ARP常見問題：為什麼在各自的ARP超時過期後，ARP表中仍存在一些動態ARP條目？

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簡介

本檔案介紹動態位址解析通訊協定(ARP)專案老化問題。

為什麼在各自的ARP超時過期後，ARP表中仍存在一些動態ARP條目？

在Cisco IOS®軟體中，ARP快取逾時預設設定為四小時（240分鐘），但可以在介面組態模式下修改。

輸入**show interfaces**命令以顯示ARP快取超時：

```
ASR1k#show interfaces gi0/0/2 | include ARP
Encapsulation ARPA, loopback not set
ARP type: ARPA, ARP Timeout 04:00:00
```

ARP條目實際上儲存在ARP快取中，即使在超時過期之後。在本示例中，IP地址10.2.2.2的動態ARP條目已在ARP快取中存在253分鐘：

```
ASR1k#show arp
Protocol Address Age (min) Hardware Addr Type Interface
Internet 10.2.2.1 - 30e4.dbb7.7e02 ARPA GigabitEthernet0/0/2
Internet 10.2.2.2 253   0004.c01d.7c1a  ARPA   GigabitEthernet0/0/2
```

額外時間是在每個動態ARP條目建立時新增到其中的抖動。向ARP快取超時新增了隨機抖動，以避免ARP條目的同步過期，這可能會觸發ARP風暴。抖動應該是一個介於0秒和30分鐘之間的隨機數，最大抖動為30分鐘。

以下過程介紹了如何確認抖動是隨機的：

1. 輸入**show arp** *IP address* **detail**命令以檢查ARP專案詳細資訊：

```
ASR1k#show arp 10.2.2.2 detail
```

```
ARP entry for 10.2.2.2, link type IP.
Dynamic, via GigabitEthernet0/0/2, last updated 253 minutes ago.
Encap type is ARPA, hardware address is 0004.c01d.7c1a, 6 bytes long.
ARP subblocks:
* Dynamic ARP Subblock
Entry will be refreshed in 9 minutes and 4 seconds.
It has 2 chances to be refreshed before it is purged.
Entry is complete.
* ARP HA
ARP entry is a new entry and has not been synchronized to standby RP.
* IP ARP Adjacency
Adjacency (for 10.2.2.2 on GigabitEthernet0/0/2) was installed.
Connection ID: 0
```

2. 再次清除ARP專案，並從**show arp** *IP address* **detail** 指令擷取輸出：

```
ASR1k#clear arp 10.2.2.2
ASR1k#show arp 10.2.2.2 detail
ARP entry for 10.2.2.2, link type IP.
Dynamic, via GigabitEthernet0/0/2, last updated 0 minute ago.
Encap type is ARPA, hardware address is 0004.c01d.7c1a, 6 bytes long.
ARP subblocks:
* Dynamic ARP Subblock
Entry will be refreshed in 261 minutes and 42 seconds.
It has 2 chances to be refreshed before it is purged.
Entry is complete.
```

注意計時器已重置。

3. 重複步驟2，注意結果不同：

```
ASR1k #clear arp 10.2.2.2
ASR1k #show arp 10.2.2.2 det
ARP entry for 10.2.2.2, link type IP.
Dynamic, via GigabitEthernet0/0/2, last updated 0 minute ago.
Encap type is ARPA, hardware address is 0004.c01d.7c1a, 6 bytes long.
ARP subblocks:
* Dynamic ARP Subblock
Entry will be refreshed in 263 minutes and 58 seconds.
It has 2 chances to be refreshed before it is purged.
Entry is complete.
```

相關資訊

- Cisco IOS IP Addressing Services命令參考中的show arp命令
- 技術支援與文件 - Cisco Systems