

# **Moderro**

## **Remote Expert Manager**

### **Upgrade / Migration Guide**

Release 11

Moderro Technologies

[www.moderro.com](http://www.moderro.com)

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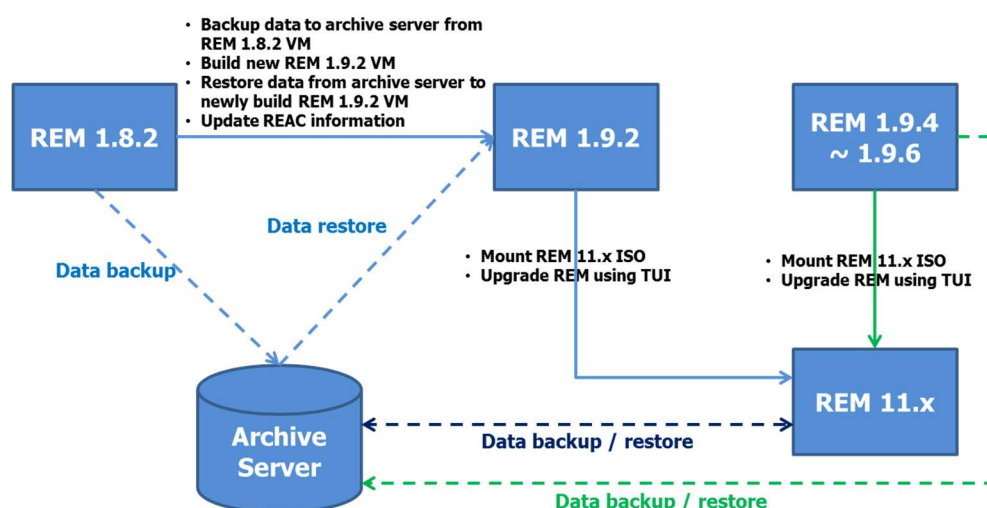
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## REM Upgrade

To upgrade REM to version 11.0, it is required to have a remote archive server, running on Linux operation system. The server should be able to accept Secure Shell (**SSH**) and Secure File Transfer Protocol (**SFTP**) connections. In addition, this archive server should not have a banner or login warning configured. Upgrading REM generally has two scenarios, and workflows are summarized as follows:

- Upgrade from REM 1.8.2 to REM 11.0 **(Step 1 to Step 21)**
  - a. Migrating database from old REM 1.8.x to REM 1.9.2.
  - b. Upgrading REM application from REM 1.9.2 to REM 11.0
- Upgrade from REM 1.9.x to REM 11.0 **(Step 17 to Step 21)**
  - a. Upgrading REM application from REM 1.9.x to REM 11.0.

The below diagram illustrates the REM migration/upgrade path.



NOTE: REM agent license is required for each agent in REM release 1.9.2 and above. Please refer to the "Managing Licenses" section of the Moderro Remote Expert Manager Administration Guide for instructions on how to obtain and add agent licenses.

It is recommended that this entire activity needs to be done in a maintenance window when there is no incoming requests hitting REM servers. It is also recommended to take snapshots of the REM VMs (using vSphere's snapshot feature) before proceeding.

Perform the following steps to migrate and upgrade REM:

- 1.) Take a backup from REM 1.8.x (perform on active node).
  - i. Enable the backup/restore feature of REM.
    - a) **vi /var/rem/tools/ias/template/rem.properties**
    - b) In the "Backup Restore Properties" section, update the following parameters:
      - **\$\_[FEATURE\_ENABLE]\* =True**  
(“True” to enable backup feature. “False” to disable backup feature.)
      - **\$\_[SERVER\_IP\_1]\*=< Server IP where the backup file needs to be stored >**

(Do not update username and password fields. You will be asked to provide the information, when the IAS script is executed later.)

- You may update job schedule parameters, if necessary. Schedule parameter configurations follow the “crontab” format in Linux system. The parameters can be configured by using the below conventions:
  - An asterisk (\*) can be used by any of these parameters as a valid value.
  - An asterisk (\*) is used to indicate that every instance (i.e. every hour, every weekday, etc.) of the particular time period will be used.
  - The values of parameters cannot be blank.
  - Multiple values for a parameter may be used. Those values have to be separated by commas (,). Here are some examples:
    - 30 18 \* \* \* (each day at 6:30 PM)
    - \* \* \* \* \* (every min)
    - 0 0 1,5,10 \* \* (midnight on 1st,5th & 10th of month)
    - \*/2 \* \* \* \* (Every 2 min)

Suppose you want to have a backup copy created at 6:30 pm every day. The configuration would look like:

```
$*[MIN]*=30
$*[HOUR]*=18
$*[DAY]*=*
$*[MONTH]*=*
$*[WEEKDAY]*=*
```

- You may update email notification parameters, if you wish to receive email notification once backup is done. Currently, REM only supports email relay, meaning that there is no support for authentication for SMTP server.
  - **\$\*[MAIL\_ENABLED]\*=true**  
 (“true” to enable email alert. “false” to disable email alert.)
  - **\$\*[SMTP]\*=<SMTP server IP>**
  - **\$\*[FROM]\*=rem\_admin@cisco.com**  
 (Sender email ID)
  - **\$\*[TO]\*=<A user email ID>**  
 (Recipients email ID)
- ii. Execute IAS tool.
  - a) **cd /var/rem/tools/ias/scripts**
  - b) **./main.sh**  
 (Provide all necessary information.)
- iii. Verify backup configuration.
  - a) **cat /var/rem/tools/backup/conf/backup.properties**
  - b) Write down the location of the parameters “workspace”. The default value is “/tmp/remote-expert/backup”.
- iv. Run backup script.
  - a) **cd /var/rem/tools/backup/scripts/**
  - b) **./backup**
- v. Once backup script is completed, it will create backup archived file at the directory “<workspace>/archive/” on the remote backup server. By default, the backup archive is located at “/var/rem/tools/backup/data/”. The file will look like:
 

**rem\_nov-16-2016\_09-00-30\_172.20.20.10.tgz**
- vi. Use the following naming convention to rename the archived file, based on your version of REM 1.8.x:

- REM 1.8.0 GA: 1.8.0-27-194-<dateString>.tgz
- REM 1.8.0 REGS: 1.8.0-28-32-<dateString>.tgz
- REM 1.8.1: 1.8.1-1-280-<dateString>.tgz
- REM 1.8.1 EM (NW): 1.8.1-2-43-<dateString>.tgz

If necessary, move the file to a desired directory for later use.

- 2.) Deploy two REM 1.9.2 FCS VMs for High Availability (HA) setup. Please refer to the “Moderro Remote Expert Manager Installation Guide” for more details. Make sure that each REM node has two network interface controller/card (NIC).
- 3.) Enable the backup / restore feature in REM HA, if you have not done so. Use the below table as references to modify parameters in the section of “Backup Restore Properties” of REM properties file.

Property	Corresponding Value
[FEATURE_ENABLE]	To enable backup/restore, set it to “true”. To disable this feature, set it to “false”.
[ARCHIVE_IDENTIFIER]	REM IP in case of single node. Public IP of node in case of REM HA.
[SERVER_ADDRESS]	IP address of the remote server storing backup files.
[SERVER_BACKUP_PATH]	Directory of remote server where the backup files are stored. You need to create the directory before executing backup operations.
[NO_BACKUP_FILES]	Number of backup archives to be stored in storage server. (Make sure that you have proper credentials / permission and disk space for archiving job.)
<p>To configure the corresponding properties to schedule backup procedure. An asterisk (*) is used to indicate that every instance (i.e. every hour, every weekday, etc.) of the particular time period will be used. For example, to have REM do backup at 6:30 pm every day, we will have the following configuration:</p> <pre> \$*[MIN]*=30 \$*[HOUR]*=18 \$*[DAY]*=* \$*[MONTH]*=* \$*[WEEKDAY]*=* </pre>	
[MAIL_ENABLED]	“true” to enable email notification. “false” to disable notification feature. If you configure email notification, make sure that you configure SMTP server as well.
[SMTP]	IP or FQDN of SMTP server.
[TO]	Recipient’s email ID. The ID must be valid.

- 4.) Execute the “REM Configuration Tool”. Make sure that all information in REM properties file is correct.
- 5.) Verify if REM HA is up and running. Perform the following:
  - i. Check if REM HA is operational.
    - a) Use a browser, and go to REAC via Virtual IP.  
<https://<REM Virtual IP>:8443/reac>
    - b) Navigate to the “DB Cluster” tab. Both “DB Cluster Manager” and “DB Cluster Nodes” should show in green, if REM HA functions properly.

REM Database Nodes				
<input checked="" type="checkbox"/> Activate				
	DB Node	Host	DB Cluster Manager	DB Cluster Nodes
<input type="radio"/>	database1	192.168.10.200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
<input type="radio"/>	database2	192.168.10.201	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

ii. Check the aliveness of REM nodes.

a) Use a browser, and access each node's REAC by using the below URLs:

<https://<primary node ip address>:8443/resc/isalive.html>

<https://<secondary node ip address>:8443/resc/isalive.html>

The message **"Alive"** should be displayed, if REM node works properly.

iii. Verify if DBs are in sync.

a) Use a browser, and access each node's REAC by using the below URLs:

<https://<primary node ip address>:8443/reac>

<https://<secondary node ip address>:8443/reac>

b) Navigate to the "Session" tab, and verify if numbers of records are the same in both nodes.

c) Navigate to other tabs, such as the "Document" and "Video" tab, to check if they have the same data in both nodes.

6.) Update SQL script for backup / restore operations on REM 1.9.2 server. **Perform this step on both REM servers if you have a HA setup.**

i. Create a TAC account on the REM 1.9.2 server.

ii. Upload new updated SQL script (**1.8.1-2-43-46\_to\_1.9.2.sql**) to a directory, such as `"/tmp"`, on REM server, using the TAC account created in the previous step.

iii. SSH into REM node using **TAC** account.

iv. Issue the below commands:

a) `cd /var/rem/tools/upgrade/upgradeSql/`

b) `sudo mv 1.8.1-2-43-46_to_1.9.2.sql 1.8.1-2-43-46_to_1.9.2.sql.original`

c) `sudo mv /tmp/ 1.8.1-2-43-46_to_1.9.2.sql .`

7.) Upload the archive file (created in Step 1) to an archiving server.

i. Make sure that follow the instruction in **Step 1-vi** to rename the desired archive file. For example, if you upgrade REM from version 1.8.1.2, the file name of your archive file should start with **"1.8.1-2-43-"**. So, the file name may look like:

**1.8.1-2-43-nov-16-2016\_172.20.20.10.tgz.tgz**

ii. Upload the archive file to a directory (i.e. `"/REM_Backup"`) on the archiving server, using an account with proper permission on the server.

**NOTE:**

- (1) The directory to store REM archive files needs to be created manually by users. REM may not create the directory automatically.
- (2) Make sure that the directory is in the `"[SERVER_BACKUP_PATH]"` field of REM properties file mentioned in **Step3**. Also provide proper user credentials when you execute REM Configuration Tool.



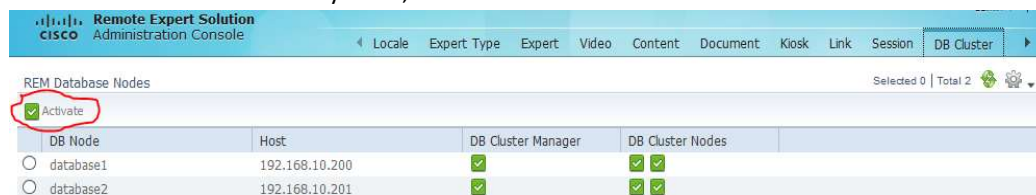
c) Follow the on-screen instructions, and wait for process completed.

iv. Synchronize the DBs between two nodes.

a) Use a browser to access REAC via **virtual IP** of REM HA.

b) Go to “DB Cluster” tab.

c) Select the DB of the secondary node, and click “**Activate**” button.



d) Make sure that that both DBs are up and running (showing in green).

10.) Update the Expert Types in REAC.

i. Navigate to the “Expert Types” tab in REAC.

ii. Select an Expert Type and click "Modify" button.

iii. Enter valid IVR Phone Number.

**NOTE:** The combination of “**Expert Type**” and “**Locale**” should be **unique**, and the **IVR number** for the expert type should be the **same** irrespective of the locales. For example, a REM has four locales (English, Spanish, French, and German), and all of them have an expert type group called “Commercial Lending “. According to the rule of REAC configuration, the IVR number for the “Commercial Lending” group could be the same for all locales.

iv. Choose the Locale.

v. Update the Queue Video.

vi. Enter the caption that should display in REIC under expert type image.

vii. Upload an image without a caption so it is language-neutral.

viii. Click "Update" button to save the changes.

ix. Repeat above sub-steps for all Expert Types.

x. To update the expert type of **Help**, select one **Help** expert type and click the “Modify” button.

xi. Choose **Help** from the Expert Type drop-down menu.

xii. Enter a valid directory number for help line.

xiii. Choose the Locale.

xiv. Upload the image for the **Help** button.

xv. Click the “Update” button to save the changes.

xvi. Repeat above sub-steps for all **Help** locales.

11.) Add new REM licenses. Make sure that **follow the below substeps in exact order**.

i. Log in REAC, and navigate to the “Expert” tab. **Delete all experts** that are migrated from old REM 1.8.x server.

ii. Navigate to the “Licensing” tab, and upload a new valid REM license.

iii. Once new license is added, log out REAC, clear browser (the one opens REAC) cache and re-log in REAC to verify license status.

iv. Navigate to the “Expert” tab, and add all experts who will be used in REM 11.0 solution back to the system.

v. Verify if experts are added successfully (shown green in the “Registration Status”), and license usage has correct counts in the “Licensing” tab.



**NOTE:** The following behaviors may be observed, if agent deletion/addition operations are performed when there is **no** new license added:

- (1) A warning window with the message “**Expert cannot be added, license not available**” is shown, when you try to delete an expert. However, the expert will be deleted after closing the pop-up window.
- (2) A warning window with the message “**Expert cannot be added, license not available**” is shown, when you try to add or modify an expert. However, the expert will NOT be added or modify, since a valid license is not presented.

12.) (Optional) Modify video information in REAC if you will use a different media server (i.e. Adobe Media Server) or the video files are changed:

- i. Navigate to the “Video” tab in REAC.
- ii. Choose a video and click the “Modify” button.
- iii. Provide the proper video URL.
- iv. Upload a thumbnail image by clicking the “Browse” button.
- v. Repeat above sub-steps for all video files.

13.) (Optional) Modify document information in REAC if the documents are changed:

- i. Navigate to the “Document” tab in REAC.
- ii. Select a document and click the “Modify” button.
- iii. Upload the document by clicking the “Browse” button.
- iv. Repeat above sub-steps for all document files.

14.) Verify that the IEC has the correct policy in the IEM. Clear IEC’s web cache in **IEM**, and reboot the kiosk in **REAC**.

15.) Make a call from the kiosk. Perform a sanity test if possible.

**NOTE:** If REM HA functions properly, it is recommended to take snapshots of both REM VMs (using vSphere’s snapshot feature) before proceeding.

16.) Remove SSH Key Exchange. This step is only required if you have a REM HA setup.

- i. SSH into the **primary** (master) node using **installer** account.
- ii. In TUI menu, go to “d) REM Server Administration” -> “h) Node Configuration”. Select “h) Master Node – Remove Slave Node”.
- iii. To check if the secondary (slave) node is removed properly, in TUI menu, go to “d) REM Server Administration” -> “h) Node Configuration” -> “d) All Nodes – View Configured Nodes”.
- iv. SSH into the **secondary** (slave) node using **installer** account.
- v. In TUI menu, go to “d) REM Server Administration” -> “h) Node Configuration”. Select “c) All Nodes – Turn Node Support Off”. A warning message will display. Press **Y** to continue.
- vi. To verify if the node has been removed from REM HA pair, go to “d) REM Server Administration” -> “h) Node Configuration” -> “d) All Nodes – View Configured Nodes”. The pairing status of node should show as **Stand-alone**.
- vii. SSH into the **primary** (master) node using **installer** account.
- viii. In TUI menu, go to “d) REM Server Administration” -> “h) Node Configuration”. Select “c) All Nodes – Turn Node Support Off”. A warning message will display. Press **Y** to continue.
- ix. To verify if the node has been removed from REM HA pair, go to “d) REM Server Administration” -> “h) Node Configuration” -> “d) All Nodes – View Configured Nodes”. The pairing status of node should show as **Stand-alone**.

17.) Upgrade the PostgreSQL database. **Perform this step on both REM servers if you have a HA setup.** Make sure that **this step is completed successfully before upgrading** REM 11.x. Also, this step **requires** a **TAC** account registered with your REM server.

- i. In vSphere Client, select the 1.9.2 VM, and mount new REM 11.x ISO to it.
- ii. SSH into REM 1.9.2 server via **TAC** account.
- iii. Issue the below commands **in exact order**, and follow on-screen instructions.
  - a) **`sudo service tomcat stop`**
  - b) **`sudo service postgresql-9.1 stop`**
  - c) **`sudo mount /dev/cdrom /media`**
  - d) **`sudo cp -f /home/installer/upgrade.repo /etc/yum.repos.d/upgrade.repo`**
  - e) **`sudo yum clean all`**
  - f) **`sudo yum -y update postgresql91 postgresql91-libs postgresql91-server`**
  - g) **`sudo rm -f /etc/yum.repos.d/upgrade.repo`**
  - h) **`sudo umount /media`**
  - i) **`sudo service postgresql-9.1 start`**
  - j) **`sudo service tomcat start`**

**NOTE:** Before starting this step, make sure that you have at least one copy of working backups of database and related artifacts (using REM's backup/restore feature).

18.) Upgrade REM application (rpm files) from REM 1.9.2 FCS to REM 11.0 FCS. Perform the following tasks.

- i. Upload new REM ISO to a desired Datastore on your ESXi server, if necessary.
- ii. Mount new REM ISO to your REM VM, if you have not done so. Make sure that both "Connected" and "Connected at power on" are checked in the "Device Status" section of your vSphere Client.
- iii. Open VM's console window, and log in REM using "**installer**" account.
- iv. In TUI, go to "d) REM Server Administration" -> "i) Upgrade Server". Press "C" to continue when prompted.
- v. Once upgrade is done, network service needs to be restarted.
  - a) In the main menu of TUI, go to "c) Services Control" -> "a) Networking" -> "a) Restart networking".
  - b) Follow the on-screen instructions, and wait for the process to be completed.
- vi. Log out the console.
- vii. Repeat the above sub-steps on the other REM server, if you have a HA setup.

19.) Re-configure two REM nodes as a HA setup (including the configuration of **SSH Key Exchange**). Execute REM Configuration Tool on the **primary** (master) node. Please refer to "Moderro Remote Expert Manager Installation Guide" for more details,

**NOTE:** If a **self-signed certificate** is needed, make sure that set the parameter of "**GENERATE\_SELF\_CERT**" to "**true**" in the REM properties file.

20.) Perform the post-upgrade configuration. This step **requires** a **TAC** account registered with your REM server.

- i. Due to the change in encryption mechanism, all credentials created in old REM server will be reset. Log in REAC using the **default credentials** (admin / admin) to change default password for the "admin" account. If necessary, perform password changes for other accounts, while logging in the "admin" account.
- ii. Create a TAC account on REM server. If you have a HA setup, perform this sub-step on the **primary** server first. It is fine to use the same user name.
- iii. SSH into REM 11 VM via **TAC** account created in the previous sub-step.
- iv. Issue the below command and follow on-screen instructions.  
**`sudo sh -lc "chage -l -1 -m 0 -M 99999 -E -1 cisco"`**

- v. Remove old Cisco SSL library. **This step is ONLY required when REM is upgraded to version 11.0-638-443 or above.**
  - a) **`sudo service tomcat stop`**
  - b) **`sudo yum remove -y ciscossl ciscossl-fom tomcat-native`**
  - c) **`sudo service tomcat start`**
- vi. Repeat the above sub-steps on the secondary REM server, if you have a HA setup.

21.) Do the followings to verify if the upgrade is done properly.

- i. Check if REM HA is operational.
  - a) Use a browser, and go to REAC via Virtual IP.  
<https://<REM Virtual IP>:8443/reac>
  - b) Navigate to the “DB Cluster” tab. Both “DB Cluster Manager” and “DB Cluster Nodes” should show in **green**, if REM HA functions properly.
- ii. Check the aliveness of REM nodes.
  - a) Use a browser, and access each node’s REAC by using the below URLs:  
<https://<primary node ip address>:8443/resc/isalive.html>  
<https://<secondary node ip address>:8443/resc/isalive.html>  
  
The message “**Alive**” should be displayed, if REM node works properly.
- iii. Verify if DBs are in sync.
  - a) Use a browser, and access each node’s REAC by using the below URLs:  
<https://<primary node ip address>:8443/reac>  
<https://<secondary node ip address>:8443/reac>
  - b) Navigate to the “Session” tab, and verify if numbers of records are the same in both nodes.
  - c) Navigate to other tabs, such as the “Document” and “Video” tab, to check if they have the same data in both nodes.
- iv. Make a call from the kiosk. **Perform a sanity test.**

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## Acronyms

- a. CTI - Computer Telephony Integration. Provides a link between telephone systems and computers to facilitate incoming and outgoing call handling and control; the physical link between a telephone and server.
- b. CTS - Cisco Telepresence System
- c. CUCM - Cisco Unified Communications Manager
- d. CVP - Cisco Voice Portal
- e. DC - Direct Connect
- f. IVR - Interactive Voice Response
- g. JTAPI - Java Telephony Application Program Interface. Sun Microsystems telephony programming interface for Java. It provides a set of classes and interfaces that provide access to call control and telephony device control as well as media and administrative services.
- h. MS - Media Sense
- i. NTP - Network Time Protocol
- j. REAC - Remote Expert Admin Console
- k. READ - Remote Expert Agent Desktop
- l. REIC - Remote Expert Interactive Controller
- m. REM - Remote Expert Manager
- n. RESC - Remote Expert Session Controller
- o. SNMP - Simple Network Management Protocol
- p. SSH-2 - Secure Shell version 2
- q. UCCE - Unified Contact Center Enterprise
- r. UCCX - Unified Contact Center Express