

配置和排除故障在CMX的Hyperlocation

目录

[简介](#)

[背景信息](#)

[先决条件](#)

[使用的组件](#)

[要求](#)

[使用的缩略语](#)

[配置Hyperlocation](#)

1. [启用在WLC的Hyperlocation](#)
2. [启用在CMX的Hyperlocation](#)
3. [验证在WLC的Hyperlocation](#)
4. [检查Hyperlocation模块是否在AP检测：](#)
5. [验证在AP的Hyperlocation](#)
6. [验证在CMX的Hyperlocation](#)
7. [如果CMX获得从WLC的AoA信息请验证](#)
8. [验证地图/物理AP部署](#)

[排除故障Hyperlocation](#)

[方案1。hyperlocation在CMX在WLC启用和没有启用。](#)

[方案2。WLC与CMX不同步，但是可及的。](#)

[仍然有问题？](#)

简介

本文着重配置和排除故障在CMX的Hyperlocation。

背景信息

Hyperlocation是提高位置准确性的思科功能。您能闻悉更多在[Hyperlocation部署指南的](#)此功能。

Hyperlocation使用关于接入点提供的客户端的(RSSI级别)和到达角度的数据。

为了使用hyperlocation您应该有hyperlocation (WSM)模块用光晕天线。光晕天线有32天线里面并且能检测除RSSI信息外的地方，探测器/数据包到达从，因而进行更加准确的位置。可以找到更多信息[此处](#)。

并且，Hyperlocation是可以启用的功能，只有当CMX在3365个MSE物理设备或高端虚拟Appliances时安装。

[CMX数据表的](#)参考的表检查硬件指南的3。

如果不是肯定的在虚拟设备的运作的specs，您能发出这些命令之一：

```
cmxos inventory
```

[先决条件](#)

使用的组件

本文档中的信息基于以下软件和硬件版本：

CMX 10.2.3-34

WLC 2504/8.2.130.0

AIR-CAP3702I-E-K9

[要求](#)

思科建议您有Hyperlocation deployment指南的知识。当它们不运作正如所料时，本文着重排除故障法塞特查找和Hyperlocation。

使用的缩略语

WLC -无线 LAN 控制器

AoA -到达角度

CMX -已连接移动经验

AP -接入点

NMSP -网络移动性服务协议

SNMP -简单网络管理协议 (SNMP)

GUI -图形用户界面

CLI -命令行界面

ICMP -Internet 控制消息协议

HTTP -超文本传输协议

RSSI -收到信号强度征兆

NTP -网络时间协议 (NTP)

MAC -媒体访问控制

WSM -无线安全和监听模块

配置Hyperlocation

1. 启用在WLC的Hyperlocation

为了启用在WLC的Hyperlocation您应该使用此line命令：

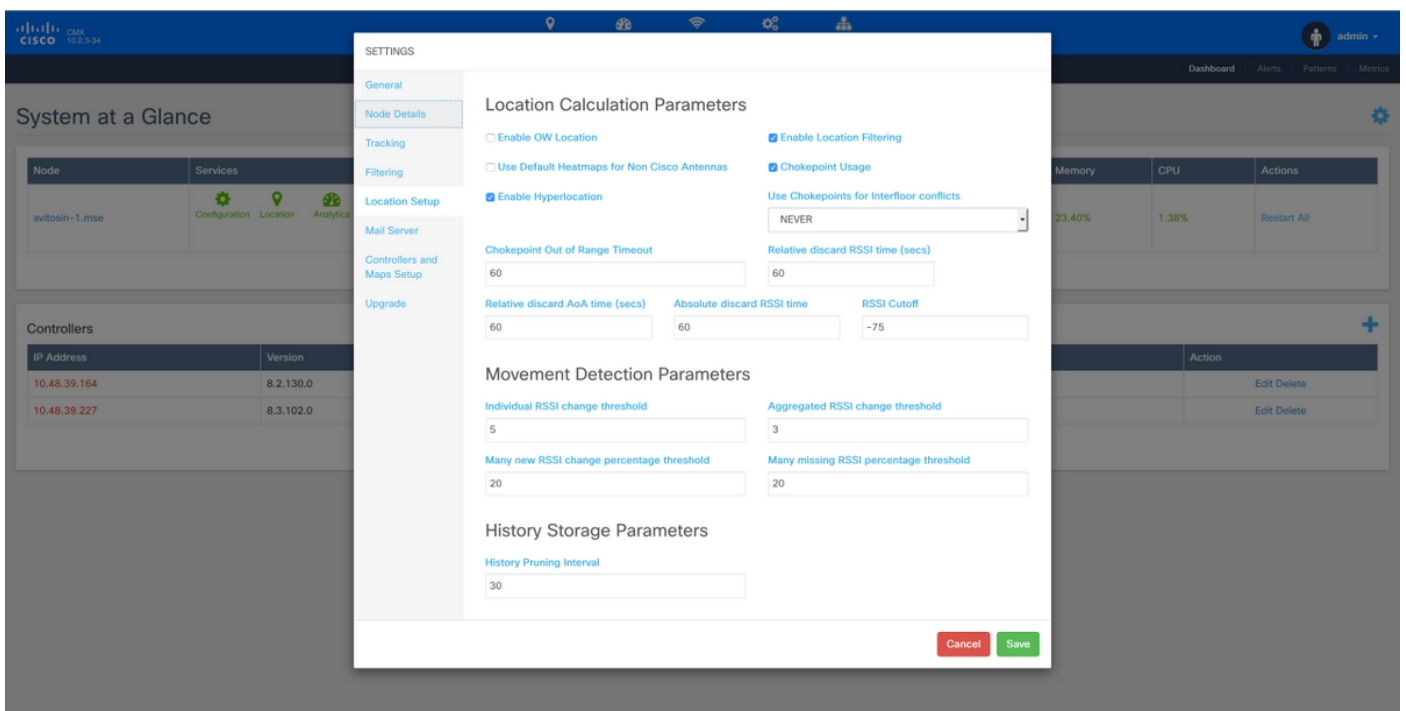
(Cisco Controller) >config advanced hyperlocation enable
启用在WLC GUI的Hyperlocation也是可能的：

- >Access- >- >enable Hyperlocation ()

2. 在CMX的Enable (event) Hyperlocation

为了启用在CMX的Hyperlocation，登录到GUI和执行此步骤：

- > () - >- >enable Hyperlocation ()



这也将启用“法塞特查找” (即根据数据帧的位置)，因此将启用，只要您有(非hyperlocation)监控模式 AP或无线电或者用hyperlocation模块。有与位置服务涉及的多种参数，您能调整。您能找到关于跟随链路的那些的更多信息。[。](#)

3. 验证在WLC的Hyperlocation

为了验证，如果Hyperlocation在WLC启用：

(Cisco Controller) >show advanced hyperlocation summary

```
Hyperlocation..... UP
Hyperlocation NTP Server..... 10.48.39.33
Hyperlocation pak-rssi Threshold..... -70
Hyperlocation pak-rssi Trigger-Threshold..... 10
```

```

Hyperlocation pak-rssi Reset-Threshold..... 8
Hyperlocation pak-rssi Timeout..... 3
AP Name           Ethernet MAC       Slots   Hyperlocation
-----
AP78ba.f99f.3c24  78:ba:f9:9d:a6:e0    3       UP

```

4. 检查Hyperlocation模块是否在AP检测：

```

(Cisco Controller) >show ap inventory ?
<Cisco AP>      Enter the name of the Cisco AP.
all             Displays inventory for all Cisco APs
(Cisco Controller) >show ap inventory all
Inventory for AP78ba.f99f.3c24
NAME: "AP3700"      , DESCR: "Cisco Aironet 3700 Series (IEEE 802.11ac) Access Point"
PID: AIR-CAP3702I-E-K9,  VID: V03,  SN: FCW1915N9YJ
NAME: "Dot11Radio2"  , DESCR: "802.11N XOR Radio"
PID: AIR-RM3010L-E-K9 ,  VID: V01,  SN: FOC19330ASB
MODULE NAME: "Hyperlocation Module w/Antenna"  ,DESCR: "Advanced Security Module (.11acW1)
w/Ant"
PID: AIR-RM3010L-E-K9 ,VID: V01 ,SN: FOC19330ASB ,MaxPower: 2000mW(Cisco Controller) >show
ap module summary all

```

```

AP Name           External Module Type
-----
AP78ba.f99f.3c24  Hyperlocation Module w/Antenna

```

请注意，如果光晕天线连接到hyperlocation模块，检测是不可能的。您需要物理的验证那。

5. 验证在AP的Hyperlocation

```

ap#show capwap client rcb
-----OUTPUT OMITTED-----
NextHop MAC Address      : 0014.f15f.f7ca
HYPERLOCATION ADMIN STATE : 1
WLC GATEWAY MAC         : 00:14:F1:5F:F7:CA

```

```

WLC HYPERLOCATION SRC PORT      : 9999

BLE Module State                : ENABLED

MSE IP[0]                       : 10.48.71.21

MSE PORT[0]                     : 2003

```

-----OUTPUT OMITTED-----

接入点将是发送AoA消息的那个到通过WLC将转发的CMX。确保被提及的MSE ip是您要使用的那个，当仅AP支持—MSE ip。

确保“WLC网关MAC”是WLC的网关MAC地址，如果CMX和WLC不在相同子网。

否则WLC “网关MAC”将是CMX MAC地址。

6. 验证在CMX的Hyperlocation

如果所有服务在CMX，运作第一步将验证。Hyperlocation功能使用选中项目部分。

```

[cmxadmin@avitosin-1 ~]$ cmxctl status Done The nodeagent service is currently running with PID: 19316 +-----+
-----+-----+-----+-----+ | Host | Service | Status | Uptime (HH:mm) | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Analytics | Running | 1 days, 02:14 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6378 | Running | 1 days, 02:15 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6379 | Running | 1 days, 02:14 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6380 | Running | 1 days, 02:14 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6381 | Running | 1 days, 02:14 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6382 | Running | 1 days, 02:14 | +-----+-----+
-----+-----+-----+-----+ | avitosin-1.mse | Cache_6383 | Running | 1 days,
02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Cache_6385 | Running | 1
days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Cassandra | Running |
1 days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Confd | Running | 1
days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Configuration |
Running | 1 days, 02:13 | +-----+-----+-----+-----+ | avitosin-1.mse | Connect |
Running | 1 days, 02:13 | +-----+-----+-----+-----+ | avitosin-1.mse | Consul |
Running | 1 days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Database
| Running | 1 days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Haproxy
| Running | 1 days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse |
Hyperlocation | Running | 1 days, 02:12 | +-----+-----+-----+-----+ | avitosin-
1.mse | Influxdb | Running | 1 days, 02:14 | +-----+-----+-----+-----+ |
avitosin-1.mse | Iodocs | Running | 1 days, 02:14 | +-----+-----+-----+-----+ |
avitosin-1.mse | Location | Running | 1 days, 02:13 | +-----+-----+-----+-----+
| avitosin-1.mse | Matlabengine | Running | 1 days, 02:12 | +-----+-----+-----+-----+
-----+ | avitosin-1.mse | Metrics | Running | 1 days, 02:14 | +-----+-----+-----+-----+
-----+ | avitosin-1.mse | Nmsplb | Running | 0 days, 01:47 | +-----+-----+-----+-----+
-----+ | avitosin-1.mse | Qlesspyworker | Running | 1 days, 02:14 | +-----+-----+-----+-----+
-----+

```

7. 如果CMX获得从WLC的AoA信息请验证

```
tcpdump -i eth0 dst2003 -w aoa3.pcap
```

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
2	0.003747	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
3	1.087479	10.48.39.214	10.48.71.21	UDP	130	9999 → 2003 Len=88
4	2.733577	10.48.39.214	10.48.71.21	UDP	130	9999 → 2003 Len=88
5	2.999859	10.48.39.251	10.48.71.21	UDP	178	9999 → 2003 Len=136
6	3.001227	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
7	4.355249	10.48.39.214	10.48.71.21	UDP	146	9999 → 2003 Len=104
8	5.999538	10.48.39.251	10.48.71.21	UDP	178	9999 → 2003 Len=136
9	6.000959	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
10	8.999418	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
11	9.000791	10.48.39.251	10.48.71.21	UDP	178	9999 → 2003 Len=136
12	9.262904	10.48.39.214	10.48.71.21	UDP	146	9999 → 2003 Len=104
13	10.894785	10.48.39.214	10.48.71.21	UDP	130	9999 → 2003 Len=88
14	11.995126	10.48.39.251	10.48.71.21	UDP	194	9999 → 2003 Len=152
15	11.999193	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
16	14.994902	10.48.39.251	10.48.71.21	UDP	178	9999 → 2003 Len=136
17	14.996368	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
18	17.994857	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
19	17.996231	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
20	18.102843	10.48.39.251	10.48.71.21	UDP	130	9999 → 2003 Len=88
21	21.098408	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
22	21.099952	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
23	24.098574	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
24	24.099804	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
25	27.098099	10.48.39.251	10.48.71.21	UDP	162	9999 → 2003 Len=120
26	27.099839	10.48.39.251	10.48.71.21	UDP	130	9999 → 2003 Len=88
27	28.880307	10.48.39.164	10.48.71.21	UDP	146	9999 → 2003 Len=104
28	28.881569	10.48.39.214	10.48.71.21	CAPP	146	CAPP MD5 Encrypted
29	30.094237	10.48.39.251	10.48.71.21	UDP	178	9999 → 2003 Len=136
30	30.097812	10.48.39.251	10.48.71.21	UDP	146	9999 → 2003 Len=104
31	30.513451	10.48.39.214	10.48.71.21	UDP	130	9999 → 2003 Len=88
32	30.515926	10.48.39.164	10.48.71.21	UDP	130	9999 → 2003 Len=88

▶ Frame 1: 162 bytes on wire (1296 bits), 162 bytes captured (1296 bits)
 ▶ Ethernet II, Src: CiscoInc_2a:c4:a3 (00:06:f6:2a:c4:a3), Dst: Vmware_99:4e:19 (00:50:56:99:4e:19)
 ▶ Internet Protocol Version 4, Src: 10.48.39.251, Dst: 10.48.71.21
 ▶ User Datagram Protocol, Src Port: 9999 (9999), Dst Port: 2003 (2003)
 ▼ Data (120 bytes)
 Data: ae 2f 44 f0 00 00 b4 5f ef 06 fd cb b7 6c 03 c7 ...
 [Length: 120]

8. 验证地图/物理AP部署

请注意非常在AP的箭头配置指向在地图的实际方向，否则位置准确性关闭。它没有技术上要求有楼层的所有AP有他们的在同一个方向的箭头点，然而大量地推荐避免在地图的所有错误(例如在AP更换的情况下，是非常容易的忘记重新配置天线方向)。

请注意准确性只将是正如所料，当客户端由4 AP比-75dbm时同时检测与RSSI好。如果对于若干物理原因，一些区域比预计不fullfill这些需求，准确性将是。

排除故障Hyperlocation

在此部分将是讨论CMX特定方案。如果任何防火墙存在WLC和CMX之间，是以下的端口开放的：

- 16113个NMSP

- 2003 AoA (AP将封装AoA数据包在往WLC的Capwap里面，因此端口2003必须是开放的在WLC之间和CMX)
- 80 HTTP
- 443个HTTPS
- ICMP
- 161, 162个SNMP

方案1。hyperlocation在CMX在WLC启用和没有启用。

在这种情况下将没有从WLC的AoA发送的消息到CMX。启用Hyperlocation在WLC并且检查CMX是否接收在端口2003的AoA消息从WLC。

方案2。WLC与CMX不同步，但是可及的。

在这种情况下请检查在两个的NTP配置CMX和WLC (请检查日期)

通过运行在AP的#show capwaprcb看到以下：

```
[cmxadmin@avitosin-1 ~]$ cmxctl status Done The nodeagent service is currently running with PID: 19316 +-----+
+-----+-----+-----+-----+ | Host | Service | Status | Uptime (HH:mm) | +-----+
+-----+-----+-----+-----+ | avitosin-1.mse | Analytics | Running | 1 days, 02:14 | +-----+
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+-----+-----+-----+-----+ | avitosin-1.mse | Cache_6379 | Running | 1 days, 02:14 | +-----+
+-----+-----+-----+-----+ | avitosin-1.mse | Cache_6380 | Running | 1 days, 02:14 | +-----+
+-----+-----+-----+-----+ | avitosin-1.mse | Cache_6381 | Running | 1 days, 02:14 | +-----+
+-----+-----+-----+-----+ | avitosin-1.mse | Cache_6382 | Running | 1 days, 02:14 | +-----+
+-----+-----+-----+-----+ | avitosin-1.mse | Cache_6383 | Running | 1 days,
02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Cache_6385 | Running | 1
days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Cassandra | Running | 1
days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Confd | Running | 1
days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse | Configuration |
Running | 1 days, 02:13 | +-----+-----+-----+-----+ | avitosin-1.mse | Connect |
Running | 1 days, 02:13 | +-----+-----+-----+-----+ | avitosin-1.mse | Consul |
Running | 1 days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Database
| Running | 1 days, 02:15 | +-----+-----+-----+-----+ | avitosin-1.mse | Haproxy
| Running | 1 days, 02:14 | +-----+-----+-----+-----+ | avitosin-1.mse |
Hyperlocation | Running | 1 days, 02:12 | +-----+-----+-----+-----+ | avitosin-
1.mse | Influxdb | Running | 1 days, 02:14 | +-----+-----+-----+-----+ |
avitosin-1.mse | Iodocs | Running | 1 days, 02:14 | +-----+-----+-----+-----+ |
avitosin-1.mse | Location | Running | 1 days, 02:13 | +-----+-----+-----+-----+
| avitosin-1.mse | Matlabengine | Running | 1 days, 02:12 | +-----+-----+-----+-----+
+-----+ | avitosin-1.mse | Metrics | Running | 1 days, 02:14 | +-----+-----+-----+-----+
+-----+ | avitosin-1.mse | Nmsplb | Running | 0 days, 01:47 | +-----+-----+-----+-----+
+-----+ | avitosin-1.mse | Qlesspyworker | Running | 1 days, 02:14 | +-----+-----+-----+-----+
+-----+
```

仍然有问题？

请，请检查CMX Hyperlocation故障排除列表-

如果所有在上面不指向问题，感到自由访问为帮助的[Cisco支持论坛](#)(上述输出和清单明确地将帮助缩小您的在论坛的问题)或打开TAC支持请求!