Understand SNMP Traps for Access Point (AP) Association/Disassociation on AireOS Wireless LAN Controller (WLC)

Contents

Introduction

This document describes the SNMP (Simple Network Manager Protocol) traps that an AireOS WLC sends for AP association/disassociation.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Wireless LAN Controller (WLC)
- Access Points (AP)
- SNMP (Simple Network Manager Protocol)

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any step.

Background Information

For each AP dissociation/association event, the WLC must send a SNMP trap with the following Object Identifiers (OIDs):

Dissociation trap (variable bindings)

1.3.6.1.2.1.1.3.0 (sysUpTime)   **<---- included in traps as the first variable binding**

1.3.6.1.6.3.1.1.4.1 (snmpTrapOID) **<---- second variable binding (the value of this is another OID, indicating the AP dissociation event)**

   1.3.6.1.4.1.14179.2.6.3.8 (bsnAPDisassociated) **<---- OID indicating the event**

1.3.6.1.4.1.14179.2.6.2.20 (bsnAPMacAddrTrapVariable) **<---- trap component, base radio MAC (Media Access Control) address of the AP**

1.3.6.1.4.1.14179.2.2.1.1.3 (bsnAPName) **<---- trap component**

Management Information Base (MIB): AIRESPACE-WIRELESS-MIB (all OIDs except sysUpTime and snmpTrapOID):

Association trap (variable bindings)

1.3.6.1.2.1.1.3.0 (sysUpTime) **<---- included in traps as the first variable binding**

1.3.6.1.6.3.1.1.4.1 (snmpTrapOID) **<---- second variable binding (the value of this is another OID, indicating the AP association event)**

   1.3.6.1.4.1.9.9.513.0.4 (ciscoLwappApAssociated) **<---- OID indicating the event**

1.3.6.1.4.1.9.9.513.1.1.1.1.5 (cLApName) **<---- trap component, AP name**

1.3.6.1.4.1.9.9.513.1.1.1.1.16 (cLApLastRebootReason) **<---- trap component (essentially the reason why the AP disconnected previously)**

1.3.6.1.4.1.9.9.513.1.1.1.1.36 (cLApDataEncryptionStatus) **<---- trap component**

MIB: CISCO-LWAPP-AP-MIB (all OIDs except sysUpTime and snmpTrapOID).

SNMP Traps for AP Association/Disassociation on AirOS WLC

Configuration

The trap control configuration can be set on the WLC GUI with the **AP Register** control (**Management > SNMP > Trap Controls > AP > AP Register**). This is enabled by default. Also, the WLC needs a trap receiver configured (**Management > SNMP > Trap Receivers**) on the GUI as well.

Verify Association and dissociation of the AP:

1. Traplog

The output of **show traplog** on the WLC shows counters for both associated and dissociated traps, in addition to messages for each event as shown below:

```
(Cisco Controller) >show trap log
```

```
AP Traps Statistics

AP Associated Traps ............... 1
AP Disassociated Traps ........... 1


23 Fri Jun 14 23:32:22 2019 AP 'torres-3802', MAC: 40:01:7a:73:fd:c0 disassoc
iated previously due to AP Reset. Uptime: 0 days,
00 h 02 m 05 s . Reason: controller reboot comman
d.
24 Fri Jun 14 23:29:32 2019 AP Disassociated. Base Radio MAC:40:01:7a:73:fd:c
0 ApName - torres-3802
```
2. Packet Capture

Disassociation will appear in the packet captures as shown in the image:

1.3.6.1.4.1.14179.2.6.3.8 is the OID to indicate that the AP disconnected, followed by instance of **bsnAPMacAddrTrapVariable** with the base radio MAC of the AP (40:01:7a:73:fd:c0) and instance of **bsnAPName** with the AP name (**torres-3802** is translated from the hexadecimal value).

Association will appear in the packet captures as shown in the image:

1.3.6.1.4.1.9.9.513.0.4 is the OID to indicate that the AP connected back to the WLC, followed by instance of **cLApName** with the AP name (**torres-3802** is translated from the hexadecimal value) and instance of **cLApLastRebootReason** (in this case it is number 4 to indicate a manual reboot from the WLC).

Below Wireshark filters can be used for the SNMP packets:

1. **snmp.value.oid == 1.3.6.1.4.1.14179.2.6.3.8**
2. **snmp.value.oid == 1.3.6.1.4.1.9.9.513.0.4**
3. **(snmp.value.oid == 1.3.6.1.4.1.14179.2.6.3.8 or snmp.value.oid == 1.3.6.1.4.1.9.9.513.0.4) and snmp.value.octets == "*<AP name>*"**