



# Integrating Dell PowerConnect W-AirWave 7.5 AMP with Centralized NMS Event Correlation

## Overview

This document describes AirWave's alert/trap workflow when integrating with a centralized NMS Event Correlation System, using the following topics:

- “Adding NMS Event Correlation Servers to AirWave” on page 1
- “Configuring Alerts/Traps in AirWave” on page 2
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## Adding NMS Event Correlation Servers to AirWave

To add a event correlation server to the AirWave Management Platform (AMP):

1. Navigate to AMP Setup > NMS and click Add.
2. Configure server settings.

**Figure 1** AMP Setup > NMS Page Illustration

**NMS Integration**

AMP can send SNMP traps to NMS servers. First, add one or more NMS servers below, then select *NMS* as a notification option for *triggers*.

The *Sync* action will send one trap for each device managed by AMP to inform an NMS of each one's up/down and configuration status.

[Download](#) the AMP MIB files.

**NMS Server**

Hostname:

Port (1-65535):

Community String:

Confirm Community String:

SNMP Version:

Enabled:  Yes  No

Send Configuration Traps:  Yes  No

## Configuring Alerts/Traps in AirWave

1. Navigate to Systems > Triggers, as shown in [Figure 2](#).
2. Select one of the built-in Alerts/Traps.
3. Click Add.

**Figure 2** Configuring a *Device Count* Trigger

The screenshot shows the 'Trigger' configuration interface. The 'Type' dropdown is set to 'Device User Count'. The 'Severity' and 'Duration' fields are empty. The 'Conditions' section shows 'Available Conditions: User Count' and an 'Add' button. Below this is a table with columns 'Option', 'Condition', and 'Value'. The 'Option' dropdown is set to 'User Count', the 'Condition' dropdown is set to '>=', and the 'Value' field is empty.

Option	Condition	Value
User Count	>=	

Configure properties for the Alert/Trap

- Thresholds for the alert (quantity and time)
- Severity of alert
- Distribution options
- Notification Method
  - Sender
  - Recipient
  - NMS – sends SNMP traps
- Alert Suppression

## Viewing Alerts in Various Destinations

As seen on the System > Alerts page of the AirWave console:

**Figure 3** System > Alerts Page Illustration

**Alerts**

1-20 of 914 Alerts Page 1 of 46 > >| Choose columns Export CSV

	Trigger Type	Trigger Summary ▲	Triggering Agent	Time	Severity	Details
<input type="checkbox"/>	Radio Down	802.11a	mldry-ap65	7/25/2011 2:50 PM	Normal	-
<input type="checkbox"/>	Radio Down	802.11a	dlogan-ap70	7/24/2011 8:28 PM	Normal	-

As seen in email from the recipient's perspective:

**Figure 4** Email recipient of an alert



As seen by the NMS server via a tcpdump of the actual alert:

### Device User Count

```
10:32:52.964243 IP (tos 0x0, ttl 64, id 0, offset 0, flags [DF], proto 17, length: 284) demo.airwave.com.38979 > airwave-  
openvie.snmptrap: [bad udp cksum ebf4!] { SNMPv2c C=foo { V2Trap(242) R=47680 system.sysUpTime.0=10  
S:1.1.4.1.0=E:12028.4.15.0.3 E:12028.4.15.1.101=2 E:12028.4.15.1.102=4 E:12028.4.15.1.103="Device: HQ-Engineering -  
https://demo.airwave.com/ap\_monitoringid=11277: AP User Count >= 2 users for 60 seconds" E:12028.4.104=10.2.26.164 } }
```

### Device Down

```
10:32:23.055999 IP (tos 0x0, ttl 64, id 0, offset 0, flags [DF], proto 17, length: 261) demo.airwave.com.38934 > airwave-  
openvie.snmptrap: [bad udp cksum e740!] { SNMPv2c C=foo { V2Trap(219) R=47676 system.sysUpTime.0=10  
S:1.1.4.1.0=E:12028.4.15.0.13 E:12028.4.15.1.101=2 E:12028.4.15.1.102=4 E:12028.4.15.1.103="Device: Aruba-AP65-ap.2.2.3 - https://  
demo.airwave.com/ap\_monitoringid=11797: Device Down " E:12028.4.104=10.51.3.46 } }
```

### OID Breakdown

12028.4.15.1.102 contains Severity Code

- 2 = Normal
- 3 = Warning
- 4 = Minor
- 5 = Major
- 6 = Critical

12028.4.15.1.103 contains several fields separated by colons

- Object Type {Client, AirWave, Device/AP, Group}
- Object Name and URL (the URL is optional, if it exist then it will be separated by a dash “-“)
- Trap Description and Evaluation Elements

12028.4.15.1.104 contains device IP Address

- Group Traps will contain AirWave’s IP address.

## Acknowledging Alerts

AirWave alerts must be manually acknowledge from the System > Alert page. AirWave does not currently provide an external interface to acknowledge alerts from an NMS server.

## Compiling the AirWave MIB on NMS

1. Navigate to AMP Setup > NMS.
2. Click on the Download link.
3. Transfer to NMS server.

4. Compile on NMS server.

## Matching Severity in the NMS Event Correlation Servers

Most NMS Event Correlation systems have the ability to color code and esclate based on information received in the trap, as shown in Figure 5. The OID 12028.4.15.1.102 contains the AirWave severity code.

**Figure 5** Color Codes

Node	Alert Group	Alert Key	Summary
dtno.airwave.com, IP: 10.51.3.46	Access Point Flooding per Client	Client: 00:01:02:03:04:05	Too Many Beacons => 10 for 180 minutes - launch @URL for details ( Device: HQ-Engineering )
dtno.airwave.com, IP: 10.51.3.46	Access Point Signal Quality	Device: HQ-Engineering	Signal Quality <= -85 - launch @URL for details ( Device: HQ-Engineering )
dtno.airwave.com, IP: 10.51.3.46	Access Point Status	Device: ArubaAP65-ap.2.2.3	Device Up - launch @URL for details ( Device: ArubaAP65-ap.2.2.3 )
dtno.airwave.com, IP: 10.51.3.46	Access Point Status	Device: ArubaAP65-ap.2.2.3	Device Down - launch @URL for details ( Device: ArubaAP65-ap.2.2.3 )
dtno.airwave.com, IP: 10.51.3.128	Access Point Status	Device: Aruba-Ctrl-200	Device Down - launch @URL for details ( Device: Aruba-Ctrl-200 )
dtno.airwave.com, IP: 10.51.3.128	Access Point Status	Device: Aruba-Ctrl-200	Device Up - launch @URL for details ( Device: Aruba-Ctrl-200 )
dtno.airwave.com, IP: 10.51.5.42	Access Point Status	Device: ap	Device Down Device uptime indicates that device has rebooted - launch @URL for details ( Device: ap )
dtno.airwave.com, IP: 10.51.5.42	Access Point Status	Device: ap	Device Up - launch @URL for details ( Device: ap )
dtno.airwave.com, IP: 10.51.3.46	Bandwidth Usage per Access Point	Device: HQ-Engineering	AP Bandwidth >= 100 kbps for 60 seconds - launch @URL for details ( Device: HQ-Engineering )
dtno.airwave.com, IP: 10.51.3.46	Bandwidth Usage per Client	Client: 00:13:02:98:A4:61	User Bandwidth >= 5 kbps for 15 seconds ( Client: 00:13:02:98:A4:61 )

4 rows selected | 7/17/2007 9:45:33 PM | root | NCOMS [PRI]

## Enhanced Integration

AirWave has enhanced integration modules with several NMS Event Correlation Systems. These integrations provide enhanced functionality like quicklink problem diagnostics, configuration, and WLAN topology views.

- IBM Netcool – navigate to <https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=ITW10NC16> to download the certified NetCool NIM
- ProCurve Manager – Navigate to AMP Setup > NMS and click on the HP ProCurve Manager section to obtain additional information.
- HP OpenView NNM – Contact Dell Support at [support.dell.com](http://support.dell.com) for additional information.

## Actual MIB



**NOTE:** Traps in grey text are unused.

```

_ *****
-- * awampEvent parameter definitions
__ *****
awampEventID OBJECT-TYPE
    SYNTAX INTEGER
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Random number AMP assigns to the event."
    ::= { awampEventObject 101 }
awampEventSeverityCode OBJECT-TYPE
    SYNTAX INTEGER
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Level 1-6"
    ::= { awampEventObject 102 }
awampEventDescription OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Concatenated String produced from AMP."
    ::= { awampEventObject 103 }

```

```

awampEventAPIPOld OBJECT-TYPE
    SYNTAX IpAddress
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Old IP of the AP when AMP changes and
        sends trap to HPOV."
    ::= { awampEventObject 104 }
awampEventAPMngURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to manage AP on AMP from HPOV."
    ::= { awampEventObject 105 }
awampEventAPMonURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to monitor AP on AMP from HPOV."
    ::= { awampEventObject 106 }
awampEventGroupMngURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to manage Group on AMP from HPOV."
    ::= { awampEventObject 107 }
awampEventGroupMonURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to monitor Group on AMP from HPOV."
    ::= { awampEventObject 108 }
awampEventAPICON OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Name of ICON to display on HPOV screen"
    ::= { awampEventObject 109 }
-- *****
-- * Fault Traps generated by the AMP
-- * (1.3.6.1.4.12028.4.15.0.)
-- *****

tooManyDevAssocAMP NOTIFICATION-TYPE
    OBJECTS { awampEventID,
              awampEventSeverityCode,
              awampEventDescription }
    STATUS current
    DESCRIPTION
        "This trap is sent when too many devices are
        simultaneously associated with AMP for a period of time."
    ::= { awampEventPrefix 1 }
tooManyDevAssocGroup NOTIFICATION-TYPE
    OBJECTS { awampEventID,
              awampEventSeverityCode,
              awampEventDescription }
    STATUS current
    DESCRIPTION
        "This trap is sent when too many devices are
        simultaneously associated with AMP for a period of time."
    ::= { awampEventPrefix 2 }

tooManyDevAssocAp NOTIFICATION-TYPE
    OBJECTS { awampEventID,
              awampEventSeverityCode,
              awampEventDescription,
              awampAPIP }
    STATUS current
    DESCRIPTION
        "This trap is sent when too many devices are associated
        simultaneously associated with AP for a period of time. "
    ::= { awampEventPrefix 3 }

toomuchBWAMP NOTIFICATION-TYPE
    OBJECTS { awampEventID,
              awampEventSeverityCode,
              awampEventDescription }
    STATUS current
    DESCRIPTION
        "This trap is sent when there is too much BW being

```

```

used on the WLAN for a period of time."
::= { awampEventPrefix 4 }
toomuchBWGroup NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription }
STATUS current
DESCRIPTION
"This trap is sent when there is too much BW being
used by a Group for a period of time."
::= { awampEventPrefix 5 }

toomuchBWAP NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when there is too much BW being
used on an AP for a period of time."
::= { awampEventPrefix 6 }
toomuchBWClient NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription }
STATUS current
DESCRIPTION
"This trap is sent when there is too much BW being
used by a Client for a period of time."
::= { awampEventPrefix 7 }

toomanyRoamsClient NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription }
STATUS current
DESCRIPTION
"This trap is sent when Client roams too often from
AP to AP for a period of time."
::= { awampEventPrefix 8 }
poorSignalAP NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when an AP has poor Signal
quality for a period of time."
::= { awampEventPrefix 9 }

nonAMPAPChange NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when an AP Changes configuration
without the AMP knowledge"
::= { awampEventPrefix 10 }

unauthenticatedClient NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription }
STATUS current
DESCRIPTION
"This trap is sent when Client is associated with
WLAN for a period of time without authenticating."
::= { awampEventPrefix 11 }

rogueAPDetected NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription }
STATUS current
DESCRIPTION
"This trap is sent when the AMP discovers a Rogue
AP."
::= { awampEventPrefix 12 }

downAP NOTIFICATION-TYPE
OBJECTS { awampEventID,

```

```

        awampEventSeverityCode,
        awampEventDescription,
        awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when the AP is down as in
missed SNMP Ping or SNMP Get"
::= { awampEventPrefix 13 }
discoveredAP NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when AP is discovered by AMP.
The AP is not authorized, but only discoverd.
A Config trap is when AP is authorized"
::= { awampEventPrefix 14 }

upAP NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap is sent when AP is detected as UP after being
marked DOWN by the AMP."
::= { awampEventPrefix 15 }

genericTrap NOTIFICATION-TYPE
OBJECTS { awampEventID,
          awampEventSeverityCode,
          awampEventDescription,
          awampAPIP }
STATUS current
DESCRIPTION
"This trap will catch things not defined."
::= { awampEventPrefix 50 }

```

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