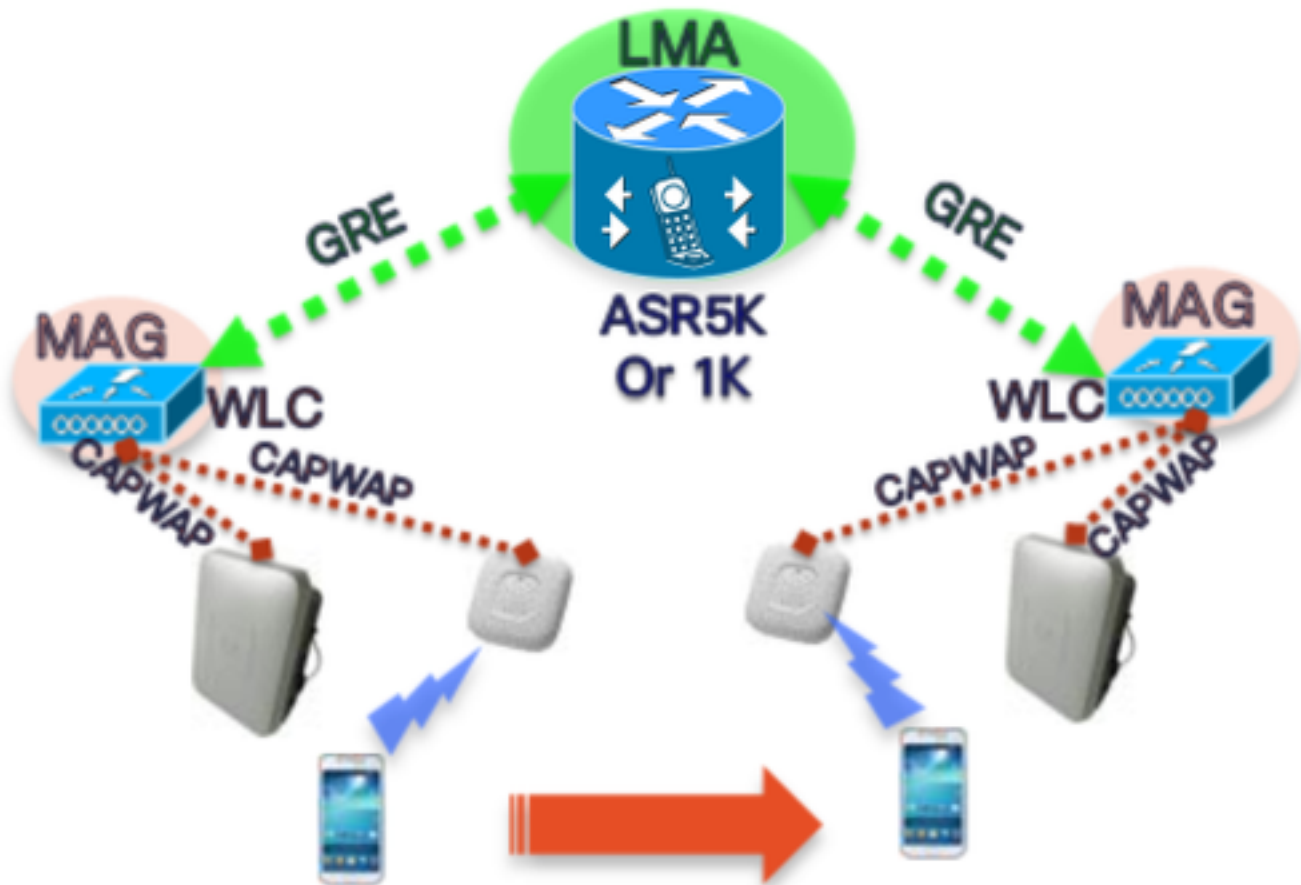


- كرح هيجوتل همادختسا نكمي ليمعملل ديرف فرعم وه (NAI) ةكبشلا ىلا لوصولا فرعم mac-address@realm ىلع اذه نوكيسو. IP ناووع مادختسا نم الدب، هيل ةهجوملا رورملا
- ديدحتل اذه مدختسي س. cisco.com لثم لاجم مسا لكش في NAI قاطن نوكي ام ةداع لادبتساب اذه موقوي، ىلكلسال ىنعمب. ليمعملل اهليل يمتني نأ بجي يتلا "ةكبشلا" ليمعملل ىلع ةبولطملا VLAN ةكبش نييعتب موقت يتلا ةيكيما نيديلا ةهجاوولا يتلا LMA اضيأ ددحيسو (WLAN) ةيكللساللا ةيلحمللا ةكبشلا ىلع اذه نيوكت متي اهمادختساب هاجتالا يئانث قفنلا MAG لكشيس

ىلا عجرا، IP لقنت تاحلطصم لوح تامولعملل نم ديزمل

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mob_ip/configuration/15-mt/mob-ip-15-mt-book/imo-nai-haa.html



اساجبنا

- ةكبش ىلع اهنيوكت مت 2 ةقبطلال نم ةقداصم يأو 802.11 نارتقا PMIP ليمعملل مكييس WLAN.

رييغت (0) عدب 00:23:c2:db:29:2d 0.0.0.0 [PA] 18 14:50:40.023 وينوي *apfMsConnTask_2: ةلحال رجا (2) AUTHCHECK ىلا ةلحال

(2) ةلحال ةقداصم رجا (4) L2AUTHCOMPLETE ىلا ةلحال رييغت (2) *apfMsConnTask_2: 18 14:50:40.023 [PA] 00:23:c2:db:29:2d 0.0.0.0 AUTHCHECK

- MAG موقيس، ةيلاتلا ةلحمللا ىلا ليمعملل ريوطت لبغو، L2 ةقداصم لامتك درجمب لاسراب MAG موقيس، ةينفلا ةيحلل نم. هل IP ناووع بلطو ليمعملل اذه نع LMA غالباب (PBA) ليكولا طبر مالعإ مادختساب درلاب LMA موقتس. لىلا ليكولل (PBU) شيحت

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*PMIPv6_Thread_2: Jun 18 14:50:40.023: [PA]

[PMIPv6_MAG_INFO]: PBU message nai(0023.c2db.292d@ciscotacbangalore.com), nai len: 15, hoa(0), att(4) llid(0023.c2db.292d) , ll len: 16 seqNo:9465

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مغى لى LMA MAG ةطساوب طبرلا شىدحت بلط ةمزح لاسرا متي

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*PMIPv6_Thread_2: Jun 18 14:50:40.023: [PA]

[PMIPv6_MM] Sending UDP Packet, src: 0x0a6a236f, dst: 0x0a6a2528, sport: 5436, dport:5436

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0x0a6a236f = IP Address of MAG

0x0a6a2528 = IP Address of LMA

انه يضارت فال هجوم ل ناووعو ليمع لاب صاخ ل IP ناووع بلط رهظي:

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*PMIPv6_Thread_2: Jun 18 14:50:40.023: [PA]

[PMIPv6_MM] V4HOAREQ option included len 6 val 0

*PMIPv6_Thread_2: Jun 18 14:50:40.023: [PA]

[PMIPv6_MM] V4DFT_RTR option included len 6 val 0

*PMIPv6_Thread_2: Jun 18 14:50:40.023: [PA]

[PMIPv6_MAG_EVENT]: PBU message sent

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```

> Frame 1: 198 bytes on wire (1584 bits), 198 bytes captured (1584 bits) on interface 0
> Ethernet II, Src: Cisco_78:be:cd (50:0f:80:78:be:cd), Dst: Cisco_7a:97:71 (00:00:0c:7a:97:71)
> 802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 35
> Internet Protocol Version 4, Src: 10.106.35.111, Dst: 10.106.37.40
> User Datagram Protocol, Src Port: 5436, Dst Port: 5436
v Mobile IPv6
  Payload protocol: No Next Header for IPv6 (59)
  Header length: 18 (152 bytes)
  Mobility Header Type: Binding Update (5)
  Reserved: 0x00
  Checksum: 0x0000
  > Binding Update
  v Mobility Options
    > MIPv6 Option - PadN
    > MIPv6 Option - Mobile Node Identifier: 0023.c2db.292d
    > MIPv6 Option - Service Selection: @ciscotacbangalore.com
    > MIPv6 Option - Handoff Indicator: Attachment over a new interface
    > MIPv6 Option - Access Technology Type Option: IEEE 802.11a/b/g
    MIPv6 Option - Pad1
    > MIPv6 Option - Timestamp: Jun 18, 2019 04:50:40.0000 UTC
    > MIPv6 Option - PadN
    > MIPv6 Option - Mobile Node Link-layer Identifier
    > MIPv6 Option - PadN
    > MIPv6 Option - IPv4 Home Address Request: 0.0.0.0
    > MIPv6 Option - IPv4 Default-Router Address: 0.0.0.0

```

ليعمل هون يي عت متيس يذال IP ناو نع عم "قيثوت شي دحت سدكم" كة باجت سالا يقلت متي
 يضا رتفالا هجومال ناو نع و

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*PMIPv6_Thread_0: Jun 18 14:50:40.026: [PA]

[PMIPv6_MM] NAI option received len 15

*PMIPv6_Thread_0: Jun 18 14:50:40.026: [PA]

[PMIPv6_MM] V4HOAREPLY option received len 6 val 3232236844

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3232236844 = IP address of MN returned by LMA from the IP Pool in Decimal.

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*PMIPv6_Thread_0: Jun 18 14:50:40.026: [PA]

[PMIPv6_MM] V4DFT_RTR option received len 6 val 3232236801

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```

3232236801 = Default router address in Decimal
Mobility Header Type: Binding Acknowledgement (6)
Reserved: 0x00
Checksum: 0x0604
  Binding Acknowledgement
    Status: Binding Update accepted (0)
    0... .... = Key Management Compatibility (K) flag: No Key Management Mobility Compatibility
    .0.. .... = Mobile Router (R) flag: No Mobile Router Compatibility
    ..1. .... = Proxy Registration (P) flag: Proxy Registration
    ...0 .... = TLV-header format (T) flag: No TLV-header format
    .... 0... = Bulk-Binding-Update flag (B): Disabled bulk binding update support
    Sequence number: 9465
    Lifetime: 7200 (28800 seconds)
  Mobility Options
    > MIPv6 Option - PadN
    > MIPv6 Option - Mobile Node Identifier: 0023.c2db.292d
    > MIPv6 Option - Handoff Indicator: Attachment over a new interface
    > MIPv6 Option - Access Technology Type Option: IEEE 802.11a/b/g
    MIPv6 Option - Pad1
    > MIPv6 Option - Timestamp: Jun 18, 2019 04:50:40.0000 UTC
    > MIPv6 Option - PadN
    > MIPv6 Option - Mobile Node Link-layer Identifier
    > MIPv6 Option - PadN
  MIPv6 Option - IPv4 Home Address Reply: Success : 192.168.5.44
    Length: 6
    Status: Success (0)
    0100 11.. = Prefix-len: 24
    IPv4 Home Address: 192.168.5.44
  > MIPv6 Option - IPv4 Default-Router Address: 192.168.5.1

```

طاشن ىلى MAG طبر ةلاح ريغت مت

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*PMIPv6_Thread_2: Jun 18 14:50:40.026: [PA]

[PMIPv6_MAG_EVENT]: Event received PBA accept in state: INIT, new state: ACTIVE

*PMIPv6_Thread_2: Jun 18 14:50:40.026: [PA]

[PMIPv6_MM] L2 Attach Status: Success

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نل ةعرس سايقم لجس DHCP مياظن و DHCP_REQD ىلى ريغت نوبز ةلودلا عبتت يس اذه (WLC) ةيكللساللا ةيكلحملا ةكبشلا يف مكحتلا رصنع نيب ال DHCP ةمزح ةكرح نوكت ملتسا دق (WLC) ةيكللساللا ةيكلحملا ةكبشلا يف مكحتلا رصنع ن ا شح ليمعلاو سدكم/اضرع مزح يف هنيمضتل هجوملا ناووعو ةيكلحملا ةكبشلا انقو IP ناووع لعفلاب DHCP.

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*apfMsConnTask_2: Jun 18 14:50:40.023: [PA] 00:23:c2:db:29:2d 0.0.0.0 L2AUTHCOMPLETE (4) Change state to DHCP_REQD (7) last state L2AUTHCOMPLETE (4)

*DHCP Socket Task: Jun 18 14:50:40.235: [PA] 00:23:c2:db:29:2d DHCP transmitting DHCP DISCOVER (1)

*DHCP Socket Task: Jun 18 14:50:40.236: [PA] 00:23:c2:db:29:2d DHCP transmitting DHCP OFFER (2)

*DHCP Socket Task: Jun 18 14:50:41.072: [PA] 00:23:c2:db:29:2d DHCP transmitting DHCP REQUEST (3)

*DHCP Socket Task: Jun 18 14:50:41.074: [PA] 00:23:c2:db:29:2d DHCP transmitting DHCP ACK (5)

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No.	Time	Source	Destination	Protocol	Length	Info
1	2019-06-18 04:50:40.048613	10.106.35.111	10.106.37.40	MIPv6	198	Binding Update
2	2019-06-18 04:50:40.051456	10.106.37.40	10.106.35.111	MIPv6	174	Binding Acknowledgement
3	2019-06-18 04:50:40.399814	0.0.0.0	255.255.255.255	DHCP	430	DHCP Discover - Transaction ID 0xd24d2a35
4	2019-06-18 04:50:40.399931	192.0.2.1	192.168.5.44	DHCP	418	DHCP Offer - Transaction ID 0xd24d2a35
5	2019-06-18 04:50:40.401783	0.0.0.0	255.255.255.255	DHCP	442	DHCP Request - Transaction ID 0xd24d2a35
6	2019-06-18 04:50:40.401905	192.0.2.1	192.168.5.44	DHCP	418	DHCP ACK - Transaction ID 0xd24d2a35

ةحصلا نم ققحتلا

ححص لكشب نيوكتل لمع ديكأتل مسقلا اذه مدختسا

ةلحملا ةكبشللا في مكحتلا رصنع ىلع تاجرخلما هذه عم ليمعلا ةلح ديكأتل نمكي
ةكيسلالا (WLC):

```
(Cisco Controller) >show pmipv6 mag binding
[Binding][MN]: Domain: D1, Nai: 0023.c2db.292d@ciscotacbangalore.com
[Binding][MN]: State: ACTIVE
[Binding][MN]: Interface: Management
[Binding][MN]: Hoa: 0xc0a8052c, att: 3, llid: 0023.c2db.292d
[Binding][MN][LMA]: Id: LMA1
[Binding][MN][LMA]: lifetime: 3600
[Binding][MN][GREKEY]: Upstream: 100, Downstream: 1
```

```
(Cisco Controller) >show client detail 00:23:c2:db:29:2d
```

```
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Client Type..... PMIPv6
PMIPv6 State..... Complete
PMIPv6 MAG location..... WLC
```

```
-----Truncated-----
```

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا ذه Cisco ت مچرت
م ل ا ل اء ان ا ع مچ ي ف ن م دخت س م ل ل م عد و ت ح م م ي دقت ل ة ي ر ش ب ل و
امك ة ق ي ق د ن و ك ت ن ل ة ي ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ال م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ال ا ة مچرت ل ا ع م ل ا ح ل ا و ه
ل ا ا م اء ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا هذه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا