



APPENDIX **B**

Upgrading to BAMS Release 3.30

Revised: March 10, 2011, OL-11618-18

Introduction

To upgrade Cisco BAMS software to Cisco BAMS 3.30, you must upgrade from BAMS 3.20. If you wish to upgrade from BAMS 3.13 to BAMS 3.30, you must first upgrade from BAMS 3.13 to BAMS 3.20.

From BAMS 3.30, you cannot roll back to BAMS 3.20 because the hard disk is reformatted during an upgrade to BAMS 3.30. Therefore, to go back to 3.20, you must re-install Solaris 8 and BAMS 3.20, and then restore the backup files from BAMS 3.20.

You cannot upgrade to BAMS 3.30 from BAMS 3.10 or earlier releases.



Caution

Before upgrading to a new BAMS release, ensure that you have backed up the latest configuration and data files. For more information, see the [“System Backup and Recovery”](#) section on page 1-3.



Note

Before beginning this upgrade procedure, read the entire appendix to familiarize yourself with all of the steps you will be required to perform.

Upgrading a Simplex BAMS 3.20 on Solaris 8 to BAMS 3.30 on Solaris 10

To perform an upgrade from a Cisco BAMS 3.20 simplex system running on a Sun Solaris 8 operating system to Cisco BAMS 3.30 running on the Solaris 10 operating system, complete the following steps:

Step 1

For each platform on which you wish to install BAMS 3.30, collect the following information from your system administrator (the recommended defaults are provided):

- Platform hostname
- Platform IP address, network mask and default gateway IP address
- Root password
- BAMS 3.30 license keys for each unit to be upgraded

- Host names and IP addresses of the PGW 2200 units
- Home directory for new user accounts (default: /opt/CiscoBAMS/local)
- The location for the directory /opt/CiscoBAMS/data in which to insert all data files created by the application. This is usually a separate disk or file system (default: /opt/CiscoBAMS).

Step 2 Log into the simplex BAMS unit to be upgraded as bams user and execute the MML command **stp-softw::confirm** to stop the BAMS software:

```
mml:sys>stp-softw::confirm
```

The command returns a response similar to the following:

```
Billing and Measurements Server - BAMS-00 2007-05-02 12:16:02
B  COMPLD

Terminating BAMS

waiting for MGR to shut down...
;
mml:sys>
```

Step 3 Quit the MML utility.

Step 4 Log out as bams user.

Step 5 Log in as root user.

Step 6 Ensure that no other user is currently logged in on this BAMS unit and using the bams user account.

Step 7 Change directory to the location of the script for uninstalling the software:

```
$ cd /opt/install
```

Step 8 Run the uninstall script:

```
$ bams uninstall
```



Note See the [“Uninstalling BAMS” section on page 2-3](#).

Step 9 Issue the command **pkgrm CiscoBAMS**.

Enter y (yes) when the system prompts you to save the current active configuration. Enter n (no) when the system asks you if you wish to remove the data and directories. The following example shows this series of interactions:

```
# pkgrm CiscoBAMS

The following package is currently installed:
CiscoBAMS      Cisco BAMS for VSCs
                (sparc) 3.20

Do you want to remove this package? y

## Removing installed package instance <CiscoBAMS>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
...
** Examining mml directories in BAMS node 08:
Newest directory /opt/CiscoBAMS/files/s08/mml/bams_system automatically saved.
```

```

** clean_mml.sh finished.

Would you like the current active configuration to be saved as the restore
configuration? [y,n] y

Saving current active BAMS configuration...
...
Uninstalling the BAMS application...
Deleting the userid bams.
Deleting the group bams.
Would you like to remove the data directories? [y,n] n
Would you like to remove the archive directories? [y,n] n
...
Removal of <CiscoBAMS> was successful.

```

- Step 10** Issue the following command to create a tar file of the /opt/CiscoBAMS directory and subdirectories: with the following command:

```

#
# cd /opt
#
# tar cvf cisco320bams0.tar /opt/CiscoBAMS/*

```

- Step 11** Issue the following command to create a tar file of the /usr/tmp directory and subdirectories:

```

#
# cd /opt
#
# tar cvf usrtmpbams0.tar /usr/tmp/*

```

- Step 12** Create a backup copy of the two tar files that you created with Step 10 and Step 11. Copy the tar files to another server or computer by using FTP in binary mode.

- Step 13** Install the Solaris 10 operating system.



Note For information on installing the Solaris 10 operating system and disk partitioning, see the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*, for Release 9.7(3).

- Step 14** Restore and extract (that is, copy and unzip) the two tar files that you backed up with Step 12, as shown in the following example:

```

#
# cd /opt
#
# ftp backup_server_ip_address
# ftp > binary
# ftp > get cisco320bams0.tar
# ftp > lcd /usr/tmp
# ftp > get usrtmpbams0.tar
# ftp > quit
#
# ls -l
total 42214
drwxr-xr-x  3 root    bin          512 Apr 27 17:48 SUNWits
drwxr-xr-x  4 root    bin          512 May  2 18:33 SUNWmlib
drwxr-xr-x  5 root    sys          512 Apr 27 18:30 SUNWrtvc
-rw-r--r--  1 root    other      14920192 May  2 12:53 cisco320bams0.tar
#
# tar xvf cisco320bams0.tar
# cd /usr/tmp
# tar xvf usrtmpbams0.tar

```

- Step 15** While you are logged in as root, install the Cisco BAMS software from the CD-ROM labeled “Cisco Billing and Measurements Server (BAMS)” according to the instructions provided in the [“Installing Cisco BAMS” section on page 2-4](#).

**Caution**

The installation and migration of BAMS 3.30 must complete successfully, without a single error, before you can continue. Review all of the information displayed on the screen to ensure that no error or failure occurred. Login as bams user and issue the appropriate MML commands to ensure that the configuration for all sites was properly migrated by the BAMS 3.30 installation process. If you discover any error, you must resolve it at this point before continuing to the next step.

- Step 16** After you confirm that the configuration migrated successfully, determine whether you wish to enable QoS output. For instructions on how to enable QoS output refer to [Chapter 11, “Configuring BAMS for QoS Output.”](#)

**Note**

If you enable QOS output for any node, ensure that you also configure the “type” parameter in Mass Storage Control (MSC) Parameters table to maintain the new file type named QOS_STAT*csv. (Refer to [“Updating the Mass Storage Control Parameters Table” section on page 5-6](#).) Also, refer to [“Setting Disk Usage Thresholds” section on page 2-20](#) and [“Updating the Node Parameters Table” section on page 5-11](#) for more information on configuring MSC and Node parameters.

- Step 17** Ensure that the IP addresses and network names of all the PGW 2200 units are defined in the file /etc/hosts.

- Step 18** Log out as root user.

- Step 19** Log in as bams user.

- Step 20** Install the license key for the BAMS 3.30 node in the directory /opt/CiscoBAMS/license.

- Step 21** Because SFTP is the preferred transfer protocol between BAMS and the Cisco PGW 2200, configure SFTP on the BAMS unit as described in the [“Enabling SFTP on Cisco BAMS and the Cisco PGW 2200” section on page 2-7](#).

**Note**

To enable SFTP, you must also set the “protocol” parameter in the Poll table to SFTP.

Example:

```
mml:1:node01>prov-ed:poll:protocol="SFTP"
```

**Caution**

If you are migrating from BAMS 3.20 and you had QoS output enabled, for BAMS 3.30, you must enable the qosoutput parameter in the Nodeparms table.

Example:

```
mml:1:node01>prov-ed:NODEPARMS:qosoutput=[1|2]
```

For more information about enabling QoS output, see [Chapter 11, “Configuring BAMS for QoS Output.”](#)

- Step 22** While still logged in as bams user, start the BAMS application by issuing the MML command **sta-softw** as shown in the following example:

```
mml:sys>sta-softw
Billing and Measurements Server - BAMS-00 2007-04-03 13:47:27
B   COMPLD
;
mml:sys>
```

- Step 23** Confirm that the BAMS system starts to collect and process data properly.
- Step 24** Monitor the BAMS node until you are sure that the unit is working properly.

Upgrading Redundant BAMS Systems from BAMS 3.20 on Solaris 8 to BAMS 3.30 on Solaris 10

To perform an upgrade for redundant BAMS systems running Cisco BAMS 3.20 running on the Sun Solaris 8 operating system to Cisco BAMS 3.30 running on the Solaris 10 operating system, complete the following steps:

- Step 1** For each node on which you wish to install BAMS 3.30, collect the following information from your system administrator (the recommended defaults are provided):
- Platform hostname
 - Platform IP address, network mask, and default gateway IP address
 - Root password
 - BAMS 3.30 license keys for each node to be upgraded
 - Host names and IP addresses of the Cisco PGW 2200 units
 - Home directory for new user accounts (default: /opt/CiscoBAMS/local)
 - The location for the directory /opt/CiscoBAMS/data in which to insert all data files created by the application. This is usually a separate disk or file system (default: /opt/CiscoBAMS).



Note To exemplify this procedure, the redundant BAMS units are name bams0 and bams1. All nodes that are in Standby polling mode are on bams0. All nodes that are in Active polling mode are on bams1.

- Step 2** Log in as bams user on both systems and ensure that all the nodes that are in active polling mode reside on a single unit.



Note To check a node for active polling mode, issue the MML command **rtrv-ne** at the system-level prompt, as shown in the following example:

```
mml:sys> rtrv-ne
```

Refer to the [“rtrv-ne—Retrieve Network” section on page 4-22](#) for additional information on the MML **rtrv-ne** command.

If some nodes are active on one unit (for example, bams0) when the other nodes are active on the other unit (bams1), perform a switch over of the active nodes from one unit to the other so that all nodes on the first unit become *Standby* while all nodes on the other unit become *Active*. Refer to the section “sw-ovr—Switch Over” in Chapter 4 for additional information on the MML command **sw-ovr**.

For the remaining of this procedure, we will refer by the name bams0 to one of the BAMS units being upgraded, while bams1 will be used to refer to the other unit of this redundant pair of BAMS units.

For the remaining of this procedure, we will assume that at the beginning of the Upgrade all nodes were put on Standby polling mode on bams0, and that all nodes were put on Active polling mode on bams1.

Step 3 Begin the BAMS 3.30 upgrade by upgrading the Standby unit bams0.

Log out of bams1.

Step 4 Confirm that all nodes on bams0 are Standby.

Step 5 Stop the BAMS software on bams0 by issuing the MML command **stp-softw::confirm** as shown in the following example.

```
mml:sys>stp-softw::confirm
Billing and Measurements Server - BAMS-00 2007-05-02 12:16:02
B  COMPLD

Terminating BAMS

waiting for MGR to shut down...
;
mml:sys>
```

Step 6 On bams0, quit the **mml** utility.

Step 7 While logged in as bams user on bams0, run the **change_mode** program and set bams0 to Simplex mode to prevent it from synchronizing with the remote unit during the upgrade process, as shown in the following example:

```
$ pwd
/opt/CiscoBAMS/bin
$
$ change_mode

The change_mode program sets the BAMS configuration to simplex or
redundant. Do you want to continue (y/n)? y

Enter mode of operation:
1. Simplex BAMS mode
2. Redundant BAMS mode

Enter mode [1-2] : 1
```

Step 8 Log out as bams user from bams0.

Step 9 Log in as root user on bams0.

Step 10 Ensure that no other user is currently logged in on bams0 and using the bams user account.

Step 11 Change directory to the location of the script for uninstalling the software:

```
$ cd /opt/install
```

Step 12 Run the uninstall script:

```
$ bams uninstall
```



Note See the “Uninstalling BAMS” section on page 2-3.

Step 13 Issue the command **pkgrm CiscoBAM**, as shown in the following example:

Enter y (yes) when the system prompts you to save the current active configuration. Enter n (no) when the system asks you if you wish to remove the data and archive directories. The following example shows this series of interactions:

```
# pkgrm CiscoBAM

The following package is currently installed:
CiscoBAMS      Cisco BAMS for VSCs
                (sparc) 3.20

Do you want to remove this package? y

## Removing installed package instance <CiscoBAMS>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
...
** Examining mml directories in BAMS node 08:
Newest directory /opt/CiscoBAMS/files/s08/mml/bams_system automatically saved.

** clean_mml.sh finished.

Would you like the current active configuration to be saved as the restore confi
guration? [y,n] y

Saving current active BAMS configuration...
...
Uninstalling the BAMS application...
Deleting the userid bams.
Deleting the group bams.
Would you like to remove the data directories? [y,n] n
Would you like to remove the archive directories? [y,n] n
...
Removal of <CiscoBAMS> was successful.
```

Step 14 Create a tar file of the /opt/CiscoBAMS directory and subdirectories on bams0 by issuing the commands shown in the following example:

```
#
# cd /opt
#
# tar cvf cisco320bams0.tar /opt/CiscoBAMS/*
```

Step 15 On bams0, create a tar file of the /usr/tmp directory and subdirectories by issuing the commands shown in the following example:

```
#
# cd /opt
#
# tar cvf usrtmpbams0.tar /usr/tmp/*
```

Step 16 Create a backup copy of the two tar files that you created with Step 14 and Step 15. Copy the tar files to another server or computer by using FTP in binary mode.

Step 17 On bams0, install the Solaris 10 operating system.



Note For information on installing the Solaris 10 operating system and disk partitioning, see the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*, for Release 9.7(3).

Step 18 Restore and extract the two tar files that you backed up with Step 16, as shown in the following example:



Note Ensure that you are logged in as root.

```
#
# cd /opt
#
# ftp backup_server_ip_address
# ftp > binary
# ftp > get cisco320bams0.tar
# ftp > lcd /usr/tmp
# ftp > get usrtmpbams0.tar
# ftp > quit
#
# ls -l
total 42214
drwxr-xr-x  3 root    bin          512 Apr 27 17:48 SUNWits
drwxr-xr-x  4 root    bin          512 May  2 18:33 SUNWmlib
drwxr-xr-x  5 root    sys          512 Apr 27 18:30 SUNWrtvc
-rw-r--r--  1 root    other       14920192 May  2 12:53 cisco320bams0.tar
#
# tar xvf cisco320bams0.tar
# cd /usr/tmp
# tar xvf usrtmpbams0.tar
```

Step 19 While you are logged in as root, install the Cisco BAMS software from the CD-ROM labeled “Cisco Billing and Measurements Server (BAMS)” according to the instructions provided in the “[Installing Cisco BAMS](#)” section on page 2-4.



Caution

The installation and migration of BAMS 3.30 must complete successfully, without a single error, before you can continue. Review all of the information displayed on the screen to ensure that no error or failure occurred. Log in as bams user and issue the appropriate MML commands to ensure that the configuration for all sites was properly migrated by the BAMS 3.30 installation process. If you discover any error, you must resolve it at this point before continuing to the next step (upgrading bams1).

Step 20 After you confirm that the configuration migrated successfully, determine whether you wish to enable QoS output. For instructions on how to enable QOS output refer to [Chapter 11, “Configuring BAMS for QoS Output.”](#)



Note If you enable QOS output for any node, ensure that you also configure the “type” parameter in Mass Storage Control (MSC) Parameters table to maintain the new file type named QOS_STAT*csv. (Refer to “[Updating the Mass Storage Control Parameters Table](#)” section on page 5-6.) Also, refer to “[Setting Disk Usage Thresholds](#)” section on page 2-20 and “[Updating the Node Parameters Table](#)” section on page 5-11 for more information on configuring MSC and Node parameters.

After you verify that the installation and migration procedures completed successfully on bams0, you can start the upgrade of bams1.

- Step 21** Log in on bams1 as bams user and execute the MML command **stp-softw::confirm** to stop the BAMS software on bams1.
- Step 22** On bams1, quit the **mml** utility.
- Step 23** While logged in as bams user on bams1, run the **change_mode** program and set bams1 to Simplex mode to prevent it from synchronizing with the remote unit during the upgrade process, as shown in the following example:

```
$ pwd
/opt/CiscoBAMS/bin
$
$ change_mode
```

```
The change_mode program sets the BAMS configuration to simplex or
redundant. Do you want to continue (y/n)? y
```

```
Enter mode of operation:
1. Simplex BAMS mode
2. Redundant BAMS mode
```

```
Enter mode [1-2] : 1
```

- Step 24** Log out as bams user from bams1.
- Step 25** Log in as root user on bams1.
- Step 26** Ensure that no other user is currently logged in on bams1 using the bams user account.
- Step 27** To uninstall BAMS 3.20 from bams1, issue the commands **./bams uninstall** and **pkgrm CiscoBAM**, as shown in the following example.

Enter y (yes) when the system prompts you to save the current active configuration. Enter n (no) when the system asks you if you wish to remove the data and archive directories. The following example shows this series of interactions:

```
# ./bams uninstall
# pkgrm CiscoBAM
```

```
The following package is currently installed:
CiscoBAMS      Cisco BAMS for VSCs
                (sparc) 3.20
```

```
Do you want to remove this package? y
```

```
## Removing installed package instance <CiscoBAMS>
```

```
This package contains scripts which will be executed with super-user
permission during the process of removing this package.
```

```
Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
```

```
...
```

```
** Examining mml directories in BAMS node 08:
Newest directory /opt/CiscoBAMS/files/s08/mml/bams_system automatically saved.
```

```
** clean_mml.sh finished.
```

```
Would you like the current active configuration to be saved as the restore
configuration? [y,n] y
```

```

Saving current active BAMS configuration...
...
Uninstalling the BAMS application...
Deleting the userid bams.
Deleting the group bams.
Would you like to remove the data directories? [y,n]  n
Would you like to remove the archive directories? [y,n]  n
...
Removal of <CiscoBAMS> was successful.

```

- Step 28** On bams1, create a tar file of the /opt/CiscoBAMS directory and subdirectories by issuing the commands shown in the following example:

```

#
# cd /opt
#
# tar cvf cisco320bams1.tar /opt/CiscoBAMS/*

```

- Step 29** On bams1, create a tar file of the /usr/tmp directory and subdirectories by issuing the commands shown in the following example:

```

#
# cd /opt
#
# tar cvf usrtmpbams1.tar /usr/tmp/*

```

- Step 30** Create a backup copy of the two tar files you created in Step 25 and Step 26 on another computer. Copy the tar files to another server or computer by using FTP in binary mode.

- Step 31** On bams1, install the Solaris 10 operating system.

- Step 32** Restore and extract the two tar files that you backed up with Step 27, as shown in the following example:



Note Ensure that you are logged in as root.

```

#
# cd /opt
#
# ftp backup_server_ip_address
# ftp > binary
# ftp > get cisco320bams1.tar
# ftp > lcd /usr/tmp
# ftp > get usrtmpbams1.tar
# ftp > quit
#
# ls -l
total 42214
drwxr-xr-x  3 root    bin          512 Apr 27 17:48 SUNWits
drwxr-xr-x  4 root    bin          512 May  2 18:33 SUNWmlib
drwxr-xr-x  5 root    sys          512 Apr 27 18:30 SUNWrtvc
-rw-r--r--  1 root    other       14920192 May  2 12:53 cisco320bams1.tar
#
# tar xvf cisco320bams1.tar
# cd /usr/tmp
# tar xvf usrtmpbams1.tar

```

- Step 33** While you are logged in as root on bams1, install the Cisco BAMS software from the CD-ROM labeled “Cisco Billing and Measurements Server (BAMS)” according to the instructions provided in the [“Installing Cisco BAMS” section on page 2-4](#).

**Caution**

The installation and migration of BAMS 3.30 must complete successfully, without a single error, before you can continue. Review all of the information displayed on the screen to ensure that no error or failure occurred. Login as bams user and issue the appropriate MML commands to ensure that the configuration for all sites was properly migrated by the BAMS 3.30 installation process. If you discover any error, you must resolve it at this point before continuing to the next step.

- Step 34** After you confirm that the configuration migrated successfully, determine whether you wish to enable QoS output. For instructions on how to enable QoS output refer to [Chapter 11, “Configuring BAMS for QoS Output.”](#)

**Note**

If you enable QoS output for any node, ensure that you also configure the “type” parameter in Mass Storage Control (MSC) Parameters table to maintain the new file type named QOS_STAT*csv. (Refer to [“Updating the Mass Storage Control Parameters Table”](#) section on page 5-6.) Also, refer to [“Setting Disk Usage Thresholds”](#) section on page 2-20 and [“Updating the Node Parameters Table”](#) section on page 5-11 for more information on configuring MSC and Node parameters.

- Step 35** Log out as root user on bams1.
- Step 36** Log in as bams user on bams1.
- Step 37** On bams1, execute the command **change_mode** and set bams1 to redundant mode as shown in the following example:

```
$ change_mode

The change_mode program sets the BAMS configuration to simplex or
redundant. Do you want to continue (y/n)? y

Enter mode of operation:
1. Simplex BAMS mode
2. Redundant BAMS mode

Enter mode [1-2] : 2

Specify the transfer protocol between the BAMS units:
1. FTP
2. SFTP

Enter mode [1-2] : 2
```

- Step 38** On bams1, modify the UNITNO environment variable to define the unit number as 1 in the file /opt/CiscoBAMS/bin/sym_defs, as shown in the following example:

```
$ cd /opt/CiscoBAMS/bin
$
$ vi sym_defs
```

Find the following line in the file sym_def:

```
UNITNO=0;                                export UNITNO
```

Change the UNITNO value to 1:

```
UNITNO=1;                                export UNITNO
```

- Step 39** Log out as bams user on bams1.

- Step 40** Log in as the root user on bams1 and ensure the IP addresses and network names of the other bams unit and the PGW 2200 units are defined in the file /etc/hosts.
- Step 41** On bams1, verify that the file /etc/hosts contains a line with the IP address and host name of the remote BAMS unit.
- Step 42** Log in as root user on bams0 and verify that the IP addresses and network names of the other bams unit and the PGW 2200 units are defined in the file /etc/hosts.
- Step 43** On bams0, verify that the file /etc/hosts contains a line with the IP address and host name of the remote BAMS unit.
- Step 44** Log out as root user on both BAMS units.
- Step 45** On bams1, log in as bams user.
- Step 46** On bams1, from the directory /opt/CiscoBAMS/bin directory, issue the command **setbamunit** to configure the hostname, login ID, and password parameters for both BAMS units. All parameters should be defined. The parameters bam-name0 and bam-name1 should correspond to the node names of the BAMS units defined in the file /etc/hosts.
- Step 47** On bams1, configure the login information for the PGW 2200 unit(s) by executing the command **setpollpwd -s#**. The character # in this command corresponds to the number of each node (1 through 8) that is polled by this BAMS unit.
- Step 48** On bams1, install the new BAMS 3.30 license key for this unit in the directory /opt/CiscoBAMS/license.
- Step 49** On bams1, configure SFTP as described in the [“Enabling SFTP on Cisco BAMS and the Cisco PGW 2200” section on page 2-7](#).
- Step 50** On bams0, log in as bams user.
- Step 51** On bams0, from the directory /opt/CiscoBAMS/bin, execute the command **setbamunit** to configure the hostname, login ID, and password parameters for both BAMS units. All parameters should be defined. The parameters bam-name0 and bam-name1 should correspond to the node names of the BAMS units defined in the file /etc/hosts.
- Step 52** On bams0, configure the login information for the PGW 2200 unit(s) by executing the command **setpollpwd -s#**. In this command, the character # correspond to the number of each node (1 through 8) that is polled by this BAMS unit.
- Step 53** On bams0, install the new BAMS 3.30 license key for this unit in the directory /opt/CiscoBAMS/license.
- Step 54** On bams0, configure SFTP as described in the [“Enabling SFTP on Cisco BAMS and the Cisco PGW 2200” section on page 2-7](#).
- Step 55** On bams0, execute the command **change_mode** and set bams0 unit to redundant mode, as shown in the following example:

```
$ change_mode
```

```
The change_mode program sets the BAMS configuration to simplex or
redundant. Do you want to continue (y/n)? y
```

```
Enter mode of operation:
```

1. Simplex BAMS mode
2. Redundant BAMS mode

```
Enter mode [1-2] : 2
```

```
Specify the transfer protocol between the BAMS units:
```

1. FTP
2. SFTP

```
Enter mode [1-2] : 2
```

- Step 56** On bams1, while still logged in as bams user, start the BAMS application by issuing the MML command **sta-softw**, as shown in the following example:

```
mml:sys>sta-softw
Billing and Measurements Server - BAMS-00 2007-04-03 13:47:27
B  COMPLD
;
mml:sys>
```

- Step 57** Confirm that bams1 starts to collect and process data properly.

- Step 58** On bams0, while still logged in as bams user, start the BAMS application by issuing the MML command **sta-softw**, as shown in the following example:

```
mml:sys>sta-softw
Billing and Measurements Server - BAMS-00 2007-04-03 13:47:27
B  COMPLD
;
mml:sys>
```

- Step 59** Monitor both BAMS units until you are sure that both units are working properly and synchronized with bams1 as the Active unit and bams0 as the Standby unit.

- Step 60** Finally, issue the MML command **sw-ovr** to switch over all the nodes from bams1 into bams0 and to ensure that bams0 continues to collect and process data properly.

