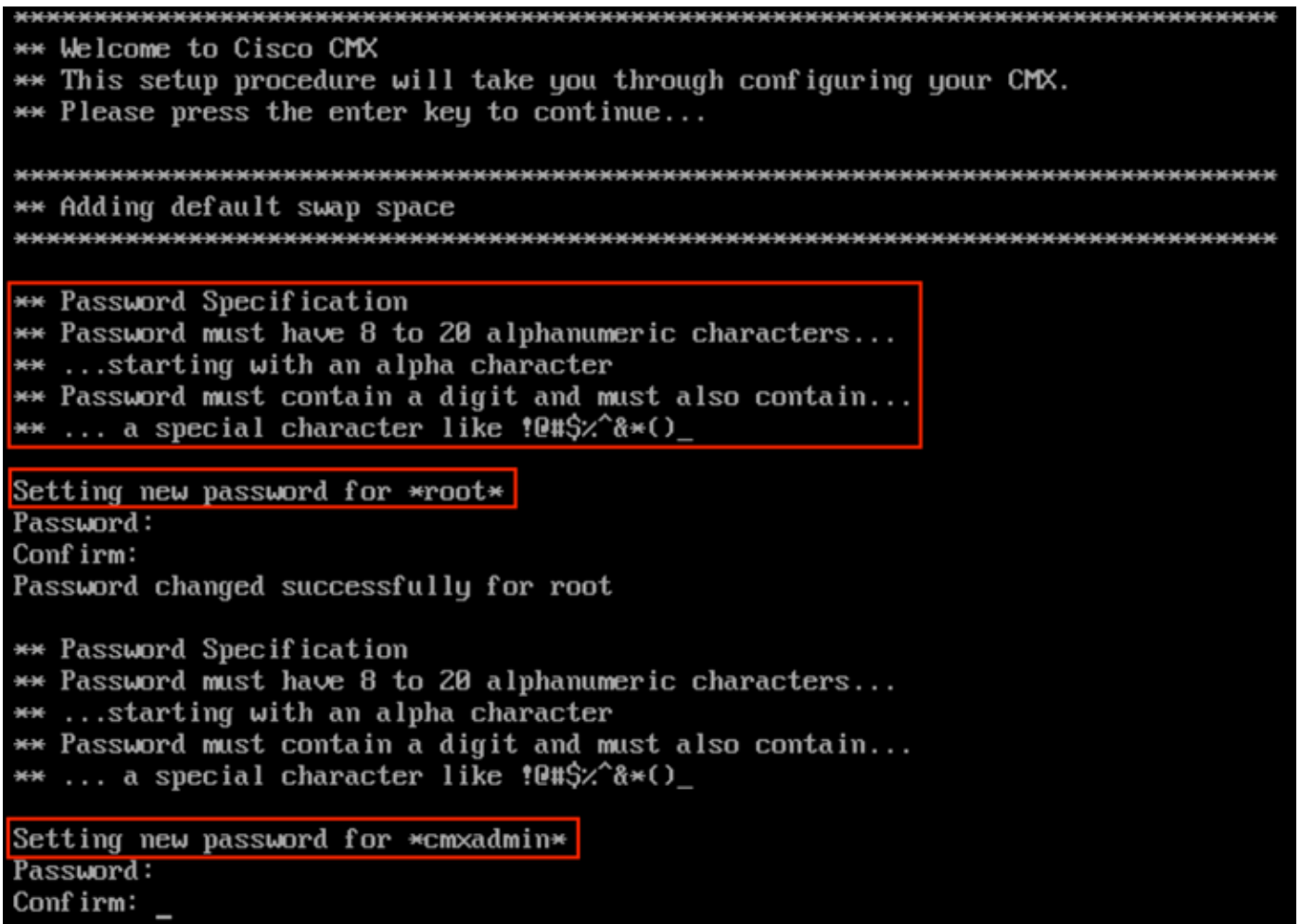


Figure 19. Changing root and cmxadmin passwords

Step 4 Configure the network parameters. Gateway and DNS need to be reachable for network settings to be applied. In case they are not, you will be prompted to configure network parameters again. If they are reachable, keepalive services will be restarted. During this process, DO NOT press Enter!

```
Please enter hostname: mse-3375-1
Please enter IP address: 10.48.39.240
Please enter netmask: 255.255.255.0
Please enter gateway: 10.48.39.5
Please enter DNS server: 10.48.39.5
Please enter search domain name: mse33751
Are the network settings correct?: yes
Stopping keepalived service
Verify keepalived service has been stopped
Successfully stopped the keepalived service.
Starting keepalived service
```

Figure 20. Network parameters setup

```
Restarting network...
Pinging 127.0.0.1..... Success
Pinging 10.48.71.63..... Success
Pinging 10.48.71.5..... Failed
Error: PING 10.48.71.5 (10.48.71.5) 56(84) bytes of data.
From 10.48.71.63 icmp_seq=1 Destination Host Unreachable
From 10.48.71.63 icmp_seq=2 Destination Host Unreachable
From 10.48.71.63 icmp_seq=3 Destination Host Unreachable
From 10.48.71.63 icmp_seq=4 Destination Host Unreachable

--- 10.48.71.5 ping statistics ---
4 packets transmitted, 0 received, +4 errors, 100% packet loss, time 3004ms
pipe 3

The network is not configured properly
Do you want to configure the network again?: yes
```

Figure 21. If gateway is unreachable, network configuration prompt will come up

Step 5 After keepalive services are restarted, the installation will prompt to enter NTP server IP address, region and country. In case the NTP is not used, the prompt will skip to time zone and time/date configuration:

```
Restarting network...
Pinging 127.0.0.1.... Success
Pinging 10.48.39.240.... Success
Pinging 10.48.39.5.... Success
Network configuration completed successfully
*****
Checking if the machine meets required specification...
*****
+-----+-----+-----+-----+
| Check | Minimum Required | Actual | Result |
+=====+=====+=====+=====+
| Memory | 24GB | 63GB | ■ |
+-----+-----+-----+-----+
| CPU | 8 | 24 | ■ |
+-----+-----+-----+-----+
| Disk | 150GB | 1882GB | ■ |
+-----+-----+-----+-----+
| hostname | RFC Compliant Hostname | mse-3375-1 | ■ |
+-----+-----+-----+-----+
*****
Configuring NTP Server...
*****
Please enter the NTP server name (blank for no NTP server) []: _
```

Figure 22. NTP configuration

```
*****
Configuring Timezone and date...
*****
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
 1) Africa
 2) Americas
 3) Antarctica
 4) Arctic Ocean
 5) Asia
 6) Atlantic Ocean
 7) Australia
 8) Europe
 9) Indian Ocean
10) Pacific Ocean
11) none - I want to specify the time zone using the Posix TZ format.
#? 8
Please select a country.
 1) Albania          18) Guernsey        35) Poland
 2) Andorra          19) Hungary         36) Portugal
 3) Austria          20) Ireland        37) Romania
 4) Belarus          21) Isle of Man    38) Russia
 5) Belgium          22) Italy           39) San Marino
 6) Bosnia & Herzegovina 23) Jersey         40) Serbia
 7) Britain (UK)     24) Latvia         41) Slovakia
 8) Bulgaria         25) Liechtenstein  42) Slovenia
 9) Croatia          26) Lithuania      43) Spain
10) Czech Republic  27) Luxembourg     44) Sweden
11) Denmark          28) Macedonia      45) Switzerland
12) Estonia          29) Malta           46) Turkey
13) Finland          30) Moldova         47) Ukraine
14) France           31) Monaco          48) Vatican City
15) Germany          32) Montenegro     49) Åland Islands
16) Gibraltar        33) Netherlands
17) Greece           34) Norway
#? 5
```

Figure 23. Timezone and date configuration

Step 6 You will be prompted to confirm entered information. If you select No, you will be taken back to the NTP configuration prompt:

```
The following information has been given:

      Belgium

Therefore TZ='Europe/Brussels' will be used.
Local time is now:      Mon Jan 21 08:11:16 CET 2019.
Universal Time is now: Sun Jan 20 23:11:16 UTC 2019.
Is the above information OK?
1) Yes
2) No
#?
```

Figure 24. NTP configuration

Step 6 Next prompt will ask you to select if you want disk encryption. KVM setup ends here and the remaining configuration will be done through CMX web interface (GUI):

Disk encryption is one of the requirements for GDPR compliance. Full information about CMX GDPR compliance can be found on [this link](#).

```
*****
Disk Encryption...
*****
Do you want to encrypt the /opt partition of the disk ? [y/N]: n
*****
CMX OS Configuration is complete.
Please visit below url to continue CMX configuration
*****

https://cmx-wlaaan:1984

[cmxadmin@localhost ~]$
```

Figure 25. Disk encryption prompt

Once encrypted, the drive cannot be unencrypted.

CMX node installation

Step 1 Access the CMX GUI through `https://<cmx_ip_address>:1984`. Port 1984 is only used during the initial setup or upgrade. Log in using `cmxadminuser` and the password that was previously configured:

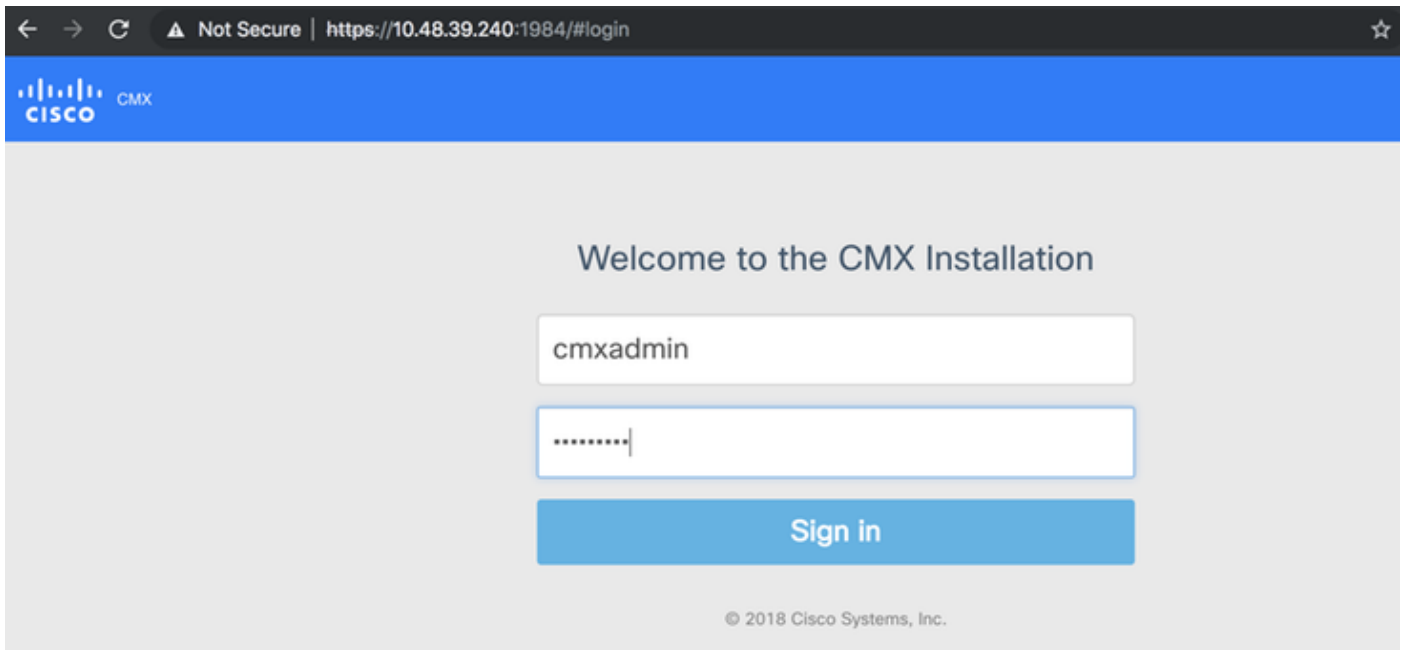


Figure 26. CMX GUI node installation login

Step 2 Select the CMX node type (Location or Presence). Note that this cannot be changed afterwards. After selecting, wait for the configuration and startup to finish:

Welcome to the CMX Installation

1

Node Type

2

Services

3

Configuration

4

Startup

5

Finish



Presence

- Presence Analytics
- CMX Connect



Location

- Location Analytics
- CMX Connect

Secondary server for High Availability

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Figure 27. CMX node type selection



Figure 28. Startup process

Step 3 Press Please click to continue setup:



Figure 29. Click to continue setup

Step 4 Installation process is now done. You will be redirected to the setup assistant to finish the node's specific configuration (maps import, pairing with wireless controller and mail server setup):

Once the setup is complete, make sure to clear browser cookies and cache. Not doing this might result in some CMX web pages being blank.

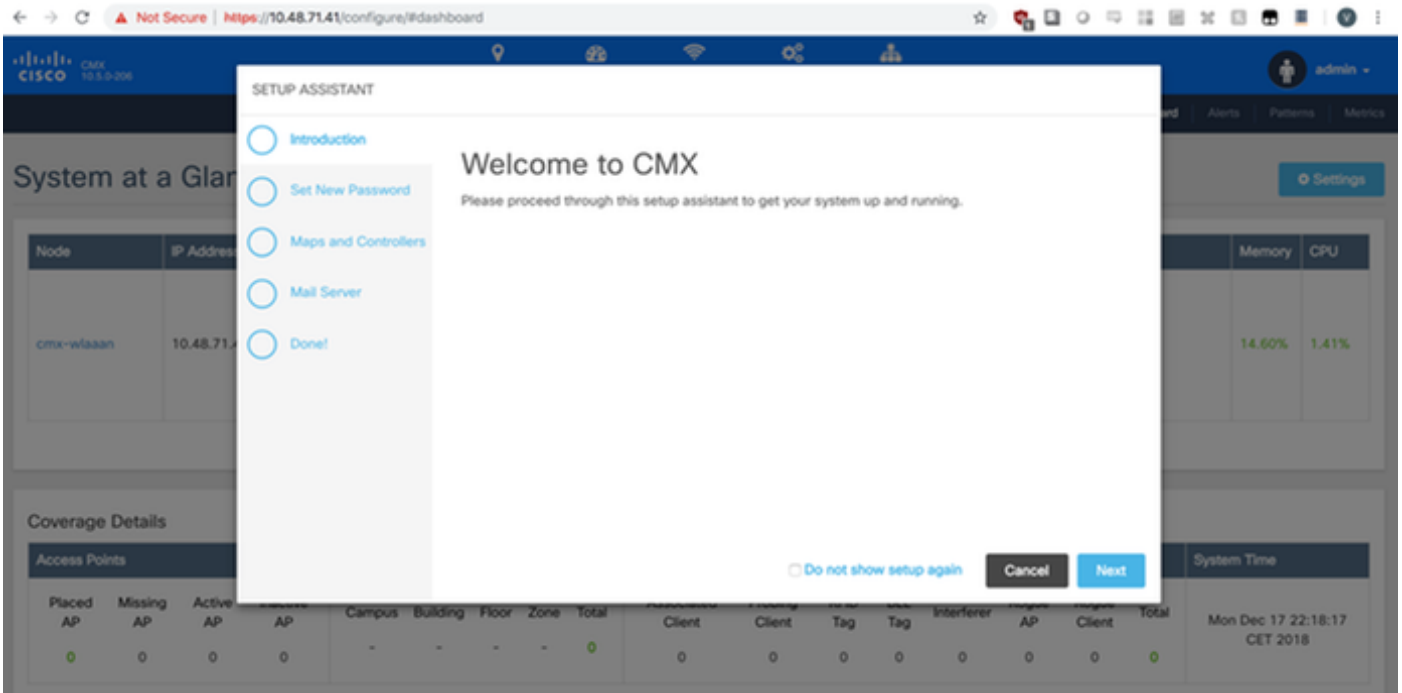


Figure 29. CMX setup assistant