

Rocky Linux and Double Attachment

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1 ABOUT THIS DOCUMENT

1.1 PURPOSE OF THIS DOCUMENT

This document describes the main installation phases for the Rocky Linux operating system. It indicates the minimum configuration required to use MiVoice 5000 applications with Linux.

1.2 SCOPE

64 bits Rocky Linux must first be installed (64 bits machine) before installing Mitel applications running with Linux.

Rocky Linux can only be used for a first installation.

Reference documents for the installation of the OS:

- MiVoice 5000 Server/Manager – Upgrading to R8.0
- MiVoice 5000 Server - Implementation
- MiVoice 5000 Manager – Installation and Configuration
- MiVoice 5000 Server - Operating Manual
- Updating by Repository
- Updating Rocky Linux Security Patch

1.3 TERMINOLOGY

- BOND0 : Virtual network interface
- DRBD : Distributed Replicated Block Device
- ETH0 or EM1 : Main network interface
- ETH1 or EM2 : Secondary or backup network interface
- IP : Internet Protocol
- LAN : Local Area Network
- WAN : Wide Area Network

2 INSTALLING ROCKY LINUX

This chapter explains how to install Rocky Linux from the DVD provided by Mitel.



IMPORTANT: Installing the OS on a virtual machine is the same as installing it on a physical machine. The "Firmware" parameter must be set to "EFI (recommended)" in the system's Boot Options menu.

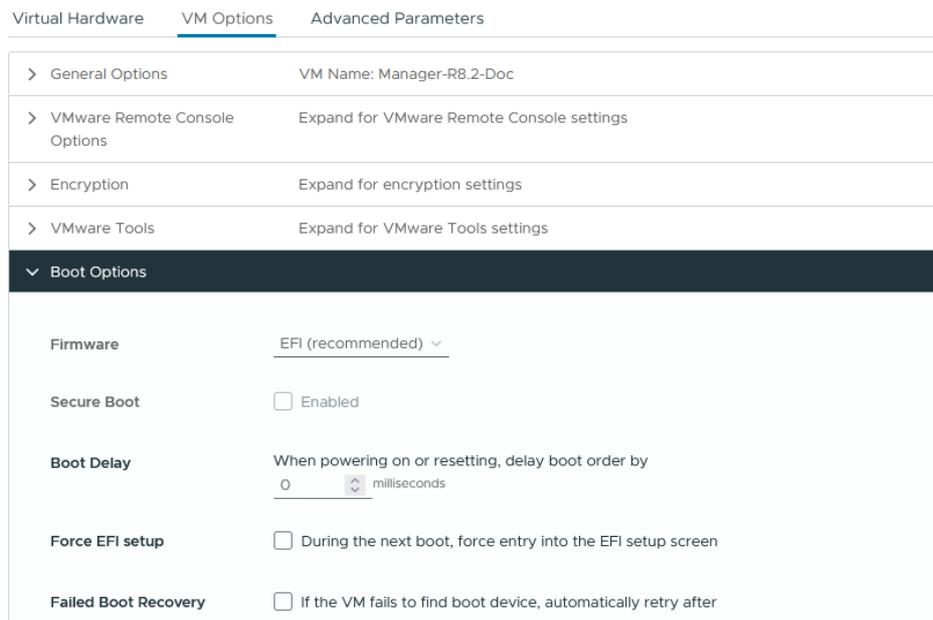
YOU WILL NEED A DISK with:

> 90 GB space minimum for a redundant or non-redundant MiVoice 5000 Server

> 150 GB space minimum for a redundant or non-redundant MiVoice 5000 Manager.



WARNING: For a redundant installation on a physical or virtual machine, disable the secure reboot. On VMWare; the option to opt out is in the settings of the machine, under VM Options > Boot Options



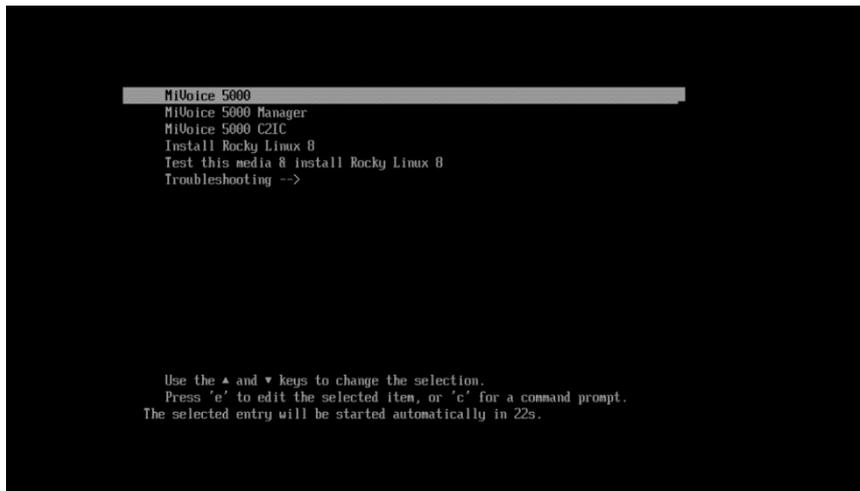
2.1 INSTALLING FROM THE DVD

- To install Rocky Linux, place the DVD in your DVD/CD-ROM drive and reboot your system from the DVD/CD-ROM.
- The installation program then checks your system and tries to identify and boot from your DVD/CD-ROM drive.



Note: It may be necessary to edit the BIOS in order to first boot from the DVD/CD-ROM and boot in legacy BIOS mode instead of UEFI mode.

- Wait for the welcome screen to open (do not press any key until this screen opens).

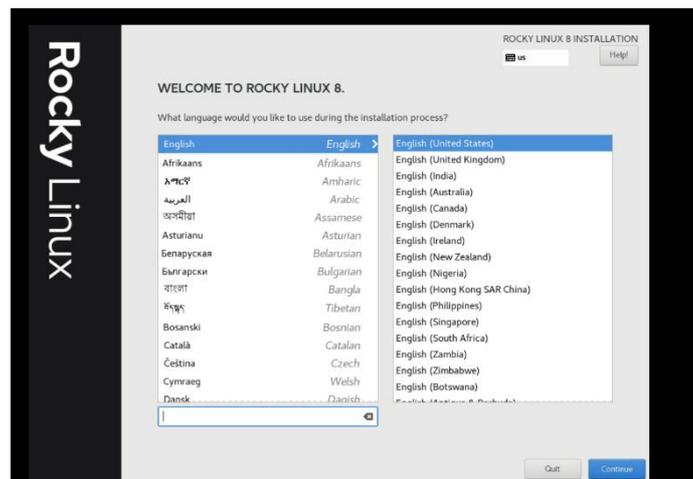


- Using the arrows, select:
 - For a MiVoice 5000 Server:
 - **MiVoice 5000**
 - For a MiVoice 5000 Manager:
 - **MiVoice 5000 Manager**
 - For a MiVoice C2IC:
 - **MiVoice C2IC**



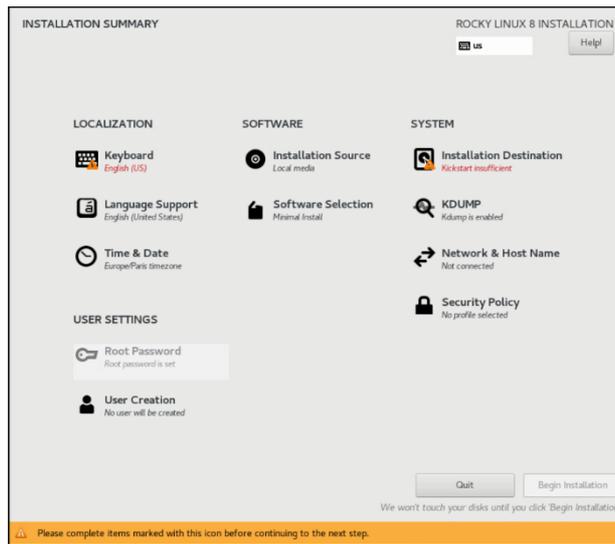
WARNING: Do not select any other option. If no action is taken for (about) 2 minutes, the system automatically starts on the first MiVoice 5000 line.

- Then click **Enter**.
The procedure in the example below will be described for MiVoice 5000 Server.
- Select the installation language (English by default).



- Click **Continue**.

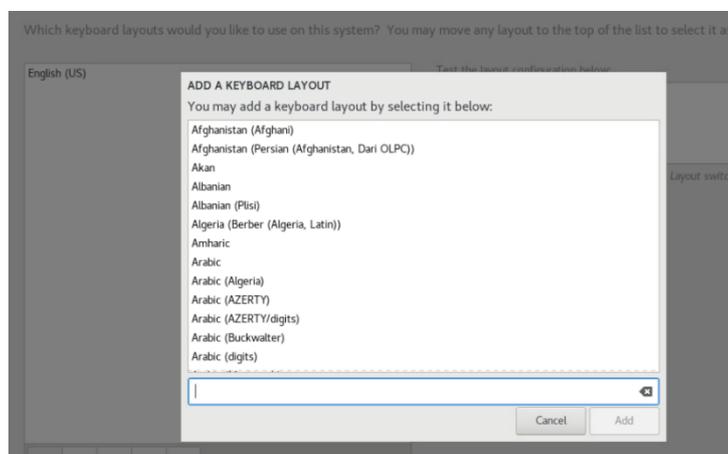
The following windows opens.



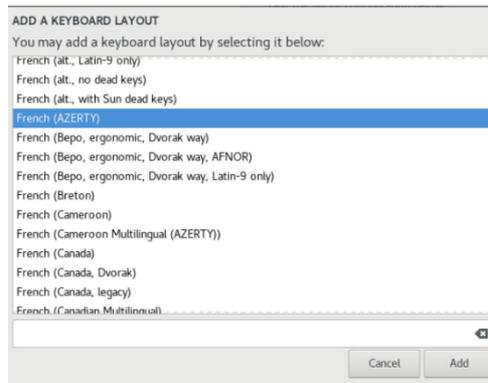
- Choose the Keyboard type by clicking the **Keyboard** icon with a small orange **Warning** icon:



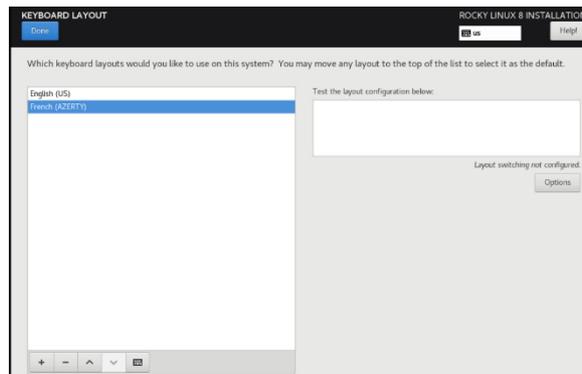
- On the keyboard selection screen, click the  button.



Use the scroll bar on the right to select the keypad type concerned.
Click **Add**.



The options list is updated:



- Select type > (French (AZERTY) in the example).
- Click **Done** on the top left side.

The main setup screen re-opens:



- Click the **SYSTEM** icon with a small orange **Warning** icon.



Note: The small orange Warning icons indicate the configurations that must be made.

The next screen is for selecting the disk on which the installation will be made.

In the **Storage configuration** area:

- Select **Customised**.
- Click **Done**.

On the manual partitioning screen:

- Choose the new mounting points which will use the following partitioning pattern: **Standard partition**
- Select the link ([Click here to create them automatically](#)).

The screen shows the automatically created partitions.

- Then, depending on the type of system, adapt the mounting points and associated capacities by clicking the  or  buttons.

Some will have to be deleted, others created or modified.

Tips:

- Respect the order indicated in the left column for partitioning (Partition 1, 2, etc.) in the tables.
- The unit for the capacity can be entered regardless of the installation language chosen (Mio or Mib, Gio or Gib).
- Do not use the Device type and File System fields, as the selection is made automatically.

The partitioning procedure is similar for the other systems with the respective values shown:

- For a redundant or non-redundant MiVoice 5000 Server, see Section 0.
- For a non-redundant MiVoice 5000 Manager, see Section 0.
- For a redundant MiVoice 5000 Manager, see Section 0.

Example of partitioning for MiVoice 5000 Server which should be as follows:

Recommended partitioning for a (redundant or non-redundant) MiVoice 5000 Server

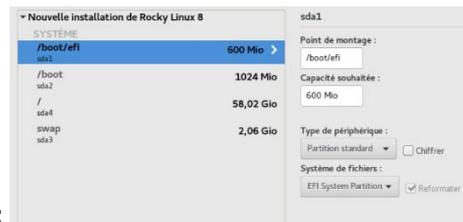
	Mounting point	Type	Size
Partition 1	/boot	xfs	1000 Mib
Partition 2	/boot/efi	EFI system partition	600 Mib
Partition 3	/	xfs	40 000 Mib (40 Gib)
Partition 4		Swap	4 000 Mib (4 Gib)
Partition 5	/var/log	xfs	4 000 Mib (4 Gib)
Partition 6	/opt/a5000	xfs	40 000 Mib (40 Gib)

Therefore, the **/home** line must be deleted, the **Swap** and **/** lines adjusted by modifying them and the **/var/log** and **/opt/a5000** partitions created.

Removing the **/home** line:

- Select this line then click .
- Click again on the left in the list:

- The line is deleted.

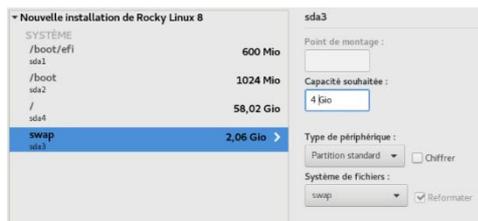


Result >:

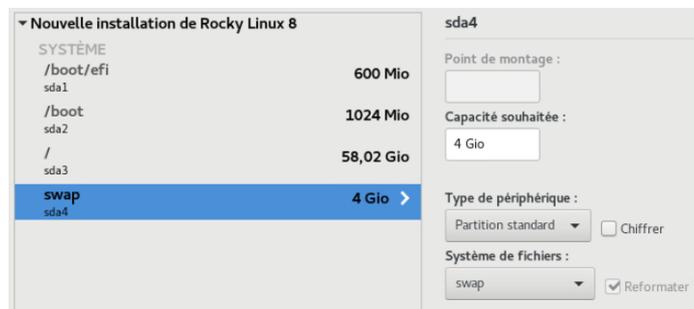
Modifying the **Swap** line:

- Select the **Swap** line.

In the **Capacity** area, enter the recommended value of **4 GiB**.



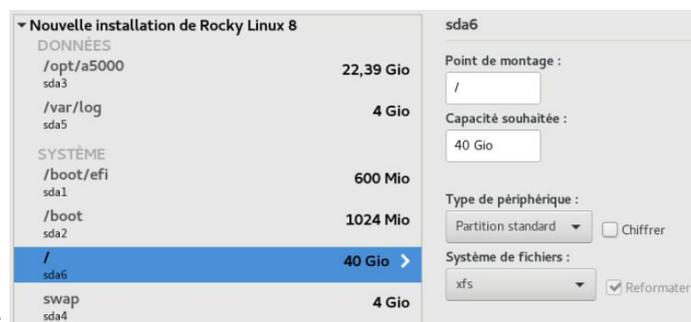
- Click again on the left in the list:



Result >:

Modifying the **/** line:

- Repeat the previous operation for this partition.



Result:

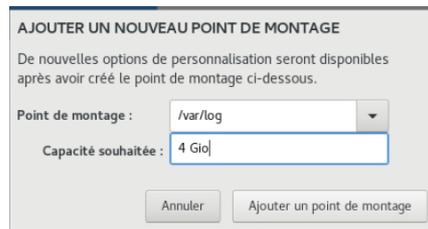


Note: If another line is to be modified, use the same procedure

Creating the `/var/log` partition:

Click  to add a mounting point.

Enter the name and the recommended capacity in the window that opens:



AJOUTER UN NOUVEAU POINT DE MONTAGE

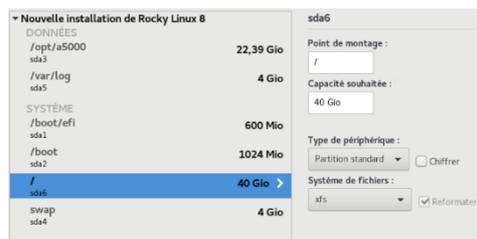
De nouvelles options de personnalisation seront disponibles après avoir créé le point de montage ci-dessous.

Point de montage :

Capacité souhaitée :

Click **Add mounting point**.

The line is created:



Partage	Capacité
/opt/a5000	22,39 Gio
sda3	
/var/log	4 Gio
sda5	
SYSTÈME	
/boot/efi	600 Mio
sda1	
/boot	1024 Mio
sda2	
/	40 Gio
sda6	
swap	4 Gio
sda4	

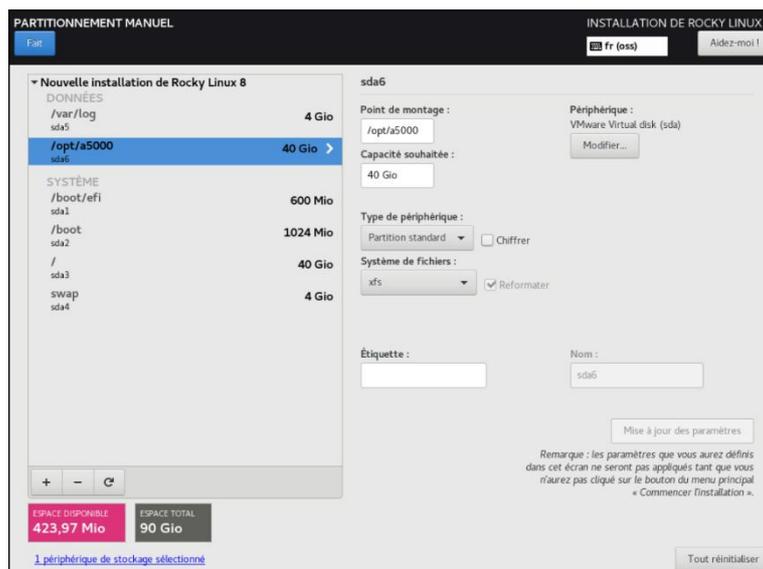
Configuration for sda6:

- Point de montage : /
- Capacité souhaitée : 40 Gio
- Type de périphérique : Partition standard
- Système de fichiers : xfs
- Reformater :

Creating the `/opt/ a5000` partition:

- Repeat the previous operation for this partition.

As the partitions have all been processed, the result is as follows:



INSTALLATION DE ROCKY LINUX 8

fr (oss) Aidez-moi !

Partitions list:

- /opt/a5000: 40 Gio
- /var/log: 4 Gio
- /boot/efi: 600 Mio
- /boot: 1024 Mio
- /: 40 Gio
- swap: 4 Gio

Configuration for sda6:

- Point de montage : /opt/a5000
- Capacité souhaitée : 40 Gio
- Type de périphérique : Partition standard
- Système de fichiers : xfs
- Reformater :
- Étiquette :
- Nom : sda6

Remarque : les paramètres que vous aurez définis dans cet écran ne seront pas appliqués tant que vous n'aurez pas cliqué sur le bouton du menu principal « Commencer l'installation ».

ESPACE DISPONIBLE: 423,97 Mio | ESPACE TOTAL: 90 Gio

1 périphérique de stockage sélectionné

Tout réinitialiser

If the result is correct, click **Done**.

Partition creation starts.

Wait for the summary of the modifications to be displayed:

Ordre	Action	Type	Périphérique	Point de montage
3	créer une partition	partition	sda1 sur VMware Virtual disk	
4	créer le format	EFI System Partition	sda1 sur VMware Virtual disk	/boot/efi
5	créer une partition	partition	sda2 sur VMware Virtual disk	
6	créer le format	xfs	sda2 sur VMware Virtual disk	/boot
7	créer une partition	partition	sda3 sur VMware Virtual disk	
8	créer une partition	partition	sda4 sur VMware Virtual disk	
9	créer une partition	partition	sda5 sur VMware Virtual disk	
10	créer une partition	partition	sda6 sur VMware Virtual disk	
11	créer le format	xfs	sda6 sur VMware Virtual disk	/opt/a5000
12	créer le format	xfs	sda5 sur VMware Virtual disk	/var/log
13	créer le format	swap	sda4 sur VMware Virtual disk	
14	créer le format	xfs	sda3 sur VMware Virtual disk	/

Annuler et retourner au partitionnement personnalisé Accepter les modifications

- Check the configuration of the different partitions



IMPORTANT: For a redundant system, note the system name of the redundant partition `/opt/a5000` as this will be required when installing redundancy.

- Click **Accept modifications**.

The welcome screen is displayed:

INSTALLATION SUMMARY
ROCKY LINUX 8 INSTALLATION

us
Help!

LOCALIZATION

Keyboard
English (US), French (AZERTY)

Language Support
English (United States)

Time & Date
Europe/Paris timezone

SOFTWARE

Installation Source
Local media

Software Selection
Minimal Install

SYSTEM

Installation Destination
Custom partitioning selected

KDUMP
Kdump is enabled

Network & Host Name
Not connected

Security Policy
No profile selected

USER SETTINGS

Root Password
Root password is set

User Creation
No user will be created

Quit **Begin Installation**

We won't touch your disks until you click 'Begin Installation'.

If other items still need to be configured, they are indicated by an orange **Warning** icon.

Then see Section **2.2** Starting the installation.

2.1.1 SYSTEM PARTITIONING FOR REDUNDANT AND NON-REDUNDANT MIVOICE 5000 SERVER

This partitioning also applies to a Cluster Server.

Recommended partitioning for a (redundant or non-redundant) MiVoice 5000 Server

	Mounting point	Type	Size
Partition 1	/boot	xfs	1000 Mib
Partition 2	/boot/efi	EFI System partition	600 Mib
Partition 3	/	xfs	40 000 Mib (40 Gib)
Partition 4		Swap	4 000 Mib (4 Gib)
Partition 5	/var/log	xfs	4 000 Mib (4 Gib)
Partition 6	/opt/a5000	xfs	40 000 Mib (40 Gib)

Since the procedure is the same as for MiVoice 5000 Server, see Section 0.

At the end of the partitioning operation, see Section 2.2.

2.1.2 PARTITIONING A NON-REDUNDANT MIVOICE 5000 MANAGER SYSTEM

Recommended partitioning for a non-redundant MiVoice 5000 Manager

	Mounting point	Type	Size
Partition 1	/boot	xfs	1000 Mib (created automatically > OK)
Partition 2	/boot/efi	EFI System partition	600 Mib (created automatically > OK)
Partition 3		Swap	4 000 Mib (4 Gib) (To be adjusted)
Partition 4	/var/log	xfs	4 000 Mib (4 Gib) (To be created)
Partition 5	/	xfs	Fill up to the maximum permissible size equivalent to the rest of the disk (To be adjusted).

Since the procedure is the same as for MiVoice 5000 Server, see Section 0.

At the end of the partitioning operation, see Section 2.2.

2.1.3 PARTITIONING A REDUNDANT MIVOICE 5000 MANAGER SYSTEM

Recommended partitioning for a redundant MiVoice 5000 Manager

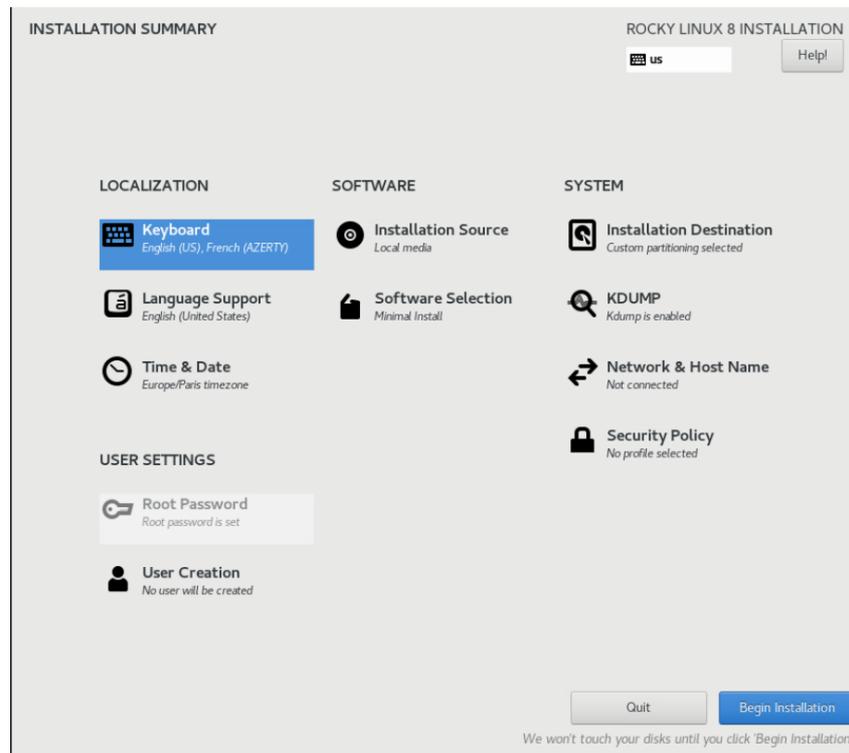
	Mounting point	Type	Size
Partition 1	/boot	xfs	1000 Mib (created automatically > OK)
Partition 2	/boot/efi	EFI System partition	600 Mib (created automatically > OK)
Partition 3	/	xfs	40 Gib (To be adjusted)
Partition 4		Swap	4 000 Mib (4 Gib) (To be adjusted)
Partition 5	/var/log	xfs	4 000 Mib (4 Gib) (To be created)
Partition 6	/opt/a5000	xfs	See Ordering Guide. The disk space must be evaluated according to the configuration.

Since the procedure is the same as for MiVoice 5000 Server, see Section 0.

At the end of the partitioning operation, see Section 2.2.

2.2 STARTING THE INSTALLATION

At the end of the partitioning operation carried out in the previous sections, the welcome screen opens:



- Click **Begin installation**.

The installation starts.

During the installation phase:

- The previously created partitions are formatted.
- The packages are transferred and installed automatically.

At this stage, you can no longer do anything until all the packages are installed.

The duration of the installation depends on the number of packages installed and the capacity of your PC.

At the end of the installation; A screen opens with the message **Finished**.



WARNING: If the installation has been made from a DVD, remove the DVD before rebooting.

- Click **Reboot System**.



Note: For some types of servers, it may be necessary to perform a hard boot (ON/Off).

Then see Section 0.

2.3 LOGGING IN AS ROOT ON THE OS

- After the start sequence, the login screen appears:

```
Rocky Linux 8.5 (Green Obsidian)
Kernel 4.18.0-348.el8.x86_64 on an x86_64

miv5000 login:
```

- Enter the **User name** (by default **root**)
- Enter the **Password** (by default **Mitel5000**).

Additional configurations, the configuration of Dual Attachment and the installation of the application itself are described in the following paragraphs.

2.4 CHANGING THE NETWORK CONFIGURATION AFTER INSTALLING THE OS



WARNING: Never use the network administration tool.

To change the (static) network configuration after the installation:

- Log in as **root**.
- Go to the directory **/etc/sysconfig/network-scripts**.
- Edit the file **ifcfg-eth0**.
 - Modify the IP addresses of the parameters **GATEWAY**, **IPADDR**, **NETMASK**
- Back up these modifications.



WARNING: For a redundant MiVoice 5000 Cluster Server or MiVoice 5000 Manager, the IP addresses must be fixed.

2.5 CHANGING THE DNS CONFIGURATION

- Log in as **root**.
- Edit the file **resolv.conf** in the **/etc/** directory (or create it if it does not exist).
 - Add a line indicating the new name and IP address concerned.
Example: `nameserver 8.8.8.8`

If there are several DNS servers, create as many lines as there are servers.

- Back up these modifications.

2.6 CHANGING THE HOSTNAME



WARNING: While configuring the MiVoice 5000 Manager network, the PC name (hostname) should not contain the character "." (the character "period"). Example: the name "host" can then be used whereas the name **host.domain.com** should not be used.

- Log in to the **root** account with the password **Mitel5000**.
- In the terminal window, type in the following command to give a name to the machine (for instance **miv5000**):

```
hostnamectl set-hostname miv5000
```

- As a result of this command the prompt can be used to check the name, by typing in the hostname command:

```
[root@miv5000 ~]# hostname  
miv5000
```

2.7 CHANGE THE ROOT PASSWORD CONFIGURATION AFTER INSTALLING THE OS

To change a root password:

- Enter the **passwd** command.
- Enter the new password.

2.8 CONFIGURING THE FIREWALL (OPTIONAL)

To configure the firewall:

Create an **iptables.conf** files with all the required ports open. Refer to the document **MiVoice 5000 solution - List of TCP and UDP ports**.

To implement the new **iptables.conf** file:

- Log in to the Linux terminal in **root**.
- Go to the **/tmp/** directory.
- Copy the new **iptables.conf** file in the **tmp** folder.
- Enter the **dos2unix iptables.conf** command to convert the **iptables.conf** file to a Unix format.
- Enter the **iptables-restore iptables.conf** command to apply the configuration of the **iptables.conf** file.
- Enter the **iptables-save > /etc/sysconfig/iptables** command to save the new **iptables.conf** file in the proper directory.
- Enter the **systemctl enable iptables** command to activate **iptables** when Linux launches.

3 CONFIGURING DOUBLE ATTACHMENT ON MIVOICE 5000 SERVER

This procedure is applicable to both redundant and non-redundant systems. For redundant systems, this procedure must be followed on each PC (master and slave PC).

In double attachment, the (Master and Slave) machines are connected to two networks and, therefore, have two network cards.

3.1 CREATING THE FILE `ifcfg-bond0`

- Go to the directory `/etc/sysconfig/network-scripts`.
- Copy the file `ifcfg-eth0` to `ifcfg-bond0`.
- Then modify the file `ifcfg-bond0` as follows (modifications in bold): The lines in bold must be added or modified):

```
NAME=bond0  
DEVICE=bond0  
TYPE=bond  
ONBOOT=yes  
BOOTPROTO=none  
IPADDR=12.1.1.61  
NETMASK=255.255.0.0  
GATEWAY=12.1.1.1  
DEFROUTE=yes  
PEERDNS=no  
PEERROUTES=yes  
IPV4_FAILURE_FATAL=no  
IPV6INIT=yes  
IPV6_AUTOCONF=yes  
IPV6_DEFROUTE=yes  
IPV6_PEERDNS=yes  
IPV6_PEERROUTES=yes  
IPV6_FAILURE_FATAL=no  
BONDING_OPTS="miimon=100 mode=1 primary=eth0"
```

- For other parameters not listed above, leave the default values.
- Save the modifications made in the file `ifcfg-bond0`.

3.2 MODIFYING THE FILE IFCFG-ETH0

- Modify the file IFCFG-ETH0 as follows (modifications in bold). The lines in bold must be added or modified:

```
NAME=eth0  
DEVICE=eth0  
TYPE=Ethernet  
ONBOOT=yes  
BOOTPROTO=none  
MASTER=bond0  
SLAVE=yes
```



Note: It is not necessary to indicate the network configuration (IP address, subnet mask, etc.) in the files `ifcfg-eth0` and `ifcfg-eth1`.

- For other parameters not listed above, leave the default values.
- Save the modifications made in the file `ifcfg-eth0`.

3.3 CREATING THE FILE IFCFG-ETH1

- Copy the file `ifcfg-eth0` to `ifcfg-eth1`.
- Then modify the file `ifcfg-eth1` as follows (modifications in bold). The lines in bold must be added.
- Save the modifications made in the file `ifcfg-eth1`.

```
NAME=eth1  
DEVICE=eth1  
TYPE=Ethernet  
ONBOOT=yes  
BOOTPROTO=none  
MASTER=bond0  
SLAVE=yes
```



Note: It is not necessary to indicate the network configuration (IP address, subnet mask, etc.) in the files `ifcfg-eth0` and `ifcfg-eth1`.

- For other parameters not listed above, leave the default values.
- Save the modifications made in the file `ifcfg-eth1`.

Taking into account the network configuration > Rebooting the system by running the command:

```
shutdown -r now
```

Or the commands:

```
nmcli c reload
```

- And then for each modified network card, run the commands (here example for eth0):

```
nmcli dev eth0
```

```
nmcli con up eth0
```

3.4 CHECKING THE WORKING OF DOUBLE ATTACHMENT

The following points must be checked:

- The four items bond0, eth0, eth1 and lo must be listed.
- The three interfaces bond0, eth0 and eth1 must have the same Mac address, that of Ethernet access eth0.
- Only interface bond0 is associated with the virtual IP address used by the MiVoice 5000 Server software and works in "MASTER" mode.
- The two interfaces eth0 and eth1 now work in "SLAVE" mode.
- Upon prompt, type in the **ifconfig** command.
- Check the above information, displayed below in bold:

Example

```

bond0: flags=5187<UP,BROADCAST,RUNNING,MASTER,MULTICAST> mtu 1500
inet 10.1.1.251 netmask 255.255.0.0 broadcast 10.1.255.255
inet6 fe80::1618:77ff:fe45:bea7 prefixlen 64 scopeid 0x20<link>
ether 14:18:77:45:be:a7 txqueuelen 0 (Ethernet)
RX packets 10697720 bytes 3815773003 (3.5 GiB)
RX errors 0 dropped 1476 overruns 0 frame 0
TX packets 31741430 bytes 11469804817 (10.6 GiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

eth0: flags=6147<UP,BROADCAST,SLAVE,MULTICAST> mtu 1500
ether 14:18:77:45:be:a7 txqueuelen 1000 (Ethernet)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 0 bytes 0 (0.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
device interrupt 18

eth1: flags=6211<UP,BROADCAST,RUNNING,SLAVE,MULTICAST> mtu 1500
ether 14:18:77:45:be:a7 txqueuelen 1000 (Ethernet)
RX packets 10698880 bytes 3815908347 (3.5 GiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 31742719 bytes 11470162921 (10.6 GiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
device interrupt 19

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 0 (Local loop)
RX packets 24094972 bytes 10685725721 (9.9 GiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 24094972 bytes 10685725721 (9.9 GiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

4 INSTALLING THE MIVOICE 5000 APPLICATION

Install the application in question using the following documents, available on Mitel.com:

- For MiVoice 5000 Call Server installation:
 - MiVoice 5000 Server - Implementation
 - MiVoice 5000 Server - Operating Manual
- For MiVoice 5000 Manager installation:
 - MiVoice 5000 Manager – Installation and Configuration
- For migrating to R8.2 or later version for MiVoice 5000 Call Server
 - MiVoice 5000 Server/Manager, EX Controller, and Mitel 5000 Compact Server - Migrating to R8.2 and later versions
- For updates:
 - Updating by Repository
 - Updating Rocky Linux Security Patch