

知 某局点10506X网关交换机下联无线终端无法上线问题

DHCP/DHCP Relay 赵卓 2022-09-26 发表

告警信息

行 8754: %Sep 20 19:16:27:282 2022 S10510X_wuxian RESMON/2/RESMON_USEDUP: -Slot=0; -Resource=ac-Total=0-Used=0-Free=0; Resources used up.

行 8754: %Sep 20 19:16:27:282 2022 S10510X_wuxian RESMON/2/RESMON_USEDUP: -Slot=0; -Resource=ac-Total=0-Used=0-Free=0; Resources used up.

行 8755: %Sep 20 19:16:57:493 2022 S10510X_wuxian RESMON/5/RESMON_USEDUP_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=65532-Free=1; The amount of free resources increased from zero to a non-zero value.

行 8755: %Sep 20 19:16:57:493 2022 S10510X_wuxian RESMON/5/RESMON_USEDUP_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=65532-Free=1; The amount of free resources increased from zero to a non-zero value.

行 8756: %Sep 20 19:16:57:500 2022 S10510X_wuxian RESMON/5/RESMON_MINOR_RECOVERY: -Slot=0; -Resource=ac-Total=1-Used=0-Free=1; Free resource increased above minor threshold 20%.

行 8756: %Sep 20 19:16:57:500 2022 S10510X_wuxian RESMON/5/RESMON_MINOR_RECOVERY: -Slot=0; -Resource=ac-Total=1-Used=0-Free=1; Free resource increased above minor threshold 20%.

行 8757: %Sep 20 21:31:02:586 2022 S10510X_wuxian RESMON/5/RESMON_SEVERE_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=58893-Free=6640; Free resource increased above severe threshold 10%.

行 8757: %Sep 20 21:31:02:586 2022 S10510X_wuxian RESMON/5/RESMON_SEVERE_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=58893-Free=6640; Free resource increased above severe threshold 10%.

行 8758: %Sep 20 22:08:19:833 2022 S10510X_wuxian RESMON/5/RESMON_MINOR_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=52378-Free=13155; Free resource increased above minor threshold 20%.

行 8758: %Sep 20 22:08:19:833 2022 S10510X_wuxian RESMON/5/RESMON_MINOR_RECOVERY: -Slot=0; -Resource=nexthoppool1-Total=65533-Used=52378-Free=13155; Free resource increased above minor threshold 20%.

问题描述

10506X作为网关交换机，晚上6-7点偶发下联无线终端掉线后无法上线问题

过程分析

查看故障时间点日志中有nexthoppool1下一跳资源不足的告警。怀疑与此相关

nexthoppool1是underlay的下一跳资源，非vsi接口学习的arp nd，和vxlan不相关的relay路由、ac口、L3隧道等占用的nexthop都会占用nexthoppool1资源。

进一步查看正常时设备arp、nd表项，arp表项有18k条，nd表项有35k条。设备下一跳资源为64k，此时已占用40k。

```
- Unit 0
  L3 INTF size:          4096
  L3 INTF cnt:           64
  L3 TBL size:          245760
  IPv4 prefix cnt:      18238
  IPv6 prefix cnt:      35360
  L3 TBL cnt:           88958
  L3 DEFIP size:        131072
  IPv4 route cnt:       1364
  IPv6 route cnt:       436
  L3 DEFIP cnt:         2236
  L3 ECMP size:         16
  L3 ECMP used:         1
  L3 NH size:           65536
  L3 NH used:           40247
  TNL INIT size:        2048
  TNL INIT cnt:         0
  TNL TERM size:        1024
  TNL TERM cnt:         0
  IPv4 ext tcam size:   131072
  IPv6 ext tcam size:   65536
  IPv6 ext Mode:        1
```

当晚上6-7点时，无线终端在网量增加，由于现场ipv6地址为无状态获取，一个终端往往有一个ipv4地址+两到三个ipv6地址，进一步占用nd表项，消耗下一跳资源

解决方法

为了减少下一跳资源的占用，调整设备nd老化时间为20min，和arp表项一致，减少nd表项的同时占用
ipv6 neighbor stale-aging second 1200

同时可以配置arp uni mode，该模式下arp表项不占用下一跳资源，进一步节省下一跳资源

