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AnyMedia® Element Manager-Broadband:

Software Release Description
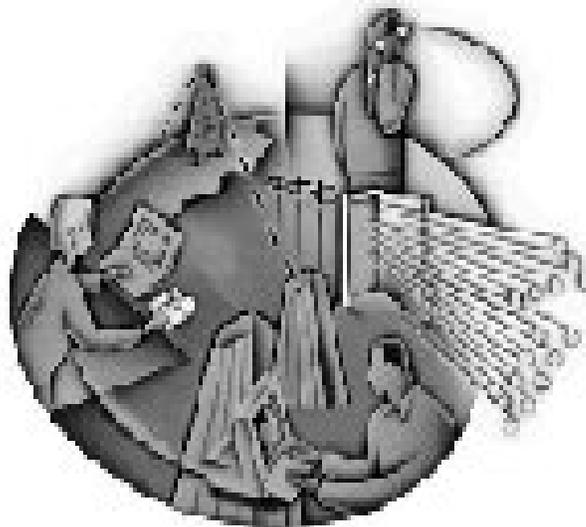
363-211-322
AEM-BB Release 1.3
Version 1.0
March 2000

1   Software release description

Overview

Purpose   This Software Release Description (SRD) provides information about the *AnyMedia® Element Manager-Broadband (AEM-BB)* software release R1.3. For this release, the software and associated documentation consist of the following:

- AEM-BB R1.3 CDs
    - *AnyMedia® Element Manager-Broadband SID-C037-08 (disk 1)*
    - *AnyMedia® Element Manager-Broadband SID-C037-09 (disk 2)*
- AEM-BB R1.3 documentation
    - *AnyMedia® Element Manager-Broadband: Administrator's Guide R1.3*
    - *AnyMedia® Element Manager-Broadband: User's Guide R1.3*

Additional information about the AEM-BB software package (including the version number) can be obtained by clicking on the **Description** button on the Launch page and then clicking on the "Version Information" hyperlink on the About page.

Compatibility   This release of the AEM-BB software is compatible with AFM software loads R1.1.2 and R 1.4 and manages the following network elements:

- *AnyMedia® Access System*

- *AnyMedia® Access Interface Unit (AIU)*

- *AnyMedia® Access Interface Unit Expansion (EAIU)*

- *AnyMedia® Access Interface Unit Remote (RAIU)*

Contents   This SRD contains the following sections, which begin on the referenced page:

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New features

Existing features   The following features are being delivered as part of Release 1.3 of the AEM-BB:

- Network element configuration
- Provisioning
- Traffic counts
- Performance monitoring
- Alarm monitoring
- Security
- Network element software installation
- Subscriber information

Enhancements   This new release adds support for AFM version 1.4. and provides:

- Limited support for the Optical Network Unit (ONU) and Optical Application Pack (OAP)
- Enhanced fault management functions to allow the display of alarms and events generated by the ONU subshelves on AEM-BB pages

Other enhancements include:

- A new Network Element Cross Connects page that displays all of the cross connects provisioned by the AEM-BB for a particular network element
- A new Backup Schedule page that displays the schedule for automatic backups of network element provisioning data and enables users to modify the schedule
- Enhanced alarm reporting functions that consist of the enabling or disabling of autonomous alarms on a per network element basis
- New network element capabilities that include the deletion of network elements removed from the network and the enabling or disabling of a scheduled backup on a per network element basis
- The redesign of the network element event Log page to provide a significant improvement of the GUI's performance

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Precautions and warnings

Purpose
This section lists information pertaining to recognized operating warnings and precautions existing in this release of the AEM-BB software. The information presented in this section is the result of continued testing and system performance characterization.

Supported Solaris version
GUI display problems exist when the Netscape application runs on Solaris 2.6 software.

Workaround
Continue to use the Solaris 2.5.1 operating system on the server and client.

OAP management
The AEM-BB provides limited support for the OAP card, including the configuring and resetting of the OAP.

Workaround
Use the DATA GSI (international version) as documented in the *AnyMedia Access System Commands and Procedures Data Services* manual to perform all of the other provisioning and management tasks related to the OAP.

ONU management
The AEM-BB does not provide any support for the configuration or maintenance of ONU subshelves.

Workaround
Use the DATA GSI (international version) as documented in the *AnyMedia Access System Commands and Procedures Data Services* manual to provision and manage the subshelf.

ONU shelf cross connects
The AEM-BB does not recognize cross connects associated with the ports on ONU subshelves. Attempts to cross connect a network VPI/ VCI that is already in use will cause an error message to be displayed. In addition, the AEM-BB subscriber audit will not recognize ONU cross connects.

Workaround
If an error message is displayed, refer to the DATA GSI to identify the VPIs and VCIs already in use to avoid entering duplicate values.

GUI lockup or exit

The Netscape GUI interface may occasionally lock up or exit during normal use. The GUI may also lock up when accessing an AFM that has been removed or stops responding.

Work around

Restart the Netscape GUI session by clicking on the Exit entry under the File pull-down menu. This should close all of the Netscape windows including the Connections window.

If this procedure does not succeed, forcibly exit your Netscape session and then restart the program.

Netscape Back button

When the AEM-BB System page is displayed, the Netscape **Back** button does not work.

Work around

Click on the **AEM-BB Admin** sidebar button instead.

Hourglass continues to display

Occasionally, the hourglass may remain on the screen after all the data is retrieved for the page.

Work around

Click on File and then Exit on the pull-down menu, and restart the Netscape GUI session.

Alarm tables and Alarms page: Location field disabled links

In the Alarms tables and on the Alarm page, the Location field links are disabled for the following alarms:

- "link has transitioned to in service state"
- "link has transitioned to out of service state"

In addition, OAP and subshelf location entries in alarm and event tables are disabled.

Work around ("Link has transitioned...")

If necessary, click on a NE Location to navigate to the Network Element page. At that page, navigate to the appropriate page as required.

Workaround (OAP and subshelf locations)

Use the DATA GSI to manage the OAP and subshelf hardware.

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Precautions and warnings resolved

Purpose

This section describes the recognized operating warnings and precautions that have been resolved in this release of the AEM-BB software. The information presented in this section is the result of continued testing and system performance characterization.

No notification given when placing a card out of service

If a request is made to place a card out of service (OOS), all ports on the card will also be placed OOS. Notification is now given to the user indicating whether or not there is customer service provisioned on these ports.

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System notes

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Engineering rules

The following engineering rules are recommendations that help ensure the acceptable performance of the AEM-BB server. For this release, the recommended number of network elements and ADSL lines are provided in the following table.

Table 1-1   Recommended specifications

Component	Recommendation
Network elements managed per AEM-BB:	250
ADSL lines managed per AEM-BB:	15,000 where: 15,000 = 250 network elements x 60 lines Note that the 60 lines are based on a shelf with 15 ADSL cards and 4 ports on each card.

To ensure acceptable system response times, it is recommended that all ADSL lines on a network element be associated with a single subscriber entry. This approach will minimize the number of subscribers defined in the system while distributing the number of ADSL lines among the subscribers.

It is expected that a separate accounting system will be used to record end-customer service and billing information.

Alarm and events Location fields

Each Location field in the AEM-BB Alarms table and events log now displays the location of the shelf-card-port. If the displayed location is associated with an OAP or a subshelf, the link in the Location field is disabled.

How to manually define a network element

A network element can be manually defined as follows:

- Edit or create an */opt/adslem/config/afmhosts* file.

- Then, list the IP addresses of the AFMs that are not being automatically discovered in this file.

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For example, if AFMs with IP addresses of 1.1.1.1 and 1.1.2.2 are not being automatically discovered, add the following lines to the */opt/ adslem/config/afmhosts* file:

```
1.1.1.1

1.1.2.2
```

Then, save the file and wait 60 seconds. Afterwards, reload the Network Elements page and the AFMs should appear on the page.

Network element precautions and warnings

The functionality of the AEM-BB system is dependent on the operation of the network element. Each release of the network element will have an SRD that will specify the known limitations in the system.

The system administrator should review the *AnyMedia® Access System: Software Release Description for DATA Software Release 1.0/ 1.1* for the list of known operating issues.

GUI pages not displaying updates

Netscape GUI user screens may display information that is out of date after changes have been applied. Specifically, changes made by other GUI users will not be reflected on a different user's screen until the page is reloaded. Also, status changes of ports/cards are not dynamically updated on the screen.

To display the latest status, reload the screen.

System audits and counts

The AEM-BB has processes that run periodically to:

- Audit data and use this information to sync the AEM-BB with the network element
- Collect performance monitoring and traffic count data at regular intervals
- Poll each managed network element continuously (to check for a heartbeat) to ensure that each AFM card is operational

The following is a summary of some of the periodic activities that are performed on the AEM-BB:

- Subscriber line PM collection every 15 minutes
- DS3 or E3 PM collection every 15 minutes
- Network element traffic counts every 15 minutes
- Subscriber audit every 15 minutes
- Network element audit every 24 hours
- Alarm audit every 15 minutes
- Heartbeat audit every 2 minutes

- Event logs synchronized every 15 minutes

Running a manual subscriber audit

To verify that a particular network element and the AEM-BB have consistent views of the port and cross connection data, the subscriber audit can be run manually as follows:

- Invoke adslem.profile with a dot command as follows:

  `. /opt/adslem/config/xdslem.profile`

- Enter:

  `SubscriberAudits -e <ElementIP_address>`

  where:

  `<ElementIP_ address>` is the IP address of a particular network element [for example, `135.135.135.135`]

The subscriber audit, which runs in a noncorrecting mode, provides the user with a log of discrepancies in the following directory:

/opt/adslem/auditslog

Netscape security

The AEM-BB web-based security system can be set up by using *Netscape FastTrack Server 3.01*. To facilitate access control, the AEM-BB pages may be segmented into three functional areas to limit access to specific groups of users, such as system administrators, network element managers, and subscriber provisioners.

If the FastTrack Server is used to provide security for the AEM-BB, each user will be required to respond to a prompt for a login and password to access particular groups of screens.

After the user has successfully entered a valid login/password for a specific functional area, he or she will not be prompted again for the duration of the Netscape session. However, if the user accesses a different functional area, he or she will again be prompted for a valid login/password that will also be valid for the session.

If the login entered is valid but does not allow access to a particular functional group, the user will be denied access to these functions until the Netscape session is completely closed. (That is, Netscape on the GUI must be completely shut down.) After Netscape is restarted, the user is provided another chance to enter a valid login/password. If the login is valid, the user should gain access to the previously denied functional group.

Initializing the AFM database

If a re-initialization of the AFM's database (*init-sys*) becomes necessary, the user will need to use the DATA GSI to perform the *init-*

sys. The *init-sys* of the AFM must be done from the DATA GSI since the AFM may be cut off from the AEM-BB after the *init-sys* operation is complete.

If an AFM is in-band managed (via an ATM switch), the *init-sys* operation will erase provisioning information stored on the AFM that is required to establish communications to the AEM-BB. The DATA GSI is needed to re-provision the basic communication information in the AFM that is necessary to establish a connection to the AEM-BB.

Recommended patch levels for third-party software

The following software patch levels are recommended for the proper operation of the system and are available on the AEM-BB CD, disk 2:

*   Solaris patches

    –   Solaris 2.5.1, dated 9/99

    –   Y2K patch, dated 9/99

    –   Raptor video card patch 107851-03 if a Raptor Video card is installed

*   The following NNM consolidated patch:

    –   NNM Release 5.0x Solaris 2.X Consolidated Patch PSOV_02468, dated 9/99

*   HPOV Emanate Client Agent Patch – PSOV-02377, dated 8/99 (Patch Description:

    sparcSOL 2.X OV EMANATE14.x Emanate Agent 14.0 patch)

*   Netscape FastTrack 3.01 Admin Server v3.5 Patch 2

Multiple Netscape processes

Individual UNIX users should only run one *Netscape Communicator* process. The AEM-BB does not support multiple *Netscape Communicator* processes for the same client.

> **Important!**   Multiple windows within the same Netscape Communicator session are supported.

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System configuration and documentation

AEM-BB configuration in a multi-AEM-BB network

One and only one AEM-BB should manage a network element. If auto-discovery is to be employed in a multi-AEM-BB network, then subnetting must be used. The network elements that are to be managed by a single AEM-BB should be on the same subnet.

If you are not using subnetting, then the */opt/adslem/config/afmhosts* file should be populated with the IP address of each network element to be managed by that AEM-BB.

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Software installation procedures

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Initial installation procedures Software installation procedures for a new AEM-BB system can be found in the *AnyMedia® Element Manager-Broadband: Administrator's Guide* (document number 363-211-320).

Browser version For AEM-BB Release 1.3, the *Netscape Communicator* version that is being shipped was updated to 4.6.1.

Although *Netscape Communicator* 4.5 is still supported, customers are encouraged to upgrade to the newer release.

Previous cross connect information If any port or cross connect information has been provisioned on a network element prior to the installation of the AEM-BB, this information must be copied to the AEM-BB subscriber database using the UNIX command: `SubscriberAudits -i`

When this command is executed, all of the subscriber data on the network element is copied from each network element to the AEM-BB. In addition, this command creates one Subscriber ID for each port that has a cross connect on a network element. The created Subscriber ID is in the following format:

`135.135.135.135_Sub_x`

Time zone setting The AEM-BB time zone must be set up based on the Greenwich Mean Time (GMT) world standard.

Work around

After the AEM-BB is installed, modify the */etc/TIMEZONE* file as follows:

1. Logged in as root, edit the */etc/TIMEZONE* file by entering:

   `cd /etc`

   `vi TIMEZONE`

2. Set the time for your region by entering:

   `TZ=<time_zone>`

   where:

   `<time_zone>` is the valid GMT+ or GMT- time zone designation applicable to your region

   [For example, enter `TZ=GMT-6` for Chicago.]

3. Reboot.

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⚠ CAUTION

Do not use the other naming conventions for the time_zone (for example, TZ=US/Central).

Software upgrade procedures

Software installation procedures for upgrading an AEM-BB system to a newer release of software can be found in the *AnyMedia® Element Manager-Broadband: Administrator's Guide* (document number 363-211-320).

Important! When upgrading AEM-BB software from R1.2.x to R1.3, edit the */etc/system* file to modify the value for SEMMNU from 30 to 300. After this value is updated, reboot the system to enable the change to become effective.

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Abbreviations

List of abbreviations The following abbreviations are used in this SRD:

Abbreviation	Expansion
ADSL	Asymmetrical Digital Subscriber Line
AEM-BB	AnyMedia Element Manager-Broadband
AFM	ATM Feeder Multiplexer
AIU	Access Interface Unit
DS3	Digital Signal Level 3
E3	European Signal 3
EAIU	Access Interface Unit Expansion
GMT	Greenwich Mean Time
GUI	Graphical User Interface
HPOV	HP OpenView
IP	Internet Protocol
Mgmt VCI	Management Virtual Channel Identifier
Mgmt VPI	Management Virtual Path Identifier
NNM	Network Node Manager
PM	Performance Monitoring
OAP	Optical Application Pack
OCP	Optical Communication Pack
ONU	Optical Network Unit
RAIU	Access Interface Unit Remote
SNR	Signal to Noise Ratio
SRD	Software Release Description
OOS	Out of service
VCI	Virtual Channel Identifier
VPI	Virtual Path Identifier

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