

组网及说明

组网不涉及

问题描述

部分苹果手机，连上SSID后不弹页面或者弹出页面为空白，故障截图如下



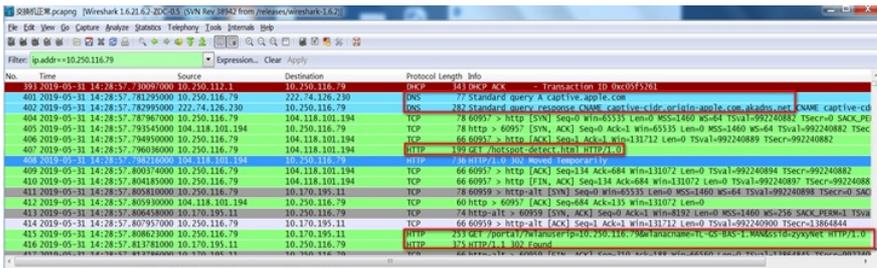
过程分析

首先我们需要明确苹果自动弹页面的机制，一般苹果自动弹页面流程如下：

- 1、苹果连上SSID后，苹果智能设备会尝试打开指定站点检查网络是否畅通（CAN机制）
- 2、如果发现网络畅通，则苹果智能设备就会在消息栏显示Wi-Fi已连接的图标。
- 3、如果发现网络不通，则苹果智能设备与站点之间可能存在Web重定向操作，终端用户需要在重定向的页面进行认证，认证后苹果智能设备才允许接入网络

下面来看一个苹果正常弹页面抓包

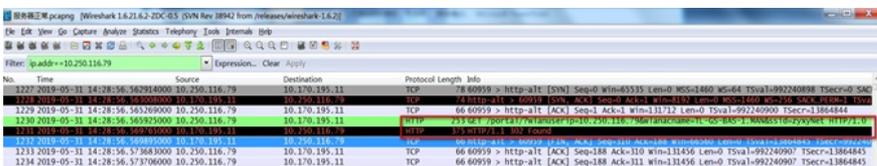
终端IP: 10.250.116.79 服务器IP: 10.250.195.11



1-1 正常苹果终端抓包

看这个正常报文，过程如下：

- 1、终端连上SSID后，会首先给网络中的DNS服务器发送captive.apple.com，DNS服务器正常回应该报文
- 2、苹果终端发送探测报文，即hotspot-detect.html HTTP/1.0
- 3、探测报文被重定向，重定向报文中含有portal服务器的地址
- 4、终端按照重定向拿到的portal服务器的地址，发送请求登录页面的报文，即GET/Portal..报文
- 5、Portal服务器回应302Foud报文，此时终端可以正常弹出认证界面



1-2 正常服务器侧抓包

看此时portal服务器侧报文，可以看到服务器端收到了终端发过来请求报文，服务器也正常做了回应。现场出现页面空白时，终端侧抓包如下：

No.	Time	Source	Destination	Protocol	Length	Info
389	2019-05-31 14:15:12.018367000	10.250.116.79	10.250.116.79	DHCP	343	DHCP ACK - Transaction ID 0xc05f5239
448	2019-05-31 14:15:12.338337000	10.250.116.79	10.250.116.79	DHCP	343	DHCP ACK - Transaction ID 0xc05f5239
452	2019-05-31 14:15:12.406567000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local, cache flush Faith.local
454	2019-05-31 14:15:12.406574000	10.250.116.79	224.0.0.251	MDNS	112	Standard query PTR _sleep-proxy._sdp.local, "Q" question
461	2019-05-31 14:15:12.427476000	10.250.116.79	224.0.0.251	DNS	77	Standard query A captive.apple.com
462	2019-05-31 14:15:12.428167000	224.0.0.251	10.250.116.79	DNS	282	Standard query response CNAME captive.apple.com.cdn.cloudflare.com.pkafns.net.CNAME.captive-d
464	2019-05-31 14:15:12.433455000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
476	2019-05-31 14:15:12.910166000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local PTR, cache flush Faith.local
499	2019-05-31 14:15:13.131341000	10.250.116.79	224.0.0.2	IGMP	60	v2 Leave Group 224.0.0.251
500	2019-05-31 14:15:13.131544000	10.250.116.79	224.0.0.251	IGMP	60	v2 Membership Report / Join group 224.0.0.251
523	2019-05-31 14:15:13.451883000	10.250.116.79	224.0.0.251	MDNS	112	Standard query PTR _sleep-proxy._sdp.local, "Q" question
539	2019-05-31 14:15:13.457354000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
613	2019-05-31 14:15:14.433646000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
623	2019-05-31 14:15:14.909448000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local PTR, cache flush Faith.local
692	2019-05-31 14:15:15.253743000	10.250.116.79	224.0.0.251	MDNS	108	Standard query PTR _homekit._tcp.local, "Q" question
700	2019-05-31 14:15:15.416661000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
1480	2019-05-31 14:15:17.974922000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER

### 1-3 故障时终端侧抓包

通过抓包对比正常报文可以看出，终端侧没有主动探测报文，即hotspot-detect的报文，导致后续设备侧不会进行相应的重定向，该问题需要终端侧自行进行排查，和服务器以及设备均无关。

页面空白时，服务器侧抓包如下，过滤终端的IP地址可以看出，没有任何的终端信息，和上面终端没有主动发起探测报文相对应

No.	Time	Source	Destination	Protocol	Length	Info
389	2019-05-31 14:15:12.018367000	10.250.116.79	10.250.116.79	DHCP	343	DHCP ACK - Transaction ID 0xc05f5239
448	2019-05-31 14:15:12.338337000	10.250.116.79	10.250.116.79	DHCP	343	DHCP ACK - Transaction ID 0xc05f5239
452	2019-05-31 14:15:12.406567000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local, cache flush Faith.local
454	2019-05-31 14:15:12.406574000	10.250.116.79	224.0.0.251	MDNS	112	Standard query PTR _sleep-proxy._sdp.local, "Q" question
461	2019-05-31 14:15:12.427476000	10.250.116.79	224.0.0.251	DNS	77	Standard query A captive.apple.com
462	2019-05-31 14:15:12.428167000	224.0.0.251	10.250.116.79	DNS	282	Standard query response CNAME captive.apple.com.cdn.cloudflare.com.pkafns.net.CNAME.captive-d
464	2019-05-31 14:15:12.433455000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
476	2019-05-31 14:15:12.910166000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local PTR, cache flush Faith.local
499	2019-05-31 14:15:13.131341000	10.250.116.79	224.0.0.2	IGMP	60	v2 Leave Group 224.0.0.251
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539	2019-05-31 14:15:13.457354000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER
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623	2019-05-31 14:15:14.909448000	10.250.116.79	224.0.0.251	MDNS	232	Standard query response PTR, cache flush Faith.local PTR, cache flush Faith.local
692	2019-05-31 14:15:15.253743000	10.250.116.79	224.0.0.251	MDNS	108	Standard query PTR _homekit._tcp.local, "Q" question
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1480	2019-05-31 14:15:17.974922000	10.250.116.79	184.31.32.142	TCP	78	60939 -> http [SYN] Seq=0 win=65535 Len=0 MSS=1460 WS=64 TSval=99197778 TSecr=0 SACK_PER

### 1-4 故障时服务器侧抓包

## 解决方法

该问题一般是终端没有主动发包导致，和服务器以及接入设备无关，需要终端侧自行排查。