AirWave Management Link™ Configuration & Setup Guide

Version 1.2

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Introduction

The AirWave Management Link™ (AML) is a Java applet that allows AirWave's customers to seamlessly manage their wireless networks with HP OpenView Network Node Manager (NNM), just as they manage their wired networks. AML's primary function is to manage communications between the AirWave Management Platform (AMP) software and NNM.

Whenever AMP discovers a new access point to be managed, it sends a "configuration trap" to AML containing the detailed configuration of the AP. AML then updates the NNM database, enabling the user to monitor and manage the access points via standard NNM tools. The AirWave Management Platform sends updates to AML via SNMP whenever wireless access point's status or configuration changes.

As AMP monitors the wireless LAN and discovers potential problems, it sends fault traps to AML. The AirWave Management Link then updates the NNM database status with the proper severity code for the alert and sends an alarm to the NNM alarm browser.

Because AMP generates common alarm and configuration traps across multiple hardware platforms, network administrators can manage access points from heterogeneous vendors from the same console. AMP supports access points from Avaya, Cisco, Colubris, Enterasys, HP, Intel, Proxim, Symbol, and many others.

AirWave Management Link™ Installation

System Requirements

- Solaris 8 or higher; MS Server 2000 or 2002
- Netscape version 6.0, IE 6.0, Mozilla 1.3 or higher
- Java2 JRE 1.2.2 or higher
- NNM 6.2 or higher
- SNMP v2 traps must be enabled on NNM
- AirWave Management Platform version 2.2.0 or higher
- UDP port 162 must be open for traps to pass between AMP and NNM
- Write access to $AML_DIR, the $OV_SHARE tree, and $AML_LOGDIR (see below).

Directory Structure

This document references environment variables rather than the actual path locations. The table below relates the actual directory to the environment variable. HP OpenView's naming convention for environment variables is consistent across all supported platforms. The directory structures for Solaris, HP-UX and Windows NT/200 are listed below.

Directory	Unix (Solaris & HP-UX)	MS Server 2000 & 2002
AML_DIR	/opt/awaml	C:\Program Files\awaml
AML_LOGDIR	/var/opt/awaml	C:\Program Files\awaml\log
AML_BACKUP	/var/opt/awaml/backup	C:\Program Files\awaml\backup
OV_SHARE	/etc/opt/OV/share	*C:\Program Files\HP OpenView\NNM
OV_SNMP_MIBS	/var/opt/OV/share/snmp_mibs	*C:\Program Files\HP OPenView\NNM\snmp_mibs

NOTE: On pre 6.2 versions of Network Node Manager the target installation directory is c:\openview instead of c:\Program Files\HP OpenView\NNM.

- *Network Node Manager for MS Windows allows users to specify the installation location. By default, NNM is installed in c:\Program Files\HP OpenView\NNM. If you change the default location during installation, the environment variables OV_SHARE and OV_SNMP_MIBS will also point to the new install directory.*

Installation Flow

During the AirWave Management Link installation process, the software:

- Shuts down Network Node Manager until installation is complete.
- Installs the contents of NNM.zip, various registration files and icons in $OV_SHARE.
- Installs the AML software in $AML_DIR and $AML_LOGDIR
- Adds definitions for both AirWave Management Platform and internal AirWave Management Link traps to NNM's configuration file for trap formats (specified in trapd.conf).
- Adds a filter called "AMLNode" to the filters file.
- Loads the AirWave MIB into OpenView and installs it in $OV_SNMP_MIBS\Vendors/OTHER-VENDORS/airwave_mib.

- Reconfigures OpenView to remove AML nodes when it cannot ping them for two hours by setting the DHCP node filter to “AMLNode” and setting the DHCP timeout to two hours. (Optional)
- Saves backups of the OpenView configuration files modified during the install process in $AML_BACKUP to facilitate easy software removal.

Getting Started

1. Login as root

2. Use the AML software provided on CD or download it from AirWave at www.airwave.com/awaml. The installation package contains six files:
   - aml_install – executable installation program for Unix
   - aml_install_windows.ovpl – executable install program for MS
   - NNM.zip – zip file of files deposited into OpenView directories (application and field registration files, icons, and related files)
   - aml.zip – zip file of AirWave application files (AirWave.jar, AirWave Mib file, and AirWave trap definitions)
   - README
   - InstallationGuide.pdf

AML Installation Process

1. Ensure that OpenView is configured to use Netscape 6, IE 6.0, Mozilla 1.3, or greater.
   (Note: Solaris 8 ships with Netscape 4.76, which is not compatible with AMP.)

2. On Unix systems, ensure that $OV_SHARE/conf/ovweb.conf specifies the proper version of Netscape or Mozilla before starting the install process. To test, view ovweb.conf or launch `ovweb`.
   (Note: ovweb.conf will not exist if you haven’t configured OpenView with a browser)

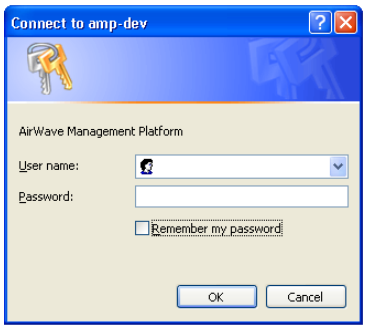
3. Execute the aml_install program from the desired location by typing `./aml_install` on Unix systems or `aml_install_windows.ovpl` on Microsoft platforms.
   (Note: On MS platforms the install program prompts for location of the OpenView installation directory. The default is `c:\Openview`.)

4. The install program prompts for the UDP port to use when forwarding traps from the AirWave Management Platform to AML. The default is 4144. In most cases it is safe to accept this default setting. Check with the network administrator if you are not sure whether this port is already in use.

5. The install program asks whether it should poll AML nodes frequently using the DHCP status polling mechanism. The default is “no.”

6. Start the Network Node Manager graphical UI by typing “ovw &”.
   - A symbol labeled “AirWave Network” should appear in the root sub map
   - Executing `ps - ef` should display a new java process running, and its pid should match the contents of the file $AML_LOGDIR/.ovcwd.pid.
     (Note: A detailed log of the AML installation process is kept in $AML_LOGDIR/install.log.)

AMP Installation



Configure AMP to Communicate with NNM

1. Login to AMP as the "Management" user *(Note: The default user name is "management" and the default password is "management". Check with the network administrator if you do not know the AMP username and password.)*

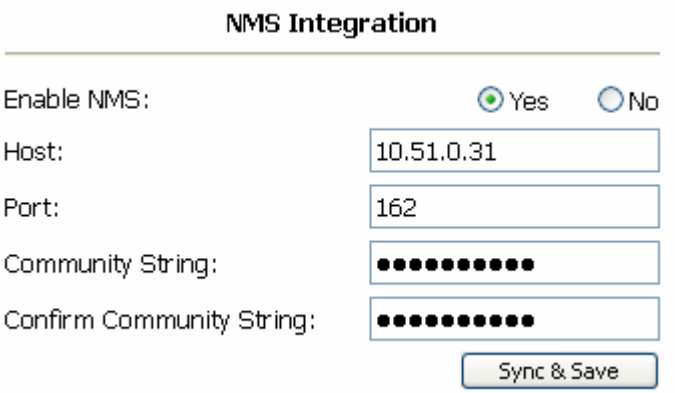
2. Proceed to the AMP Setup→NMS tab on the AMP user interface.

3. Select "Yes" in the "Enable NMS" field.

4. Enter the IP address or hostname of the NNM server.

5. Enter the SNMP trap port number *(Note: The default is 162).*

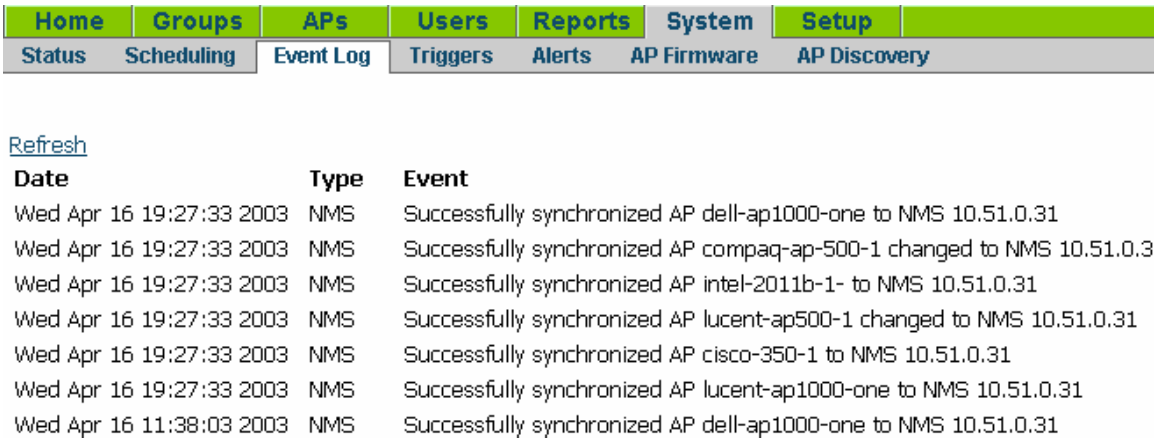
6. Enter an arbitrary string twice in the "Community String" and "Confirm Community String" fields. *(Note: OpenView does not check the community string on incoming traps, but AMP requires a community string)*



7. Click the "Sync & Save" button. When you click this button, AMP will send a configuration trap to NNM for each AP under management.

8. Proceed to AMP's System→Event Log page, to see an event message for every access point under management (see below).

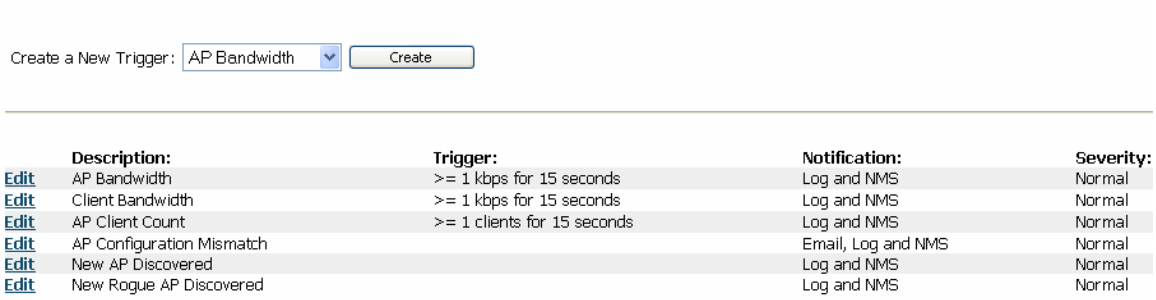
9. AML interprets each event message and creates a group symbol and submap for each group of APs in AMP. For each group submap, AML will create an AP symbol for each AP within that group.



Configure & Acknowledge Triggers (Traps) on AMP

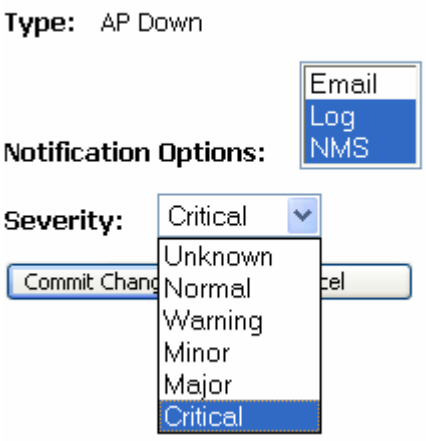
Once communication between AMP and NNM is established, AMP can send fault events to the NNM. To configure traps, proceed to the System→Triggers page on AMP.

AMP will only send a trigger to HP OpenView if "NMS" is included in the Notification column on this page. When AML receives one of these alarm traps from AMP, it will change the status of the access point object in NNM to reflect the severity specified for that trap ("Normal," "Warning," "Minor," "Major," or "Critical").

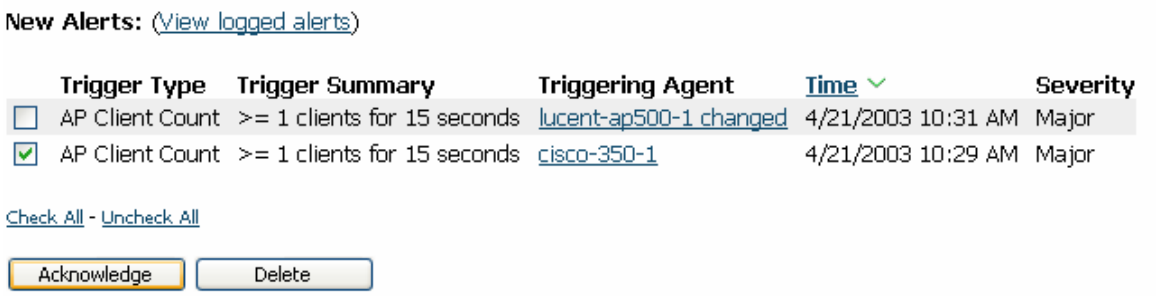


1. To edit a trigger on the System→Triggers page, click on the "Edit" link and select the proper notification options and severity levels from the drop-down lists. *(Note: To select multiple notification options, use <Ctrl> + left mouse click.)*

2. Click "Commit Changes" to apply any edits. *(Note: Triggers only fire a single time for a particular device until the alert has been acknowledged on AMP's console.)*



3. To acknowledge alerts, proceed to the System→Alerts page or click the "Alerts" notification link on the top menu bar on any page within AMP's user interface. Check the line relating to the trigger to be acknowledged and click the "Acknowledge" button. Once you have clicked the Acknowledge button, subsequent triggers will once again send traps to NNM.



Verify Successful AML Installation

To verify that the AirWave Management Link is communicating successfully with AMP, view the AML process log file to ensure the AMP traps were received by AML. Execute the command `tail $AML_LOGDIR/.ovcwd.stdout`. This file should contain a debugging message for each configuration or alert trap received from AMP.

Using AML

AML creates an "AirWave Wireless Network" symbol in the root submap. This symbol provides access to all the APs managed by AMP. Its submap contains a group symbol for each group of wireless access points listed on AMP's Group→List page. That group symbol which explodes to show all of the APs contained in that group.

All access point symbols are executable: double-clicking on one of them launches a web browser that provides more detailed information on that access point's current status. AML also provides "monitor" and "manage" options to the right-click popup menu for both the "AP" and "AP group" symbols. When selected, these options launch web browser windows to manage (configure) or monitor the devices.

AML also provides a "Reset Status" menu item to the right-click popup menu for all AirWave device submaps. When selected, the "Reset Status" menu item will that reset that device's status in OpenView to "normal".

Important Notes

Access Point Deletions Do Not Propagate to OpenView

To ensure that the AirWave Management Link is a non-intrusive application, access points are not automatically deleted from the NNM submaps after being deleted from the AMP server. Instead, the AML system creates a filter and changes the DHCP polling interval to search for AirWave devices. Devices are deleted if they cannot be located within 2 hours.

NNM Automated Backup May Cause Lost Traps

AML exits when the automated backup process begins. Because AML is not running during the automated backup, it loses any configuration or alert traps that AMP sends during this period. To recover from lost configuration traps, click the “Sync & Save” button on the Setup→SNMP/Email page on AMP.

Browser Incompatibility with Netscape 4

AML launches AMP’s web interface in order to configure groups and access points. AMP supports only Netscape version 6.0 and higher, but Solaris 8 ships with Netscape 4. AML reads the file $OV_SHARE/conf/ovweb.conf at installation to determine what browser the user has used with OpenView.

“AP Status” Reflects Most Recent Fault Severity

The AP status indicator within NNM reflects only the most recent alert for that device. If a “Minor” alert is received for an AP which already has a pre-existing, unacknowledged ‘Major” alert, that AP’s status within NNM will reflect “Minor.”

Groups Without APs Do Not Display on Group Sub Map

Groups that have been defined within AMP but contain no access points will display on the AMP’s Group page, but do not display within HP OpenView.

Group Names Must Not Replicate Current OpenView Object Names

AML uses the user-defined name of a group of APs as the OpenView selection name. As a result, group names that conflict with selection names of other objects (such as AP IP addresses) will cause problems. To avoid confusion, ensure that AP group names do not conflict with other OpenView objects.

Deleting a Symbol from the OV Map Places Object in the “Removed” List

When a symbol that exists in both the AirWave and OV map is deleted from the OV map, AML sets the selection name to “REMOVED:<IP ADDRESS>” on the AirWave map.

Release Notes 1.2

- **Installation Script** – Streamlined the installation script for faster and more efficient installs.
- **Compound Status** – Enables administrators to more easily manage alerts from the Group submap. AP-centric alerts now propagate to the corresponding group symbol.
- **Submap Overlay** – Enables administrators to drill into the AP submap while maintaining the group submap window.
- **CR-0520031001** – Ensures that AP name changes always propagate from AMP to NNM.