



## CHAPTER 5

# Migrating to Solaris 10 and Cisco PGW 2200 Softswitch Software Release 9.8

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## Introduction

This chapter describes how to migrate your Cisco PGW 2200 Softswitch to the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8.

This chapter contains the following information:

- [Conditions for Migration, page 5-1](#)
- [Cautions and Notes, page 5-2](#)
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  - [Replacing Hard Disks on an Existing Solaris 10 Platform, page 5-35](#)

## Conditions for Migration

Your hardware and software environment must meet the following conditions before you can use the procedures provided below to migrate your software to Solaris 10:

- Your system must have at least two disks.

**Note**

If you plan to replace the Cisco PGW 2200 Softswitch hard disks during the upgrade, ensure that you have two replacement disks.

- The disks in the system must be at least 18 GB in size.
- You (or the person doing the upgrade) must be an experienced Solaris system administrator. You must be familiar with system administration tasks such as mounting file systems and running **tar** to save and restore files.

Use [Table 5-1](#) to determine the appropriate steps to upgrade your system.

**Table 5-1** *Solaris 10 and Cisco PGW 2200 Softswitch Release 9.8 Migration Conditions*

Condition	Action
If you are upgrading the disk drive but not upgrading the software...	Follow the procedure in the <a href="#">“Replacing Hard Disks on an Existing Solaris 10 Platform”</a> section on page 5-35.
If you are migrating from Solaris 8 to Solaris 10...	You must install the Sun Solaris 10 Operating System and Cisco PGW 2200 Softswitch software Release 9.8 on your Cisco PGW 2200 Softswitch platform.
If you are migrating from the old Cisco PGW 2200 Softswitch software releases to Release 9.8(1)	See <a href="#">Table 5-2</a> to determine the migration procedure.

## Cautions and Notes

Before starting the upgrade, consider the following cautions and notes:

**Caution**

Before starting the upgrade, make sure the Cisco PGW 2200 Softswitch software is shut down, and the system administrator is logged in as **root**.

**Caution**

Always start the migration or upgrade from the standby Cisco PGW 2200 Softswitch host.

**Caution**

Resolve any major alarms on the Cisco PGW 2200 Softswitch before proceeding with the upgrade or migration.

**Caution**

Do not make any provisioning changes to the Cisco PGW 2200 Softswitch during the upgrade to the Cisco PGW 2200 Softswitch software Release 9.8.

**Caution**

When upgrading a redundant system, verify that the `pom.dataSync` parameter (located in `/opt/CiscoMGC/etc/XECfgParm.dat`) is set to **false** on both Cisco PGW 2200 Softswitch hosts in order to maintain calls and preserve your configuration.

**Caution**

Features such as session refresh, mid-call updates, and DTMF propagation might not work as expected for calls that were established before the start of the upgrade because complete call continuity across upgrade and switchover is not supported, which means that although established calls are replicated during upgrade, the data that is replicated is limited to basic call information.

**Caution**

Perform configuration export and migration to Release 9.8(1) in the laboratory.

**Caution**

On the upgraded version available in the lab, create and execute a list of test cases revolving around the core functionality for which deployment is being used. Pay special attention to the test cases involving the set of configured optional trunk group properties in the current deployment. This is because in some cases, the parameter value interpretation and changes in usage occur, and these might not be documented for all the cases. These test cases should also include scenarios revolving around billing (CDR generation and interpretation) for the most common call flows in the deployment.

**Caution**

Check the versions of PGW adjuncts for compatibility with the new PGW version. If required, consult the Cisco Technical Assistance Center.

**Caution**

Please keep the rollback procedure at hand when you are going to upgrade your system.

**Note**

The Cisco PGW 2200 Softswitch supports a live upgrade from the Sparc-based platforms to the Opteron-based platforms. There is no service outage during the upgrade. For detailed procedure of this live upgrade, see the [“Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms” section on page 5-22](#).

## Required Software

You must have the following software:

- Cisco Solaris 10 Operating System Jumpstart Disk. There are two versions of this disk, one for each of the supported platform types. If your host platform is a Sun Opteron-based platform, use the Cisco Solaris 10 Operating System Jumpstart Disk for Opteron-based Platforms. Otherwise, use the Cisco Solaris 10 Operating System Jumpstart Disk for Sparc-based Platforms.
- Cisco Solaris 10 Operating Environment CD. The latest version of the version is available at:
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-sparc> (Sparc platform)
  - <http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-sol10-opteron> (Opteron platform)

- Cisco Installation CD, which includes the new release of the Cisco PGW 2200 Softswitch software. For information on latest patches, see the *Release Notes for the Cisco PGW 2200 Softswitch Release 9.8(1)* at [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/pgw/9/release/note/rn981.html](http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/release/note/rn981.html)

## License Installation

Before you begin installation, obtain and install a Cisco PGW 2200 Softswitch license file using the instructions provided in “[Installing the License File, page 3-16](#)”.

## Recording System Data

When you upgrade to Sun Solaris 10, you must reenter various elements of your system data, because the installation overwrites your existing system data. To ensure that you have all of your system data, record the contents of the following files:

- /etc/default
- /etc/defaultrouter
- Hostname files for each interface (such as /etc/hostname.hme0 or /etc/hostname.bge0)
- /etc/hosts.equiv
- /etc/group
- /etc/nsswitch.conf
- /etc/passwd
- /etc/resolv.conf
- /etc/shadow
- /etc/inet/hosts
- /etc/inet/netmasks
- /etc/inet/ntp.conf



### Note

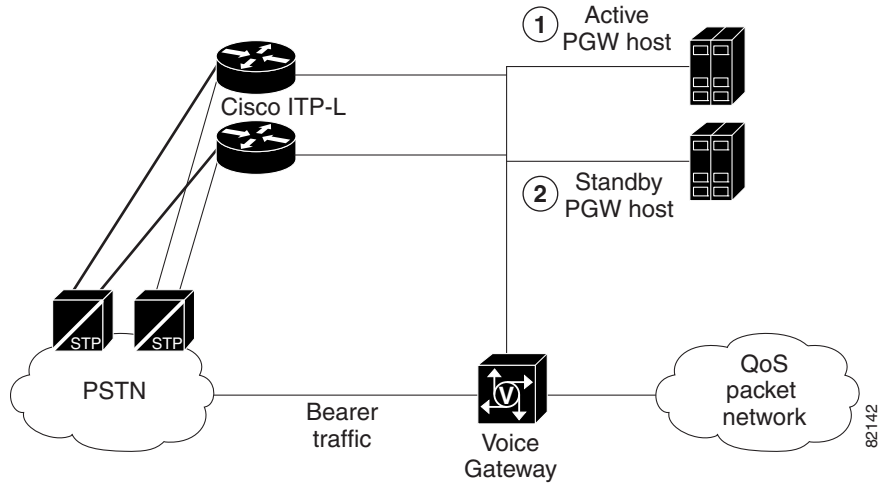
You may have already recorded some of this information based on the “[Required Site-Specific Information](#)” section on page 1-3 and the “[Required Machine-Specific Information](#)” section on page 1-3.

## Migration Overview

In order to migrate to Release 9.8 of the Cisco PGW 2200 Softswitch software, you need to install the software on both the active and standby Cisco PGW 2200 Softswitch hosts.

During the migration procedure, you must set each host to both active and standby. For clarity, the Cisco PGW 2200 Softswitches are labeled PGW 1 and PGW 2. PGW host 1 is the host that is active at the beginning of the procedure, and PGW host 2 is the host that is set to standby at the beginning of the procedure.

Figure 5-1 Cisco PGW 2200 Softswitch Host Labeling



Cisco PGW 2200 Softswitch supports both Sparc-based and Opteron-based platforms on Release 9.7(3). Prior to Release 9.7(3), only Sparc-based platforms are supported. In order to migrate to Release 9.8(1), you need find out the old Cisco PGW 2200 Softswitch software version, the old Sun platform, and the target Sun platform you are going to use.

See the *Cisco PGW 2200 Softswitch Hardware Installation Guide (Release 7 & 9)* to find out supported Sun platforms for Cisco PGW 2200 Softswitch software Release 9.8.

Table 5-2 shows migration procedures to Cisco PGW 2200 Softswitch Release 9.8 across different platforms. The target platforms are listed in the first column. You can find the migration procedure based on your target platform and your existing Cisco PGW 2200 Softswitch platform.

Table 5-2 Migration Procedures to Release 9.8 Across Different Platforms

Target Release 9.8	From Release 9.5 or 9.6		From Release 9.7	
	Sparc-based		Sparc-based	Opteron-based
Sparc-based	Migration from Release 9.5 or 9.6 to Release 9.8 without Platform Changes, page 5-5		Migration from Release 9.7 to Release 9.8 without Platform Changes, page 5-21	—
Opteron-based	Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms, page 5-22		Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms, page 5-22	Migration from Release 9.7 to Release 9.8 without Platform Changes, page 5-21

# Migration from Release 9.5 or 9.6 to Release 9.8 without Platform Changes

## Migrating the Second Cisco PGW 2200 Softswitch Software to Release 9.8

Use the steps in the following sections to upgrade PGW 2 to Cisco PGW 2200 Softswitch Release 9.8.

**Note**

If you want to use two new disk drives to install the Cisco PGW 2200 Softswitch software, complete the “[Installing Sun Solaris 10](#)” and “[Loading the Sun Solaris 10 Operating Environment Packages](#)” sections before you begin this procedure.

## Backing Up the Cisco PGW 2200 Softswitch Configuration Files

Before you begin the migration to the new version of the Cisco PGW 2200 Softswitch software, you need to back up your current system files. This section describes the following backup procedures:

- Create a remote backup of the current Cisco PGW 2200 Softswitch configuration using the `mgcbbackup` utility. These backup files are used to revert to the original version of the Cisco PGW 2200 Softswitch software if a problem occurs during migration.
- Create an `MGC.tar` archive file of the current Cisco PGW 2200 Softswitch settings.

Follow these steps to back up the Cisco PGW 2200 Softswitch configuration files on PGW host 2:

- 
- Step 1** Verify that the `pom.dataSync` variable is set to **False** on the active and standby Cisco PGW 2200 Softswitch hosts. To view or modify the `pom.datasync` variable, use an editor such as `vi` to edit `/opt/CiscoMGC/etc/XECfgParm.dat`.

**Note**

If you modify the `pom.dataSync` variable, restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes take effect.

- Step 2** Log in to the PGW host 2 as `mgcusr`.

- Step 3** Enter the following command to stop the Cisco PGW 2200 Softswitch.

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

- Step 4** Follow these steps to back up the system:

- a. **Local Tape Backup**—Using the `mgcbbackup` utility, back up the system to the local tape drive.

```
% /opt/CiscoMGC/local/mgcbbackup -d /dev/rmt/0
```

- b. **Remote File Server Backup**—Type the following commands to use the `mgcbbackup` utility to back up the system to local directory.

```
% mkdir /var/tmp/upgrade
```

```
% cd /var/tmp/upgrade
```

```
% /opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```

**Note**

The backup file is stored in the specified directory path in the following format:  
`mgc_<hostname>_<yyyymmdd>_<hhmmss>_backup`

Where:

- *hostname* is the name of the Cisco PGW 2200 Softswitch host, such as MGC-01.
- *yyyymmdd* is the date the backup file is created, in a year-month-day format, such as 20011130.
- *hhmmss* is the time the backup file is created, in an hour-minute-second format, such as 115923.

- c. Type the following command to list the files in your backup directory. Verify that the backup was successful.

```
% /opt/CiscoMGC/local/mgcbbackup -l
```

**Caution**

You must now move the backup file to a remote file server using the ftp program so it can be recovered if you need to revert to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

- Step 5** Stop MMDB database replication on PGW hosts 1 and 2:

```
% ./delete_replication.sh
```

- Step 6** Follow these steps to back up the MMDB on the PGW host 2:

- a. Log in to the PGW host 2 as **mgcusr**.

- b. Create the export.ttdb file:

```
% /opt/CiscoMGC/local/backupDb.sh /opt/CiscoMGC/etc/export.ttdb
```

- c. Create the migrate.ttdb file:

```
% ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

- d. Remove the existing version of the MMDB file:

```
% rm -f /opt/CiscoMGC/etc/version.ttdb
```

- e. Determine the version of the version.ttdb file:

```
% /opt/TimesTen/32/bin/ttVersion presenter
```

The Cisco PGW 2200 Softswitch displays output similar to the following example:

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

- f. Replace the TimesTen database Release x.y.z with the new version:

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

- g. Ensure that the version.ttdb, migrate.ttdb, and export.ttdb files are present:

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

**Step 7** Log in to the PGW host 2 as **root**.

**Step 8** Save the Cisco PGW 2200 Softswitch configuration data:

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



**Note**

If you are using Cisco MNM, save the snmpd.cnf file (located in /opt/CiscoMGC/snmp) before the migration starts.

**Step 9** Move to the CiscoMGC directory:

```
# cd /opt/CiscoMGC
```

**Step 10** Back up the current Cisco PGW 2200 Softswitch files:

```
# tar cvf /var/tmp/upgrade/MGC.tar ./etc ./dialPlan
# cp ./local/ttbackup.tar /var/tmp/upgrade/ttbackup.tar
```

**Step 11** Verify that configuration files were successfully backed up. The mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup file, ttbackup.tar, and MGC.tar files must be present.

```
# cd /var/tmp/upgrade
# ls
```

**Step 12** At this point, you have saved all the required data in tar files in /var/tmp/upgrade. Follow these steps to move these files to a blank tape or remote machine so that you can recover them after installing Solaris 10.



**Caution**

You are responsible for providing the backup mechanism and storage location.

**a. Local tape drive**—Enter the following commands to store the files on a local tape drive:

```
# cd /var/tmp/upgrade
# tar cvf /dev/rmt/0 MGC.tar ttbackup.tar mgc_MGC-01_20011130_115923_backup.tar
```

**b. Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the /var/tmp/upgrade directory to a remote file server.



**Note**

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

**Step 13** Verify that the files are successfully transferred to the remote file server before continuing.

At this point, the Cisco PGW 2200 Softswitch configuration data has been saved in MGC.tar files on a tape or remote file server. The file backup is now complete. Proceed to “[Installing Sun Solaris 10](#)”.

## Installing Sun Solaris 10

Follow these steps to install Sun Solaris 10 on PGW host 2.

**Note**

If you want to use two new disk drives to install the Cisco PGW 2200 Softswitch software Release 9.8, you can use the original disk drives to revert to the previous Cisco PGW 2200 Softswitch software version if there is a problem during the upgrade procedure. For instructions on how to revert to the previous Cisco PGW 2200 Softswitch software version, see the “[Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6](#)” section on page 5-29.

**Note**

If you are upgrading from the primary disk, use Veritas Volume Manager to use the second disk for Solaris 8 fallback. For further information, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

**Step 1**

Shut down PGW host 2:

```
# init 0
```

**Step 2**

Wait for the system to return to the boot prompt and load the Cisco Solaris 10 Operating System Startup CD in the CD-ROM drive.

**Note**

If you are replacing the disk drives, power off the system and label, and remove the existing disks, using proper anti-static procedures. Install the new disk drives in the same slots the original disk drives were located. Finally, power up the system. For more information, see the Sun System Manual for your platform.

**Step 3**

Install the Sun Solaris 10 operating system using the procedures in the “[Loading the Sun Solaris 10 Operating System](#)” section on page 2-3.

**Caution**

Do not format or modify the second disk drive. Unless you replaced the disk drives in [Step 2](#), the second disk contains the original Solaris 8 system if you are using Veritas Volume Manager. The second disk is used as a fallback in case of a failure in the Solaris 10 upgrade.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, load the Sun Solaris 10 Operating Environment packages using the steps in the “[Loading the Sun Solaris 10 Operating Environment](#)” section.

**Caution**

Do not load Solstice DiskSuite (CSCO0h023) if you are using Veritas Volume Manager to use the second disk for Solaris 8 fallback. For more information about Veritas Volume Manager, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

## Restoring Data Files

Follow these instructions to restore the Cisco PGW 2200 Softswitch configuration files (MGC.tar) on PGW host 2:

**Step 1** Log in as **root** and move the Cisco PGW 2200 Softswitch configuration files to the /tmp directory.

```
# cd /var/tmp
```

**Step 2** Create a mount point.

```
# mkdir saved
# cd /var/tmp/saved
```

**Step 3** Store the data files:

**a. Local tape drive**—Store the files on a local tape drive.

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

**b. Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the remote file server to the /tmp/saved directory.



### Note

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

**Step 4** Verify that the files successfully transfer to the remote file server before continuing.

**Step 5** Create an MGC directory and extract Cisco PGW 2200 Softswitch data files:

```
# cd /opt
# mkdir CiscoMGC                # Create MGC directory
# cd /opt/CiscoMGC
# mkdir snmp                    # Create snmp directory
# cp /var/tmp/saved/MGC.tar MGC.tar
# tar xvf MGC.tar              # Extract MGC data files
# mkdir local                  # Create snmp directory
# cp /var/tmp/saved/ttbackup.tar ./local/ttbackup.tar
```

**Step 6** Verify that the etc and dialPlan directories are present.

**Step 7** If you saved the snmpd.cnf file, copy the file to the /opt/CiscoMGC/snmp directory:

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

**Step 8** Enter the following command to reboot the Cisco PGW 2200 Softswitch:

```
# init 6
```

## Installing and Verifying the Cisco PGW 2200 Softswitch Software

Follow these steps to install the Cisco PGW 2200 Softswitch software on PGW host 2:

**Step 1** Install the Cisco PGW 2200 Softswitch software using the instructions in the [“Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases”](#) section on page 3-3.

**Step 2** When the installation is complete, perform the following steps on PGW host 2:

**Step 3** Log into PGW host 2 as **mgcusr**.

**Step 4** Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 2:

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

**Step 5** If you are migrating from the Sparc platform to the Opteron platform, start a provisioning session and regenerate the .bin files:

```
mm1> prov-sta
mm1> prov-cpy
```



**Caution** Complete this step only if you are migrating from the Sparc platform to the Opteron platform.

**Step 6** Verify that the migration to the Cisco PGW 2200 Softswitch software Release 9.8 is complete and that all protocols are operational:

```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
mm1> rtrv-c7lnk:all
mm1> rtrv-iplnk:all
```

**Step 7** Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:

```
mm1> rtrv-tc:all
-----rtrv-tt-database-----
# numan-rtrv:cliprefix:clisetname="1111",cliprefix="1"
# numan-rtrv:announcement:annId=1,gwtype="AS5400"
# numan-rtrv:porttbl:digitstring="100034"
```

**Step 8** You have now upgraded the PGW host 2 to the Release 9.8 software. Promote PGW host 2 to active:



**Note** This step sets PGW host 1 to standby.

```
mm1> sw-over::confirm
```

**Step 9** When the switchover is complete, verify that PGW host 2 is processing calls.

```
mm1> rtrv-tc:all
```



**Note** If the call replication fails, or if new active host is not processing calls, see the [Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide](#).

## Migrating the First Cisco PGW 2200 Softswitch Software to Release 9.8

Use the steps in the following sections to upgrade PGW 1 to Cisco PGW 2200 Softswitch Release 9.8.



**Note** If you want to use two new disks drives to install the Cisco PGW 2200 Softswitch software Release 9.8, complete the “[Installing Sun Solaris 10](#)” and “[Loading the Sun Solaris 10 Operating Environment Packages](#)” sections before you begin this procedure.

## Backing Up the Cisco PGW 2200 Softswitch Configuration Files

Before you begin the migration to the new version of the Cisco PGW 2200 Softswitch software, you need to back up your current system files. This section describes the following backup procedures:

- Create a remote backup of the current Cisco PGW 2200 Softswitch configuration using the `mgcbbackup` utility. You can use these backup files to revert to the original version of the Cisco PGW 2200 Softswitch software if there is a problem during migration.
- Create an `MGC.tar` archive of the current Cisco PGW 2200 Softswitch settings.

Follow these steps to back up the configuration files on PGW host 1:

- Step 1** Verify that the `pom.dataSync` variable is set to **False** on both Cisco PGW 2200 Softswitch hosts. To edit the `pom.datasync` variable, use an editor such as `vi` to edit `/opt/CiscoMGC/etc/XECfgParm.dat`.



**Note**

If you modify the `pom.dataSync` variable, restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes take effect.

- Step 2** Log in to the PGW host 1 as **mgcusr**.

- Step 3** Enter the following command to stop the Cisco PGW 2200 Softswitch.

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

- Step 4** Follow these steps to back up the system:

- a. Local Tape Backup**—Using the `mgcbbackup` utility, back up the system to the local tape drive.

```
% /opt/CiscoMGC/local/mgcbbackup -d /dev/rmt/0
```

- b. Remote File Server Backup**—Enter following commands to use the `mgcbbackup` utility to back up the system to local directory.

```
% mkdir /var/tmp/upgrade
% cd /var/tmp/upgrade
% /opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```



**Note**

The backup file is stored in the specified directory path in the following format:  
`mgc_<hostname>_<yyyymmdd>_<hhmmss>_backup`

Where:

- `hostname` is the name of the Cisco PGW 2200 Softswitch host, such as `MGC-01`.
- `yyyymmdd` is the date the backup file is created, in a year-month-day format, such as `20011130`.
- `hhmmss` is the time the backup file is created, in an hour-minute-second format, such as `115923`.

- c.** Verify that the backup was successful by listing the files in your backup directory:

```
% /opt/CiscoMGC/local/mgcbbackup -l
```

**Caution**

You must now move the backup file to a remote file server using the ftp program so it can be recovered if you need to revert the Cisco PGW 2200 Softswitch to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

**Step 5** Stop TimesTen database replication on PGW hosts 1 and 2:

```
% ./delete_replication.sh
```

**Step 6** Follow these steps to back up the MMDB on the PGW host 1:

a. Log in to the PGW host 1 as **mgcusr**.

b. Create the export.ttdb file:

```
% /opt/CiscoMGC/local/backupDb.sh /opt/CiscoMGC/etc/export.ttdb
```

c. Create the migrate.ttdb file:

```
% ttMigrate -c DSN=howdydb /opt/CiscoMGC/etc/migrate.ttdb
```

d. Remove the existing version of the MMDB file:

```
% rm -f /opt/CiscoMGC/etc/version.ttdb
```

e. Determine the version of the version.ttdb file:

```
% /opt/TimesTen/32/bin/ttVersion presenter
```

The Cisco PGW 2200 Softswitch displays output similar to the following example:

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

f. Replace the TimesTen database Release x.y.z with the new version:

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

g. Ensure that the version.ttdb, migrate.ttdb, and export.ttdb files are present:

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

**Step 7** Log in to PGW 1 as **root**.

**Step 8** Save the Cisco PGW 2200 Softswitch configuration data:

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

**Note**

If you are using Cisco MNM, save the snmpd.cnf file (located in /opt/CiscoMGC/snmp) before the migration starts.

**Step 9** Move to the CiscoMGC directory:

```
# cd /opt/CiscoMGC
```

**Step 10** Back up the current Cisco PGW 2200 Softswitch configuration files:

```
# tar cvf /var/tmp/upgrade/MGC.tar ./etc ./dialPlan
# cp ./local/ttbackup.tar /var/tmp/upgrade/ttbackup.tar
```

**Step 11** Verify that configuration files were successfully backed up. The mgc\_<hostname>\_<yyyymmdd>\_<hhmmss>\_backup file and the MGC.tar file must be present.

```
# cd /var/tmp/upgrade
# ls
```

- Step 12** At this point, you have saved all the required data in tar files in /var/tmp/upgrade. Follow these steps to move these files to a blank tape or remote machine so that you can recover them after installing Solaris 10.

**Caution**


---

You are responsible for providing the backup mechanism and storage location.

---

- a. Local tape drive**—Enter the following commands to store the files on a local tape drive:

```
# cd /var/tmp/upgrade
# tar cvf /dev/rmt/0 MGC.tar ttbackup.tar mgc_MGC-01_20011130_115923_backup.tar
```

- b. Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the /var/tmp/upgrade directory to a remote file server.

**Note**


---

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

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- Step 13** Verify that the files are successfully transferred to the remote file server before continuing.
- 

At this point, the Cisco PGW 2200 Softswitch configuration data have been saved in MGC.tar files on a tape or remote file server. The file backup is now complete. Proceed to [Installing Sun Solaris 10](#).

---

## Installing Sun Solaris 10

Follow these steps to install Sun Solaris 10 on PGW host 1:

**Note**


---

If you want to use two new hard disks to install the Cisco PGW 2200 Softswitch software Release 9.8, you can use the original hard disks to revert to the previous Cisco PGW 2200 Softswitch software version if there is a problem during the upgrade procedure. For instructions on how to revert to the previous Cisco PGW 2200 Softswitch software version, refer to [Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6](#).

---

**Note**


---

If you are upgrading from the primary disk, you need use Veritas Volume Manager to use the second disk for Solaris 8 fallback. For further information, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

---

- Step 1** Shut down PGW host 1:

```
# init 0
```

- Step 2** Wait for the system to return to the boot prompt then load the Cisco Solaris 10 Operating System Startup CD in the CD-ROM drive.

**Note**

If you are replacing the hard disks, power off the system, label, and remove the existing disks using proper anti-static procedures. Install the new disk drives in the same slots the original disk drives were located. Finally, power up the system. See the Sun System Manual for your platform.

- Step 3** Install the Sun Solaris 10 operating system using the procedures in “[Loading the Sun Solaris 10 Operating System](#)” section on page 2-3.

**Caution**

Do not format or modify the second disk drive. Unless the disk drives were replaced in [Step 2](#), the second disk contains the original Solaris 8 system if you are Veritas Volume Manager. The second disk is used as a fallback in case of a failure in the Solaris 10 upgrade.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, load the Sun Solaris 10 Operating Environment packages using the steps in the “[Loading the Sun Solaris 10 Operating Environment](#)” section on page 2-53.

**Caution**

Do not load Solstice DiskSuite (CSCOh023) if you are using Veritas Volume Manager to use the second disk for Solaris 8 fallback. For more information about Veritas Volume Manager, refer to [http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage\\_Software/VERITAS\\_Volume\\_Manager/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Software/Storage_Software/VERITAS_Volume_Manager/index.html).

## Restoring Data Files

Follow these instructions to restore the Cisco PGW 2200 Softswitch configuration files (MGC.tar) on PGW host 1:

- Step 1** Log in as **root** and move the Cisco PGW 2200 Softswitch configuration files to the /tmp directory.

```
# cd /var/tmp
```

- Step 2** Create a mount point.

```
# mkdir saved
# cd /var/tmp/saved
```

- Step 3** Store the data files:

- a. **Local tape drive:** Store the files on a local tape drive.

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

- b. **Remote file server**—Using the ftp utility, transfer the MGC.tar and ttbackup.tar files from the remote file server to the /tmp/saved directory.

**Note**

Use the binary mode of ftp to transfer the MGC.tar and ttbackup.tar files.

- Step 4** Verify that the files successfully transfer to the remote file server before continuing.

- Step 5** Create an CiscoMGC directory and extract Cisco PGW 2200 Softswitch data files:

```
# cd /opt
# mkdir CiscoMGC                # Create MGC directory
# cd /opt/CiscoMGC
# mkdir snmp                    # Create snmp directory
# cp /var/tmp/saved/MGC.tar MGC.tar
# tar xvf MGC.tar                # Extract MGC data files
# mkdir local                   # Create snmp directory
# cp /var/tmp/saved/ttbackup.tar ./local/ttbackup.tar
```

**Step 6** Verify that the etc and dialPlan directories are present.

**Step 7** If you saved the snmpd.cnf file, copy the file to the /opt/CiscoMGC/snmp directory:

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

**Step 8** Enter the following command to reboot the Cisco PGW 2200 Softswitch:

```
# init 6
```

## Installing and Verifying the Cisco PGW 2200 Softswitch Software

Follow these steps to install the Cisco PGW 2200 Softswitch software on PGW host 1:

**Step 1** Install the Cisco PGW 2200 Softswitch software using the instructions in [Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases](#).

**Step 2** Set the value of pom.dataSync to **true** on PGW hosts 1 and 2. To update the pom.dataSync value, use an editor such as vi to edit the XECfgParm.dat in the /opt/CiscoMGC/etc/ directory.

**Step 3** Log in to PGW host 1 as **mgcusr**.

**Step 4** Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 1:

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

**Step 5** Wait for PGW host 1 to come up fully as standby host.

**Step 6** When the Cisco PGW 2200 Softswitch software starts, it updates the following files to function with the Cisco PGW 2200 Softswitch software Release 9.8:

- Data files in the /opt/CiscoMGC/etc directory
- Data files in the /opt/CiscoMGC/etc/CONFIG\_LIB/CFG\_config-name directory specified by the /opt/CiscoMGC/etc/active\_link file

**Step 7** Enter the following command on PGW host 1 to restart TimesTen database replication:

```
% /opt/CiscoMGC/local/setup_replication.sh peerHost active
```

**Step 8** Enter the following command on PGW host 2 to stop the Cisco PGW 2200 Softswitch software:

```
% init 0
```

**Step 9** Enter the following command on PGW host 2:

```
% /opt/CiscoMGC/local/setup_replication.sh peerHost standby
```

**Step 10** Verify that the migration to the Release 9.8 software is complete and that all protocols are operational:

```
mm1> rtrv-ne
mm1> rtrv-tc:all
mm1> rtrv-dest:all
mm1> rtrv-c7lnk:all
mm1> rtrv-iplnk:all
```

- Step 11** Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:

```
mm1> rtrv-tc:all
```

Text similar to the following is displayed:

```
-----rtrv-tt-database-----
# numan-rtrv:cliprefix:clisetname="1111",cliprefix="1"
# numan-rtrv:announcement:annId=1,gwtype="AS5400"
# numan-rtrv:porttbl:digitstring="100034"
```

- Step 12** You have now completed upgrading PGW host 1 to the Release 9.8 software. Enter the following command to promote PGW host 1 to active:

```
mm1> sw-over::confirm
```

- Step 13** When the switchover is complete, enter the following command to verify that PGW host 1 is processing calls.

```
mm1> rtrv-tc:all
```



**Note**

If the call replication fails, or if new Active Host is not processing calls, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

- Step 14** Restart PGW host 2 in order to ensure that the changes to the pom.dataSync variable take effect.

## Transferring Additional Configuration Files

If you need to transfer additional configuration files, follow these steps, using the config-lib tool:

- Step 1** Set the pom.dataSync variable to **False** on both Cisco PGW 2200 Softswitch hosts. To view or modify the pom.dataSync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.
- Step 2** Restart the active and standby Cisco PGW 2200 Softswitch hosts sequentially to ensure that the changes to the pom.dataSync variable take effect.
- Step 3** Complete the following steps to migrate the files to PGW host 2:

- a. Log in to PGW host 2 as **root**.
- b. Enter the following command to stop the Cisco PGW 2200 Softswitch software on PGW host 2:

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

- c. Run the config-lib application:

```
# config-lib
```

- d. At the configuration file library main menu, enter **3** and press **Enter**.

```
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> 3
```

- e. The menu lists available configuration files.

```
Configuration Versions

1. sip-upgrade-0131-3
2. sip-upgrade-0131
3. sip-upgrade-0131-2
4. sip-upgrade-0130
***Current Production Version = sip-upgrade-0131-3
Enter Selection to Copy or 'q' to go back>
```

- f. Enter the number of the configuration you want to migrate and press **Enter**.

In this example, enter 2 to migrate the sip-upgrade-0131 configuration.

Text similar to the following is displayed:

```
Enter Selection to Copy or 'q' to go back> 2
***Start checking if migration is needed...
starting migration ...
```




---

**Note** Command output is truncated. Config-lib lists the related files as they are migrated to Release 9.8.

---

```
***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)?
```

- g. At the prompt, enter **y** and press **Enter** to copy the files to the production area.

```
Do you want to overwrite the production files (y/n)? y
removing data files in Production Area...
Copying data files of selected version to the data Production Area...
```

```
Completed copy
```

- h. Enter **q** to exit config-lib.

```
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> q
Quit
```

**Step 4** Perform the following steps on PGW host 2 when the file transfer is complete:

- a. Enter the following command to start the Cisco PGW 2200 Softswitch software:

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

- b. Verify that all protocols are operational:

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

- c. Enter the following command on the standby host to verify that call replication is occurring between the active and standby Cisco PGW 2200 Softswitch hosts:

```
mm1> rtrv-tc:all
```

**Step 5** Promote PGW host 2 to active:

```
mm1> sw-over::confirm
```

**Step 6** When the switchover is complete, verify that PGW host 2 is processing calls:

```
mm1> rtrv-tc:all
```



**Note**

If the call replication fails, or if the new Active Host is not processing calls, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

**Step 7** Complete the following steps to migrate the files to PGW host 1:

- a. Log in to PGW host 1 as **root**.
- b. Enter the following command to stop the Cisco PGW 2200 Softswitch software on PGW host 1:

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

- c. Enter the following command on PGW host 1:

```
# config-lib
```

- d. At the configuration file library main menu, type **3**.

```
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> 3
```

- e. The menu lists available configuration files.

```
Configuration Versions
```

```
1. sip-upgrade-0131-3
2. sip-upgrade-0131
3. sip-upgrade-0131-2
4. sip-upgrade-0130
***Current Production Version = sip-upgrade-0131-3
Enter Selection to Copy or 'q' to go back>
```

- f. Enter the number of the configuration you want to migrate.

```
Enter Selection to Copy or 'q' to go back> 2
***Start checking if migration is needed...
starting migration ...
```



**Note**

Command output is truncated. Config-lib lists the related files as they are migrated to Release 9.8.

```
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)?
```

- g.** Enter **y** and press **Enter** to copy the files to the production area.

```
Do you want to overwrite the production files (y/n)? y
removing data files in Production Area....
Copying data files of selected version to the data Production Area....
```

```
Completed copy
```

- h.** Enter **q** to exit config-lib.

```
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> q
Quit
```

**Step 8** Perform the following steps when the file transfer is complete:

- a.** Set the value of `pom.dataSync` to **true** on PGW hosts 1 and 2. To update the `pom.dataSync` value, use an editor such as `vi` to edit the `XECfgParm.dat` in the `/opt/CiscoMGC/etc/` directory.

- b.** Log in to PGW host 1 as **root**.

- a.** Enter the following command to start the Cisco PGW 2200 Softswitch software on PGW host 1:

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

- b.** Wait for PGW host 1 to come up fully as standby host.

- c.** Stop the Cisco PGW 2200 Softswitch software on PGW host 2:

```
# init 0
```

- d.** Set PGW host 2 to standby:

```
# /opt/CiscoMGC/local/setup_replication.sh peerHost standby
```

**Step 9** Verify that all protocols are operational:

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

**Step 10** Enter the following command on the standby host to verify that call replication is occurring between PGW hosts 1 and 2:

```
mml> rtrv-tc:all
```

**Step 11** Promote PGW host 1 to active:

```
mml> sw-over::confirm
```

**Step 12** When the switchover is complete, verify that PGW host 1 is processing calls.

```
mml> rtrv-tc:all
```

**Note**

If the call replication fails, or if new Active Host is not processing calls, refer to the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide*.

- Step 13** Restart PGW host 2 in order to ensure that the changes to the pom.dataSync variable take effect.

## Migration from Release 9.7 to Release 9.8 without Platform Changes

Perform the following procedure to migrate from Cisco PGW 2200 Softswitch Release 9.7 to Release 9.8 without platform changes:

**Note**

When replicating the calls from release 9.7 to release 9.8, some calls will be lost due to the architectural changes between release 9.7 and release 9.8.

**Note**

As you migrate from Cisco PGW 2200 Softswitch Release 9.7(3) to Release 9.8(1), before you start the Release 9.8(1) system software, first install the base Release of 9.8(1), and then install Release 9.8(1) patch S7P7 or later.

- Step 1** Log in the Cisco PGW 2200 Softswitch as **mgcusr**.

- Step 2** Enter the following command to stop the Cisco PGW 2200 Softswitch software:

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

- Step 3** Delete the replication between the active and standby pair of the Cisco PGW 2200 Softswitches.

```
% ./delete_replication.sh
```

- Step 4** Back up the .odbc.ini file manually using the following command:

```
% cp /opt/CiscoMGC/local/.odbc.ini /opt/CiscoMGC/etc/.odbc.ini.ttdb
```

- Step 5** Locate the active configuration using the following commands:

```
% cd /opt/CiscoMGC/etc
% cd active_link
% pwd
```

The text similar to the following is displayed:

```
/opt/CiscoMGC/etc/CONFIG_LIB/CFG_Sip
```

- Step 6** Back up the active configuration using the following commands:

```
% cd /opt/CiscoMGC/etc/CONFIG_LIB
% tar cvf CFG_backup973.tar ./CFG_Sip
```

- Step 7** Back the snmp folder using the following command:

```
% cd /opt/CiscoMGC
% tar cvf SNMP_backup973.tar ./snmp
```

**Step 8** Back the dial plan configurations using the following commands:

```
% cd /opt/CiscoMGC
% tar cvf DP_backup973.tar ./dialPlan
```

**Step 9** Log in again as **root** and uninstall the Cisco PGW 2200 Softswitch software. See the “[Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh](#)” section on page E-1.



**Note** Answer **y** to the question, “Is the uninstall being done in order to upgrade to a new version of the software?”, at the beginning of the uninstallation procedure.

**Step 10** Install the Cisco PGW 2200 Softswitch software Release 9.8 as described in the “[Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher Releases](#)” section on page 3-3

**Step 11** Start the Cisco PGW 2200 Softswitch software:

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



**Note**

After the migration from Cisco PGW 2200 Softswitch Release 9.7(3) CSCOGs027/CSCOnn027 to Release 9.8(1) CSCOGs007/CSCOnn007 and later, there is a known issue of /opt/CiscoMGC/lib/perl5/5.00503/vars.pm file. The workaround for this issue is to manually change line 17 of vars.pm file from "if (\$sym =~ tr/A-Za-Z\_0-9//c) {" to "if (\$sym =~ tr/A-Za-z\_0-9//c) {" and save the file.

## Upgrading Lively from Sparc-based Platforms to Opteron-based Platforms

The Cisco PGW 2200 Softswitch supports a live upgrade from Sparc-based platforms to Opteron-based platforms. There is no service outage during the upgrade. The service and data on the Sparc-based platforms are transferred seamlessly to the Opteron-based platforms.

### Before You Start

Before you do the live upgrade from the old Sparc-based platforms to the new Opteron-based platforms, make sure you have full access to the following platforms:

- the old Sparc-based active Cisco PGW 2200 Softswitch (referred to as PGW 1)
- the old Sparc-based standby Cisco PGW 2200 Softswitch (referred to as PGW 2)
- A pair of new Opteron-based hardware platforms for Cisco PGW 2200 Softswitch (referred to as PGW 3 and PGW 4)

Verify if the two scripts, **liveUpgrade.sh** and **mgcTTmigrate** (Sparc-based platform scripts), are in the /opt/CiscoMGC/local directory on PGW 1 and 2. If you cannot find them, you can download them from the Cisco website.

To download the mgcTTmigrate script, follow the procedure in the “[Release 9.8\(1\) Patch 5 and Later](#)” section, of the *Release Notes for the Cisco PGW 2200 Softswitch Release 9.8(1)*. You can find the mgcTTmigrate.981 script in system patches for 9.8(1) Sparc platforms. This script works for Release 9.8(1) software on both Sparc and Opteron platforms. Rename the script to mgcTTmigrate after you download it.

**Note**

To make sure that you use the latest version of the mgcTTmigrate script, download the mgcTTmigrate script from Cisco.com every time before you use it.

To download the liveUpgrade.sh script, see [Table 5-3](#).

**Table 5-3** *Links to the liveUpgrade.sh Script for Different Software Releases*

Software Releases	Links to the liveUpgrade.sh Script
9.5(2)	<a href="http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-952">http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-952</a>
9.6(1)	<a href="http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-961">http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-961</a>
9.7(3)	<a href="http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-sparc">http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-sparc</a> (Sparc) <a href="http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-opteron">http://www.cisco.com/cgi-bin/tablebuild.pl/mgc-973-opteron</a> (Opteron)

**Note**

No provisioning is allowed during the live upgrade. Before performing the live upgrade, you must stop all the MML provisioning sessions and quit from the MML interface on the old Sparc-based active and standby pair of Cisco PGW 2200 Softswitches. Provisioning is allowed only when the new pair of Cisco PGW 2200 Softswitches on Opteron-based platforms are running normally as an active and standby pair. To view the status of the Cisco PGW 2200 Softswitch, use the MML command “rtrv-ne”.

## Live Upgrade Procedure

This section describes the live upgrade procedure from Sparc-based platforms to Opteron-based platforms.

First, you migrate PGW 2 to PGW 4. When the migration is complete, PGW 4 can serve as a replacement of PGW 2. You stop PGW 2 and do a switchover from PGW 1 to PGW 4. When the switchover is complete, you migrate PGW 1 to PGW 3. Finally you enable the MMDB database replication between PGW 3 and PGW 4.

Perform the following steps to do the live upgrade:

**Step 1**

Verify that the pom.dataSync variable is set to **False** on both PGW 1 and PGW 2. To view or modify the pom.dataSync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.

**Note**

You must set pom.dataSync to false on the active and standby pair of Cisco PGW 2200 Softswitches before you perform the live upgrade.




---

**Note** If you modify the pom.dataSync variable, make sure you save the file, /opt/CiscoMGC/etc/XECfgParm.dat. You don't have to restart the Cisco PGW 2200 Softswitch after the modification of this variable.

---

**Step 2** On **PGW 2**, log in as **root**. Then run the following script under /opt/CiscoMGC/local.

```
# cd /opt/CiscoMGC/local
# ./liveUpgrade.sh export
```

Text similar to the following is displayed:

```
You are running as root - Good...
Stopping TimesTen database replication on sh-hox
Stopped TimesTen database replication successfully
Backing up the Main Memory Database (MMDB) on sh-hox
Back up the Main Memory Database (MMDB) successfully
All configuration files were exported successfully in /var/tmp/upgrade/
please ftp them to your file server
```

**Step 3** Back up the odbc.ini file using the following command:

```
# cp /opt/CiscoMGC/local/.odbc.ini /var/tmp/upgrade/
```




---

**Note** Step 3 is only required when **PGW 2**'s software version is Cisco PGW 2200 Softswitch Release 9.7.

---

**Step 4** Use ftp utility to transfer MGC.tar, tbackup.tar, and .odbc.ini which are generated in Step 2 and Step 3 from /var/tmp/upgrade directory to the remote file server.




---

**Note** Use the binary mode of ftp to transfer the three files, MGC.tar, tbackup.tar, and .odbc.ini.

---

**Step 5** Verify that the files are successfully transferred to the remote file server before continuing.

**Step 6** Install the Sun Solaris 10 operating system on **PGW 4** using the procedure in the [“Loading the Sun Solaris 10 Operating System”](#) section on page 2-3.

**Step 7** Install the Sun Solaris 10 operating environment packages on **PGW 4** using the steps in the [“Loading the Sun Solaris 10 Operating Environment”](#) section on page 2-53.

**Step 8** On **PGW 4**, log in as **root**.

**Step 9** Use the following commands to create the **saved** directory under /var/tmp.

```
# cd /var/tmp
# mkdir saved
# cd /var/tmp/saved
```

**Step 10** Use the ftp utility to transfer the three files, MGC.tar, tbackup.tar, and .odbc.ini from the remote file server to the current directory /var/tmp/saved on **PGW 4**.

**Step 11** Verify that the files are successfully transferred from the remote file server before continuing.

**Step 12** Download the liveUpgrade.sh and mgcTTmigrate scripts (Opteron-based platform scripts) from the Cisco website. Then put them under /var/tmp/saved. (See [“Before You Start”](#) section on page 5-22.)

**Step 13** Use the following commands to change the file permissions of the two scripts, liveUpgrade.sh and mgcTTmigrate.

```
# chmod 777 liveUpgrade.sh
```

```
# chmod 777 mgcTtmigrate
```

**Step 14** On **PGW 4**, run the following script.

```
# ./liveUpgrade.sh import
```

Text similar to the following is displayed:

```
You are running as root - Good...
make sure PGW configuration files has been fetched from your file server
and already placed in /var/tmp/saved directory

Would you like to continue? [y] [y,n,?,q]
```

**Step 15** Enter **y** and press **Enter** to continue.

Text similar to the following is displayed:

```
remove bin files due to bin format incompatibility between Opteron and Sparc platform
removed /opt/CiscoMGC/dialPlan/*.bin
removed /opt/CiscoMGC/etc/*.bin
removed /opt/CiscoMGC/etc/active_link/*.bin
removed /opt/CiscoMGC/etc/*.ttdb
Finished import configuration files. Please go ahead to install PGW software
```

**Step 16** Install the Cisco PGW 2200 Softswitch software Release 9.8(1) on **PGW 4** using the steps in [Chapter 3, “Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher.”](#)

**Step 17** Restore the `.odbc.ini` file using the following command on **PGW 4**:

```
# cp /var/tmp/saved/.odbc.ini /opt/CiscoMGC/local/
```

**Step 18** Use the following commands to move to the `/opt/CiscoMGC/local` directory and start the TimesTen database.

```
# cd /opt/CiscoMGC/local
# /etc/init.d/tt start
```

Text similar to the following is displayed:

```
The tt60 daemon has started successfully.
```

**Step 19** Change the login to `mgcusr` using the following command:

```
# su - mgcusr
```

**Step 20** Run `db_count.sh` script to verify that the TimesTen database is empty.

```
% ./db_count.sh
```

Text similar to the following is displayed:

```
Counting the rows in each database table.
CISCO.ANNOUNCEMENT < 0 >
CISCO.A_CHARGE_ORIGIN < 0 >
CISCO.A_NUMBERDIALPLANSLECTION < 0 >
CISCO.BLACKLIST_A < 0 >
CISCO.BLACKLIST_B < 0 >
CISCO.CBBOOKINGINFO < 0 >
CISCO.CBMONITORINGINFO < 0 >
CISCO.CLIPADDRESS < 0 >
CISCO.CLIPREFIX < 0 >
CISCO.FULLNUMBERTRANSLATION < 0 >
CISCO.H323IDDIVFROM < 0 >
CISCO.LIENTRIES < 0 >
CISCO.NUMBERTERM < 0 >
CISCO.PORTEDNUMBERS < 0 >
```

```
CISCO.SCRIPT < 0 >
CISCO.WHITELIST_A < 0 >
CISCO.WHITELIST_B < 0 >
```

**Step 21** Import the database files from the ttbackup.tar using the following command:

```
% ./mgcTtmigrate import /var/tmp/saved/ttbackup.tar
```

**Step 22** Verify the MMDB database is successfully imported from the configuration backup file using the following script.

```
% ./db_count.sh
```

Text similar to the following is displayed:

```
Counting the rows in each database table.
CISCO.ANNOUNCEMENT < 1001 >
CISCO.A_CHARGE_ORIGIN < 1001 >
CISCO.A_NUMBERDIALPLANSELECTION < 6 >
CISCO.BLACKLIST_A < 1001 >
CISCO.BLACKLIST_B < 1002 >
CISCO.CBBOOKINGINFO < 0 >
CISCO.CBMONITORINGINFO < 0 >
CISCO.CLIIIPADDRESS < 1000 >
CISCO.CLIPREFIX < 9 >
CISCO.FULLNUMBERTRANSLATION < 0 >
CISCO.H323IDDIVFROM < 1002 >
CISCO.LIENTRIES < 0 >
CISCO.NUMBERTERM < 0 >
CISCO.PORTEDNUMBERS < 10005 >
CISCO.SCRIPT < 1000 >
CISCO.WHITELIST_A < 1001 >
CISCO.WHITELIST_B < 1001 >
```

**Step 23** Log in **PGW 2** as **root** and stop **PGW 2** using the following command:

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

**Step 24** Remove **PGW 2** from the current network environment and replace it with **PGW 4**.

**Step 25** Configure the required network parameters on **PGW 4** to make PGW 4 a replacement of PGW 2.

For example, the IP address on PGW 4 should be the same with PGW 2.

**Step 26** Log in **PGW 4** as **root** and start the Cisco PGW 2200 Softswitch software using the following command:

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



**Note** Before you start the Cisco PGW 2200 Softswitch software, make sure that you have installed the license file in the /opt/CiscoMGC/license directory. See Step 1 and 2 in the [“Installing the License File if the Cisco PGW 2200 Softswitch is NOT Running”](#) section on page 3-16 for more information.

**Step 27** Use the following commands to change the login to **mgcusr** on **PGW 4** and verify the migration from PGW 2 to PGW 4 is complete.

```
# su - mgcusr
% mm1
mm1> rtrv-ne
mm1> rtrv-softw:all
mm1> rtrv-alm:
mm1> rtrv-ne-health:all
```

**Note**


---

When you view the alarms, you can find the alarm, “POM-01: 2008-07-27 21:15:09.910 CST,ALM=“PEER LINK A FAILURE”,SEV=MN”. The Cisco PGW 2200 Softswitch raises this alarm because no provisioning is synchronized between PGW 1 and 4 when the PGW 1 and 4 are on different hardware platforms. You can ignore this alarm during the live upgrade. It disappears after the live upgrade is complete. When you view the network element health with the `rtrv-ne-health:all` command on both PGW 1 and 4, verify the values in the Current in progress calls field on the two platforms are same or close.

---

**Step 28** Log in **PGW 1** as **mgcusr** and switch over from PGW 1 to PGW 4 using the following command:

```
% mm1
mm1> sw-over::confirm
```

**Step 29** Repeat [Step 1](#) to [Step 27](#) to migrate PGW 1 to PGW 3 in the same way you did for PGW 2.

**Step 30** Set up the database replication between **PGW 3** and **PGW 4** following the procedures described in [“Setting Up Replication” section on page 4-89](#).

**Step 31** Remove the platform.dat file on both **PGW 3** and **PGW 4** using the following commands:

```
% cd /opt/CiscoMGC/local
% rm -f platform.dat
```

---

This completes the procedure for the live upgrade from Sparc-based platforms to Opteron-based platforms.

## Falling Back Overview

Cisco PGW 2200 Softswitch supports both Sparc-based and Opteron-based platforms on Release 9.7(3) and 9.8(1). Prior to Release 9.7(3), only Sparc-based platforms are supported. In order to fall back to a previous release, you need to find out the current Sun platform you are using, the previous Cisco PGW 2200 Softswitch software version to fall back to, and the target Sun platform to fall back to.

See the *Cisco PGW 2200 Softswitch Hardware Installation Guide (Release 7 & 9)* to find out supported Sun platforms for Cisco PGW 2200 Softswitch software Release 9.5(2), 9.6(1), and 9.7(3).

[Table 5-4](#) shows fallback procedures from Cisco PGW 2200 Softswitch Release 9.8 to previous releases across different platforms. The fallback platforms are listed in the first column. You can find the fallback procedure based on your fallback platform and your existing Cisco PGW 2200 Softswitch platform.

Table 5-4 Fallback Procedures from Release 9.8 to Previous Releases Across Different Platforms

From Release 9.8	To Release 9.5 or 9.6	To Release 9.7	
	Sparc-based	Sparc-based	Opteron-based
Sparc-based	<a href="#">Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6, page 5-29</a>	<a href="#">Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes, page 5-28</a>	<a href="#">Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-34</a>
Opteron-based	<a href="#">Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-34</a>	<a href="#">Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes, page 5-34</a>	<a href="#">Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes, page 5-28</a>

## Falling Back to the Cisco PGW 2200 Softswitch Software Release 9.7 without Platform Changes

Perform the following procedure to fall back to the Cisco PGW 2200 Softswitch software Release 9.7(3) without platform changes.

- 
- Step 1** Log in the Cisco PGW 2200 Softswitch as **root**.
- Step 2** Uninstall the Cisco PGW 2200 Softswitch Release 9.8(1). See the [“Removing a Cisco PGW 2200 Softswitch Software Version: Sample Output for uninstall.sh”](#) section on page E-1.



**Note** Answer **n** to the question, "Is the uninstall being done in order to upgrade to a new version of the software?", at the beginning of the uninstallation procedure.

---

- Step 3** Install Cisco PGW 2200 Softswitch software Release 9.7(3).  
See Chapter 3, “Installing Cisco MGC Software Release 9.7 and Higher”, in the *Cisco Media Gateway Controller Software Installation and Configuration (Release 9.7)*.
- Step 4** Restore the configuration using the following commands:
- ```
% cd /opt/CiscoMGC/etc/CONFIG_LIB/
% tar xvf CFG_backup973.tar
```
- Step 5** Restore the snmp folder using the following command:
- ```
% cd /opt/CiscoMGC
% tar xvf SNMP_backup973.tar
```
- Step 6** Restore the dial plan configurations using the following commands:
- ```
% tar xvf DP_backup973.tar
```
- Step 7** Use **config-lib** command to migrate the configurations.  
For details on the config-lib command usage, see [“Transferring Additional Configuration Files”](#) section on page 5-17.
-

# Falling Back to Solaris 8 and Cisco PGW 2200 Softswitch Release 9.5 or 9.6

If you encounter problems during migration to Solaris 10, follow these steps to revert to Solaris 8:

- If you had hard disk drives with Cisco PGW 2200 Softswitch Release 9.5(2) or 9.6(1) installed, see the [“Backup Procedure” section on page 5-35](#) and the [“Hard Disk Replacement Procedure” section on page 5-36](#).
- If you replaced disk drives during the migration to Solaris 10, refer to the [“Falling Back to Solaris 8 If Hard Drives Were Replaced During the Upgrade” section on page 5-29](#).
- If you did not replace disk drives during migration but used Veritas Volume Manager to mirror disk drives, refer to the [“Falling Back to Solaris 8 on the Second Disk Drive” section on page 5-29](#).
- If you cannot use the previous options to restore Solaris 8, you need to restore the original Cisco PGW 2200 Softswitch configuration. For further instructions, see the [“Restoring the Original Cisco PGW 2200 Softswitch Software” section on page 5-33](#).

## Falling Back to Solaris 8 If Hard Drives Were Replaced During the Upgrade

If you replaced disk drives during the migration to Solaris 10 and need to revert to Solaris 8, perform the following procedure:

- 
- |               |                                                                                                                                                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | Stop the operating system and power down the platform:<br><pre># /usr/sbin/shutdown -g0 -i5</pre>                                                                             |
| <b>Step 2</b> | Remove the new disk drives and install the original disk drives in their original locations using proper anti-static procedures. See the Sun System manual for your platform. |
| <b>Step 3</b> | Power up the system.                                                                                                                                                          |
- 

## Falling Back to Solaris 8 on the Second Disk Drive

If the upgrade is not successful, you can fall back to Solaris 8:

- 
- |               |                                                                                                                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | Stop the operating system.<br><pre># init 0</pre>                                                                                                                                                                                                                               |
| <b>Step 2</b> | From the <b>ok</b> prompt, boot the secondary boot disk.<br><pre>ok boot disk1</pre>                                                                                                                                                                                            |
| <b>Step 3</b> | Log in as <b>mgcusr</b> and verify that the system boots Solaris 8 and the Cisco PGW 2200 Softswitch software starts properly. <ol style="list-style-type: none"><li>a. Enter the following command to verify the operating system version.<br/><pre>% uname -r</pre></li></ol> |

Text similar to the following is displayed:

5.8




---

**Note** “5.8” indicates that the system is running the Solaris 8 operating system.

---

- b. Start the MML command interface and use the following command to see if the software starts properly.

```
mml> rtrv-ne
```

**Step 4** Verify that the correct version of the Cisco PGW 2200 Softswitch software is running.

**Step 5** Log in again as **root** and start **vxdiskadm**.

```
# vxdiskadm
```

Text similar to the following is displayed:

```
Volume Manager Support Operations
Menu: VolumeManager/Disk

1  Add or initialize one or more disks
2  Encapsulate one or more disks
3  Remove a disk
4  Remove a disk for replacement
5  Replace a failed or removed disk
6  Mirror volumes on a disk
7  Move volumes from a disk
8  Enable access to (import) a disk group
9  Remove access to (deport) a disk group
10 Enable (online) a disk device
11 Disable (offline) a disk device
12 Mark a disk as a spare for a disk group
13 Turn off the spare flag on a disk
list List disk information

?  Display help about menu
?? Display help about the menuing system
q  Exit from menus

Select an operation to perform
```

**Step 6** Enter **4** to remove a disk for replacement.

```
Remove a disk for replacement
Menu: VolumeManager/Disk/RemoveForReplace
```

Use this menu operation to remove a physical disk from a disk group, while retaining the disk name. This changes the state for the disk name to a "removed" disk. If there are any initialized disks that are not part of a disk group, you will be given the option of using one of these disks as a replacement.

**Step 7** Enter **list** to list all disks:

```
Enter disk name [<disk>,list,q,?] list

Disk group: rootdg

DM NAME          DEVICE          TYPE          PRIVLEN  PUBLLEN  STATE
dm rootdiska     -                -              -         -         NODEVICE
dm rootdiskb     c0t1d0s2        sliced         4711      35363560 -
```

**Step 8** Enter **rootdiska** at the following prompt:

```
Enter disk name [<disk>,list,q,?] rootdiska
```

The following volumes will lose mirrors as a result of this operation:

```
opt rootvol swapvol usr var
```

No data on these volumes will be lost.

The requested operation is to remove disk rootdiska from disk group rootdg. The disk name will be kept, along with any volumes using the disk, allowing replacement of the disk.

Select "Replace a failed or removed disk" from the main menu when you wish to replace the disk.

**Step 9** Enter **y** and press **Enter** at the prompt to continue:

```
Continue with operation? [y,n,q,?] (default: y)
```

```
Removal of disk rootdiska completed successfully.
```

**Step 10** Enter **n** at the prompt and then **q** to quit vxdiskadm:

```
Remove another disk? [y,n,q,?] (default: n) n
```

```
Volume Manager Support Operations
Menu: VolumeManager/Disk
```

```
1      Add or initialize one or more disks
2      Encapsulate one or more disks
3      Remove a disk
4      Remove a disk for replacement
5      Replace a failed or removed disk
6      Mirror volumes on a disk
7      Move volumes from a disk
8      Enable access to (import) a disk group
9      Remove access to (deport) a disk group
10     Enable (online) a disk device
11     Disable (offline) a disk device
12     Mark a disk as a spare for a disk group
13     Turn off the spare flag on a disk
list   List disk information

?      Display help about menu
??     Display help about the menuing system
q      Exit from menus
```

```
Select an operation to perform: q
```

```
Goodbye.
```

**Step 11** Use the **vxdisk** command to verify that rootdiska is removed.

```
# vxdisk list
```

**Step 12** Shut down and boot from disk1.

```
# init 0
ok boot disk1
```

**Step 13** Log in as **root** and run vxdiskadm.

```
# vxdiskadm
```

**Step 14** Enter **5** to replace a failed disk.

```
Replace a failed or removed disk
Menu: VolumeManager/Disk/ReplaceDisk
```

Use this menu operation to specify a replacement disk for a disk that you removed with the "Remove a disk for replacement" menu operation, or that failed during use. You will be prompted for a disk name to replace and a disk device to use as a replacement. You can choose an uninitialized disk, in which case the disk will be initialized, or you can choose a disk that you have already initialized using the Add or initialize a disk menu operation.

**Step 15** Enter **list** at the following prompt:

```
Select a removed or failed disk [<disk>,list,q,?] list
```

```
Disk group: rootdg
```

| DM NAME      | DEVICE | TYPE | PRIVLEN | PUBLEN | STATE   |
|--------------|--------|------|---------|--------|---------|
| dm rootdiska | -      | -    | -       | -      | REMOVED |

**Step 16** Enter **rootdiska** at the following prompt:

```
Select a removed or failed disk [<disk>,list,q,?] rootdiska
```

**Step 17** Enter **list** at the following prompt:

```
Select disk device to initialize [<address>,list,q,?] list
```

| DEVICE | DISK      | GROUP  | STATUS |
|--------|-----------|--------|--------|
| c0t0d0 | -         | -      | error  |
| c0t1d0 | rootdiskb | rootdg | online |

```
Type c0t0d0 to select disk device to initialize
```

The following disk device has a valid VTOC, but does not appear to have been initialized for the Volume Manager. If there is data on the disk that should NOT be destroyed you should encapsulate the existing disk partitions as volumes instead of adding the disk as a new disk.  
Output format: [Device\_Name]

```
c0t0d0
```

**Step 18** To initialize the disk instead of encapsulating, enter **y** and press **Enter**.



**Note** To encapsulate the disk, enter **n** and press **Enter**.

```
Instead of encapsulating, initialize? [y,n,q,?] (default: n) y
```

The requested operation is to initialize disk device c0t0d0 and to then use that device to replace the removed or failed disk rootdiska in disk group rootdg.

**Step 19** Enter **y** and press **Enter** to continue.

```
Type Y at the following prompt:
Continue with operation? [y,n,q,?] (default: y) y
```

```
Replacement of disk rootdiska in group rootdg with disk device
c0t0d0 completed successfully.
```

This will begin recovery of the disk and the mirrors will re-synchronize automatically.

**Step 20** Enter **n** and press **Enter** when asked to replace the disk.

```
Replace another disk? [y,n,q,?] (default: n) n
```

```
Volume Manager Support Operations
Menu: VolumeManager/Disk
```

```
1      Add or initialize one or more disks
2      Encapsulate one or more disks
3      Remove a disk
4      Remove a disk for replacement
5      Replace a failed or removed disk
6      Mirror volumes on a disk
7      Move volumes from a disk
8      Enable access to (import) a disk group
9      Remove access to (deport) a disk group
10     Enable (online) a disk device
11     Disable (offline) a disk device
12     Mark a disk as a spare for a disk group
13     Turn off the spare flag on a disk
list   List disk information

?      Display help about menu
??     Display help about the menuing system
q      Exit from menus
```

**Step 21** Enter **q** and press **Enter** to quit.

```
Select an operation to perform: q
```

Goodbye.




---

**Note** Allow enough time to let both disks synchronize. Depending on the system, this can take 5 to 6 hours.

---

**Step 22** Use the **vxprint** command to make sure disk0 is remirrored to disk1. When this is complete, shut down the platform and boot.

```
# vxprint -ht

# init 0
ok boot
```

**Step 23** Repeat [Step 3](#) to verify that the correct software is running.

---

## Restoring the Original Cisco PGW 2200 Softswitch Software

If you cannot use the previous procedures to revert to Solaris 8, follow these steps to restore the original Cisco PGW 2200 Softswitch software configuration:

- 
- Step 1** Install Solaris 8 Operating System using the procedures in the “[Sun Solaris 8 Operating System Installation](#)” chapter.
  - Step 2** Install the original Cisco PGW 2200 Softswitch Software using the procedures in the “[Installing the Cisco MGC Software 9.2\(x\) and Higher Releases](#)” section.
  - Step 3** Restore the data files using the procedures in “[Restoring the System](#)” section.
- 

## Falling Back to Previous Cisco PGW 2200 Softswitch Software Releases with Platform Changes

If you need to fall back to previous Cisco PGW 2200 Softswitch software releases with platform changes, use the following procedure.

- 
- Step 1** Verify that the pom.dataSync variable is set to **False** on the active and standby pair of Cisco PGW 2200 Softswitches. To view or modify the pom.dataSync variable, use an editor such as vi to edit /opt/CiscoMGC/etc/XECfgParm.dat.




---

**Note** You must set pom.dataSync to false on the active and standby pair of Cisco PGW 2200 Softswitches before you perform the fallback.

---




---

**Note** If you modify the pom.dataSync variable, make sure you save the file, /opt/CiscoMGC/etc/XECfgParm.dat. You don't have to restart the Cisco PGW 2200 Softswitch after the modification of this variable.

---

- Step 2** Log in the standby Cisco PGW 2200 Softswitch as **root**.
- Step 3** Stop the Cisco PGW 2200 Softswitch software using the following command:
 

```
# /etc/init.d/CiscoMGC stop
```
- Step 4** Remove the platform from the current network environment and replace it with the old version Cisco PGW 2200 Softswitch.
- Step 5** Log in the old version Cisco PGW 2200 Softswitch as **root**.
- Step 6** Configure the required network parameters on PGW 4 to make PGW 4 a replacement of PGW 2.
- Step 7** Start the old version Cisco PGW 2200 Softswitch software using the following command:
 

```
# /etc/init.d/CiscoMGC start
```
- Step 8** Use the following commands to change the login to mgcusr on the old version platform and verify that the Cisco PGW 2200 Softswitch software started successfully.
 

```
# su - mgcusr
% mm1
mm1> rtrv-ne
mm1> rtrv-softw:all
mm1> rtrv-alm:
mm1> rtrv-ne-health:all
```

**Note**

When you view the alarms, you can find the alarm, “POM-01: 2008-07-27 21:15:09.910 CST,ALM=“PEER LINK A FAILURE”,SEV=MN”. The Cisco PGW 2200 raises this alarm because no provisioning is synchronized between new version active Cisco PGW 2200 Softswitch and old version one when the two Cisco PGW 2200 Softswitches are on different hardware platforms. You can ignore this alarm during the fallback. It disappears after the fallback is complete.

- Step 9** Log in the Cisco PGW 2200 Softswitch as **mgcusr** and switch over from new version Cisco PGW 2200 Softswitch to the old version platform using the following command:

```
% mm1
mm1> sw-over::confirm
```

- Step 10** Repeat Step 2 to Step 9 to fall back the new version Cisco PGW 2200 Softswitch to the old version platform.

- Step 11** Verify that the `pom.dataSync` variable is set to True on the active and standby pair of old version Cisco PGW 2200 Softswitches.

This completes the procedure for falling back to previous Cisco PGW 2200 Softswitch software releases with platform changes.

## Replacing Hard Disks on an Existing Solaris 10 Platform

If you need to replace the hard disks on an existing Cisco PGW 2200 Softswitch system running the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8, use the steps in the following sections.

### Backup Procedure

Before restoring the `mgcbbackup` file, you must install the same Cisco PGW 2200 Softswitch software release and the patch level that was originally on the platform. Follow these steps to back up the system:

- Step 1** Log in as **root** and enter the following command to stop the Cisco PGW 2200 Softswitch application:
- ```
# /etc/init.d/CiscoMGC stop
```
- Step 2** Complete one of the following steps to back up the system:
- **Local Tape Backup**—Using the `mgcbbackup` utility, back up the system to the local tape drive.
 

```
# /opt/CiscoMGC/local/mgcbbackup -d /dev/rmt/0
```
  - **Remote File Server Backup**—Using the `mgcbbackup` utility, back up the system to the local directory. Use the `mgcbbackup` utility to list the filename of the last backup and use `ftp` to transfer the file to a remote file system.
 

```
# /opt/CiscoMGC/local/mgcbbackup -d /var/tmp/upgrade
```



**Note** The backup file is stored in the specified directory path in the following format:  
`mgc_<hostname>_<yyyymmdd>_<hhmmss>_backup.tar`

Where:

- *hostname* is the name of the Cisco PGW 2200 Softswitch host, such as MGC-01.
- *yyyymmdd* is the date the backup file is created, in a year-month-day format, such as 20011130.
- *hhmmss* is the time the backup file is created, in an hour-minute-second format, such as 115923.

- Enter the following command to list the files in your backup directory. Verify that the backup was successful.

```
# /opt/CiscoMGC/local/mgcbackup -l
```



**Caution** You must now move the backup file to a remote file server using the ftp program so that you can recover it if you need to return the Cisco PGW 2200 Softswitch to the previous version of Solaris or Cisco PGW 2200 Softswitch software. You are responsible for providing the mechanism and storage location.

- Step 3** Enter the following command to stop the operating system and power down the platform:

```
# /usr/sbin/shutdown -g0 -i5
```

The system backup is now complete.

## Hard Disk Replacement Procedure

Follow these steps to replace the hard disk.



**Caution** Be sure to follow the appropriate anti-static procedures when performing this procedure.

- Step 1** Label the hard disks with their current locations and remove them from the system. See the Sun System manual for your platform for the proper procedure.
- Step 2** Install the new hard disks in the same slots as the existing hard disks. See the Sun System manual for your platform for the proper procedure.

## Loading the Solaris 10 Operating System

Power on the platform and follow the procedures in [Chapter 2, “Installing the Sun Solaris 10 Operating System,”](#) to install the Solaris 10 operating system.

## Loading the Sun Solaris 10 Operating Environment Packages

Before you install the Cisco PGW 2200 Softswitch software, you need to load the Sun Solaris 10 Operating Environment packages. To load the environment packages, complete the steps in the section [Loading the Sun Solaris 10 Operating Environment](#).

## Installing the Cisco PGW 2200 Softswitch

Install the same release and patch levels of Cisco PGW 2200 Softswitch software that were originally on the host, using the procedures provided in the [Chapter 3, “Installing the Cisco PGW 2200 Softswitch Software Release 9.8 and Higher.”](#)

## Restoring the System

---

**Step 1** Complete one of the following steps to restore the system:

- a. **Local Tape Backup**—Using the `mgcrestore` utility, enter the following command to restore the system from the local tape drive:

```
# /opt/CiscoMGC/local/mgcrestore -d /dev/rmt/0
```

- b. **Remote File Server Backup**—Using the `ftp` program, retrieve the file created in [Step 2b.](#) of the “[Backup Procedure](#)” section on [page 5-35](#), and place it in the `/opt/CiscoMGC/var/log` directory. Using the `mgcrestore` utility, restore the system.

```
# /opt/CiscoMGC/local/mgcrestore -d /var/tmp/upgrade -f filename
```

where *filename* is the filename created in [Step 2b.](#) of the section “[Backup Procedure](#)” section on [page 5-35](#).

**Step 2** Enter the following command to start the Cisco PGW 2200 Softswitch software:

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

---

The hard disk replacement on an existing platform running the Solaris 10 operating system and Cisco PGW 2200 Softswitch software Release 9.8 is now complete.

