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

Overview

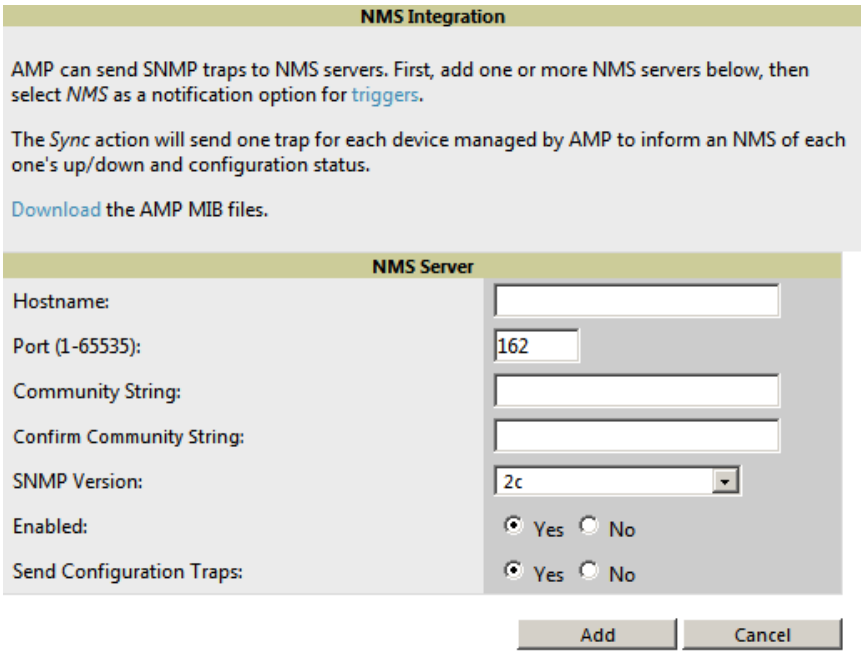
This document describes AirWave's alert/trap workflow when integrating with a centralized NMS Event Correlation System, using the following topics:

Adding NMS Event Correlation Servers to AirWave

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.

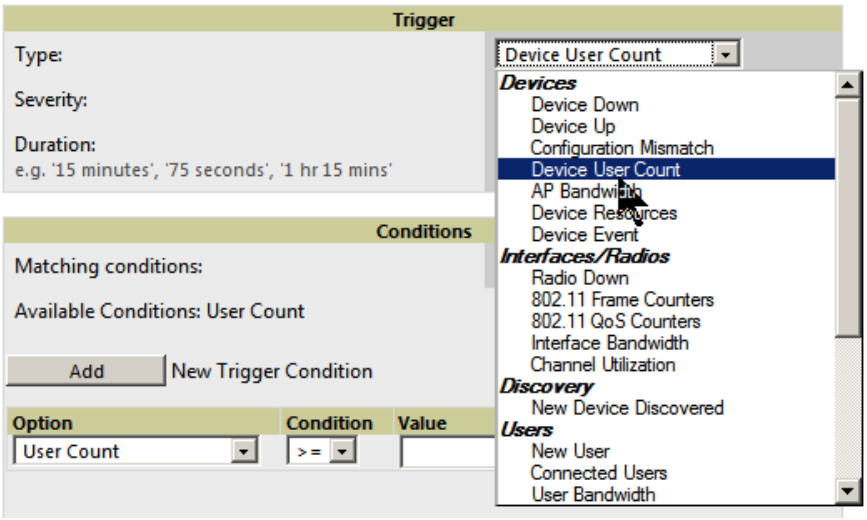
Figure 1 *AMP Setup > NMS Page Illustration*



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*



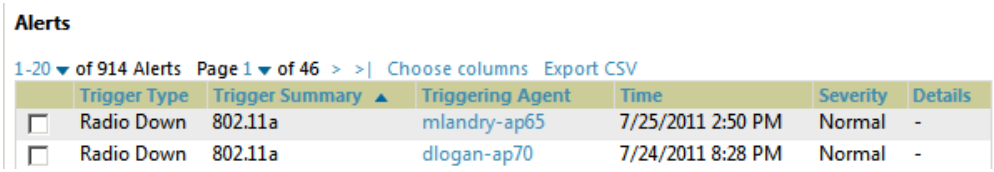
Configure properties for the Alert/Trap

- 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

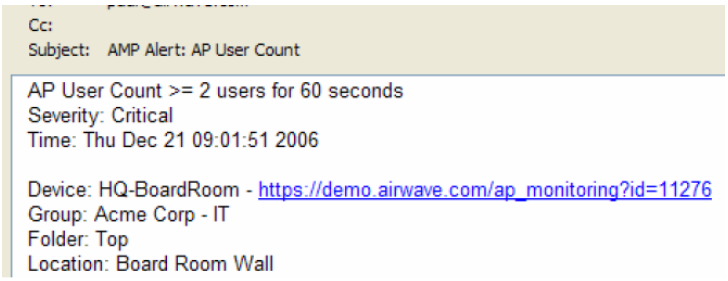
As seen on the **System > Alerts** page of the AirWave console:

Figure 3 *System > Alerts Page Illustration*



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

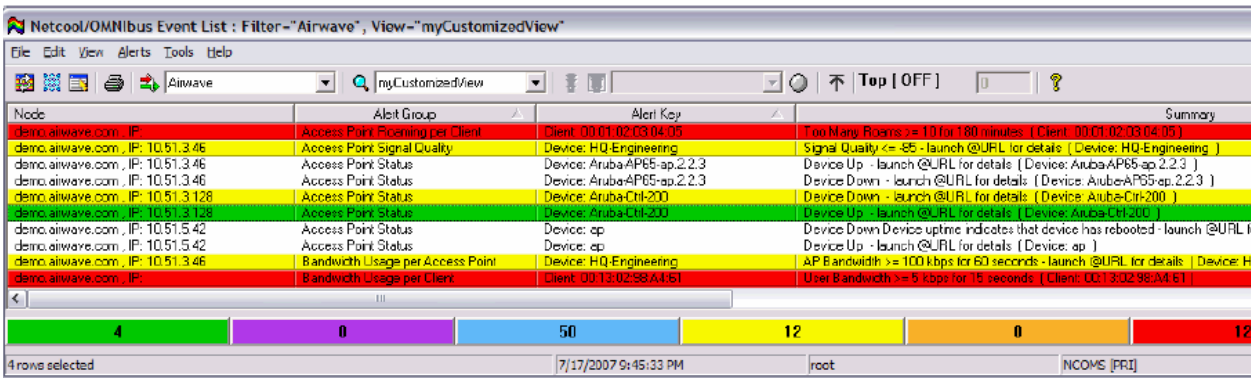
1. Navigate to **AMP Setup > NMS**.
2. Click on the **Download** link.
3. Transfer to NMS server.

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 contians the AirWave severity code.

Figure 5 *Color Codes*



Enhanced Integration

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

- **IBM Netcool** – navigate to https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10NC16 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 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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