MiVoice 5000 Server - Manager - EX Controller and Mitel 5000 Compact Server - Upgrading to R8.x

09/2022
AMT/PTD/PBX/0175/0/7/EN
OPERATING MANUAL

Warning

Although the information provided in this document is considered pertinent, Mitel Networks Corporation (MITEL ®) cannot guarantee its accuracy.

The information may be changed without notice and should not be interpreted in any way whatsoever as a commitment on the part of Mitel, its affiliated companies or subsidiaries.

Mitel, its affiliated companies and subsidiaries shall not be held liable for any errors or omissions made in this document. This document -may be reviewed or re-edited at any time in order to add new information.

No part of this document may be reproduced or transmitted in any form or by any means whatsoever - be it electronic or mechanical - no matter the purpose thereof, without the prior written consent of Mitel Networks Corporation.

CONTENTS

1 INTRODUCTION

1.1 DEFINITION

This document describes the procedures for upgrading to R8.x, required for any virtual or physical system below R8.x for standalone and redundant MiVoice 5000 systems as well as for standalone and redundant MiVoice 5000 Manager systems below R8.x.

1.2 REFERENCE DOCUMENTS

Reference documents for installing the OS (available on Mitel.com):

- Rocky Linux and Double Attachment
- MiVoice 5000 Manager - Installation and configuration
- MiVoice 5000 Server - Implementation
- MiVoice 5000 Server and Cluster Server – Redundancy
- MiVoice 5000 Manager – Redundancy
- Mitel EX Controller Mitel GX Gateway and TA7100 - Installation and configuration.

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
- MMI : Man Machine Interface
- IP : Internet Protocol
- LAN : Local Area Network
- MAC : Media Access Control
- PC : Personal Computer
- WAN : Wide Area Network

2 UPGRADING TO R8.X FOR STANDALONE MIVOICE 5000 SERVER

2.1 INTRODUCTION

A new R8.x licence is required.

In R8.x, the operating system must be Rocky Linux. Therefore, it is mandatory to upgrade to Rocky Linux.

2.2 MAIN PHASES

A procedure for migrating to R8.x is necessary for any virtual or physical system below R8.x.

This procedure must be followed in this order:

- Back up the general data in the original version.
- Back up the specific data in the original version (if necessary).
- Install the OS and configure double attachment (optional but recommended by MITEL).
- Install MiVoice 5000 Server R8.x.
- Restore the specific data (if necessary).
- Restore the general data.
- Enter the new licences.

2.3 BACKING UP GENERAL DATA

WARNING: **Before starting the procedure in the original release, check that no data needs to be retrieved from the USB key because the USB key is reformatted during the backup.**

The backup must be made from Menu **SYSTEM>Software maintenance>Backup>Backup contents**.

Tick the boxes indicated below.

For more information, see the document **MiVoice 5000 Server - Operating manual.**

2.4 BACKING UP SPECIFIC DATA

The backup indicated in the previous section does not concern certain specific data which require, while upgrading the operating system, a specific script which is independent of the actions taken from Web Admin menus. This backup, if necessary, concerns releases ≥ R5.3 only.

The following specific data are not currently backed up/stored from Web Admin:

- IVB signatures: signature wav/was/avi files
- Left messages - IVB: wav/was/avi files of left messages.
- Pictures: .png files
- TFTP: TFTP firmware and ima.cfg file
- FTP: Mitel 6000 SIP Phone/MiVoice 5300 IP Phone files from an external TMA (firmware, language and configuration files)

This unique archive (and restore) script is independent of Web Admin, and must be manually started by the user if necessary:

./archive_restore.sh

WARNING: No choice of data to be stored/restored is offered by this script.

This data can be stored when MiVoice 5000 Server is working.

During an upgrade, this operation can be carried out when MiVoice 5000 Server is stopped (command **./service a5000server stop**).

This script automatically checks the size of available storage space compared to the data to be backed up (pictures + IVB messages/signatures).

The PBX user is advised to check the required memory size from Menu **SYSTEM>Monitoring>Filling of the disk space**.

The required space can be estimated via Web Admin in the Filing of disk space menu (voicemail boxes + pictures + FTP terminals). The file archive.log is used to display the backed up data (in **/opt/a5000/infra/utils/log**).

Procedure

To implement this backup, log in as **root**.

- Select the directory **/opt/a5000/infra/utils/bin**.
- In the terminal window, enter the command:

  # chmod 777 archive_restore.sh

  #./archive_restore.sh archive /mnt/backup opt_file

This script has two settings:

- The folder setting (**/mnt/backup)** is used to specify a target folder which may be on a local or network disk or on a USB key (this space must be created in advance).
- The setting **opt_fichier** is used to specify the archive file name, and is optional in case of data backup; the default archive file name is **archive_YYYYMMDDhhmmss.tar** if it is not specified in the script.

If a backup is not made on a USB key, retrieve the file with a downloading tool.

2.5 INSTALLING THE OS AND CONFIGURE DOUBLE ATTACHMENT ON MIVOICE 5000 SERVER.

Refer to the document Rocky Linux and Double Attachment.

2.6 INSTALLING MIVOICE 5000

Refer to the document MiVoice 5000 Server - Implementation.

2.7 RESTORING SPECIFIC DATA

WARNING: **It is recommended that the specific data be returned before the general data in order to retrieve the previous data on the items.**

If a specific data backup has been made (see Section 2.4), the restore operation must also be performed in a separate specific script, in the Web Admin menus.

This script is located in **/opt/a5000/infra/utils/bin** under the filename **archive_restore.sh**.

WARNING: **All the old files in the folders concerned will be deleted during the restore operation.**
MiVoice 5000 Server is stopped when the script is started and then automatically restarted.

Procedure

Preliminary operation: place the specific archive back in the folder concerned (example**/mnt/backup).**

To implement this restore, log in as **root**.

- Select the directory **/opt/a5000/infra/utils/bin**.
- In the terminal window, enter the command:

#./archive_restore.sh restore /mnt/backup archive_YYYYMMDDhhmmss.tar

This script has two installer settings:

- The folder setting (**/mnt/backup**) is used to specify the folder containing the archive file, which may be on a local or network disk or on a USB key. This space must be created beforehand.
- The file setting (**archive_YYYYMMDDhhmmss.tar**) is used to specify the name of the archive.tar file to be restored.

2.8 RESTORING GENERAL DATA

The restore operation must be carried out from Menu **SYSTEM>Software maintenance>Restore**.

For more information, see the document MiVoice 5000 Server - Operating manual.

2.9 ENTERING THE NEW LICENCES

WARNING: **During the restore operations, the old key is restored and displayed in the Licences menu.**

Preliminary operations:

- Regenerate the installation code from the IP address, and IID from Menu **System > info > Licences**.
- Log in to the MITEL licence server to regenerate the R8.x licences.
- On the MiVoice 5000 Server machine, in Menu **System> Info>Licences**, enter the licence needed by the client.

The functions in question are then authorised.

It is advisable to make a call from outside to check the validity of the key immediately.

It is also advisable to store this licence in a text file.

3 UPGRADING TO R8.X FOR A REDUNDANT MIVOICE 5000 SERVER

3.1 INTRODUCTION

The service is lost for about 1 minute throughout the total intervention period of about 1 hour 30 minutes. **Before any operation, it is advisable to back up the MiVoice 5000 Server on a USB key so you can restore it in case of malfunction**.

A new R8.x licence is required.

MiVoice 5000 Server PCs must be configured with fixed IP addresses.

In R8.x, the operating system must be Rocky Linux. Therefore, it is mandatory to upgrade to Rocky Linux.

3.2 MAIN PHASES

WARNING: The order must be respected.

- Make a backup of the data configuration on an external device, from the active **master** PC. You must back up the following data:
- General data
- Specific data (if necessary).

WARNING: It is advisable not to make any configuration modifications during the upgrade phase as this backup will be restored later.

- Switch to the **slave** MiVoice 5000 Server PC.
- Stop the **master** MiVoice 5000 Server machine and on the new one do not connect the network cable to start the procedure.
- Install the OS and configure the network and double attachment (if necessary) on the **master** MiVoice 5000 server PC.
- Collect the information required to install redundancy on the master PC (**Ifconfig, hostname and mount**).
- Reinstall redundancy on the **master** MiVoice 5000 Server PC, by deactivating the ping in the script (**install_redondance.script**).
- Make a fresh installation of release R8.x on the **master** MiVoice 5000 Server PC.
- Run the redundancy start script on the **master** MiVoice 5000 Server PC.
- (**/start_redondance.script**).
- Restore the specific data on the **master** MiVoice 5000 Server PC.
- Restore the general data on the **master** MiVoice 5000 Server PC.
- Regenerate and enter the licences on the **master** MiVoice 5000 Server PC.
- Stop redundancy on the **master** MiVoice 5000 Server PC (**pcs cluster stop --force**).
- Stop the **slave** MiVoice 5000 Server PC.
- Reconnect the network cable to the **master** MiVoice 5000 Server PC.
- Start redundancy on the **master** MiVoice 5000 Server PC (**pc cluster start**).
- Install the OS and configure double attachment on the **slave** MiVoice 5000 server PC.
- Collect the information required to install redundancy on the **slave** PC (**Ifconfig, hostname and mount**).

- Reinstall redundancy on the **slave** MiVoice 5000 Server PC, by deactivating the ping in the script (**install_redondance.script**).
- Check that DRBD synchronisation has been completed.
- Disconnect the network cable connected to the **slave** MiVoice 5000 Server PC.
- Make a fresh installation of release R8.x on the **slave** MiVoice 5000 Server PC.
- Run the redundancy start script on the **slave** MiVoice 5000 Server PC (**./start_redondance.script**).
- Stop redundancy on the **slave** MiVoice 5000 Server PC (**pcs cluster stop --force**).
- Reconnect the network cable to the **slave** MiVoice 5000 Server PC.
- Start redundancy on the **slave** MiVoice 5000 Server PC (**./pc cluster start**).
- Update the redundancy parameters on the **slave** and **master** MiVoice 5000 Server PC (if it is necessary to activate the ping).
- Check the switchover between the **slave** and **master** PC.
- Enter the licences on the **slave** PC.
- Switch over to the **master** PC.
- Create replicas in MiVoice 5000 Manager (optional).

3.3 BACKING UP GENERAL DATA

Same procedure as in the standalone system. See Section 2.3.

3.4 BACKING UP SPECIFIC DATA

This backup, if necessary, concerns releases ≥ R5.3 only.

Same procedure as in the standalone system. See Section 2.4.

3.5 SWITCHING OVER TO THE SLAVE MIVOICE 5000 SERVER PC

This operation consists in activating the virtual address on the slave MiVoice 5000 Server PC and deactivating the virtual address on the master MiVoice 5000 Server PC.

On the master MiVoice 5000 Server PC:

- Script **./hb_standby** in the **/opt/duplication/files/** tree structure

3.6 DISCONNECTING THE NETWORK CABLE CONNECTED TO THE NEW MASTER MIVOICE 5000 SERVER PC

Note: The slave MiVoice 5000 Server PC becomes active. There is no service interruption.

3.7 INSTALLING THE OS AND CONFIGURING THE NETWORK AND DOUBLE ATTACHMENT ON THE MASTER MIVOICE 5000 SERVER PC

Refer to the document Rocky Linux and Double Attachment.

3.8 COLLECTING INFORMATION ON THE MASTER PC

The following information must be collected and available before starting the redundancy installation script:

- The IP address of the **master** PC,
- The IP address of the **slave** PC,
- The virtual IP address of the MiVoice 5000 Server PC,
- The prefix of the mask associated with the virtual IP address,
- The name of the **master** PC,
- The name of the **slave** PC,
- The IP address of the gateway (router) to be pinged (connectivity test),
- The label of the **master** PC Ethernet interface for the Heartbeat link,
- The label of the **slave** PC Ethernet interface for the Heartbeat link,
- The label of the **master** PC Ethernet interface for the virtual IP address,
- The label of the **slave** PC Ethernet interface for the virtual IP address,
- The name of the partition to be made redundant on the **master** PC,
- The name of the partition to be made redundant on the **slave** PC,
- The operating mode of redundancy after a hardware failure. The **master** PC can be reactivated, and the **slave** PC returned to standby mode, automatically (Failback = ON) or manually (Failback = OFF). Mitel recommends setting this mode to OFF.

Rules:

- The PC name should not start with a number.
- The name of the **Master** PC must be different from that of the **Slave** PC.
- The size of the partition to be made redundant must be the same on the **master** and **slave** PCs.
- The label of the Ethernet interface used by the virtual IP address must be the same on the **master** and **slave** PCs.

Collecting information

To collect information on the **master** PC:

- Log In as **root**.
  - To know the IP address and label of the Ethernet interface on the **master** PC, type in the following command:

    Ifconfig
  - To know the name of the **master** PC, type in the following command:

    hostname
  - To know the name of the partition to be made redundant on the **master** PC, type in the following command:

    mount

DNS RESOLUTION

For a redundancy configuration the master and slave servers must be able to carry out DNS resolution. The "hosts" file must be used on each server in case of redundancy.

- Go to the directory **etc**, edit the hosts file, add in this file the ip addresses / name of the master and slave Mivoice 5000 as indicated below:

127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4

192.168.0.101 miv5000-master

192.168.0.102 miv5000-slave

::1 localhost localhost.localdomain localhost6 localhost6.localdomain6

3.9 INSTALLING REDUNDANCY ON THE MASTER MIVOICE 5000 SERVER PC

- Log in to the **master** PC with the **root** account and the password **Mitel5000**
- Mount the iso image (ACS_A5000_R8.0_RC_AXYY.iso) retrieved from the Mitel website. See Section 10.1.
- Go to the directory **/cdutils/redhat/utils/bin/dupliv2/**.
- Run the installation script with the command **./install_redondance.script**

Note: The values in brackets [ ] are the default values proposed. The values to be filled in are indicated in bold, some of which are recommended by Mitel.

`Master PC (1) or Slave PC (0)? []:` **1**

`Master IP Address? []:` **The IP address of the master PC**

`Master Hostname? []:` **Master PC name**

`Slave IP Address? []:` **The IP address of the slave PC**

`Slave Hostname? []:` **The name of the slave PC**

`Virtual IP address? []:` **Virtual IP address**

`Virtual IP netmask? []:` **Virtual IP address mask: 24** (Refer to Section 10.4 for the conversion equivalence).

`Do you want a 2nd IP address: Yes(1) or No(0) ? [0]:` **0**

`Lan(0) or WAN(1) redundancy? [0] :` **0** or **1**

Network configuration type:

- **LAN configuration:** Enter the value **0**.
- **Configuring WAN:** Enter the value **1**.

`DRBD Protocol (A or C)? [A]:` **A** or **C**

- For WAN: A or C, depending on the bandwidth mainly (A = low, C high)
- For LAN: The Question is not asked. (value C)

`DRBD resynchronisation rate (30% bandwidth, in Kbyte/sec)? [200] :` **80M**

Type of attachment:

- **Single attachment (1 network card):**

`Master Ethernet board for redundancy? [eth0]:` **eth0**

`Slave Ethernet board for redundancy? [eth0]:` **eth0**

`Ethernet board for applications? [eth0]:` **eth0**

- **Double attachment (2 network cards):**

`Master Ethernet board for redundancy? [eth0]:` **bond0**

`Slave Ethernet board for redundancy? [eth0]:` **bond0**

`Ethernet board for applications? [eth0]:` **bond0**

`Do you want to ping an IP address: Yes(1) or No(0) ? [0]:` **1** or **0**

- **1** if there is a gateway IP address
- **0** if there is no gateway IP address

`Master: IP address to ping? [eth0] :` The **gateway IP address for the master PC**

`Slave: IP address to ping? [ ]:` **The gateway IP address for the slave PC**

`Master partition? []:` **sda3 (**This name may be different depending on the machine). (This is the name of the partition **/opt/a5000** defined while installing the operating system on the master PC).

`Slave partition? []:` **sda3** (This name may be different depending on the machine). (This is the name of the partition **/opt/a5000** temporarily defined for the slave PC operating system). This value must be confirmed and modified, if necessary, while updating the redundancy parameters on the master and slave PCs.

`Redundancy deadtime (in seconds)? [10] :` **10**

`Failback auto = ON/OFF? [OFF]:` **OFF**

WAN-specific settings:

`Routing Protocol: RIP or OSPF? [RIP]:` **RIP**

`Routing Authentication: Yes(1) or No(0) ? [0] :` **0**

- After checking the redundancy configuration parameters, answer **1** to the question: **`Do you want to apply these settings: Yes(1) / No(0)`**

- Check that the installation scripts are running correctly.

  Wait for the end of the initialisation.

- Check the synchronisation status on the master PC:
  - Type in the following command:

    #drbdsetup status

  The following **Primary** information must appear in relation to the master machine:

```
[root@guymv5000m ~]# drbdsetup status
r0 role:Primary
disk:UpToDate
guymv5000e role:Secondary
peer-disk:UpToDate
```

- Check the virtual address on the **master** machine (command: **ifconfig (example with bonding bond0:0)**

THE INSTALLATION AND CONFIGURATION OF REDUNDANCY ON THE MASTER MACHINE HAS BEEN COMPLETED.

3.10 MAKING A FRESH INSTALLATION OF RELEASE R8.X ON THE MASTER MIVOICE 5000 SERVER PC

- Check on the master MiVoice 5000 Server PC that the partition **/opt/a5000** has actually been mounted thanks to the **mount** command.
- Go to the root of the CD-ROM tree.
- Run the MiVoice 5000 R8.x software installation script:

  ./install_a5000_server.sh

*For more information on how to install the MiVoice 5000 software, refer to the document **MiVoice 5000 Server - Implementation**.*

Note that for a redundant MiVoice 5000 Server, when the Ctrl + i script is executed, an additional configuration phase is proposed for replicating messages and signatures (MediaServer BVI duplication):

```
MiVoice 5000 Configuration / MediaServer BVI Duplication
*-------------------------------------------------------------------------*
| You are in duplication mode, do you want to                             |
| replicate messages and signatures Y/[N]:        n                       |
*-------------------------------------------------------------------------*
```

This screen appears just after the licence configuration screen.

WARNING: **In the PC's IP address configuration menu, choose the virtual IP address concerned.**

WARNING: **At the end of the MiVoice 5000 installation script, do not enter the licences and do not start the services not started automatically.**

3.11 RUNNING THE REDUNDANCY START SCRIPT ON THE MASTER MIVOICE 5000 SERVER PC

- Go to the directory **opt/duplication**.
- Run the redundancy installation script:

  ./start_redondance.script
- Check that duplication is working:

  crm_mon

3.12 RESTORING THE SPECIFIC DATA ON THE MASTER MIVOICE 5000 SERVER PC

WARNING: **It is recommended that the specific data be returned before the general data, in order to retrieve the previous data on the items.**

This phase is necessary if some specific data has been backed up at the start of the procedure.

- See Section 2.7.

3.13 RESTORING THE GENERAL DATA ON THE MASTER MIVOICE 5000 SERVER PC

- See Section 2.8.

3.14 ENTERING LICENCES ON THE MASTER MIVOICE 5000 SERVER PC

WARNING: **During the restore operations, the old key is restored and displayed in the Licences menu.**

Preliminary operations:

- Regenerate the installation code from the IP address, and IID from Menu **System > info > Licences**.
- Log in to the MITEL licence server to regenerate the R8.x licences.

On the **master** PC:

- On the master MiVoice 5000 Server machine, in Menu **System>info>Licences** enter the licence needed by the client.

The functions in question are then authorised on the **master** PC.

It is advisable to make a call from outside to check the validity of the key immediately.

It is advisable to store this licence in a text file.

3.15 STOPPING REDUNDANCY ON THE MASTER MIVOICE 5000 SERVER PC

Stop redundancy by typing in the following command:

pcs cluster stop --force

3.16 STOPPING THE SLAVE MIVOICE 5000 SERVER PC

3.17 RECONNECTING THE NETWORK CABLE TO THE MASTER MIVOICE 5000 SERVER PC

3.18 STARTING REDUNDANCY ON THE MASTER MIVOICE 5000 SERVER PC

Start redundancy by typing in the following command:

pcs cluster start

WARNING: **The master MiVoice 5000 Server PC is again working after about 40 seconds.**

3.19 INSTALLING THE OS AND CONFIGURING DOUBLE ATTACHMENT ON THE SLAVE MIVOICE 5000 SERVER PC

Refer to the document Rocky Linux and Double Attachment.

3.20 COLLECTING INFORMATION ON THE SLAVE PC

The same procedure as on the **master** PC. See Section 3.8.

3.21 INSTALLING REDUNDANCY ON THE SLAVE MIVOICE 5000 SERVER PC

- Log in to the slave PC with the **root** account and the password **Mitel5000**

- Mount the iso image (ACS_A5000_R8.0_RC_AXYY.iso) retrieved from the Mitel website. See Section 10.1.
- Go to the directory **/cdutils/redhat/utils/bin/dupliv2/**.
- Run the installation script with the command **./install_redondance.script**

Note: The values in brackets [ ] are the default values proposed. The values to be filled in are indicated in bold, some of which are recommended by Mitel.

`Master PC (1) or Slave PC (0)? []:` **0**

`Master IP Address? []:` **The IP address of the master PC**

`Master Hostname? []:` **Master PC name**

`Slave IP Address? []:` **The IP address of the slave PC**

`Slave Hostname? []:` **The name of the slave PC**

`Virtual IP address? []:` **Virtual IP address**

`Virtual IP netmask? []:` **Virtual IP address mask: 24** (Refer to Section 10.4 for the conversion equivalence).

`Do you want a 2nd IP address: Yes(1) or No(0) ? [0]:` **0**

`Lan(0) or WAN(1) redundancy? [0] :` **0** or **1**

Network configuration type:

- **LAN configuration:** Enter the value **0**.
- **Configuring WAN:** Enter the value **1**.

`DRBD Protocol (A or C)? [A]:` **A** or **C**

- For WAN: A or C, depending on the bandwidth mainly (A = low, C high)
- For LAN: The Question is not asked. (value C)

`DRBD resynchronisation rate (30% bandwidth, in kByte/sec)? [200] :` **80M**

Type of attachment:

- **Single attachment (1 network card):**

`Master Ethernet board for redundancy? [eth0]:` **eth0**

`Slave Ethernet board for redundancy? [eth0]:` **eth0**

`Ethernet board for applications? [eth0]:` **eth0**

- **Double attachment (2 network cards):**

`Master Ethernet board for redundancy? [eth0]:` **bond0**

`Slave Ethernet board for redundancy? [eth0]:` **bond0**

`Ethernet board for applications? [eth0]:` **bond0**

`Do you want to ping an IP address: Yes(1) or No(0) ? [0]:` **1** or **0**

- **1** if there is a gateway IP address
- **0** if there is no gateway IP address

`Master: IP address to ping? [eth0] :` **Gateway IP address for the master PC**

`Slave: IP address to ping? [ ]:` **The gateway IP address for the slave PC**

`Master partition? []:` **sda3 (**This name may be different depending on the machine). (This is the name of the partition **/opt/a5000** defined while installing the operating system on the master PC).

`Slave partition? []:` **sda3** (This name may be different depending on the machine). (This is the name of the partition **/opt/a5000** temporarily defined for the slave PC operating system). This value must be confirmed and modified, if necessary, while updating the redundancy parameters on the master and slave PCs.

`Redundancy deadtime (in seconds)? [10] :` **10**

`Failback auto = ON/OFF? [OFF]:` **OFF**

WAN-specific settings:

`Routing Protocol: RIP or OSPF? [RIP]:` **RIP**

`Routing Authentication: Yes(1) or No(0) ? [0] :` **0**

- After checking the redundancy configuration settings, answer **1** to the question: `Do you want to apply these settings: Yes(1) / No(0)`

- Check that the installation scripts are running correctly.

  Wait for the end of the initialisation.

- Check that the installation is working well:
  - Check that the synchronisation operation is also working well:

  - Check on the **master** MiVoice 5000 Server PC that the partition **/opt/a5000** has actually been mounted (**mount** command).

3.22 CHECKING THAT DRBD SYNCHRONISATION HAS BEEN COMPLETED

- Check the status of synchronisation on the **master** server:
- Type in the command **#drbdsetup status**.
- The following result must appear:
  - The following result must appear:

- Check the virtual address on the **master** machine (command: **ifconfig (example with bonding bond0:0)**

3.23 DISCONNECTING THE NETWORK CABLE CONNECTED TO THE SLAVE MIVOICE 5000 SERVER PC

3.24 MAKING A FRESH INSTALLATION OF RELEASE R8.X ON THE SLAVE MIVOICE 5000 SERVER PC

- Check on the slave MiVoice 5000 Server PC that the partition **/opt/a5000** has actually been mounted thanks to the **mount** command.
- Go to the root of the CD-ROM tree.
- Run the MiVoice 5000 software installation script:

./install_a5000_server.sh

*For more information on how to install the MiVoice 5000 software, refer to the document **MiVoice 5000 Server - Implementation**.*

Note that for a redundant MiVoice 5000 Server, when the installation script (Ctrl + i) is run, an additional configuration phase is proposed for replicating messages and signatures (MediaServer BVI duplication):

```
MiVoice 5000 Configuration / MediaServer BVI Duplication
*-------------------------------------------------------------------------*
| You are in duplication mode, do you want to                             |
| replicate messages and signatures Y/[N]:        n                       |
*-------------------------------------------------------------------------*
```

This screen appears just after the licence configuration screen.

WARNING: **In the PC's IP address configuration menu, press 1 (choice=Another) and enter the virtual IP address.**

WARNING: **At the end of the MiVoice 5000 software installation script, do not enter the licences and do not start the services not started automatically.**

3.25 RUNNING THE REDUNDANCY START SCRIPT ON THE SLAVE MIVOICE 5000 SERVER PC

- Go to the **dupliv2** directory on the CD-ROM tree under:

/cdutils/redhat/utils/bin/dupliv2

WARNING: **With a VM, for the redundancy script, you must use the installation tree included in the VM and not in the MiVoice 5000 CD-ROM or in the original ISO image.**

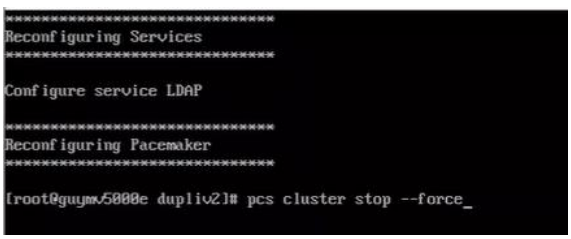
- Run the redundancy installation script:

./start_redondance.script

3.26 STOPPING REDUNDANCY ON THE SLAVE MIVOICE 5000 SERVER PC

Stop redundancy by typing in the following command:

pcs cluster stop --force



3.27 RECONNECTING THE NETWORK CABLE TO THE SLAVE MIVOICE 5000 SERVER PC

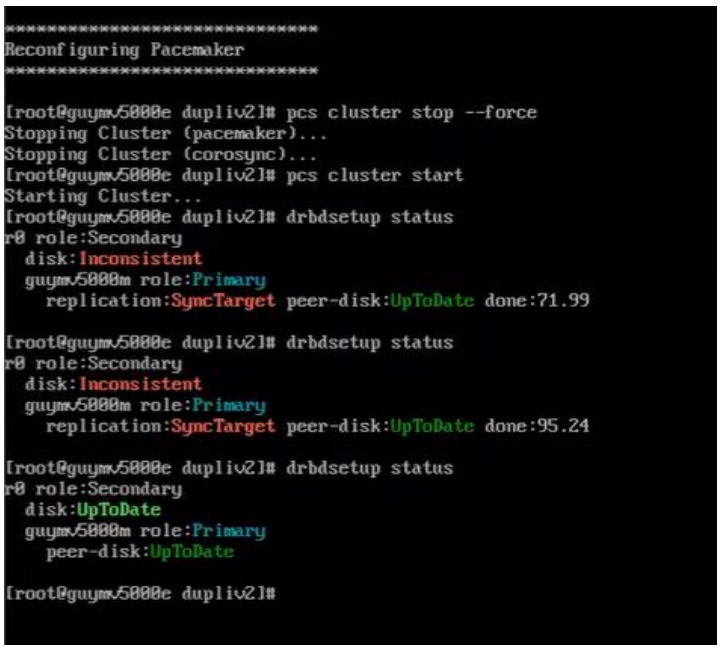
3.28 STARTING REDUNDANCY ON THE SLAVE MIVOICE 5000 SERVER PC

Start redundancy by typing in the following command:

pcs cluster start

Wait till the end of the slave MiVoice 5000 Server PC synchronisation.

- Check that synchronisation has been completed by typing in the command: **#drbdsetup status**



Check the duplication status in Web Admin on the master machine.

From Menu **Telephony service>System> Configuration>Boards>Duplex**

3.29 UPDATING THE REDUNDANCY PARAMETERS ON THE SLAVE MIVOICE 5000 SERVER PC

This step is necessary if pinging must be enabled.

The slave PC is not active.

- Go to the directory **opt/duplication**.
- Run the redundancy update script by activating the **ping** option:

./update_redondance.script

The script is similar to the installation script, see Section 3.21.

- Make the necessary updates, particularly in terms of ping.

3.30 UPDATING THE REDUNDANCY SETTINGS ON THE MASTER MIVOICE 5000 SERVER PC

This phase is necessary if you need to enable the ping.

The master PC is active.

- Go to the directory **opt/duplication**.

- Run the redundancy update script by activating the **ping** option:

./update_redondance.script

The script is similar to the installation script, see Section 3.9.

- Make the necessary updates, particularly in terms of ping.

3.31 CHECKING THE SWITCHOVER BETWEEN THE SLAVE AND MASTER PCS

On the master MiVoice 5000 PC:

Return to the master PC:

./ hb_takeover in the **/opt/duplication/files/** tree structure

- **Master** PC: command **crm_mon** in the terminal window
- **Master** PC, the following commands for checking the status of redundancy: **#drbdsetup status**
- Check the virtual address on the **master** machine (command: **ifconfig (example with bonding bond0:0)**
- Check on the **master** MiVoice 5000 Manager PC that the partition **/opt/a5000** has actually been mounted (**mount** command).

On the slave MiVoice 5000 PC:

- Script **./ hb_takeover** in the **/opt/duplication/files/** tree structure
- **Slave** PC: command **crm_mon** in a terminal window
- **Slave** PC, the following commands for checking the status of redundancy: **#drbdsetup status**
- Check the virtual address on the **slave** machine (command: **ifconfig (example with bonding bond0:0)**
- Check on the **slave** MiVoice 5000 Manager PC that the partition **/opt/a5000** has actually been mounted (**mount** command).

3.32 ENTERING LICENCES ON THE SLAVE MIVOICE 5000 SERVER PC

WARNING: During the restore operations, the old key is restored and displayed in the Licences menu.

Preliminary operations:

Switch over to the slave PC.

- Regenerate the installation code from the IP address and IID from Menu **System>info>Licences – Slave** tab.
- Log in to the MITEL licence server to regenerate the R8.x licences.

On the **slave** machine (master active or not)

- On the **slave** MiVoice 5000 Server machine, in Menu **System>Info>Licences**, enter the licence needed by the client.

The functions in question are then authorised on the slave PC; check the status of the number of validity days (example 30 d/30 d).

It is advisable to make a call from outside to check the validity of the key immediately.

It is also advisable to store this licence in a text file.

3.33 SWITCHING TO THE MASTER PC

3.34 CREATING REPLICAS IN MIVOICE 5000 MANAGER (OPTIONAL)

3.34.1 CASE OF LAN AND WAN CONFIGURATION FROM R8.0

In Menu **Administration > Network topology**:

- Select the multi-site concerned then click **Setting**.
- Click **Directory** then **Replicate**.
- Click **Add** to create a replica.

3.34.2 CASE OF WAN CONFIGURATION BEFORE R8.0

WARNING: After deleting a replica, to add a new replica, first open a terminal on the slave MiVoice 5000 Server and type in the following commands:

- **service ldap stop**
- **service ldap initdb**
- **service ldap start**

It is then possible to add and configure a new replica with MiVoice 5000 Manager.

In Menu **Administration > Network topology**:

- Select the multi-site concerned then click **Setting**.
- Click **Directory** then **Replicate**.
- Click **Add** to create a replica with a specific configuration (tick the **Specific configuration** box) used to have the master and slave MiVoice 5000 Server PCs as simultaneous destinations.

3.34.3 CHECKING THAT THE REPLICAS ARE WORKING IN MIVOICE 5000 MANAGER

In Menu **Administration>Network topology**:

- Select the multi-site concerned then click **Setting**.
- Click **Directory** then **Replicate**.
- Check the status of replication which must be active.
- In the Site field check that the IP addresses used by the replica correspond to the redundant MiVoice 5000 Server PCs.

4 UPGRADING TO R8.0 FOR EX CONTROLLER

4.1 INTRODUCTION

A new R8.x licence is required.

In R8.x, the operating system must be Rocky Linux. Therefore, it is mandatory to upgrade to Rocky Linux.

4.2 MAIN PHASES

Refer also to the **Mitel Gateway Installer - User Guide** and **MiVoice 5000 Server - Operating Manual**.

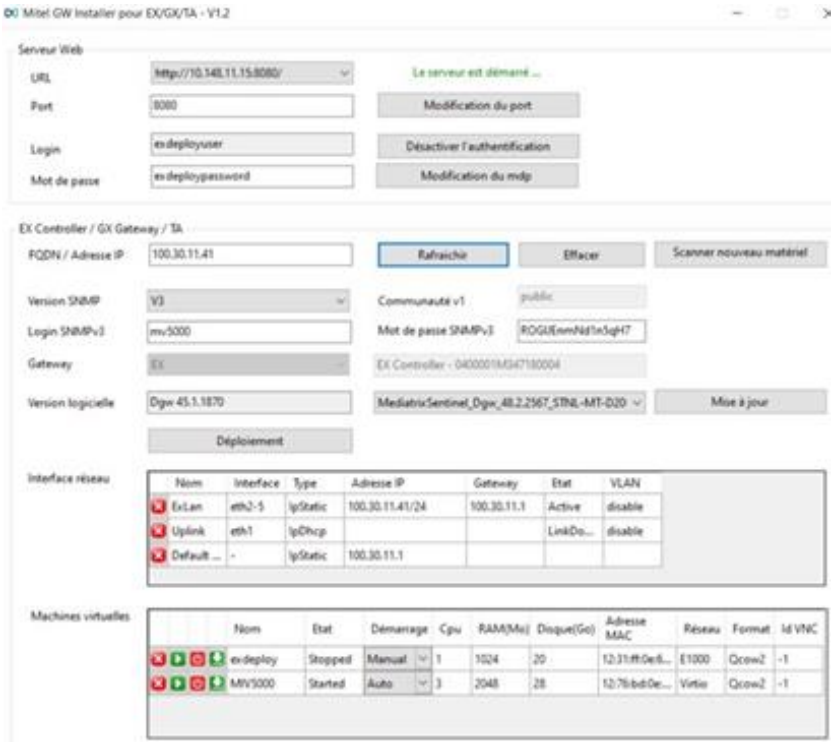
This procedure must be followed in this order:

From Web Admin:

- Back up the general data in the original version.
- Back up the specific data in the original version (if necessary).

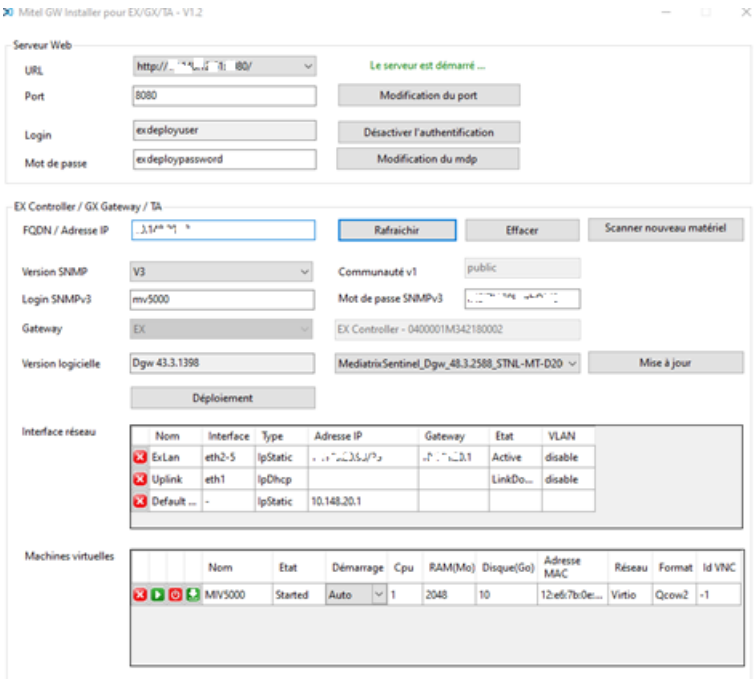
From Mitel Gateway Installer:

- In the URL column, select the URL associated with the active IP interface card.
- Stop and Delete the two VMs **ex deploy** and **MIV5000**, by clicking the VM delete icon (red cross).



- Deploy the new **MiVoice 5000 Server KVM** image in R8.x, using **Mitel Gateway Installer**.

  (Reconfiguring network settings, choice of country. See User Guide).



Once the new MiVoice 5000 R8.0 VM has been started and access to Web Admin has been set up (a few minutes):

- Restore the specific data (if necessary).

WARNING: **It is recommended that the specific data be returned before the general data in order to retrieve the previous data on the items.**

- Restore the general data.
- Enter the new licences.

5 UPGRADING A MITEL 5000 COMPACT SERVER SYSTEM BY USB KEY

This chapter explains how to upgrade a Mitel 5000 Compact system to R8.0 using a USB key (4 GB minimum).

5.1 PREREQUISITES

A new R8.x license is required.

A USB key (4 GB minimum).

The Mitel 5000 Compact Server software .iso image (A5000C-R8.0__XX.iso) provided by Mitel and containing:

- OS Rocky Linux 8.6
- Pre-installed MV5000 R8.0 AC00 application.

5.2 MAINS STEPS

For the details of certain steps, refer to the following documents:

- MiVoice 5000 Server – Operating Manual,
- MiVoice 5000 Server – Installation and Configuration.

This procedure must be carried out in the following order:

- Install the software for the update to R8.0 on the USB key,
- Save general data in the original version,
- Save specific data in the original version (if necessary),
- Recovery of previous network settings if they need to be reapplied,
- Connect the key to the Mitel 5000 Compact Server,
- Network configuration on the considered interfaces,
- Restore specific data (if necessary),

ATTENTION : It is recommended to restore the specific data before that of the general data in order to recover the previous data concerning the phones.

- Restore general data,
- Enter the new licenses and validate the new version.

5.3 INSTALLING THE SOFTWARE ON THE USB KEY:

This installation is done using the UNetbootin software available at the link: https://sourceforge.net/projects/unetbootin/

This software allows you to install an application on the USB key.

Access the site following the privacy message.

- Download **UNetbootin** software from this site
- Open downloaded file

In the **Unetbootin** screen:

- Check the '**DiskImage'** box
- Find the ISO Image file (eg: A5000C-R8.0__XX.iso) in the relevant directory,
- Choose USB drive in the Type field
- Select the Reader on which the USB key is connected
- Launch the installation by clicking OK
- Answer 'Yes to everything, if a pop-up is displayed (file name and location may differ)
- At the end of the installation, press 'Exit'.

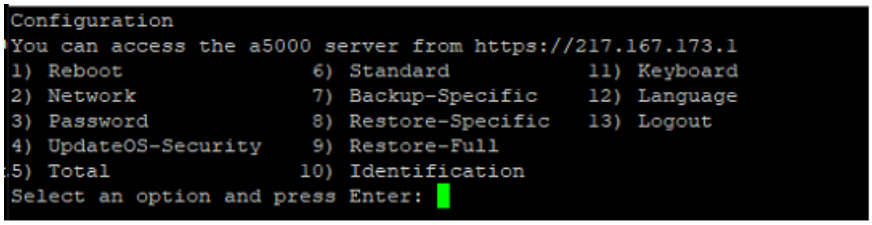
5.4 BACKUP OF GENERAL DATA

The backup is to be carried out from the menu **System>Software maintenance>Backup>Backup contents**.

- Tick the boxes as indicated.
- Export the Backup to the directory dedicated to the backup.

5.5 BACKUP OF SPECIFIC DATA

From the MiVoice 5000 Compact configuration menu:



- Select option **(7) Backup-Specific**,

The backup is made on the USB key, inserted beforehand on the box.

5.6 RECOVERY OF THE NETWORK CONFIGURATION

From the MiVoice 5000 Compact configuration menu:

• Select option **(2) Network**,

- • Consult and note the network parameters to retrieve for the different interfaces considered (IP address, Mask, Default gateway, etc.).

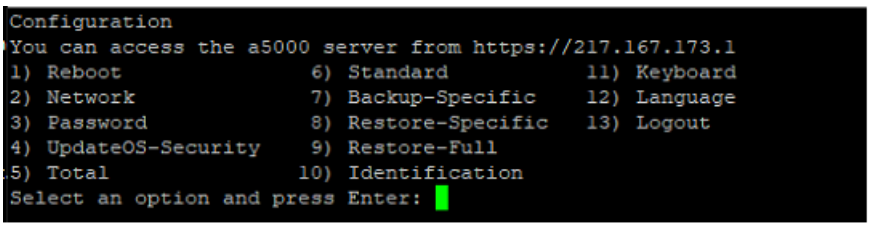
5.7 CONNECTING THE USB KEY AND RESTARTING THE SYSTEM

Connect the USB key and restart the system:

The default Mitel 5000 Compact login and password is c2ic/c2ic.

Note : If the system does not restart from the key, it is necessary to configure the restart options at the Bios level.

From the MiVoice 5000 Compact configuration menu:



- Select option **(1) Reboot**,

The system restarts by booting from the USB key.

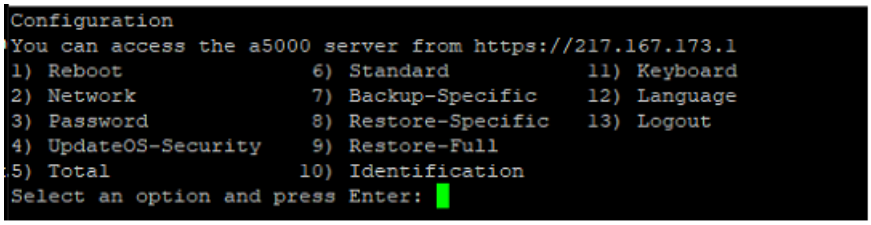
The USB key has been previously formatted (by the **UNetbootin** tool) to be "bootable".

At the end of the procedure, the system stops,

- Remove the USB key carefully,
- Carry out a Reset (button on the back of the case).

5.8 NETWORK CONFIGURATION

From the MiVoice 5000 Compact configuration menu:



- Select option **(2) Network**,
- Configure the network parameters for the different interfaces considered LAN:
  - IP address,
  - Mask,
  - Default gateway,
  - etc).

5.9 RESTART IN TOTAL MODE

From the MiVoice 5000 Compact configuration menu:

- Select menu **(5) Total**.

A script is launched (Ctrl + i) to preconfigure the system.

For details on the MiVoice 5000 software installation procedure, refer to the MiVoice 5000 Server – Installation and Configuration.

Once the pre-configuration is done, the system restarts.

5.10 RESTITUTION OF SPECIFIC DATA

- Reconnect the USB key

From the MiVoice 5000 Compact configuration menu:

- Select option **(8) Restore-Specific**,
- Select the **Archive[…].tar** file previously saved on the USB key

5.11 RESTITUTION OF GENERAL DATA

From the Web Admin:

- Select the **Telephony service>System>Software maintenance>Restore** menu,
- Download the backup from the considered directory,
- Perform a restart (Immediate or Deferred).

5.12 ENTER NEW LICENSE AND VERSION VALIDATION

From the Web Admin menu:

Select the **Telephony service>System>Info>Licenses** menu.

- Enter the 8.0 license issued by Mitel and validate
- Validate the active software version.

The system is operational.

PAUPAU1

6 UPGRADING TO R8.X FOR STANDALONE MIVOICE 5000 MANAGER

This procedure applies if you wish to upgrade an already working MiVoice 5000 Manager release <8.0 platform with the new MiVoice 5000 Manager (V3.3 software (≥ R8.0).

Upgrading MiVoice 5000 Manager to R8.0 requires first fully reinstalling Rocky Linux.

6.1 INTRODUCTION

Before any action, first back up the MiVoice 5000 Manager configuration on a USB key (the procedure is described in detail in the following phases). Retrieve the new software licence associated with release 8.x before starting the procedure.

Configure the server with a fixed IP address.

6.2 MAIN PHASES

- Back up the configuration.
- Install the OS and configure double attachment (if necessary) on MiVoice 5000 Manager Server.
- Make a fresh installation of R8.x on MiVoice 5000 Manager Server.
- Restart MiVoice 5000 Manager Server.
- Restore the data on MiVoice 5000 Manager Server.
- Update the MiVoice 5000 Manager client terminals (automatically).
- Enter the new licences on MiVoice 5000 Manager Server.
- Check that MiVoice 5000 Manager is working correctly.

6.3 BACKING UP THE MIVOICE 5000 MANAGER SERVER CONFIGURATION

See Appendix, Section 10.2.

6.4 INSTALLING THE OS AND CONFIGURING DOUBLE ATTACHMENT ON MIVOICE 5000 MANAGER SERVER

Refer to the document Rocky Linux and Double Attachment.

6.5 MAKING A FRESH INSTALLATION OF R8.X ON MIVOICE 5000 MANAGER SERVER

- Log in with the root account and the password Mitel5000.
- Retrieve the ISO image application from the Mitel site (file type **CD_7450_80-RC-A-XX_YY.iso)**.
- Mount the ISO image application (see Section 10.1).

At the root of the DVD or in the MiVoice Manager installation directory,

- Run the MiVoice 5000 Manager software installation script:

./autorun

Autorun executes the installation script.

- Select a language.

Autorun then automatically takes the following sequence of actions:

- Testing the CD-ROM,
- Checking the prerequisites,
- Installing third-party applications,
- Installing the MiVoice 5000 Manager application.

Install Nagios Extended.

- Go to the directory **CUSTOM_NAGIOS**.
- Run the NAGIOS software installation script:

./install

- Wait for the end of NAGIOS installation then reboot the MiVoice 5000 Manager PC.

6.6 RESTORING THE DATA ON MIVOICE 5000 MANAGER SERVER

See Appendix, Section 10.2.

The manager database and LDAP database are restored via the scripts to be run on MiVoice 5000 Manager.

Preliminary operation:

Transfer the initial backup made to **/home/m7450/backup**

- Select the directory **/home/scripts_m7450**
- In the terminal window, enter the command **launch_restaure_ldap.sh** followed by the parameter **dd.mm.yyyy** representing the date of the backup to be restored (input control).
  Example: "#. **/launch_restore_ldap.sh 05.03.2012**"

RESTORING PICTURES:

- Select the directory **/home/scripts_m7450**.
- In the terminal window, enter the command **restaurePictures.sh**:

  #./restaurePictures.sh
- Enter the backup directory name: **/home/m7450/backup**
- Enter the picture file name without extension: **pictures**.

RESTORING THE MIVOICE MANAGER DATABASE

- Log in as **m7450**.
- Select the directory **/home/scripts_m7450**.

For standard restore without iPBX backups:

- In the terminal window, type in the command **restore.sh** followed by the parameter **dd.mm.yyyy** representing the date of the backup to restore (input control).

  Example: "**#. /restore.sh 24.12.2007**"

  The duration of the restore process depends on the size of the configuration.

For restore with iPBX backup:

- In the terminal window, type in the command ./**restore.sh –total** followed by the setting **dd.mm.yyyy**, representing the date of the backup to restore (check). Example: "**#. /restore.sh -total 24.12.2007**"

  The duration of the restore process depends on the size of the configuration.

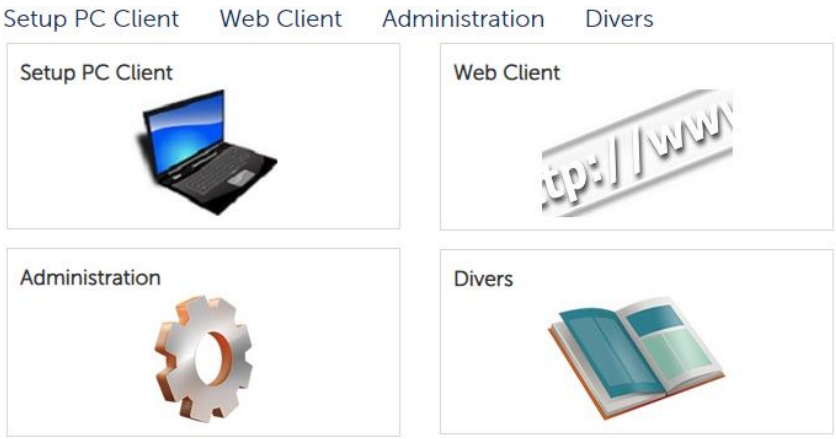
6.7 STARTING THE MANAGER SERVICE

From the **Administration** menu of the MiVoice 5000 Manager portal.

6.8 UPGRADING MIVOICE 5000 MANAGER CLIENT TERMINALS

The portal is accessible via a web browser, using the following address:

https://@IP Manager



- Select **Client PC setup** to implement the update.

Optional: Install the **Manager root certificate** from the **Miscellaneous** page.
Refer to the document MiVoice Manager - Installation and Configuration.

Access to the MiVoice 5000 Manager server of these client terminals is then operational.

6.9 ENTERING LICENCES ON THE SERVER

- In Menu **Administration>Unlock functions**:
- Enter the new R8.x key associated with the ID to unlock the client functions, then click **Validate**.

MiVoice 5000 Manager is working.

6.10 STARTING THE MANAGER SERVICE

From the **Administration** menu of the MiVoice 5000 Manager portal.

6.11 CHECKING THAT MIVOICE 5000 MANAGER IS WORKING CORRECTLY

Make the following checks (list not exhaustive):

- The working of Nagios,
- Site identification,
- TMA inventories,
- Working of replicas.

7 UPGRADING TO R8.X FOR A REDUNDANT MIVOICE 5000 MANAGER

7.1 INTRODUCTION

Upgrading MiVoice 5000 Manager to R8.x requires first fully reinstalling Rocky Linux.

Before any action, first back up the MiVoice 5000 Manager configuration on a USB key (the procedure is described in detail in the following phases).

The new master and slave software licences associated with release R8.x must be retrieved before starting the procedure.

The servers must be configured with fixed IP addresses.

7.2 MAIN PHASES

- Make a backup of the configuration on an external device, from the active (master) PC.
- Switch over to the **slave** MiVoice 5000 Manager PC.
- Disconnect the network cable connected to the **master** MiVoice 5000 Manager PC.
- The **slave** MiVoice 5000 Manager PC becomes active.
- Install the OS and configure double attachment on the **master** MiVoice 5000 Manager PC.
- Collect the information required to install redundancy on the **master** PC (**Ifconfig, hostname and mount**).
- Install redundancy on the **master** AM7450 Manager PC (**script ./install_redondance_7450.script**). Deactivate the **ping** option on this installation script.
- Check on the **master** MiVoice 5000 Manager PC that the partition **/opt/a5000** has actually been mounted (**mount** command).
- Check that synchronisation is working on the **master** PC (command: **#drbdsetup status**).
- Check that the redundant partition is active on **/dev/drbd0** on the **master** PC (command: **ifconfig** and **mount**.
- Make a fresh installation of release R8.x on the **master** MiVoice 5000 Manager PC.
- Install Nagios Extended on the **master** MiVoice 5000 Manager PC.
- Stop the **master** MiVoice 5000 Manager PC.
- Run the redundancy start script on the master MiVoice 5000 Manager PC (**./start_redondance_7450.script**).
- Make a backup of the slave MiVoice 5000 Manager PC data (necessary if the configuration has changed since the start of the procedure).
- Restore the specific data on the **master** MiVoice 5000 Manager PC.
- Stop redundancy on the **master** MiVoice 5000 Manager PC (command **pcs cluster stop --force**).
- Stop the **slave** MiVoice 5000 Manager PC.
- Reconnect the network cable to the **master** MiVoice 5000 Manager PC.
- Start redundancy on the **master** MiVoice 5000 Manager PC (command **pc cluster start**).
- Update the MiVoice 5000 Manager client terminals (from **https://@IP Manager Maitre**, select **Client PC setup**).
- Enter the licences on the **master** MiVoice 5000 Manager PC (Menu **Administration>Unlock functions**).

➢ **MiVoice 5000 Manager is working on the master PC.**

- Check that MiVoice 5000 Manager is working correctly.
- Install the operating system on the **slave** MiVoice 5000 Manager PC.
- Reconnect the network cable to the **slave** MiVoice 5000 Manager PC.
- Test the connection between the master and slave PC (**ping** command).
- Collect the information required to install redundancy on the **slave** PC (**Ifconfig, hostname and mount**).
- Install redundancy on the **slave** MiVoice 5000 Manager PC (script **./install_redondance_7450.script**). Deactivate the ping option in this installation script.
- Disconnect the network cable connected to the slave MiVoice 5000 Manager PC.
- Check on the **slave** MiVoice 5000 Manager PC that the partition **/opt/a5000** has actually been mounted (**mount** command).
- Check that synchronisation is working on the **slave** PC (command: **#drbdsetup status**).
- Check that the redundant partition is active on **/dev/drbd0** on the **slave** PC (command: **ifconfig** and **mount**.
- Make a fresh installation of release R8.x on the **slave** MiVoice 5000 Manager PC.
- Install Nagios Extended on the **slave** MiVoice 5000 Manager PC.
- Restart the **slave** MiVoice 5000 Manager PC.
- Run the redundancy start script on the **slave** MiVoice 5000 Manager PC (**./start_redondance_7450.script**).
- Stop redundancy on the **slave** MiVoice 5000 Manager PC (command **pcs cluster stop --force**).
- Reconnect the network cable to the **slave** MiVoice 5000 Manager PC.
- Update the redundancy parameters on the inactive **slave** MiVoice 5000 Manager PC (command **./update_redondance_7450.script**).
- Update the redundancy parameters on the inactive **master** MiVoice 5000 Manager PC (command **./update_redondance_7450.script**).
- Connect a client to the slave PC and enter the redundancy licence on the slave MiVoice 5000 Manager PC **(**menu **Administration>Unlock functions**).
- Check the switchover between the slave and master PCs.

Each phase is described in detail in the sections below.

7.3 BACKING UP THE CONFIGURATION ON THE MASTER MIVOICE 5000 MANAGER PC

See Section 10.3.

7.4 SWITCHING OVER TO THE SLAVE MIVOICE 5000 MANAGER PC

This operation consists in activating the virtual address on the slave MiVoice 5000 Manager PC and deactivating the virtual address on the master MiVoice 5000 Manager PC.

On the **master** MiVoice 5000 Manager PC:

- Script **./hb_standby** in the **/opt/duplication/files/** tree structure

7.5 DISCONNECTING THE NETWORK CABLE CONNECTED TO THE MASTER MIVOICE 5000 MANAGER PC

Note: The slave MiVoice 5000 Manager PC becomes active. There is no service interruption.

7.6 INSTALLING THE OS AND CONFIGURING DOUBLE ATTACHMENT ON THE MASTER MIVOICE 5000 MANAGER PC

Refer to the document Rocky Linux and Double Attachment.

7.7 COLLECTING INFORMATION ON THE MASTER PC

The following information must be collected and available before starting the redundancy installation script:

- The IP address of the **master** PC,
- The IP address of the **slave** PC,
- The virtual IP address of the MiVoice 5000 Manager PC,
- The prefix of the mask associated with the virtual IP address,
- The name of the **master** PC,
- The name of the **slave** PC,
- The IP address of the gateway (router) to be pinged (connectivity test),
- The label of the **master** PC Ethernet interface for the Heartbeat link,
- The label of the **slave** PC Ethernet interface for the Heartbeat link,
- The label of the **master** PC Ethernet interface for the virtual IP address,
- The label of the **slave** PC Ethernet interface for the virtual IP address,
- The name of the partition to be made redundant on the **master** PC,
- The name of the partition to be made redundant on the **slave** PC,
- The operating mode of redundancy after a hardware failure. The **master** PC can be reactivated, and the **slave** PC returned to standby mode, automatically (Failback = ON) or manually (Failback = OFF). Mitel recommends setting this mode to OFF.

Rules:

- The PC name should not start with a number.
- The name of the **Master** PC must be different from that of the **Slave** PC.
- The size of the partition to be made redundant must be the same on the **master** and **slave** PCs.

- The label of the Ethernet interface used by the virtual IP address must be the same on the **master** and **slave** PCs.

Collecting information

To collect information on the **master** PC:

- Log in as **root**.
  - To know the IP address and label of the Ethernet interface on the **master** PC, type in the following command:

    Ifconfig
  - To know the name of the **master** PC, type in the following command:

    hostname
  - To know the name of the partition to be made redundant on the **master** PC, type in the following command:

    Mount

DNS resolution

WARNING: **For a redundancy configuration, the master and slave servers must be able to carry out DNS resolution. The "hosts" file must be used on each server in case of redundancy.**

- Go to the directory etc, edit the hosts file, add in this file the IP addresses / name of the master and slave Mivoice 5000 as indicated below:

  127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4

  192.168.0.101 miv5000-master

  192.168.0.102 miv5000-slave

  ::1 localhost localhost.localdomain localhost6 localhost6.localdomain6

7.8 INSTALLING REDUNDANCY ON THE MASTER MIVOICE 5000 MANAGER PC

- Log in to the master PC with the root account and the password Mitel5000.
- Retrieve the ISO image application from the Mitel site (file type **CD_7450_80-RC-A-XX_YY.iso)**.
- Mount the ISO image application (see Section 10.1).
- In the root of the DVD or in the directory meant for installing MiVoice Manager, go to the **duplication** directory.
- Run the installation script with the command **./install_redondance.script**
  - **PC Master(1) or Slave(0) ?:1**
  - **Master IP address ?:192.168.0.100**
  - **Master Hostname ?: manager-maitre**
  - **Slave IP address ?:192.168.0.101**
  - **Slave Hostname ?:slave-manager**
  - **Virtual IP Address ?:192.168.0.102**
  - **Virtual IP netmask ?:24**

WARNING: **Enter the prefix value of the mask. For example, the prefix 24 corresponds to Mask 255.255.255.0. See Section 9.4 for the table of correspondence.**

  - **Redundancy: Lan(0) or WAN(1) ? : 0**

Note: **For a WAN configuration, enter 1 then adjust the Heartbeat deadtime setting (below):**

  - **Master Ethernet board for redundancy ?:bond0**
  - **Slave Ethernet board for redundancy ?:bond0**

- **Ethernet board for applications ?:bond0**
- **Do you want to ping an IP address**: **0**

WARNING: **Deactivate the ping option while executing the redundancy installation script because the master MiVoice 5000 Manager PC is disconnected from the LAN.**

- **Master Partition ?:sda3** (*this is the name of the partition* ***/opt/a5000*** *defined while installing the operating system on the master PC).*
- **Slave Partition ?:sda3** (*this is the name of the partition* ***/opt/a5000*** *temporarily defined for the operating system of the slave PC). This value must be confirmed and modified, if necessary, while updating the redundancy settings on the master and slave PCs. See Sections 7.32 and 7.33*)
- **Heartbeat deadtime (in seconds)?: 10**

Note: **The default value of the Heartbeat deadtime setting is 10 seconds in local redundancy (LAN) and 20 seconds in remote redundancy (WAN).**

- **Failback auto = ON/OFF ?:OFF**

▪ After checking the redundancy configuration settings, answer **1** to the question: **do you want to apply these settings: Yes(1) / No(0)**

- Check on the **master** MiVoice 5000 Manager PC that the partition **/opt/a5000** has actually been mounted (**mount** command).
- Synchronisation on the server:
  - Type in the command **#drbdsetup status**.
  - The following result must appear:

  cs:WFConnection st:Primary/Unknown ds:UpToDate/DUnknown
- Check that the redundant partition is active on **/dev/drbd0** on the **master** PC (command: **ifconfig (example with bonding bond0:0)**.

7.9 MAKING A FRESH INSTALLATION OF RELEASE R8.X ON THE MASTER MIVOICE 5000 MANAGER PC

At the root of the DVD or in the MiVoice Manager installation directory:

- Run the MiVoice 5000 Manager software installation script:

  ./autorun

Autorun executes the installation script:

- Select a language.
- Select the virtual IP address.

Autorun then automatically takes the following sequences of actions:

- Testing the CD-ROM
- Checking the prerequisites
- Installing third-party applications
- Installing the MiVoice 5000 Manager application.

Install Nagios Extended.

- Go to the directory **CUSTOM_NAGIOS**.
- Run the NAGIOS software installation script:

  ./install
- Wait for the end of the NAGIOS installation then reboot the master MiVoice 5000 Manager PC.

7.10 RUNNING THE REDUNDANCY START SCRIPT ON THE MASTER MIVOICE 5000 MANAGER PC

Go to the **duplication** directory.

Run the redundancy start script:

./start_redondance_7450.script

Check that duplication is working:

crm_mon

Example:

```
Last updated: Fri Jul 22 14:37:09 2016          Last change: Fri Jul 22 14:29:07 2016 by root via cibadmin on manager-maitre
Stack: corosync
Current DC: manager-maitre (version 1.1.13-10.el7-44eb2dd) - partition WITHOUT quorum
2 nodes and 5 resources configured

Online: [ manager-maitre ]
OFFLINE: [ manager-slave ]

 Master/Slave Set: resource_drbd_ms [resource_drbd]
     Masters: [ manager-maitre ]
 Resource Group: group5000
     resource_fs        (ocf::heartbeat:Filesystem):    Started manager-maitre
     resource_ip        (ocf::heartbeat:IPaddr2):       Started manager-maitre
     resource_cg        (lsb:cg):  Started manager-maitre
```

7.11 BACKING UP DATA FROM THE SLAVE MIVOICE 5000 MANAGER PC

If any change is made on manager from the backup made at the beginning of the upgrade procedure, make a new backup of the data on the **slave** MiVoice 5000 Manager PC.

Copy the backup to the master Manager backup directory: **/home/m7450/backup**

If a USB key is used, check the writing rights on this directory:

(example: chmod 777 24.12.2007).

7.12 RESTORING THE DATA ON THE MASTER MIVOICE 5000 MANAGER PC

The manager database and LDAP database are restored via the scripts to be started on the master MiVoice 5000 Manager PC.

- Select the directory **/home/scripts_m7450**.
- In the terminal window, enter the command **launch_restaure_ldap.sh**, followed by the parameter **dd.mm.yyyy** representing the date of the backup to be restored (input control). Example: "#. **/launch_restore_ldap.sh 05.03.2012**"

Restoring pictures:

- Select the directory **/home/scripts_m7450**.
- In the terminal window, enter the command **restaurePictures.sh**:

  #./restaurePictures.sh
- Enter the backup directory name: **/home/m7450/backup**
- Enter the picture file name without extension: **pictures**.

Restoring the MiVoice Manager database

- Log in as **m7450** (default installer password = **aastra78)**.
- Select the directory **/home/scripts_m7450**.

For standard restore without iPBX backups:

- In the terminal window, type in the command **restore.sh** followed by the parameter **dd.mm.yyyy**, representing the date of the backup to restore (input control). Example: "**#. /restore.sh 24.12.2007**"

  The duration of the restore process depends on the size of the configuration.

For restore with iPBX backup:

- In the terminal window, type in the command **restore.sh –total** followed by the setting **dd.mm.yyyy**, representing the date of the backup to restore (input control). Example: "**#. /restore.sh -total 24.12.2007**"

  The duration of the restore operation depends on the size of the configuration.

7.13 STOPPING REDUNDANCY ON THE MASTER MIVOICE 5000 MANAGER PC

Stop redundancy by typing in the following command:

pcs cluster stop --force

7.14 STOPPING THE SLAVE MIVOICE 5000 MANAGER PC

- Select the  icon on the top right side of the desktop.

7.15 RECONNECTING THE NETWORK CABLE TO THE MASTER MIVOICE 5000 SERVER PC

7.16 STARTING REDUNDANCY ON THE MASTER MIVOICE 5000 MANAGER PC

Start redundancy by typing in the following command:

pcs cluster start

WARNING: The master MiVoice 5000 Manager PC starts working again after about 40 seconds.

7.17 UPDATING MIVOICE 5000 MANAGER CLIENT TERMINALS

The portal is accessible via a web browser, using the following address:

https://@IP Manager Maitre

Select **Client PC setup** to implement the update.

Optional: install the certificate **ca Mitel** from the "**Documentation prerequisites"** page**.**

Access to the MiVoice 5000 Manager server of these client terminals is then working.

7.18 ENTERING LICENCES ON THE MASTER PC

- In Menu **Administration>Unlock functions**:
- Enter the new R8.x key associated with the master dongle ID to unlock the client functions, then click **Validate**.
- Enter the new R8.x key associated with the slave dongle ID to unlock the redundancy function, then click **Validate**.

Note: MiVoice 5000 Manager is working on the master PC.

7.19 CHECKING THAT MIVOICE 5000 MANAGER IS WORKING CORRECTLY

Make the following checks (list not exhaustive):

- The working of Nagios
- Site identification
- TMA inventories

7.20 INSTALLING THE OS AND CONFIGURING DOUBLE ATTACHMENT ON THE SLAVE MIVOICE 5000 MANAGER PC

Refer to the document Rocky Linux and Double Attachment.

7.21 RECONNECTING THE NETWORK CABLE TO THE SLAVE MIVOICE 5000 MANAGER PC

7.22 TESTING THE CONNECTION BETWEEN THE MASTER AND SLAVE PC

Make a ping between these two PCs to check the connection.

7.23 COLLECTING INFORMATION ON THE SLAVE PC

The same procedure as on the **Master** PC. See Section 3.8.

7.24 INSTALLING REDUNDANCY ON THE SLAVE MIVOICE 5000 MANAGER PC

- Log in to the slave PC with the **root** account and the password **Mitel5000**
- Retrieve the ISO image application from the Mitel site (file type **CD_7450_80-RC-A-XX_YY.iso)**.
- Mount the ISO image application (see Section 10.1).
- In the root of the DVD or in the directory meant for installing MiVoice Manager, go to the **duplication** directory.
- Run the installation script with the command **./install_redondance.script**
  - **PC Master(1) or Slave(0) ?:0**
  - **Master IP address ?:192.168.0.100**
  - **Master Hostname ?: manager-maitre**
  - **Slave IP address ?:192.168.0.101**
  - **Slave Hostname ?:slave-manager**
  - **Virtual IP Address ?:192.168.0.102**
  - **Virtual IP netmask ?:24**

WARNING: **Enter the prefix value of the mask. For example, the prefix 24 corresponds to Mask 255.255.255.0 See Section 9.4 for the table of correspondence.**

  - **Redundancy: Lan(0) or WAN(1) ? : 0**

Note: **For a WAN configuration, enter 1 then adjust the Heartbeat deadtime setting (below):**

  - **Master Ethernet board for redundancy ?:bond0**
  - **Slave Ethernet board for redundancy ?:bond0**
  - **Ethernet board for applications ?:bond0**
  - **Do you want to ping an IP address**: **0**

WARNING: **Deactivate the ping option while executing the redundancy installation script because the master MiVoice 5000 Manager PC is disconnected from the LAN.**

  - **Master Partition ?:sda3** (*this is the name of the partition **/opt/a5000** defined while installing the operating system on the master PC).*
  - **Slave Partition ?:sda3** (*this is the name of the partition **/opt/a5000** temporarily defined for the operating system of the slave PC). This value must be confirmed and modified, if necessary, while updating the redundancy parameters on the master and slave PCs. See Sections 7.32 and 7.33*)
  - **Heartbeat deadtime (in seconds)?: 10**

Note: **The default value of the Heartbeat deadtime setting is 10 seconds in local redundancy (LAN) and 20 seconds in remote redundancy (WAN).**

  - **Failback auto = ON/OFF ?:OFF**

- After checking the redundancy configuration settings, answer **1** to the question: **do you want to apply these settings: Yes(1) / No(0)**
  - Check the status of synchronisation on the server:
    - Type in the command **drbdsetup status**.
    - The following result must appear:

    cs:Connected st:Primary/Secondary ds:UpToDate/D…..

7.25 DISCONNECTING THE NETWORK CABLE CONNECTED TO THE SLAVE MIVOICE 5000 MANAGER PC

7.26 CHECKING THAT THE REDUNDANT PARTITION IS ACTIVE ON THE SLAVE MACHINE

Check that the redundant partition is active on **/dev/drbd0** on the slave PC, by running the command:

ifconfig (example with bonding: bond0:0)

7.27 CHECKING THAT DRBD SYNCHRONISATION IS WORKING ON THE SLAVE PC

Check that DRBD synchronisation is working on the **slave** PC:

#drbdsetup status

cs:WFConnection r0:Primary/…..)

7.28 MAKING A FRESH INSTALLATION OF RELEASE R8.X ON THE SLAVE MIVOICE 5000 MANAGER PC

Note: If a replica exists on the manager configuration, do not take into account the errors "can't connect ldap server" for each replica declared (timeout: 30s per replica).

At the root of the DVD or in the MiVoice Manager installation directory:

- Run the MiVoice 5000 Manager software installation script:

  ./autorun

Autorun executes the installation script:

- Select a language.
- Select the virtual IP address.

Autorun then automatically takes the following sequences of actions:

- Testing the CD-ROM
- Checking the prerequisites
- Installing third-party applications
- Installing the MiVoice 5000 Manager application.

Install Nagios Extended.

- Go to the directory **CUSTOM_NAGIOS**.
- Run the NAGIOS software installation script:

  ./install

- Wait for the end of the NAGIOS installation then restart the slave MiVoice 5000 Manager PC.

7.29 RUNNING THE REDUNDANCY START SCRIPT ON THE SLAVE MIVOICE 5000 MANAGER PC

Go to the **duplication** directory.

Run the redundancy start script:

./start_redondance_7450.script

Check that duplication is working:

crm_mon

7.30 STOPPING REDUNDANCY ON THE SLAVE MIVOICE 5000 MANAGER PC

Stop redundancy by typing in the following command:

pcs cluster stop --force

7.31 RECONNECTING THE NETWORK CABLE TO THE SLAVE MIVOICE 5000 MANAGER PC

Wait till the end of the slave MiVoice 5000 Manager PC synchronisation.

- Check that synchronisation has been completed by typing in the command: **#drbdsetup status**

The information **Connected** means that the synchronisation mechanism is working. The status **UpToDate** means that synchronisation has been completed on the slave PC.

7.32 UPDATING THE REDUNDANCY PARAMETERS ON THE SLAVE MIVOICE 5000 SERVER PC

The slave PC is not active.

From the DVD or dedicated directory:

Go to the **duplication** directory on the MiVoice 5000 Manager software tree.

Execute the redundancy update script by activating the **ping** option:

./update_redondance_7450.script

The script is similar to the installation script, see Section 7.8.

- Make the necessary updates, particularly in terms of ping.

7.33 UPDATING THE REDUNDANCY PARAMETERS ON THE MASTER MIVOICE MANAGER PC

The master PC is inactive.

From the DVD or dedicated directory:

Go to the **duplication** directory on the MiVoice 5000 Manager software tree.

- Execute the redundancy update script by activating the **ping** option:

./update_redondance_7450.script

The script is similar to the installation script, see Section 7.24.

- Make the necessary updates, particularly in terms of ping.

7.34 CHECKING THE SWITCHOVER BETWEEN THE SLAVE AND MASTER PCS

On the Master Manager machine, switch to Master:

- Script **./ hb_takeover** in the **/opt/duplication/files/** tree structure

- Master Manager: command **crm_mon** in the terminal window:

```
Last updated: Mon Jul 25 11:30:33 2016          Last change: Mon Jul 25 11:28:13 2016 by root via crm_resource on manage
r-maitre
Stack: corosync
Current DC: manager-esclave (version 1.1.13-10.el7-44eb2dd) - partition with quorum
2 nodes and 5 resources configured

Online: [ manager-esclave manager-maitre ]

 Master/Slave Set: resource_drbd_ms [resource_drbd]
     Masters: [ manager-maitre ]
     Slaves: [ manager-esclave ]
 Resource Group: group5000
     resource_fs        (ocf::heartbeat:Filesystem):    Started manager-maitre
     resource_ip        (ocf::heartbeat:IPaddr2):       Started manager-maitre
     resource_cg        (lsb:cg):       Started manager-maitre
```

- Master Manager, the following commands are for checking the status of redundancy: **#drbdsetup status**.

```
[root@manager-maitre files]# #drbdsetup status
version: 8.4.7-1 (api:1/proto:86-101)
GIT-hash: 3a6a769340ef93b1ba2792c6461250790795db49 build by root@centos7, 2016-04-20 17:23:48
 0: cs:Connected ro:Primary/Secondary ds:UpToDate/UpToDate C r-----
    ns:77120 nr:828840 dw:905960 dr:551243 al:32 bm:0 lo:0 pe:0 ua:0 ap:0 ep:1 wo:f oos:0
```

- Master Manager command **ifconfig** for checking that the redundant partition is mounted on the master.

```
bond0:0: flags=5187<UP,BROADCAST,RUNNING,MASTER,MULTICAST>  mtu 1500
        inet 12.1.1.60  netmask 255.255.0.0  broadcast 12.1.255.255
        ether 34:17:eb:f0:35:f3  txqueuelen 0  (Ethernet)
```

- Checking from a Client Manager: main **Mitel** display window.

On the slave Manager machine, switch to slave:

- Script **/ hb_takeover** in the **/opt/duplication/files/** tree structure
- Slave Manager: command **crm_mon** in a terminal window:

```
Last updated: Mon Jul 25 15:22:43 2016          Last change: Mon Jul 25 15:21:38 2016 by root via crm_res
ource on manager-esclave
Stack: corosync
Current DC: manager-esclave (version 1.1.13-10.el7-44eb2dd) - partition with quorum
2 nodes and 5 resources configured

Online: [ manager-esclave manager-maitre ]

 Master/Slave Set: resource_drbd_ms [resource_drbd]
     Masters: [ manager-esclave ]
     Slaves: [ manager-maitre ]
 Resource Group: group5000
```

```
resource_fs     (ocf::heartbeat:Filesystem):    Started manager-esclave
resource_ip     (ocf::heartbeat:IPaddr2):       Started manager-esclave
resource_cg     (lsb:cg):       Started manager-esclave
```

- Slave Manager, the following commands are for checking the status of redundancy: **#drbdsetup status**

```
[root@manager- slave files]# #drbdsetup status
version: 8.4.7-1 (api:1/proto:86-101)
GIT-hash: 3a6a769340ef93b1ba2792c6461250790795db49 build by root@centos7, 2016-04-20 17:23:48
 0: cs:Connected ro:Primary/Secondary ds:UpToDate/UpToDate C r-----
   ns:866645 nr:188577 dw:4282578 dr:2132127 al:39 bm:0 lo:2 pe:0 ua:0 ap:2 ep:1 wo:f oos:0
```

- Slave Manager command **ifconfig** for checking that the redundant partition is mounted on the master.

```
bond0:0: flags=5187<UP,BROADCAST,RUNNING,MASTER,MULTICAST>  mtu 1500
      inet 12.1.1.60  netmask 255.255.0.0  broadcast 12.1.255.255
      ether 10:98:36:9f:85:ca  txqueuelen 0  (Ethernet)
```

- Checking from a Client Manager: main window

The message **Operation on secondary server** appears on the welcome page of the slave MiVoice 5000 Manager PC when this latter is active.

8 UPGRADING TO R8.X FOR A CLUSTER CONFIGURATION

8.1 REMINDER ABOUT AND PRINCIPLE OF UPGRADING TO A CLUSTER CONFIGURATION

Reminder:

The MiVoice 5000 Cluster Server solution is based on a star architecture comprising a cluster server and several nodes communicating via an IP network infrastructure.

The Cluster Server contains all the subscriptions (IP, TDM, analogue subscriptions) as well as all the licences with a centralised configuration and common features on the entire cluster.

Each node is supervised by the Cluster Server.

A cluster server always refers to a MiVoice 5000 Server type iPBX.

A node refers indifferently to a MiVoice 5000 Server, Mitel 5000 Gateways or Mitel 500 type iPBX.

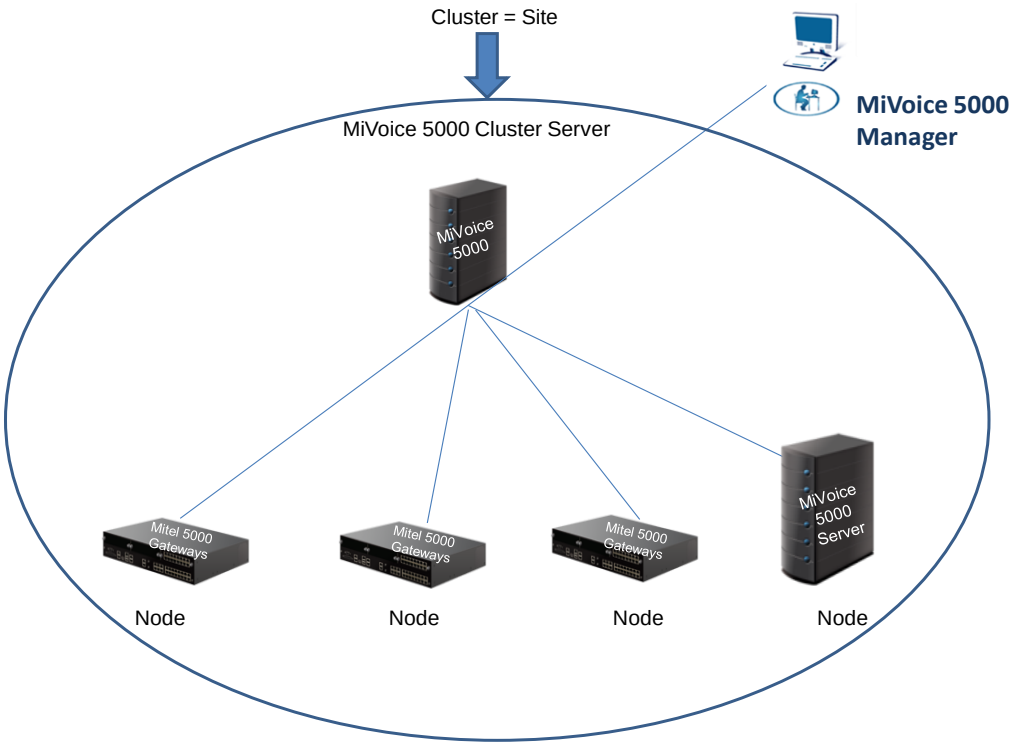
The Cluster Server may be installed on a physical or virtual machine.

The Cluster Server may be duplicated locally or geographically (LAN or WAN).

When a MiVoice 5000 Server is configured as node, it cannot be made redundant.

A MiVoice 5000 Manager is required to configure and manage a Cluster seen as a site.

Architecture of a simple Cluster



Concerning upgrade

A new R8.x licence is required.

The MiVoice 5000 Server PCs must be configured with fixed IP addresses.

In R8.x, the operating system must be Rocky Linux. Therefore, it is mandatory to upgrade to Rocky Linux.

The procedure described here concerns the two upgrade methods. The most effective method is the Repository method which limits the size of the data transmitted to the nodes.

The MiVoice 5000 Manager release must be at least R8.0 to upgrade from a cluster configuration to R8.x.

It is advisable to install the new Manager certificate on administrators' client terminals.

For the (Standalone or Duplicated) Cluster Server, the upgrade must be done manually (Full re-installation with Rocky Linux). The system may be physical or virtual.

For MiVoice 5000 Server nodes, the upgrade must be done manually (Full re-installation with Rocky Linux). The system may be physical or virtual.

For Mitel 5000 Gateways type nodes, the update is made during the start procedure from MiVoice 5000 Manager.

For Mitel 5000 Compact type nodes, the upgrade must be made by connecting a specific USB key allowing the re-installation of Rocky Linux and the MiVoice 5000 application as well as data restore.

For a configuration with a redundant cluster server, to optimise the loss of service, migration must be made on the slave machine.

8.2 CLUSTER CONFIGURATION UPGRADE - REPOSITORY METHOD

8.2.1 PRINCIPLE

The repository method (or **New upgrade service**) is used to upgrade the Cluster Server, Nodes, Mitel 5000 Gateways, MiVoice 5000 Server and MiVoice 5000 compact release using the upgrade server located on MiVoice 5000 Manager.

This operation must be programmed from MiVoice 5000 Manager R8.x.

8.2.2 PRELIMINARY OPERATION

Upgrade from MiVoice 5000 Manager to R8.x as described in Section 6.

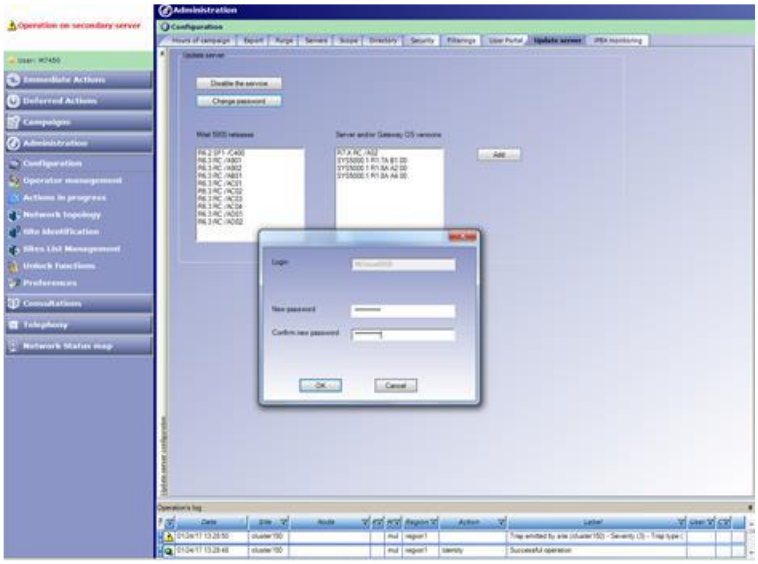
For Mitel 5000 Compact type nodes, connect the upgrade USB key. This key must first be loaded with the ISO image provided by Mitel.

WARNING: This key must have a capacity of minimum 4 GB.

8.2.3 PROCEDURE

From MiVoice 5000 Manager, Menu **Administration>Configuration**

- Select the Upgrade server tab.
- Click **Activate service**.



- Enter twice the password used to Log in to the upgrade server then click OK.

Note: The password is freely defined by the user. The syntax to be respected is indicated.

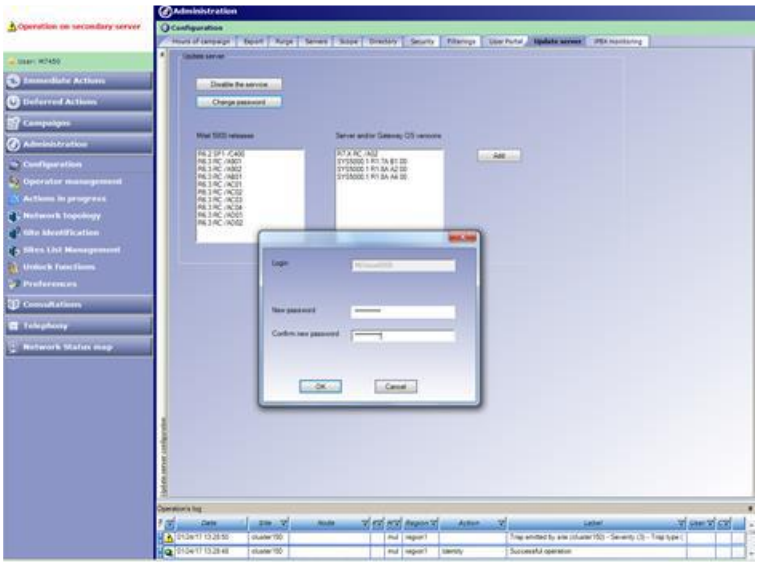
- An information message indicates that the new password associated with the login has been taken into account.
- The following message is displayed:

The list of MiVoice 5000 upgrade files is empty.

- The following message is displayed:

The list of OS security patches upgrade files is empty.

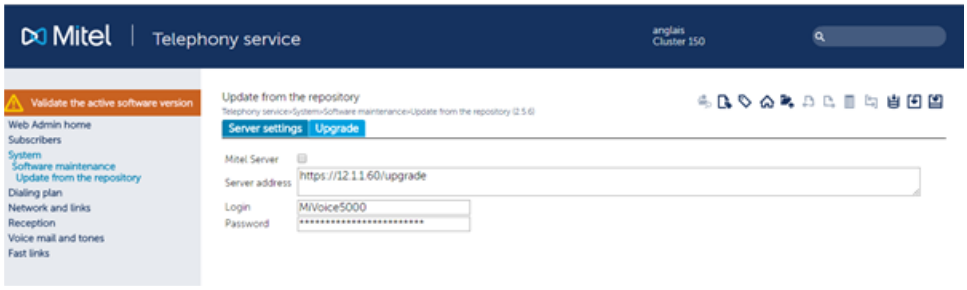
- Log in to Extranet Support in the upgrade package storage area and retrieve the package containing the application release to be installed in order to access it from the MiVoice 5000 Manager client.
- Click **Add** in the Upgrade server tab.
- A message appears indicating the software package format.
- Select the package **Rx.x_*.tar.gz**
- Wait for the message which indicates that the software package has been successfully installed.
- The application and system releases are indicated in the corresponding frames.



On the Cluster Server configure the access to the upgrade server located on MiVoice 5000 Manager:

From Web Admin, Menu **Telephony service>System>Software maintenance>Upgrade from directory**:

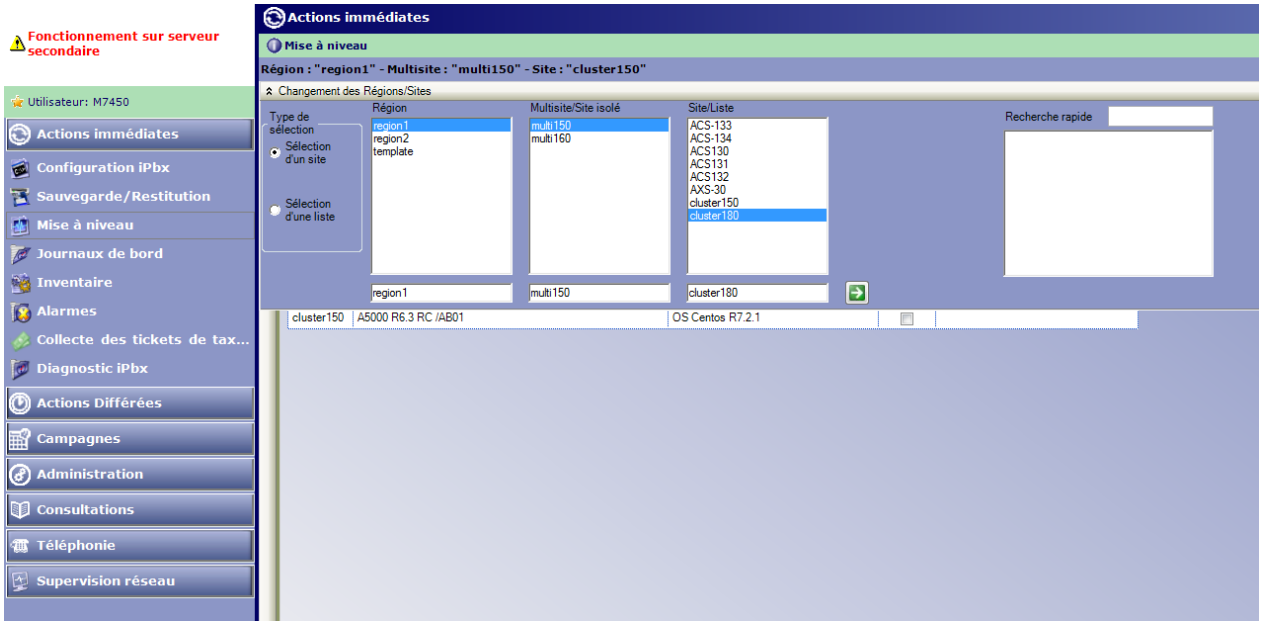
- In the **Server parameters** tab, check that the setting **Mitel Server** is unticked.
- Enter the IP address or name of the MiVoice 5000 Manager in the setting **Server address**.
- Enter the login and password used to access the private upgrade server. This must be the same as previously declared on MiVoice 5000 Manager.



- In the **Update** tab, for the setting **Update type**, select **Automatic**.

The software version list contains the releases available from MiVoice 5000 Manager:

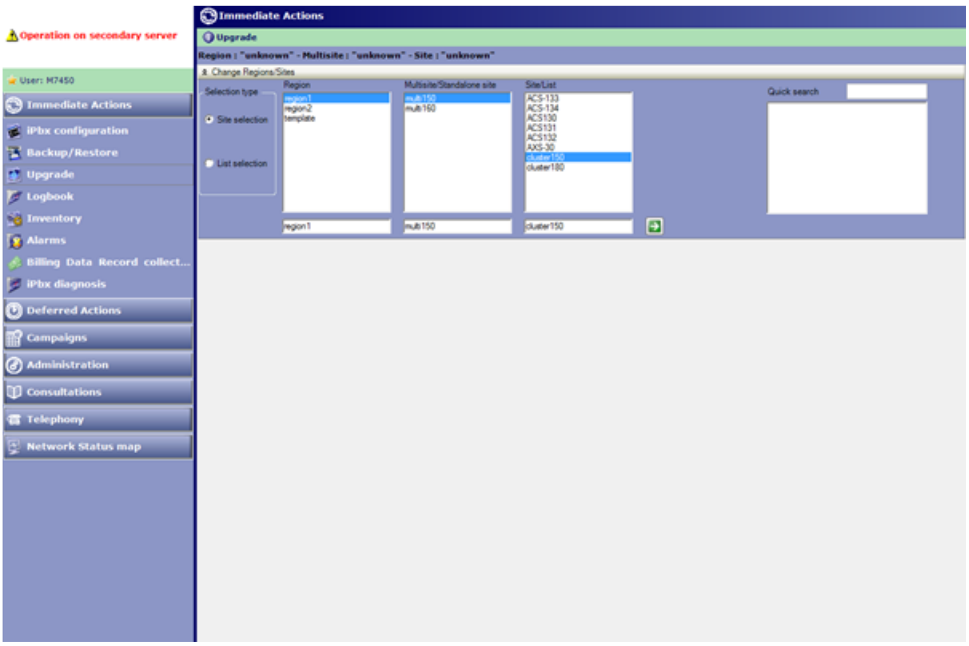
Note: If the password is not consistent, the list indicates "No software version".



From MiVoice 5000 Manager, Menu **Immediate actions>Upgrade,**

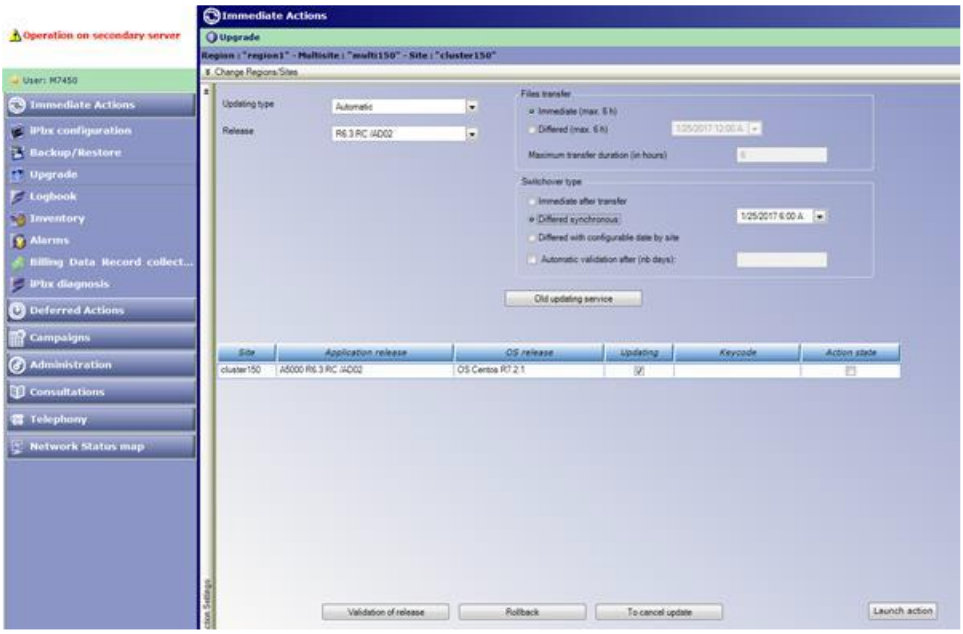
- Select the Cluster server on which the application release must be upgraded.
- Click on the green arrow.

On the Upgrade screen, select **New upgrade service**.



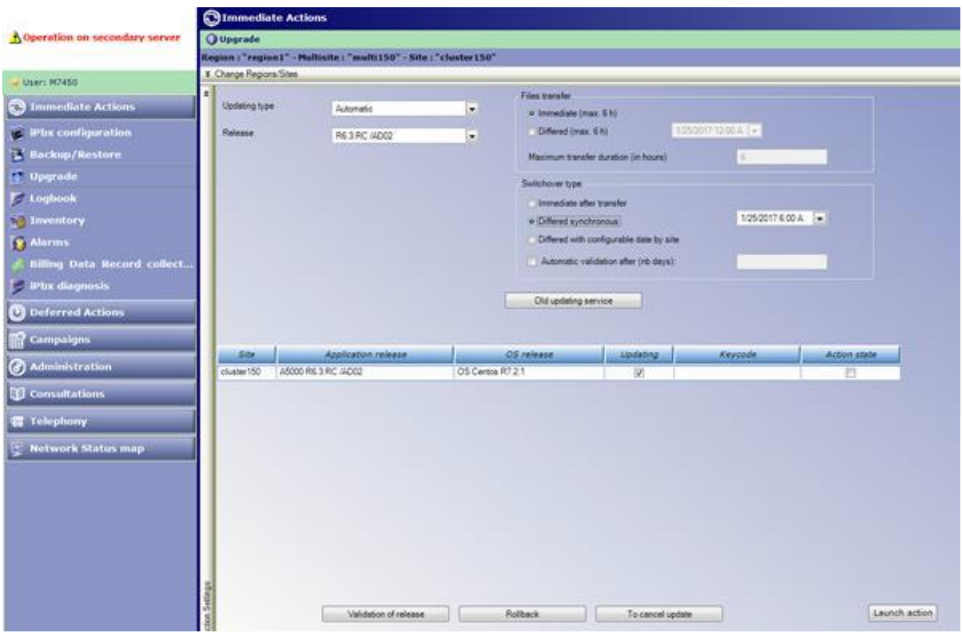
Note: If the mode was already selected during the last upgrade, it is already active. The button then shows 'old upgrade service'.

After selecting **New upgrade service**, the following screen opens:



- In the Update type field, select Automatic.
    - In the **Version** field, select the version of the system application version component to be downloaded on the site(s) concerned.
    - Enter the licence. The licence is required while changing a software release (example from V3.x to V3.x+1). In this case, a warning sign is displayed in the **Keycode** field.
    - Define the date of transfer of the software files in each node.
    - Define the switchover date for the nodes.

Note: it is advisable to leave some time between two operations to check that most of the iPBXs on the cluster have received the new release before switching over to this new release.



- Click **Launch action**.

A message indicates that the action has been taken into account.

The operations log lists the different actions in progress.

Description of other buttons (for information):

Version validation button:

This button is used to validate the test version. For a cluster, validation is carried out on the cluster server and nodes. If there is no test version, this is indicated in the result of the action, in the operations log. This action can only be carried out if a site is selected.

Rollback button:

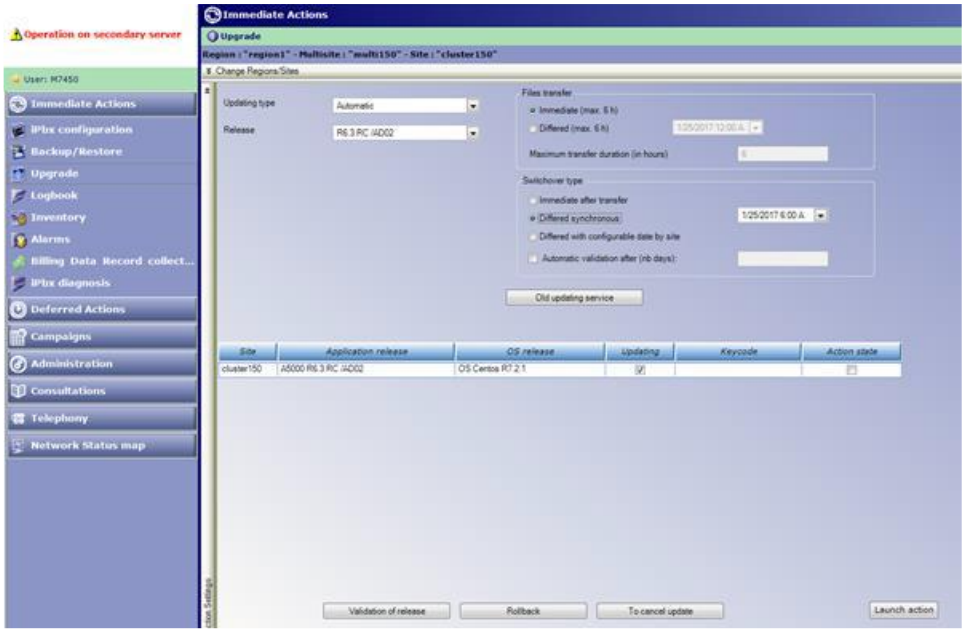
This button is used to restore the last software release validated if a release is in test mode. For a cluster, rollback is carried out on the cluster server and nodes. If no release is in test mode, this is indicated by the report of the action in the operations log. This action can only be carried out if a site is selected.

Cancel Update button:

This button is used to cancel a programmed deferred update. The update is cancelled, no matter the type of update (old method or by repository). If no update has been programmed on the system, this is indicated by the report of the action in the operations log. This action can only be carried out if a site is selected.

Then Log in to the Cluster Server's Web Admin to cancel the upgrade as this system must be manually upgraded with a change of OS.

Select Menu **Telephony service>System>Software maintenance>Upgrade from directory**.

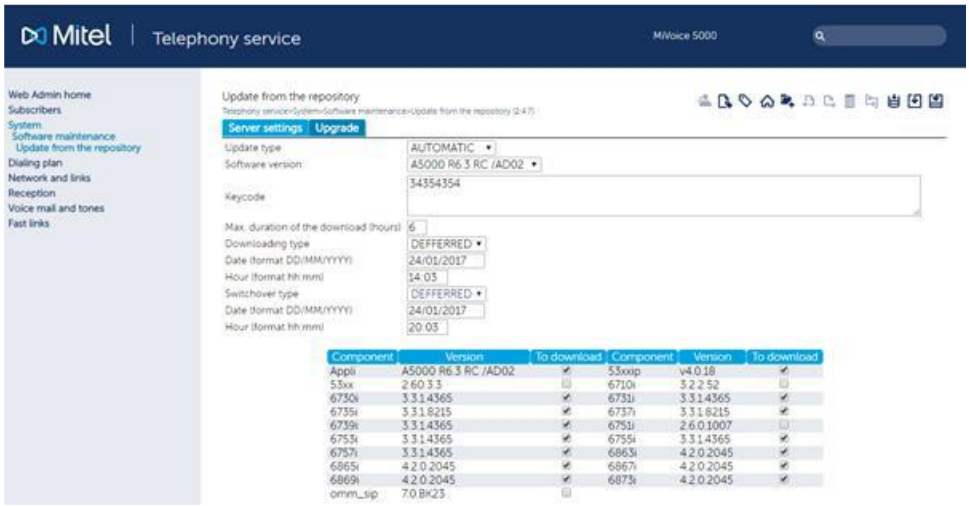


- Click **Cancel**.

This screen is also used to view (display) the information from MiVoice 5000 Manager (downloaded releases, download type and switchover type).

For each Mitel 5000 Gateway or Mitel 5000 Compact type node, check that the new release has also been downloaded.

Menu **Telephony service>System>Software maintenance>Upgrade from directory**.



This screen is also used to view (display) the information from MiVoice 5000 Manager (downloaded releases, download type and switchover type).

Then upgrade the Cluster Server to R8.x:

- For a standalone cluster, see Section 2 Upgrading to R8.x for Standalone MiVoice 5000 Server.
- For a redundant cluster, see Section 3 Upgrading to R8.x for a redundant MiVoice 5000 Server.

Also upgrade the MiVoice 5000 Server nodes as this is necessary to reinstall the operating system. See Section 2 Upgrading to R8.x for Standalone MiVoice 5000 Server.

After carrying out the upgrade, reconnect the cluster server and the MiVoice 5000 Server type nodes to the network.

On the scheduled switchover date in MiVoice 5000 Manager, all nodes will reboot with release R8.x.

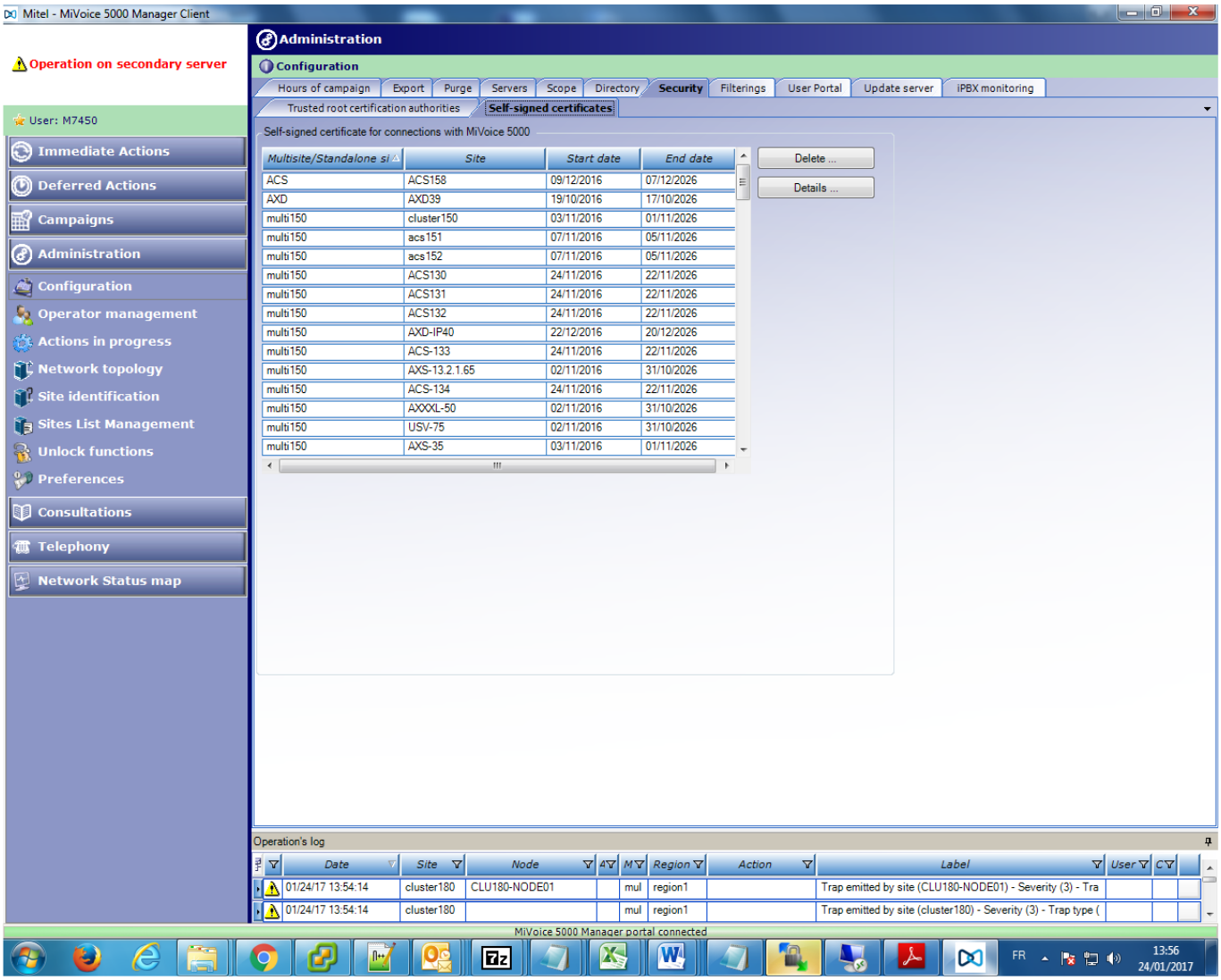
The R8.x cluster server will be sought as soon as the nodes restart.

At the end of the operation, an identification will be made by Manager when each iPBX is restarting. The administrator can then check the software release of each node.

If the version of a MiVoice 5000 Server type node is still not R8.x, it is rejected by the R8.x Cluster Server which then sends a message to Manager to upgrade that node to R8.x.

The status of the nodes can be viewed from the Cluster Server in Menu **Telephony service>System>Monitoring>Display statuses>Inter iPBX links>Intra-site links**.

- Check that MiVoice 5000 Manager has actually retrieved all the certificates from each node and from the cluster server. Menu **Administration>Configuration**
- Select the **Security** tab.



For MiVoice 5000 Manager clients accessing Web Admin, it is necessary to retrieve the self-signed certificate for each site. Refer to the MiVoice 5000 Manager Installation and Configuration document.

- For Mitel 5000 Compact type nodes, disconnect the USB key.

9 UPGRADING TO R8.X FOR A MULTISITE CONFIGURATION

Reminder

A MiVoice 5000 Manager is required to configure and manage a multi-site configuration.

A site refers indifferently to a MiVoice 5000 Server, Mitel 5000 Gateways or Mitel 5000 Compact type iPBX.

The MiVoice Server system may be physical or virtual.

It is possible to locally duplicate MiVoice 5000 Manager (LAN).

The MiVoice 5000 Server(s) may be duplicated locally or geographically (LAN or WAN).

Concerning upgrade

A new R8.x licence is required.

The MiVoice 5000 Server PCs must be configured with fixed IP addresses.

In R8.x, the operating system must be Rocky Linux. Therefore, it is mandatory to upgrade to Rocky Linux.

The upgrade may be carried out using the old method or new method (upgrade by repository).

The most effective method is the Repository method which limits the size of the data transmitted to the sites.

The MiVoice 5000 Manager release must be at least R8.x to upgrade from a Multisite configuration to R8.x. See Section 6 (standalone) or 7 (redundant).

It is advisable to install the new Manager certificate on administrators' client terminals.

For MiVoice 5000 Server sites, the upgrade must be done manually (Full re-installation with Rocky Linux). The system may be physical or virtual. Refer to Section 3 (Standalone) or Section 6 (Redundant).

For Mitel 5000 Gateway type sites, the update is made during the start procedure from MiVoice 5000 Manager.

ATTENTION : These systems are not compatible with versions ≥ R8.0. Their updates therefore only concern versions < R8.0.

For Mitel 5000 Compact type sites the upgrade must be made by connecting a specific USB key allowing the re-installation of the operating system and the MiVoice 5000 application as well as data restore.

Generally and after MiVoice 5000 Server is physically upgraded, see the description of Multisite upgrade in the MiVoice 5000 Manager User Guide.

For the Mitel 5000 Compact system, also refer to the document Mitel 5000 Compact - MCO Series - Upgrading to R8.0 via a USB key.

10 APPENDICES

10.1 MOUNTING AN ISO IMAGE

The mounting point must exist.

- Type in the following command:

  mkdir /mnt/iso

- Copy iso to /tmp

  mount /tmp/CD** /mnt/iso**

10.2 BACKING UP THE DATA ON MIVOICE 5000 MANAGER SERVER

You must back up the following data:

- MiVoice 5000 Manager configuration data, including LDAP database configuration data
- The pictures.

Backing up MiVoice 5000 Manager configuration

The different methods for creating the backup are:

- From the MiVoice 5000 Manager portal, use Choice **to start backing up the application. Click here** in Menu **Administration** (from a client terminal: **Erreur ! Référence de lien hypertexte non valide.**).
- Use daily backup, available in **/home/m7450/backup** (the most recent one).

The backups are stored in the directory **/home/m7450/backup** (see below for the content).

Backing up pictures

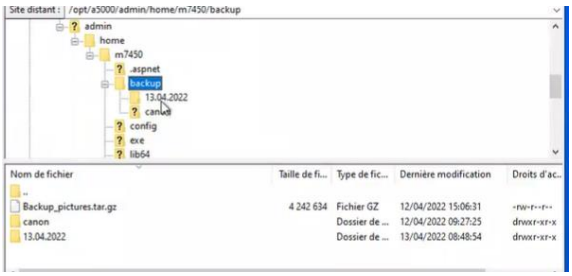
Run the script: **backupPictures.sh**.

The backups are stored in the directory **/home/m7450/backup** (see below for the content).

Then transfer this data to the (internal or external) location in question (e.g. USB).

Recommendation:

Group the backups in the same directory **(/home/m7450/backup**) to make it easier to restore the data later.



In the case of a backup on a USB key, at the end of the procedure, dismount the volume and remove the USB key from the active (master) machine.

Content of the backup directory

The last 31 backups are stored on MiVoice 5000 Manager Server, in the directory "**/home/m7450/backup**". Each backup is identified by its date.

By default, the backups are kept for 30 days. This period can be reduced if necessary by modifying the file **/home/m7450/portal.dll.config**.

- Modify the line

<add key="DELAI_SAVE_M7450" value="30"/> (the value must be between 3 and 30).

Retrieving the backups

To recover the backups:

From the portal administration window, click the link proposed in the option "**To recover MiVoice 5000 Manager application backups, click here**".

For a given date, the backup files are:

config.tar.gz : configuration files -> directories /home/m7450/automate, /home/m7450/portal, var/www/M7450 and /var/www/webmanagement/data

m7450.out: application data (psql database)

repository1.tar.gz : Directory /home/m7450/repository/system

repository2.tar.gz: Directories /home/m7450/repository/pabxdata (excluding iPBX backup) and home/m7450/repository/Users

repository3.tar.gz: Directory /home/m7450/repository/pabxdata (excluding iPBX backup)

repository4.tar.gz: Directory /home/m7450/repository/pabxconfig (except alarms and Inventory)

repository5.tar.gz: Directory /home/m7450/repository/pabxdata (iPBX backup)

backup_conf_ldap.tar.gz & ldap_file.ldiff: AM7450 LDAP backup

backup_nagios.tar.gz: Nagios configuration file backup

selfadmin.tar.gz: User Portal application data backup

syncAd.tar.gz: External synchronisation backup

tma.tar.gz: TMA data backup

webdata.tar.gz: back up of links to Mitel applications

10.3 RESTORING THE DATA ON MIVOICE 5000 MANAGER SERVER

The data is restored by running the following scripts from the server (order to be respected):

- Script for LDAP database configuration
- Script for restoring the MiVoice 5000 Manager configuration (with or without iPBX backups)
- Script for restoring pictures.

Procedure:

- Log in as **root**.
- Select the directory **/home/scripts_m7450**.

To restore LDAP data

- Log in as **root** (otherwise the LDAP database will not be restored).
- Select the directory **/home/scripts_m7450**.
- In the terminal window, type in the command **restaure_ldap.sh** followed by the setting **dd.mm.yyyy**, representing the date of the backup to be restored (input control). Example: "**#. /restaure_ldap.sh 24.06.2013**".

IMPORTANT : In a multi-site configuration with a directory replica, the replica must be recreated after the restore operation (refer to the MiVoice 5000 Manager User Guide).

To restore the MiVoice 5000 Manager configuration:

- Run the command **su - m7450**.

For standard restore without iPBX backups:

- In the terminal window, type in the command **restaure.sh** followed by the setting **dd.mm.yyyy**, representing the date of the backup to be restored (input control).

Example: "**#. /restore.sh 24.12.2007**"

The duration of the restore process depends on the size of the configuration.

For a restore operation with iPBX backups:

- In the terminal window, type in the command **restore.sh -total** followed by the setting **dd.mm.yyyy**, representing the date of the backup to be restored (input control). Example: "**#. /restaure.sh -total24.12.2007**".

The duration of the restore process depends on the size of the configuration.

Note : The restore script stops the portal automatically. During the operation, the script enumerates the files and data restored.

Restoring pictures:

- Log in as **root**.
- Select the directory **/home/scripts_m7450**.
- In the terminal window, enter the command: **#./restaurePictures.sh**
- Enter the backup directory name: **/home/m7450/backup**
- Enter the picture file name without extension: **pictures**.

After the restore operations, restart MiVoice 5000 Manager: # **service m7450 start**

10.4 MASK /ADDRESS PREFIX CONVERSION

Netmask Address	Prefix Length
255.255.255.255	/32
255.255.255.254	/31
255.255.255.252	/30
255.255.255.248	/29
255.255.255.240	/28
255.255.255.224	/27
255.255.255.192	/26
255.255.255.128	/25
255.255.255.0	/24 (Class C)
255.255.254.0	/23
255.255.252.0	/22
255.255.248.0	/21
255.255.240.0	/20
255.255.224.0	/19
255.255.192.0	/18
255.255.128.0	/17
255.255.0.0	/16 (Class B)
255.254.0.0	/15
255.252.0.0	/14
255.248.0.0	/13
255.240.0.0	/12
255.224.0.0	/11
255.192.0.0	/10
255.128.0.0	/9
255.0.0.0	/8 (Class A)
254.0.0.0	/7
252.0.0.0	/6
248.0.0.0	/5
240.0.0.0	/4
224.0.0.0	/3
192.0.0.0	/2
128.0.0.0	/1
0.0.0.0	/0 (The Internet)