

Integrating OV3600 7.5 with Centralized NMS Event Correlation

Overview

This document describes OV3600's alert/trap workflow when integrating with a centralized NMS Event Correlation System, using the following topics:

- “Adding NMS Event Correlation Servers to OV3600” on page 1
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Adding NMS Event Correlation Servers to OV3600

To add a event correlation server to OV3600:

1. Navigate to **OV3600 Setup > NMS** and click **Add**.
2. Configure server settings.

Figure 1 OV3600 Setup > NMS Page Illustration

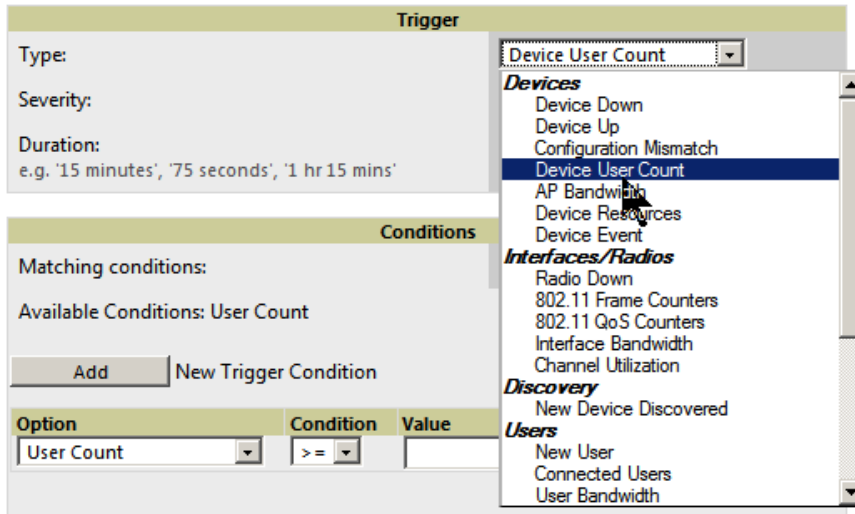
The screenshot shows the 'NMS Integration' page. At the top, there is a header 'NMS Integration'. Below it, there is a paragraph: 'OV3600 can send SNMP traps to NMS servers. First, add one or more NMS servers below, then select NMS as a notification option for triggers.' Below this is another paragraph: 'The Sync action will send one trap for each device managed by OV3600 to inform an NMS of each one's up/down and configuration status.' Below that is a link: 'Download the OV3600 MIB files.' Below the text is a section titled 'NMS Server' with the following fields: 'Hostname:' (text input), 'Port (1-65535):' (text input with '162' entered), 'Community String:' (text input), 'Confirm Community String:' (text input), 'SNMP Version:' (dropdown menu with '2c' selected), 'Enabled:' (radio buttons for 'Yes' and 'No', with 'Yes' selected), and 'Send Configuration Traps:' (radio buttons for 'Yes' and 'No', with 'Yes' selected). At the bottom right of the form are two buttons: 'Add' and 'Cancel'.

Configuring Alerts/Traps in OV3600

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 OV3600 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.ov3600.com.38979 > ov3600-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.ov3600.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.ov3600.com.38934 > ov3600-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.ov3600.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, OV3600, 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 OV3600's IP address.

Acknowledging Alerts

OV3600 alerts must be manually acknowledge from the **System > Alert** page. OV3600 does not currently provide an external interface to acknowledge alerts from an NMS server.

Compiling the OV3600 MIB on NMS

1. Navigate to **OV3600 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 escalate based on information received in the trap, as shown in Figure 5. The OID **12028.4.15.1.102** contains the OV3600 severity code.

Figure 5 Color Codes

Node	Alert Group	Alert Key	Summary
detco.airwave.com, IP: 10.51.3.46	Access Point Escalating per Client	Client: 00:01:02:03:04:05	Too Many Booms => 10 for 180 minutes (Client: 00:01:02:03:04:05)
detco.airwave.com, IP: 10.51.3.46	Access Point Signal Quality	Device: HQ-Engineering	Signal Quality <= -85 - launch @URL for details (Device: HQ-Engineering)
detco.airwave.com, IP: 10.51.3.46	Access Point Status	Device: Aruba-AP65-ap.2.2.3	Device Up - launch @URL for details (Device: Aruba-AP65-ap.2.2.3)
detco.airwave.com, IP: 10.51.3.46	Access Point Status	Device: Aruba-AP65-ap.2.2.3	Device Down - launch @URL for details (Device: Aruba-AP65-ap.2.2.3)
detco.airwave.com, IP: 10.51.3.128	Access Point Status	Device: Aruba-CH-200	Device Down - launch @URL for details (Device: Aruba-CH-200)
detco.airwave.com, IP: 10.51.3.128	Access Point Status	Device: Aruba-CH-200	Device Up - launch @URL for details (Device: Aruba-CH-200)
detco.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)
detco.airwave.com, IP: 10.51.5.42	Access Point Status	Device: ap	Device Up - launch @URL for details (Device: ap)
detco.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)
detco.airwave.com, IP: 10.51.3.46	Bandwidth Usage per Client	Client: 00:12:02:98:A4:61	User Bandwidth >= 5 kbps for 15 seconds (Client: 00:12:02:98:A4:61)

Summary bar: 4 (Red), 0 (Yellow), 50 (Green), 12 (Blue), 0 (Orange), 12 (Red)

Enhanced Integration

OV3600 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=1TW10NC16> to download the certified NetCool NIM
- **ProCurve Manager** – Navigate to **OV3600 Setup > NMS** and click on the **HP ProCurve Manager** section to obtain additional information.
- **HP OpenView NNM** – Contact Aruba Support for additional information.

Actual MIB



Traps in grey text are unused.

```

- *****
-- * awampEvent parameter definitions
-- *****
awampEventID OBJECT-TYPE
    SYNTAX INTEGER
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Random number OV3600 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 OV3600."
    ::= { awampEventObject 103 }
awampEventAPIPOld OBJECT-TYPE
    SYNTAX IpAddress
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Old IP of the AP when OV3600 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 OV3600 from HPOV."
    ::= { awampEventObject 105 }
awampEventAPMonURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to monitor AP on OV3600 from HPOV."
    ::= { awampEventObject 106 }
awampEventGroupMngURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to manage Group on OV3600 from HPOV."
    ::= { awampEventObject 107 }
awampEventGroupMonURL OBJECT-TYPE
    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "URL to monitor Group on OV3600 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 OV3600
-- * (1.3.6.1.4.1.2028.4.15.0.)
-- *****

tooManyDevAssocov3600 NOTIFICATION-TYPE
    OBJECTS { awampEventID,
              awampEventSeverityCode,
              awampEventDescription }
    STATUS current
    DESCRIPTION
        "This trap is sent when too many devices are
        simultaneously associated with OV3600 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 OV3600 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 OV3600's 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 OV3600 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 OV3600.
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 OV3600."
 ::= { 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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