Upgrading from BAMS Release 2.68 to BAMS Release 3.10

Introduction

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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 the prerequisites, major steps, and differences between the two releases.

Conversion utilities are provided in the Release 3.10 software that convert configuration and data files from Release 2.68 to Release 3.10 format. Releases before Release 2.68 are not supported. Node 1 of the Release 3.10 software is provisioned with the configuration information from the Release 2.68 system.

Note Ensure that your Release 2.68 software is up to Patch 7 before commencing this procedure.

Note BAMS Release 3.10 requires Solaris 8. You must install Solaris 8 after performing the backup and software uninstall (pkgrm) procedures explained below, but before installing BAMS 3.10. For information see "Installing the Sun Solaris 8 Operating System" section on page 1-4.

Upgrade Procedure

Use the following procedures to upgrade from BAMS Release 2.68 to BAMS Release 3.10, for either a simplex system or a redundant system.

Upgrading a Simplex System

Use the following procedure to upgrade a simplex system:

Step 1 Log in as the BAMS user and stop BAMS:

```
$ stop_system
```

Step 2 Export all MML parameters:

```
$ mml
mml> prov-exp:all:dirname=migration
mml> quit
```

This creates the file /opt/CiscoBAMS/files/mml/migration/all.mml.

Step 3 Back up the all.mml file to tape:

```
$ tar cvf <backup device name/path> /opt/CiscoBAMS/files/mml/migration/all.mml
```

Step 4 Back up data files and uninstall BAMS:

   a. To back up the data files, log in as the root user:

```
# cd /opt/CiscoBAMS/data
# find . –print | xargs tar cvf <backup device name/path>
# cd /opt/CiscoBAMS/CDR/archive
# find . –print | xargs tar cvf <backup device name/path>
```

   b. Log in as the root user.

   c. Remove the BAMS software by executing the **bams uninstall** command in the /opt/install directory. When prompted, answer "no" to save the active configuration, and answer "yes" when asked to remove the data and archive directories.

   d. Remove the BAMS software package using the pkgrm utility:

```
# cd /opt
# pkgrm CSCOcaBAM
```

   e. Upgrade the operating system from Solaris 2.6 to Solaris 8.

   f. Install BAMS Release 3.10.

   g. Go to the Cisco Web site and download the latest patch for BAMS Release 3.10.

   h. Install the patch.

   i. Log in as the BAMS user.

Step 5 Restore the files that you backed up above:

```
$ tar xvf <backup device name/path> /opt/CiscoBAMS/files/mml/migration/all.mml
$ cd /opt/CiscoBAMS/data/s01
$ tar xvf <backup device name/path>
$ cd /opt/CiscoBAMS/archive/s01
$ tar xvf <backup device name/path>
```

Step 6   Provision the exported file (all.mml) from the 2.68 system:

```
$ cd /opt/CiscoBAMS/files/mml/migration
$ mv all.mml all.phase2.mml
$ prov_2to3 -i all.phase2.mml -D /opt/CiscoBAMS/contrib/BAMS3node1_top.mml -o
BAMS3node1.mml
```

> **Note**   **The prov_2to3 command above should appear on one line.**

> **Note**   Step 6 generates the file /opt/CiscoBAMS/files/mml/migration/BAMS3node1.mml. Because of design changes in BAMS Release 3.10, this file contains most but not all of the MML commands you use to provision the processing tables from the Release 2.68 configuration. Here are the tables not carried over:
>
> The System Parameters (SYSPARMS) table has been expanded and is now called NODEPARMS. The SYSPARMS entries from the Release 2.68 configuration are not carried over, and the default Release 3.10 values for NODEPARMS are in the file BAMS3node1.mml. Examine these values to make sure they are correct.
>
> The TCA-TBL (thresholds) table has been significantly expanded in Release 3.10. The file BAMS3node1.mml must be manually edited if measurement parameters are to be provisioned in this migration procedure. Refer to the "TCA-TBL Tag ID" section on page 5-23.
>
> The Skip CDE table of Release 2.68 has "5000" as a default entry. Because this CDE TAG can be processed in BAMS Release 3.10, this table entry is not carried over in this migration procedure.

Step 7   Once all necessary changes have been made to the file BAMS3node1.mml, configure BAMS with the BAMS3node1.mml batch file:

```
$ cd /opt/CiscoBAMS/files/mml/migration
$ mml -b BAMS3node1.mml
```

Step 8   Any in-progress data files restored from tape must be converted from the Release 2.68 to the Release 3.10 format using the cnv_outputdir.sh utility provided in the Release 3.10 software. Execute the following:

```
$ cd /opt/CiscoBAMS/data/s01/output
$ chmod 777 /opt/CiscoBAMS/contrib/cnv_outputdir.sh
$ cnv_outputdir.sh
```

This script converts all Release 2.68 data files in the directory /opt/CiscoBAMS/data/s01/output to Release 3.10 format. Any files not converted are listed by this script and are stored in the /opt/CiscoBAMS/data/s01/output/unprocessed directory. Verify that this directory is empty. Any files that are left unprocessed in this directory should be forwarded to Cisco for further analysis. Files that were successfully converted are stored in the /opt/CiscoBAMS/data/s01/output/processed directory.

Step 9   Modify the Poll and Switch Information tables on the BAMS unit:

Obtain the values for the SWITCHINFO fields from the file /opt/CiscoBAMS/files/ctb_cfg on BAMS unit 0:

```
$ cat /opt/CiscoBAMS/files/ctb_cfg

CTB -I$AUG_DIR_OUT -O$CTB_DIR_OUT -iaug_ct -obaf_ -s118 -x12345 -r118 -R67890
```

Here is the mapping between the ctb_cfg parameters and the Switch Information table:

```
ctb_cfg         SWITCHINFO parameter
-s              sensortype
-x              sensorid
-r              recoffctype
-R              recoffcid
```

Step 10   Use the MML **chgno** command to set the sequence number to the next sequence number to be polled from the PGW:
```
$ mml
mml:node1> chgno::seqno1=x,seqno2=y
```

(where "x" and "y" are the sequence numbers from the two Cisco MGC units)

Step 11   Upgrade BAMS to Release 3.13. For more information, see Appendix C, "Upgrading from BAMS Release 3.10 to BAMS Release 3.13."

Upgrading a Redundant System

Use the following procedure to upgrade a redundant system:

Step 1   On the Cisco MGC, change the diskmonitor.CdrRmFinished value (in the XECfgParm.dat file) so that ".finished" files are not removed immediately. The new value for this parameter should allow enough time for the BAMS upgrade to be completed and verified.

To edit the XECfgParm.dat file, use vi:
```
vi /opt/CiscoMGC/etc/XECfgParm.dat
```

Modify the time parameter ("2" represents the number of days). For example:
```
diskmonitor.CdrRmFinished = 2 # MIGRATED
```

Step 2   Log in as the BAMS user and stop the application for BAMS units 0 and 1:

```
$ stop_system
```

Step 3   Perform the following for BAMS unit 0:

a.   Use the change_mode utility to configure unit 0 as simplex. Do not change the measurement interval.

b.   Using MML, verify that the action parameter in the Poll table is set to "R" (to rename files); if not, modify it:
```
$ mml
```

```
mml> prov-sta::srcver=active,dstver=migration,confirm
mml> prov-ed:POLL:site-name="<site name>",action="R"
mml> prov-dply::
```

    c. Export all MML parameters:

```
$ mml
mml> prov-exp:all:dirname=migration
mml> quit
```

    This creates the file /opt/CiscoBAMS/files/mml/migration/all.mml.

Step 4   Back up data files and uninstall the application on BAMS unit 1:

    a. To back up the data files, log in as the root user:

```
# cd /opt/CiscoBAMS/data
# find . –print | xargs tar cvf <backup device name/path>
# cd /opt/CiscoBAMS/CDR/archive
# find . –print | xargs tar cvf <backup device name/path>
```

    b. Remove the BAMS software on unit 1 by executing the **bams uninstall** command in the /opt/install directory. When prompted, answer "no" to save the active configuration, and answer "yes" when asked to remove the data and archive directories.

    c. Remove the BAMS software package using the pkgrm utility:

```
# cd /opt
# pkgrm CSCOcaBAM
```

    d. Upgrade the operating system from Solaris 2.6 to Solaris 8 on unit 1.

    e. Install BAMS Release 3.10 on unit 1.

    f. Go to the Cisco Web site and download the latest patch for BAMS Release 3.10.

    g. Install the patch.

    h. Log in as the BAMS user.

    i. Configure unit 1 as simplex using the change_mode utility.

    j. Specify this unit as UNITNO=1 by modifying the file /opt/CiscoBAMS/bin/sym_defs.

    k. Source the sym_defs file to update the environment variables:

```
$ . /opt/CiscoBAMS/bin/sym_defs
```

Step 5   Copy the MML batch file /opt/CiscoBAMS/files/mml/migration/all.mml from BAMS unit 0 to BAMS unit 1, /opt/CiscoBAMS/files/mml/all.phase2.mml. Convert this batch file from Release 2.68 to Release 3.10 format using the prov_2to3 utility provided in the Release 3.10 software:

```
$ cd /opt/CiscoBAMS/files/mml
$ prov_2to3 –i all.phase2.mml –D /opt/CiscoBAMS/contrib/BAMS3node1_top.mml –o
BAMS3node1.mml
```

✎
Note   **The prov_2to3 command above should appear on one line.**

✎
Note   Step 5 generates the file /opt/CiscoBAMS/files/mml/BAMS3node1.mml. Because of design changes in BAMS Release 3.10, this file contains most but not all of the MML commands you use to provision the processing tables from the Release 2.68 configuration. Here are the tables not carried over:

The System Parameters (SYSPARMS) table has been expanded and is now called NODEPARMS. The SYSPARMS entries from the Release 2.68 configuration are not carried over, and the default Release

■ **Upgrade Procedure**

3.10 values for NODEPARMS are in the file BAMS3node1.mml. Examine these values to make sure they are correct.

The TCA-TBL (thresholds) table has been significantly expanded in Release 3.10. The file BAMS3node1.mml must be manually edited if measurement parameters are to be provisioned in this migration procedure. Refer to the "TCA-TBL Tag ID" section on page 5-23.

The Skip CDE table of Release 2.68 has "5000" as a default entry. Because this CDE TAG can be processed in BAMS Release 3.10, this table entry is not carried over in this migration procedure.

Step 6   Once all necessary changes have been made to the file BAMS3node1.mml, configure BAMS unit 1 with the BAMS3node1.mml batch file:

```
$ cd /opt/CiscoBAMS/files/mml
$ mml -b BAMS3node1.mml
```

Step 7   Copy all files from the directory /opt/CiscoBAMS/data/output of BAMS unit 0 to BAMS unit 1, /opt/CiscoBAMS/data/s01/output. You must convert these files from the Release 2.68 to the Release 3.10 format using the cnv_outputdir.sh utility provided in the Release 3.10 software. Execute the following:

```
$ cd /opt/CiscoBAMS/data/s01/output
$ chmod 777 /opt/CiscoBAMS/contrib/cnv_outputdir.sh
$ cnv_outputdir.sh
```

This script converts all Release 2.68 data files in the directory /opt/CiscoBAMS/data/s01/output to Release 3.10 format. Any files not converted are listed by this script and are stored in the /opt/CiscoBAMS/data/s01/output/unprocessed directory. Verify that this directory is empty. Any files that are left unprocessed in this directory should be forwarded to Cisco for further analysis. Files that were successfully converted are stored in the /opt/CiscoBAMS/data/s01/output/processed directory.

Step 8   Modify the Poll and Switch Information tables on BAMS unit 1:

Obtain the values for the SWITCHINFO fields from the file /opt/CiscoBAMS/files/ctb_cfg on BAMS unit 0:

```
$ cat /opt/CiscoBAMS/files/ctb_cfg

CTB -I$AUG_DIR_OUT -O$CTB_DIR_OUT -iaug_ct -obaf_ -s118 -x12345 -r118 -R67890
```

Here is the mapping between the ctb_cfg parameters and the Switch Information table:

```
ctb_cfg         SWITCHINFO parameter
-s              sensortype
-x              sensorid
-r              recoffctype
-R              recoffcid
$ mml
mml:sys> set-node:1:
mml:node01> prov-sta::srcver=active,dstver=test,confirm
mml:node01> prov-ed:POLL:file-suffix1=".finished",file-suffix2=".finished"
mml:node01> prov-ed:SWITCHINFO:sensortype="sss",sensorid="xxxxx",recoffctype="rrr",
recoffcid="RRRR"
mml:node01> prov-dply::
```

The Poll tables on BAMS units 0 and 1 have now been configured so that BAMS unit 0 polls files from the Cisco MGC units and renames the files with a suffix of ".finished" after a successful poll. BAMS unit 1 then polls the "*.finished" files after they have already been polled and renamed by unit 0, and deletes these files after a successful poll. Both units process the same files, each in simplex mode.

Step 9 Use the MML **chgno** command to change the sequence numbers from "1" to "values_on_the_2.68_machine":

```
$ mml
mml:node1> chgno::seqno1=x,seqno2=y
```

(where "x" and "y" are the sequence numbers from the two Cisco MGC units)

Step 10 Set up the polling passwords:

```
$ setpollpwd -s 1
New value for 'userid1' []:
Enter  password for 'password1':
password again -
New value for 'userid2' []:
Enter  password for 'password2':
password again -
```

Step 11 Set the names for the BAMS units:

```
$ setbamunit
value for 'bam-name0' []:
value for 'login0' []:
Enter password for 'passwd0':
again password -
New value for 'bam-name1' []:
New value for 'login1' []:
Enter password for 'passwd1':
again password -
```

Step 12 Start both units with the **start_system** command. After several files have been polled and processed by BAMS unit 0, stop the application on BAMS unit 0 using the **stop_system** command.

Step 13 Allow enough time for BAMS unit 1 to poll and process all the files polled and processed by BAMS unit 0, and then stop the application on BAMS unit 1, using the **stop_system** command.

Step 14 Verify that BAMS unit 1 is generating valid output files in the following directories (if these outputs were turned on in the Node Parameters table):

```
/opt/CiscoBAMS/data/s01/ASCII
/opt/CiscoBAMS/data/s01/ASCIIBAF
/opt/CiscoBAMS/data/s01/BAF
/opt/CiscoBAMS/data/s01/EXTASCII
/opt/CiscoBAMS/data/s01/Measurements
/opt/CiscoBAMS/data/s01/p001
```

Note Compare the files in the BAF and ASCII subdirectories directly with the files from unit 0. The filenames are slightly different because unit 0 processed files with a .bin suffix, and unit 1 processed files with a .finished suffix from the Cisco MGC. If no mistakes were made during the upgrade procedure, any BAF files should be the same on both units. For the ASCII output, note that one additional field has been added to the end (TAG 5000, Global Call id). You can use the skipcde parameter to no-write the GCI, but a comma placeholder there gives the record 48 fields.

If you find any problems, they must be fixed before proceeding further. Any differences would likely be due to provisioning errors.

The files from the Measurements subdirectory will have significant differences because of changes in how statistics are generated in Release 3.10. The numbers generated in the statistics files might display some anomalies until all calls that were in progress at the time of the upgrade are complete. For this reason, the measurements might not be completely accurate for 2-3 days.

The files in ASCIIBAF, EXTASCII, and P01 are new output types for Release 3.10.

If no problems are found, remove the following directories:

```
$ cd /opt/CiscoBAMS/data/s01/output
$ rm -rf processed unprocessed
```

These directories were created in Step 8 and are no longer needed.

Step 15   Ensure that the system is stopped on unit 0.

Step 16   If verification of the data is successful, upgrade unit 0 from Release 2.68 to Release 3.10 software:

   a.   To back up the data files on unit 0, log in as root on unit 0:

```
# cd /opt/CiscoBAMS/data
# find . -print | xargs tar cvf <backup device name/path>
# cd /opt/CiscoBAMS/CDR/archive
# find . -print | xargs tar cvf <backup device name/path>
```

   b.   Remove the BAMS software on unit 0 by executing the **bams uninstall** command in the /opt/install directory. When prompted, answer "no" to save the active configuration, and answer "yes" when asked to remove the data and archive directories.

   c.   Remove the BAMS software package using the pkgrm utility:
```
$ cd /opt
$ pkgrm CSCOcaBAM
```

   d.   Upgrade the operating system from Solaris 2.6 to Solaris 8 on unit 0.

   e.   Install BAMS software Release 3.10 on unit 0.

   f.   Go to the Cisco Web site and download the latest patch for the BAMS 3.10 release.

   g.   Install the patch.

   h.   Log in as the BAMS user.

   i.   Configure unit 0 as redundant using the change_mode utility.

   j.   Source the sym_defs file to update the environment variables:

```
$ . /opt/CiscoBAMS/bin/sym_defs
```

   k.   Execute the setbamunit utility and specify the host names and login information for units 0 and 1.

Step 17   Follow these steps for unit 1:

   a.   Using MML, modify the Poll table:

```
mml> set-node:1:
```

```
mml> prov-sta::srcver=active,dstver=migration,confirm
mml> prov-ed:POLL:file-suffix1=".bin",file-suffix2=".bin"
mml> prov-dply::
```

b. Reconfigure BAMS unit 1 as redundant using the change_mode utility.

c. Execute the setbamunit utility on BAMS unit 1. Specify host names and login information for both BAMS units.

d. Copy the configuration information on unit 1 to unit 0 by executing the MML commands:

```
mml> set-node:1:
mml> prov-sync::
```

Step 18 Upgrade your BAMS units to Release 3.13. For more information, see Appendix C, "Upgrading from BAMS Release 3.10 to BAMS Release 3.13.".