



CHAPTER 6

Upgrading the Cisco MGC Software

This chapter describes procedures for upgrading from a major Cisco MGC software release such as 7.4(x) or 9.x(x) to the latest Cisco MGC software release without service interruption.

The following sections in this chapter describe the procedures for upgrading to the latest Cisco MGC software release:

- [Requirements for Upgrading, page 6-1](#)
- [Quick Guide to Upgrading Your Cisco MGC Software, page 6-2](#)
- [Before You Begin, page 6-3](#)
- [Upgrading the Cisco MGC Software Release, page 6-8](#)
- [Downgrading the Cisco MGC Software Release, page 6-15](#)
- [If Migration Fails, page 6-17](#)

Requirements for Upgrading

Your hardware and software environment must meet the following requirements before you can upgrade to the latest Cisco MGC software release:

Table 6-1 *Requirements for Upgrading*

Requirement	Description
Disk requirements	Minimum of 2 disks
Disk size	Minimum of 18 GB
Operating system	Solaris 8 operating system Note If you are running Cisco MGC software release 7.4(x) or 9.1(5), you must first upgrade your operating system to Solaris 8 and the latest patches.
Patch levels	Install the latest patch versions on both the Active and Standby hosts. Refer to Cisco.com to determine the latest patch versions available.

Table 6-1 Requirements for Upgrading

Requirement	Description
pom.dataSync parameter setting	Located in the XECfgParm.dat file. Set the pom.dataSync parameter to false when upgrading from a patch level that does not support Seamless Upgrade to a patch level that supports it. Otherwise, the standby system will not transition to the standby state and will remain out-of-service (OOS).
Installer requirements	<ul style="list-style-type: none"> Experienced Solaris system administrator. Familiarity with system administration tasks such as mounting file systems and running tar to save and restore files.

**Note**

Before starting the upgrade, obtain a remote server IP address from your system administrator. A remote file server is required when backing up configuration data (see [Step 4](#) in the “[Backing Up the Configuration Data](#)” section on page 6-10).

Quick Guide to Upgrading Your Cisco MGC Software

**Caution**

Always start migration from the standby box (Host B).

The following table provides a guide to upgrading to the latest Cisco MGC software release. For details, refer to the page numbers located on the right-hand column of the table.

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Before You Begin

You can do limited provisioning while upgrading from Cisco MGC software releases 9.x. Limited provisioning means you can provision the following during the upgrade or downgrade period:

- Screening configuration
- Ported numbers
- Number termination
- Advice of Charge (AOC)
- A number dial plan selection



Caution

Do not make any provisioning changes while upgrading from Cisco MGC software releases 7.4(x) or 9.x to the latest software release.



Note

Contact Cisco TAC if you need assistance (see the [“Obtaining Documentation, Obtaining Support, and Security Guidelines”](#) section on page xviii).

If You are Upgrading from Cisco MGC 7.4(x)

Step 1 If you are not using any screening data (AWHITE, ABLACK, BWHITE, BBLACK), proceed to Step 2 prior to uninstalling Cisco MGC 7.4(x).

If you are using screening, perform the procedure in Step 3 following *after* restoring the configuration data, as described in [Chapter 2, “Sun Solaris 8 Operating System Installation,”](#) and *prior* to installing Cisco MGC release 9.x.

Step 2 Remove the `.ttdb` files from the `/opt/CiscoMGC/etc` directory. Enter the following command to cause a complete installation of the TimesTen database instead of an upgrade.

```
rm /opt/CiscoMGC/etc/*.ttdb
```

The procedure is complete.

Step 3 Enter the following commands prior to uninstalling 7.4(x) for each customer group ID that you have data for—this will create export files of your data that can later be re-imported:

```
prov-add:files:name="awhitefile", file="XXXX.awhite", action="export
prov-add:files:name="bwhitefile", file="XXXX.bwhite", action="export
prov-add:files:name="ablackfile", file="XXXX.ablack", action="export
prov-add:files:name="bblackfile", file="XXXX.bblack", action="export
```

Where XXXX is a customer group ID (dialplan name).

Step 4 After the installation of the Cisco PGW is complete you can provision the data again (if necessary) by doing the following for each of the export files created prior to the uninstallation of Cisco MGC release 7.4:

```
prov-add:files:name="awhitefile", file="XXXX.awhite", action="import
prov-add:files:name="bwhitefile", file="XXXX.bwhite", action="import
prov-add:files:name="ablackfile", file="XXXX.ablack", action="import
prov-add:files:name="bblackfile", file="XXXX.bblack", action="import
```

The procedure is complete.

If You are Upgrading from a Cisco MGC 9.x Release to Another 9.x Release

You must run the current Cisco MGC 9.x uninstall script *before* upgrading to or downgrading from another Cisco MGC 9.x version.



Note

You must run the uninstall script of the current Cisco MGC 9.x version to avoid upgrade problems.

Back Up Your Software

- Step 1** Verify that there are no existing major alarms. Log in to both Host A (active box) and Host B (standby box) and enter the following MML command:

```
rtrv-alm
```

If major alarms are found, resolve the problems first before proceeding with the upgrade.

- Step 2** Before migrating from Cisco MGC software release 9.x prior to 9.4(1), you must first back up the `/opt/SW` directory.
- a. To ensure that you do not lose the contents of the `/opt/SW` directory, create a sub-directory under `/opt/SW/9.x directory name` and save the contents there. This will provide you a copy of the originally-installed 9.x patches, in case you need to fall back to it.
 - b. Remove the `.pkg` files from the `/opt/SW` directory before proceeding with the upgrade.

- Step 3** Save the configuration data in both Host A and Host B. To create an `mgc-backup` folder under `/tmp`, log in as `mgcusr` and enter the following commands:

```
mkdir /tmp/mgc-relnum-backup
mgcbkup -d /tmp/mgc-relnum-backup
```

Where `relnum` is the current software release number.

For example, to save the configuration data for a system running Release 9.4(1), you would enter the following commands:

```
mkdir /tmp/mgc-941-backup
mgcbkup -d /tmp/mgc-941-backup
```

- Step 4** Copy the `XECfgParm.dat` file. Enter the following command:

```
cp /opt/CiscoMGC/etc/XECfgParm.dat /tmp/mgc-relnum-backup/XECfgParm.dat.relnum
```

Where `relnum` is the current software release number.

For example, to copy the `XECfgParm.dat` file for a system running Release 9.4(1), you would enter the following command:

```
cp /opt/CiscoMGC/etc/XECfgParm.dat /tmp/mgc-941-backup/XECfgParm.dat.941
```

- Step 5** Copy the files in the `mgc-relnum-backup` folder to a remote file server using the FTP file transfer utility. Type the following command to FTP the files to a remote server and press **Enter**:

```
ftp remote_server_IP_address
```



Note The remote server IP address is provided by your system administrator.

Make sure that you are in binary mode before you FTP your files.

- Step 6** If you are using MMDB, do the following steps:
- a. Verify that both the Active and Standby hosts have the latest Cisco MGC 9.x system patch.
 - b. Log in as **mgcusr** and type the following command in both the Active and Standby Hosts, then press **Enter**:


```
./mod_replication_port.sh
```
 - c. If you are upgrading to Release 9.6(x) from Release 9.3(x), 9.4(x), or 9.5(x), type the following command in both the Active and Standby Hosts, then press **Enter**:


```
./delete_replication.sh
```

Check for Mated STP Pairs

Before upgrading the standby host (Host B) to Cisco MGC 9.3(2), check if Mated Signal Transfer Point (STP) pairs are currently configured on the system.

On the active host (Host A), type the following MML command and press **Enter** to retrieve the provisioning information for all the SS7SUBSYS:

```
prov-rtrv:ss7subsys:"all"
```

Following is an example of the text that is displayed. Look for **STP** entries in the **MATEDAPC** column in the text display.

```
va-seattle mml> prov-rtrv:ss7subsys:"all"
MGC-01 - Media Gateway Controller 2003-06-16 23:15:18.093 EST
M RTRV
"session=932-Japan-9:ss7subsys"
/*
NAME          SVC          PRI          MATEDAPC          SSN          PROTO          STPSCPIND          RANSPROTO
----          -
mate1         stp1          1            stp2              0            SS7-ITU          0                  SCCP
mate2         stp2          1            stp1              0            SS7-ITU          0                  SCCP
*/
;
```

- a. **If Mated STP pairs are configured on the SS7SUBSYS, they are displayed in the MatedAPC column:** You must create routes for the mated pairs before proceeding with the upgrade. Follow the procedures in the [“Add an SS7 Route for Each Mated STP \(from Release 7.4\(x\) only\)”](#) section on page 6-6.
- b. **If Mated STP pairs are not configured on the SS7SUBSYS, the MatedAPC column is blank:** Continue to the [“Check for ^M Characters in XECfgParm.dat”](#) section on page 6-7, below.

Add an SS7 Route for Each Mated STP (from Release 7.4(x) only)

To ensure a seamless upgrade from Cisco MGC 7.4(x), one SS7 route is required for each STP if the STP is mated.

On the active host (Host A), do the following procedures to add a route for each mated STP:

- Step 1** Find the OPC, DPC and linkset names that are associated with STPs. Type the following MML command and press Enter:

```
prov-rtrv:ss7route:"all"
```

Text similar to the following is displayed:

```
MGC-01 - Media Gateway Controller 2003-06-16 23:22:42.542 EST
M RTRV
  "session=932-Japan-9:ss7route"
/*
NAME          OPC          DPC          LNKSET        PRI
----          -
route1        opc-sc2200    dpc1         ls1           1
route2        opc-sc2200    dpc2         ls2           1
route3        opc-sc2200    dpc2         ls1           1
route4        opc-sc2200    dpc1         ls2           1
route-stp1    opc-sc2200    stp1         ls1           1
route-stp2    opc-sc2200    stp2         ls2           1
*/
;
```

- Step 2** Start a provisioning session. Type the following command and press **Enter**:

```
prov-sta::srcver="active" dstver="newconfig"
```

- Step 3** Create priority 2 SS7Routes to the "SVC"s (SERVICE) through the corresponding MATEDAPCs, as shown in the following example.

In this example, the following provisioning command is entered to create an SS7 route to SVC (stp1) via MATEDAPC (mateStp):

```
prov-add:ss7route:name="rte-to-stp1",desc="Route to stp1 via mated STP",opc="opc1",
dpc="stp1",lnkset="ls-to-mateStp",pri=2
```

Where:

ls-to-mateStp = the MML name of the previously provisioned linkset to "mateStp"

opc1 = the MML name of the OPC associated with linkset to "mateStp"

Example:

The following example is based on the output above. One route for each STP is needed.

```
prov-add:ss7route:name="route-stp1",desc="Route to stp1 via mated STP",opc="opc-pgw2200 ",
dpc="stp1",lnkset="ls2",pri=2
prov-add:ss7route:name="route-stp2",desc="Route to stp2 via mated STP",opc="opc-pgw2200 ",
dpc="stp2",lnkset="ls1",pri=2
```

- Step 4** Deploy the configuration changes done in [Step 3](#) (above), to the STANDBY platform by typing the following command:

```
prov-dply
```

- Step 5** Type the following command to execute a MML command on ACTIVE platform:

```
sw-over::confirm
```

- Step 6** Wait about 10 minutes then make sure the platforms have switched to ACTIVE/STANDBY.
- Step 7** Perform a manual switchover using the **sw-over::confirm** MML command on the ACTIVE platform.
- Step 8** Follow normal upgrade process to upgrade the STANDBY platform to the latest software release.
- Step 9** To complete the upgrade process, go to [Step 2 on page 6-8](#).
-

Check for ^M Characters in XECfgParm.dat

Before you perform backup procedures on your configuration data, make sure to remove ^M characters (Ctrl-m or carriage return) at the end of each line in the file. The ^M characters may be present if the XECfgParm.dat file was modified by a Microsoft Windows (DOS)-based editor like Notepad.

If you do not remove the ^M characters, you might get an error similar to the following when you install the new software version:

```
ttRestore: SQL Error: Failed to connect to data store
```

There are two ways to remove ^M characters and avoid this error. **Before** backing up your configuration data, perform one of the following procedures:

- Run the **dos2unix** utility. For instructions, see [Running the dos2unix Utility, page 6-7](#).
- Edit the XECfgParm.dat file with the vi editor. For instructions, see [Editing the XECfgParm.dat File, page 6-7](#).

Running the dos2unix Utility

To run the **dos2unix** utility to remove ^M characters, perform the following steps *before* backing up your configuration data:

- Step 1** Set your directory to the location of the XECfgParm.dat file by entering the following command:
- ```
cd /opt/CiscoMGC/etc
```
- Step 2** Move the XECfgParm.dat file by entering the following command:
- ```
mv XECfgParm.dat XECfgParm.dat.old
```
- Step 3** Run the **dos2unix** utility by entering the following command:
- ```
dos2unix XECfgParm.dat.old XECfgParm.dat
```
- Step 4** Using the vi editor, verify that all the ^M characters have been removed from the XECfgParm.dat file.
- 

## Editing the XECfgParm.dat File

Check for the presence of a ^M character before starting the upgrade. If found, perform the following steps *before* backing up your configuration data.

- Step 1** Set your directory to the location of the XECfgParm.dat file by typing the following command:

```
cd /opt/CiscoMGC/etc
```

**Step 2** Edit the XECfgParm.dat file with the vi editor by typing the following command:

```
vi XECfgParm.dat
```

**Step 3** Execute the following command in the vi editor to remove the ^M character from the end of each line.

```
1,$s/^v^m$//
```

**Where:**

^v is Ctrl-v

^m is Ctrl-m

There is no space between //.

**Step 4** Save the changes and exit vi.

---

Continue to the following section, [“Upgrading the Cisco MGC Software Release”](#).

## Upgrading the Cisco MGC Software Release



**Note**

Both the active host (Host A) and standby host (Host B) must be running either Cisco MGC software release 7.4(x) or 9.x.



**Note**

If you are upgrading from Cisco MGC release 7.4(x) and using screening data (such as AWHITE, ABLACK, BWHITE, BLACK), you must first see the [“If You are Upgrading from Cisco MGC 7.4\(x\)”](#) section on page 6-3.

To upgrade to a later Cisco MGC software release:

- 
- Step 1** On both Host A and Host B, make sure that **pom.dataSync** is set to **False**. Use an editor such as vi to edit the **/opt/CiscoMGC/etc/XECfgParm.dat** file and set this value.
- Step 2** On Host B, log in as root. Enter the following command to stop the Cisco MGC and shut down Host B:
- ```
/etc/init.d/CiscoMGC stop
```
- Step 3** On Host B, install the latest available system and protocol patches for the system you are running. Refer to the *Release Notes for the Cisco Media Gateway Controller Software Release x* (release version of the software you are running) for the patch location and installation procedure.
- Step 4** Start Host B. Type the following command and press **Enter**:
- ```
/etc/init.d/CiscoMGC start
```
- Step 5** Make sure that the replication of call states is occurring between Host A and Host B are now running the latest patches.

To verify whether replication of call states is occurring between Host A and Host B, enter the following MML command:

```
rtrv-cic:<ss7sigpath>;cic=<cicno>
```

- Step 6** Perform a manual switchover on Host A. Let Host B (the standby host running Cisco MGC 7.4(x) or 9.x and the latest patch) take over and become active. Enter the following command:
- ```
sw-over::confirm
```
- Step 7** Check to make sure that Host B is processing calls.
- Step 8** Wait until Host A becomes standby. Shut down Host A.
- Step 9** On Host A, log in as root. Enter the following command to stop the Cisco MGC:
- ```
/etc/init.d/CiscoMGC stop
```
- Step 10** On Host A, **install the latest available system and protocol patches for the system you are running**. Refer to the *Release Notes for the Cisco Media Gateway Controller Software Release 7* for the patch location and installation procedure.
- Step 11** Start Host A. Type the following command and press **Enter**:
- ```
/etc/init.d/CiscoMGC start
```
- Step 12** Back up the Main Memory Database (MMDB) on Host A, as shown in the following procedure, [“Backing Up the Main Memory Database”](#).


Continue to the following section, [“Backing Up the Main Memory Database”](#).

Backing Up the Main Memory Database

To back up the Main Memory Database (MMDB):

-
- Step 1** Log in as **mgcusr**. As **root**, set user to **mgcusr** by typing the following command and pressing **Enter**:
- ```
su -l mgcusr
```
- Step 2** Back up the database, using the following command:
- ```
/opt/CiscoMGC/local/backupDb.sh /opt/CiscoMGC/etc/export.ttdb
```
- Step 3** Enter one of the following commands to create the file **migrate.ttdb**.
- If your host is running Cisco MGC 7.4(x):**

```
/opt/TimesTen32/32/bin/ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```
 - If your host is running Cisco MGC 9.x:**

```
/opt/TimesTen4.1/32/bin/ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```
-  **Note** If you are upgrading to Release 9.6(1), enter the command as follows:
- ```
/opt/TimesTen5.0/32/bin/ttVersion presenter
```
- 
- Step 4** Create a version file of the MMDB (**export.ttdb**). Enter the following commands for systems running Cisco MGC software release 7.4(x) or 9.x(x):
- ```
rm -f /opt/CiscoMGC/etc/version.ttdb
```

Step 5 Determine the database version of the **version.ttdb** file.

a. **For Cisco MGC 7.4(x)**, enter the following command:

```
/opt/TimesTen32/32/bin/ttVersion presenter
```

Text similar to the following example is displayed:

```
[ output = "TimesTen Release x.y.z build time ... ]
```

b. **For Cisco MGC 9.x**, enter the following command:

```
/opt/TimesTen4.1/32/bin/ttVersion presenter
```



Note If you are upgrading to Release 9.6(1), enter the command as follows:

```
/opt/TimesTen5.0/32/bin/ttVersion presenter
```

Text similar to the following example is displayed:

```
[ output = "TimesTen Release x.y.z build time ... ]
```

Step 6 Replace the “TimesTen Release x.y.z” with the version output. Type the following command and press **Enter**:

```
echo xyz >/opt/CiscoMGC/etc/version.ttdb
```

Step 7 Verify that the backup is successful. Type the following commands and press **Enter** to make sure that the **version.ttdb**, **migrate.ttdb**, and **export.ttdb** files are present:

```
cd /opt/CiscoMGC/etc
ls *.ttdb
```

Continue to the following section, [“Backing Up the Configuration Data”](#).

Backing Up the Configuration Data

To back up the configuration data:

Step 1 Log in as **root**.

Step 2 If you are upgrading from Release 7.4(x), save the **snmpd.cnf** file located in **/opt/CiscoMGC/snmp** in another directory. Enter the following command:

```
cp /opt/CiscoMGC/snmp/snmpd.cnf /opt/CiscoMGC/dialPlan
```

Step 3 Enter the following commands to back up the **etc** and **dialPlan** folders:

```
cd /opt/CiscoMGC
mkdir upgrade-backup
tar cvf /opt/CiscoMGC/upgrade-backup/MGC.tar ./etc ./dialPlan
```



Note The **mkdir upgrade-backup** command is used to create a new folder in **/opt/CiscoMGC**.

Step 4 Type the following command to FTP the files to a remote server and press **Enter**:

```
ftp <remote server IP address>
```



Note The remote server IP address is provided by your system administrator.

Text similar to the following is displayed:

```
Name (ip address: root):
```

Step 5 Press **Enter** to continue.

Text similar to the following is displayed:

```
Password:
```

Step 6 Type the following and press **Enter**:

```
bin
```

Step 7 Type the following command and press **Enter**:

```
lcd /opt/CiscoMGC/upgrade-backup
```

Step 8 Type the following command and press **Enter**:

```
put MGC.tar
```

Step 9 Shut down the standby Host A by entering the following MML command:

```
/etc/init.d/CiscoMGC stop
```

Step 10 **Install the Solaris 8 operating system on Host A if you are upgrading from Release 7.4(x). If not, skip this step.** For the Solaris 8 operating system and Solaris patches installation procedures, refer to [Chapter 2, “Sun Solaris 8 Operating System Installation”](#).

Continue to the following section, [“Restoring Data Files”](#).

Restoring Data Files

Do the following to restore data files:

Step 1 Log in as **root**.

Step 2 Enter the following command to move the configuration files to the **tmp** folder:

```
cd /tmp
mkdir saved
cd /tmp/saved
```

Step 3 Enter the following commands to restore the data files:

a. From the local tape drive:

```
tar xvf /dev/rmt/0
```

b. From a remote file server:

Using FTP, copy the file **MGC.tar** from a remote file server to the **/tmp/saved** folder.

**Note**

You must use the binary mode of FTP and verify that the files are successfully transferred to the **/tmp/saved** folder before continuing to restore data files.

Step 4 You may need to create the CiscoMGC directory. To do this, enter the following commands:

```
cd /opt
mkdir CiscoMGC
cd /opt/CiscoMGC
cp /tmp/saved/MGC.tar MGC.tar
tar xvf MGC.tar
```

Step 5 Type the following command and press **Enter** to verify that both the **etc** and **dialPlan** folders are present:

```
ls
```

Step 6 Log in as **root**.

Step 7 Download the latest installation script (patch) to the /opt/SW directory. Install the Cisco MGC software release and the latest patches on Host A.

For Cisco MGC software installation procedures, refer to the [Chapter 3, “Cisco MGC Software Release 9 Installation.”](#) For patch installation procedures, refer to the *Release Notes for the Cisco Media Gateway Controller Software Release 9.x*.

**Caution**

Do not add to your provisioning data until both of your PGW hosts have been upgraded to the current Cisco MGC software release.

Step 8 If you are upgrading from Release 7.4(x), enter the following command to move the saved **snmp.cnf** file back to the correct directory:

```
mv /opt/CiscoMGC/dialPlan/snmpd.cnf /opt/CiscoMGC/snmp/snmpd.cnf
```

**Note**

When you install the latest release of the Cisco MGC software, the existing snmpd.cnf file is renamed and a new empty snmpd.cnf file is created. The command above assumes that you backed up the old snmpd.cnf file as described in Step 2 of the [“Backing Up the Configuration Data”](#) section on page 6-10. If you did not back up the old snmpd.cnf file, you can delete the new empty file and rename the snmpd.cnf.custorig file to snmpd.cnf to restore your old SNMP configuration.

**Caution**

When you upgrade your Cisco MGC software with patches or the newest release, there may be changes to the SNMP configuration file. After an upgrade, ensure that the snmpd.cnf file is still properly configured for your system. If you find that it is not, contact the Cisco TAC. You can find information on contacting the Cisco TAC in the [“Obtaining Documentation, Obtaining Support, and Security Guidelines”](#) section on page xvii.

Step 9 Verify that the Cisco MGC software release installation on Host A is successful by using an editor (such as vi) to check that there are no errors in the **/var/adm/MGC_install.log** file.

- a. **If the upgrade is successful:** Continue to [b.Step 10](#).
- b. **If the upgrade is not successful:** Continue to the [“If Migration Fails”](#) section on page 6-17 then return to [Step 10 on page 6-13](#) to continue the upgrade process from Cisco MGC 7.4(x) to 9.x.

**Caution**

If you are upgrading from Release 7.4(x) to Release 9.5(2), and you are going to use the config-lib tool to copy your Release 7.4(x) configuration to your Release 9.5(2) production, you must manually convert your XECfgParm.dat file to support Release 9.5(2) by performing the steps below once you have *finished* using config-lib and *before* you restart the Cisco MGC software.

1. Copy your Release 9.5(2) XECfgParm.dat file to a new filename. For example:

```
cp /opt/CiscoMGC/etc/XECfgParm.dat /opt/CiscoMGC/etc/9.5_XECfgParm.dat
```

2. Copy your Release 7.4(x) XECfgParm.dat file from the Configuration Library to the production directory. For example:

```
cp /opt/CiscoMGC/etc/CONFIG_LIB/new/XECfgParm.dat /opt/CiscoMGC/etc/XECfgParm.dat
```

3. Compare the content of the original Release 9.5(2) XECfgParm.dat file to your new production XECfgParm.dat file. Make note of parameters that are supported in Release 9.5(2) that are not in your production file.

4. Edit your production XECfgParm.dat file (using a tool such as vi), adding the parameters to the file that are supported in Release 9.5(2).

Step 10 Start the Cisco MGC software on Host A. Type the following command and press **Enter**:

```
/etc/init.d/CiscoMGC start
```

Step 11 Verify that the configuration is migrated to the desired Cisco MGC 9.x software release on Host A and ensure that all states are operational by entering the following MML commands:

```
rtrv-ne
rtrv-tc:all
rtrv-dest:all
rtrv-c7lnk:all
rtrv-iplnk:all
```

Step 12 Make sure that replication of call states is occurring between Host B (the active host running Cisco MGC 7.4(x) or 9.1(5) and the latest patch) and Host A (the standby host running the Cisco MGC 9.3(2) or later software release). Enter the following command on the standby host (Host A):

```
rtrv-tc:all
```

Step 13 Perform a manual switchover on Host B (the active host). Type the following command and press **Enter**:

```
sw-over::confirm
```

Step 14 Let Host A take over and become active.

Step 15 Verify that Host A (running Cisco MGC 9.3(2) or later software release) is processing calls. Type the following command and press **Enter**:

```
rtrv-tc:all
```

**Note**

If the call replication fails, or if Host A is not processing calls, refer to the “Cisco Media Gateway Controller Operations, Maintenance, and Troubleshooting Guide” for procedures on how to resolve the problem. Call Cisco TAC if you require further assistance.

To downgrade to a previous software release, see the section “Downgrading the Cisco MGC Software Release” section on page 6-15.

- Step 16** Back up the MMDB. Refer to the “Backing Up the Main Memory Database” section on page 6-9 for backup procedures.
- Step 17** Back up the configuration data. For backup procedures, refer to the “Backing Up the Configuration Data” section on page 6-10 and follow [Step 1](#) through [Step 8](#).
- Step 18** Shut down Host B (the standby host running Cisco MGC 7.4(x) or 9.1(5) and the latest patch) by entering the following MML command:
- ```
/etc/init.d/CiscoMGC stop
```
- Step 19** Install the Solaris 8 operating system and the necessary patches on Host B if you are upgrading from Cisco MGC 7.4(x). Install the necessary patches if you are upgrading from Cisco MGC 9.x. For installation procedures, refer to [Chapter 2, “Sun Solaris 8 Operating System Installation.”](#)
- Step 20** Restore the data files. Refer to the “Restoring Data Files” section on page 6-11 and follow [Step 1](#) through [Step 5](#) to restore the data files.
- Step 21** Install Cisco MGC 9.x software and the latest patch on Host B. For installation procedures, refer to the “Installing the Cisco MGC Software 9.2(x) and Higher Releases” section on page 3-3.
- Step 22** Set the value of **pom.dataSync=true**. Use an editor such as vi to edit the file `/opt/CiscoMGC/etc/XECfgParm.dat` to set this value.
- Step 23** Bring up Host B as standby.

**Note**

**Before starting the Cisco MGC software:** If your configuration includes BAMS and you are upgrading to Cisco MGC 9.4(x), you must first re-apply the changes noted in Steps 4 and 5 in the section “Configuring the Cisco MGC for Using BAMS” of the *BAMS User’s Guide*.

- Step 24** Start the MGC software on Host B (which now has the Cisco 9.x software). Enter the following command:
- ```
/etc/init.d/CiscoMGC start
```
- Step 25** Wait for Host B to come up fully as standby host.
- Step 26** If you are upgrading to Release 9.6(x) from Release 9.3(x), 9.4(x), or 9.5(x) and your Cisco PGW 2200 uses the MMDB, you must restart database replication between the active and standby hosts. Type the following command and press **Enter**:
- ```
./setup_replication.sh
```

The upgrade from the Cisco MGC 7.4(x) and 9.x is now complete.

# Downgrading the Cisco MGC Software Release

Two scenarios for downgrading to Release 7.4(x) or 9.x software release are detailed in this section:

- [Scenario 1: Standby Host is Running Cisco MGC 7.4\(x\) or 9.x](#)
- [Scenario 2: Active and Standby Hosts are Running Cisco MGC 9.x or Later Software Release](#)

**Note**

Features in later software releases may not be supported if you are downgrading to an older release.

## Scenario 1: Standby Host is Running Cisco MGC 7.4(x) or 9.x

When these two conditions apply, do the following procedures to downgrade from Cisco MGC 9.x:

- Host A (active Host) is running the latest version of Cisco MGC 9.x
- Host B (standby host) is running Cisco MGC 7.4(x) or 9.x and the latest patch

- 
- Step 1** Set the value of **pom.dataSync=false**. Use an editor such as vi to edit the `/opt/CiscoMGC/etc/XECfgParm.dat` file to set this value.
- Step 2** Trigger switchover on Host A, the active Host, running Cisco MGC 9.x. Host B becomes active.
- Step 3** Shut down Host A. Type the following command and press **Enter**:
- ```
/opt/init.d/CiscoMGC stop
```
- Step 4** On Host A, install the following:
- a. Solaris 2.6 operating system and the necessary patches, if you are downgrading to Releases 7.4(x) or 9.1(5). Otherwise, proceed to Step 4b. For installation procedures, see [Chapter 8, “Sun Solaris 2.6 Operating System Installation.”](#)
 - b. Software release originally installed on your system prior to the upgrade (either Cisco MGC 7.4(x) or 9.x).
For Cisco MGC installation procedures, see the following:
 - For Cisco MGC 9.1(5), see [Chapter 7, “Cisco MGC Software Release 9.1\(5\) Installation.”](#)
 - For later Cisco MGC releases, see [Chapter 3, “Cisco MGC Software Release 9 Installation.”](#)
 - For Cisco MGC 7.(x), see the “Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide.”
 - c. Latest patches (the same patch installed on Host B).
- Step 5** Set the value of **pom.dataSync=true**. Use an editor such as vi to edit the file `/opt/CiscoMGC/etc/XECfgParm.dat` to set this value.
- Step 6** On Host A, start the Cisco MGC software with the latest patches as standby host.
- Step 7** Make sure the configuration is backed up.
- Step 8** Make sure that replication of call states is occurring between Host B (the active host running Cisco MGC 7.4(x) or 9.x and the latest patch) and Host A (the standby host running Cisco MGC 7.4(x) or 9.x and the latest patches).
- Type the following command and press **Enter**:
- ```
rtrv-tc:all
```

This completes the downgrade procedure for [Scenario 1: Standby Host is Running Cisco MGC 7.4\(x\) or 9.x](#). For assistance, call Cisco TAC.

## Scenario 2: Active and Standby Hosts are Running Cisco MGC 9.x or Later Software Release



### Caution

All provisioning that is done after the upgrade will be lost because the system is using backup data.

To downgrade to Cisco MGC 7.4(x) or 9.1(5) when both the active and standby hosts are running Cisco MGC 9.3(2) or later software release:

- 
- Step 1** Shut down Host B (standby host).
- Step 2** To restore data files, refer to the [“Upgrading the Cisco MGC Software Release”](#) section on page 6-8.
- Step 3** If you are downgrading to Release 7.4(x) or 9.1(5), you must reinstall the Solaris 2.6 operating system and all of the patches that apply to it. Otherwise, proceed to Step 4. For installation procedures, refer to [Chapter 8, “Sun Solaris 2.6 Operating System Installation.”](#)
- Step 4** Create a **CiscoMGC** folder. Enter the following commands to create the **CiscoMGC** folder and extract data files:
- ```
cd /opt
mkdir CiscoMGC
cd /opt/CiscoMGC
cp /tmp/saved/MGC.tar MGC.tar
tar xvf MGC.tar
```
- Step 5** On Host B, install Cisco MGC 7.4(x) or 9.x and the latest patch.
- Step 6** On Host B, start the software release that was originally installed on your system prior to the upgrade (either Cisco MGC 7.4(x) or 9.x software) and the latest patch.
- Step 7** Set the value of **pom.dataSync=false**. Use an editor such as vi to edit the file **/opt/CiscoMGC/etc/XECfgParm.dat** to set this value.
- Step 8** Bring up Host B as standby.
- Step 9** Make sure that the configuration is backed up.
- Step 10** Make sure that replication of call states are occurring between Host A (the active host running the latest version of the Cisco MGC software) and Host B (the standby host running Cisco MGC 7.4(x) or 9.x and the latest patch).
- On the standby Host B, type the following command and press **Enter**:
- ```
rtrv-tc:all
```
- Step 11** Trigger switchover on Host A. Enter the following command:
- ```
sw-over::confirm
```
- Host B should become active.

- Step 12** Shut down Host A (now the standby host) and install the following:
- Solaris 2.6 Operating system:** If downgrading to Cisco MGC 7.4(x) or 9.1(5), see [Chapter 8, “Sun Solaris 2.6 Operating System Installation.”](#)
 - Cisco MGC software release that was originally installed on your system prior to the upgrade—either Cisco MGC 9.x or 7.4(x).
For Cisco MGC installation procedures, see the following:
 - For Cisco MGC 9.1(5), see [Chapter 7, “Cisco MGC Software Release 9.1\(5\) Installation.”](#)
 - For later Cisco MGC releases, see [Chapter 3, “Cisco MGC Software Release 9 Installation.”](#)
 - For Cisco MGC 7.(x), see the “Cisco Media Gateway Controller Software Release 7 Installation and Configuration Guide.”
- Step 13** Set the value of **pom.dataSync=true**. Use an editor such as vi to edit the file **/opt/CiscoMGC/etc/XECfgParm.dat** to set this value.
- Step 14** Bring up Host A and ensure that call replication is taking place between Host A and Host B. Type the following command and press **Enter**:
- ```
rtrv-tc:all
```

---

This completes the downgrade procedures for Scenario 2.

## If Migration Fails

When upgrading the Cisco MGC software, you may encounter unique instances which result in migration failures. An unsuccessful migration is indicated by the following message in the log:

```
Error migrating
```

If this occurs, you must install the latest patches then run **config-lib**, as shown in the following procedures.



**Note**

**If you are migrating to Cisco MGC 9.4(1) and the migration fails:** The subroutine that adds the addition of the software packages exits and the last package is skipped after a migration failure. If this occurs, perform the following command on the file located in the **APPLICATIONS** directory:

```
cd APPLICATIONS
pkgadd -d CSC0gd004.pkg
```

- 
- Step 1** Download the latest Cisco MGC system and protocol patches.
- Step 2** Run the **config-lib** script (this script resides in **opt/CiscoMGC/local**). Type the following command and press **Enter**:
- ```
config-lib
```
- Text similar to the following is displayed:
- ```
Configuration File Library Main Menu

1. List Configuration Versions in Library
```

```

2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit> 2

```

**Step 3** Type **2** to select the option **Save Production to a new Library Version** and press **Enter**.

This operation will copy the current version of configuration files from the PRODUCTION area to a new LIBRARY version.

Text similar to the following is displayed:

```
Is this what you want (y/n)?
```

**Step 4** Type **y** to confirm your selection and press **Enter**.

Text similar to the following is displayed:

```
Please Enter a Tag for this Version:
```

**Step 5** Assign a configuration file name (referred to as "Tag" in the text display above) and press **Enter**. For example, *backup\_config\_01*.

You are returned to the main menu and text similar to the following is displayed:

```
Copying to the backup_config_01 version...
```

```
Completed the save
```

```
The Configuration File Library Main Menu
```

```

1. List Configuration Versions in Library
2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit>

```

**Step 6** Type **3** to select the option **Copy Library Version to Production** and press **Enter**.

A screen showing the saved configuration version is displayed:

```
Configuration Versions
```

```

1. backup_config_01
***Current Production Version = backup_config_01
Enter Selection to Copy or 'q' to go back>

```

**Step 7** Type the number that matches the previously provided file name (for example, in this case, type **1** for **backup\_config\_01**) and press **Enter**.

A screen similar to the following displays the saved configuration version:

```
***Start checking if migration is needed...
```

```
starting migration ...
```

```

migrating from version 9.2003 to version 9.3 ...
migrating version.dat
migrating variant.dat
migrating alarmCats.dat
migrating compTypes.dat
migrating tables.dat
migrating buckets.dat
migrating alarmTable.dat

```

```
migrating thresholds.dat
migrating measProfs.dat
migrating measCats.dat
migrating mdlProcess.dat
migrating extProcess.dat
migrating extNodeTypes.dat
migrating profileTypes.dat
migrating mmlCommands.dat
migrating properties.dat
migrating sigPath.dat
migrating dial plan and route analysis files
Migrating routing files...
Migrating dial plans...
Migrating IP links...
Migrating C7IP links...
migrating TimesTen database
Migrating database from 9.2003 to 9.3
Database successfully migrated to 9.3

migrating from version 9.3 to version 9.3001 ...
migrating dynamic files completed
migrating version.dat
migrating propSet.xml.dat
migrating propVal.xsd.dat
migrating variant.dat
migrating alarmCats.dat
migrating compTypes.dat
migrating tables.dat
migrating buckets.dat
migrating alarmTable.dat
migrating thresholds.dat
migrating measProfs.dat
migrating measCats.dat
migrating mdlProcess.dat
migrating extProcess.dat
migrating extNodeTypes.dat
migrating profileTypes.dat
migrating mmlCommands.dat
migrating properties.dat
migrating sigPath.dat
migrating dial plan and route analysis files
Migrating routing files...
Migrating dial plans...
Migrating IP links...
Migrating C7IP links...
migrating TimesTen database
Migrating database from 9.2003 to 9.3
Database successfully migrated to 9.3

migrating from version 9.3 to version 9.3001 ...
migrating dynamic files completed
migrating version.dat
migrating propSet.xml.dat
migrating propVal.xsd.dat
migrating variant.dat
migrating alarmCats.dat
migrating compTypes.dat
migrating tables.dat
migrating buckets.dat
migrating alarmTable.dat
migrating thresholds.dat
migrating measProfs.dat
migrating measCats.dat
migrating mdlProcess.dat
```

```

migrating extProcess.dat
migrating extNodeTypes.dat
migrating mmlCommands.dat
migrating profileTypes.dat
migrating codec.dat
migrating static files completed
migrating profiles.dat
migrating properties.dat
migrating dial plan and route analysis files
Migrating routing files...
Migration routing file:routeAnalysis.dat:
Migrating dial plans...
Migration dialplan file:MGX7.dialPlan:
Migrating IP links...
Migrating C7IP links...
migrating TimesTen database
Migrating database from 9.3 to 9.3001
Database successfully migrated to 9.3001

migration completed successfully
***finish checking migration...
This operation will copy the selected version of each configuration file
from the LIBRARY to the PRODUCTION area.
Do you want to overwrite the production files (y/n)?

```

**Step 8** Type y and press Enter.

Text similar to the following is displayed:

```

Removing data files in Production Area....
/opt/CiscoMGC/etc/*.routeAnalysis: No such file or directory
Copying data files of selected version to the data Production Area....

Completed copy

The Configuration File Library Main Menu

1. List Configuration Versions in Library
2. Save Production to a new Library Version
3. Copy Library Version to Production
4. Remove Configuration Library Version
Enter Selection or 'q' to quit>

```

**Step 9** Type q to quit and press Enter.

q

**Step 10** Ensure that the **config-lib** migration works and that all states are operational by entering the following MML commands:

```

rtrv-ne
rtrv-tc:all
rtrv-dest:all
rtrv-c7lnk:all

```

Contact Cisco TAC if you need assistance (see the [“Obtaining Documentation, Obtaining Support, and Security Guidelines”](#) section on page xvii).

The procedure for running **config-lib** is now complete.