

Re: ath(4) driver problems with WEP...

Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/current/2003-09/1041.html>

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To: "Kenneth D. Merry" <ken@kdm.org>, current@FreeBSD.org

> I've got a Netgear WAG511 (Atheros 5212-based card) and a Netgear FWAG114
> wireless router.
>
> I've been trying to get the card and the router talking under FreeBSD.
> (Both 802.11a and 802.11g work fine under Windows on the same machine.)
>
> I'm using -current from September 15th.
>
> Anyway, whenever I try to get the card talking to the router, which is
> running WEP (128 bit keys) on both the a and b/g sides, I get:
>
> ath0: authentication failed (reason 13) for [base station MAC address]
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>
> Here's what the ifconfig looks like:
>
> ath0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
> ether [card mac address]
> media: IEEE 802.11 Wireless Ethernet autoselect mode 11a
> (OFDM/6Mbps) status: no carrier
> ssid [my ssid] 1:[my ssid]
> channel -1 authmode OPEN powersavemode OFF powersavesleep 100
> wepmode MIXED weptxkey 1
> wepkey 1:128-bit wepkey 2:128-bit wepkey 3:128-bit wepkey
> 4:128-bit
>
> I've verified and re-verified, via cut-and-paste from the router setup
> screen, that the WEP key is correct.
>

Good news+bad news. I just committed a fix to ifconfig to correctly handle 128-bit WEP keys. I'm not sure how you thought you were setting your key up but ifconfig was barfing on anything more than 104 bits. FWIW ifconfig

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wrongly indicated keys >5 bytes (40 bits) were 128-bit keys; I also fixed that so ifconfig now indicates keys are 40-, 104-, or 128-bit according to their length. Beware also that wicontrol displays WEP keys longer than 104 bits zero-padded; I believe this is because of limitations in the RID API for fetching keys. Someone else may want to investigate that issue.

The bad news is that with 128-bit keys installed I'm getting decryption errors at the AP. Actually, I'm seeing errors for any length key so it's likely a botch in the WEP frame construction in the driver. I've run out of time to look at this right now and will have to investigate later.

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> Anyway, I can't get the ath(4) driver to talk to the router when it is
> running WEP. I have been able to get it to talk 802.11g to the router
> without WEP enabled, though.
>
> I tried setting the authmode to shared via ifconfig, but from looking at
> ieee80211_ioctl.c:
>
> #if 0
> case IEEE80211_IOC_AUTHMODE:
>     sc->wi_authmode = ireq->i_val;
>     break;
> #endif
>
> i.e. I get EINVAL back.
>
> Is WEP supposed to work in -current?
>
```

authmode is not relevant. WEP worked at one time; I seem to have broken it. As I said above I will have to look at it later.

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> In a separate issue, the ath(4) driver can't see the 802.11a side of the
> wireless router at all when it is running in 108Mbps "turbo" mode. If I
> drop it down to 54Mbps, it sees it. (Works fine in Windows.)
>
> Is the ath(4) driver supposed to support the 108Mbps turbo mode?
```

I was able to associate with an Atheros AP with turbo mode enabled but didn't get any higher throughput. I'm investigating this.

FWIW I enabled turbo mode with:

```
ifconfig ath0 mediaopt turbo
```

I verified turbo mode was in use by disabling it on either station or AP side and with things mismatched the station/AP couldn't see each other. With turbo mode enabled on each side I was able to associate and communicate as normal; but netperf throughput was identical to the non-turbo setup. I'm asking Atheros folks for clarification on this—I may need to do some additional setup work to enable turbo operation. This is

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actually the first time I've tried turbo mode...

Sam

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