



WizShark™

Wi-Fi Troubleshooting Made Easy

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@WizShark, @gopinathkn, @raferruolo
CWNP - 2014

A blue-tinted image of a planet's horizon, likely Earth, with a bright sunburst effect on the right side. The sunburst is a bright white light source with several rays extending outwards, creating a lens flare effect. The planet's surface is dark blue and curves across the frame. The background is black.

This is how the Wi-Fi Troubleshooting world appears without @Wizshark ...

A Typical Wi-Fi Connectivity Issue

The image shows a Wireshark network traffic capture. The main pane displays a list of 26 packets. Packet 25 is highlighted in red, indicating an error. The packet list is as follows:

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	wibhuTec_41:1d	Aironet_a9:65:4	EAP	191	Request, Identity
2	0.023687	Aironet_a9:65:4	wibhuTec_41:1d	EAPOL	185	Start
3	0.027557	wibhuTec_41:1d	Aironet_a9:65:4	EAP	191	Request, Identity
4	0.037912	Aironet_a9:65:4	wibhuTec_41:1d	EAP	200	Response, Identity
5	0.119497	Aironet_a9:65:4	wibhuTec_41:1d	EAP	200	Response, Identity
6	3.220720	wibhuTec_41:1d	Aironet_a9:65:4	EAP	225	Request, MS-Authentication EAP (EAP-MS-AUTH)
7	3.230084	Aironet_a9:65:4	wibhuTec_41:1d	EAP	190	Response, Legacy Nak (Response Only)
8	3.240651	wibhuTec_41:1d	Aironet_a9:65:4	EAP	192	Request, Protected EAP (EAP-PEAP)
9	3.265360	Aironet_a9:65:4	wibhuTec_41:1d	TLSv1	296	Client Hello
10	3.282842	wibhuTec_41:1d	Aironet_a9:65:4	TLSv1	322	Server Hello, Change Cipher Spec, Encrypted Handshake Message
11	3.282988	wibhuTec_41:1d	Aironet_a9:65:4	TLSv1	322	Server Hello, Change Cipher Spec, Encrypted Handshake Message
12	3.301043	Aironet_a9:65:4	wibhuTec_41:1d	TLSv1	241	Change Cipher Spec, Encrypted Handshake Message
13	3.317248	wibhuTec_41:1d	Aironet_a9:65:4	TLSv1	288	Application Data
14	3.359046	Aironet_a9:65:4	wibhuTec_41:1d	TLSv1	286	Application Data
15	3.377712	wibhuTec_41:1d	Aironet_a9:65:4	EAP	190	Success
16	3.381240	wibhuTec_41:1d	Aironet_a9:65:4	EAPOL	303	Key (Message 1 of 4)
17	3.420835	Aironet_a9:65:4	wibhuTec_41:1d	EAPOL	301	Key (Message 2 of 4)
18	3.427222	wibhuTec_41:1d	Aironet_a9:65:4	EAPOL	337	Key (Message 3 of 4)
19	3.447387	Aironet_a9:65:4	wibhuTec_41:1d	EAPOL	279	Key (Message 4 of 4)
20	67.76458	Aironet_a9:65:4	wibhuTec_41:23	802.11	252	Reassociation Request, SN=2041, FN=0, Flags=....., SSID=OKC_TEST1
21	67.77429	wibhuTec_41:23	Aironet_a9:65:4	EAPOL	303	Key (Message 1 of 4)
22	67.78093	Aironet_a9:65:4	wibhuTec_41:23	EAPOL	319	Key (Message 2 of 4)
23	67.78618	wibhuTec_41:23	Aironet_a9:65:4	EAPOL	337	Key (Message 3 of 4)
24	67.78860	Aironet_a9:65:4	wibhuTec_41:23	EAPOL	279	Key (Message 4 of 4)
25	141.9197	Aironet_a9:65:4	wibhuTec_41:1d	802.11	252	Reassociation Request, SN=119, FN=0, Flags=....., SSID=OKC_TEST1[Malformed Packet]
26	141.9247	wibhuTec_41:1d	Aironet_a9:65:4	EAPOL	303	Key (Message 1 of 4)

The bottom pane shows the details of the selected frame (Frame 1):

- Frame 1: 191 bytes on wire (1528 bits), 191 bytes captured (1528 bits)
- Prism capture header
- IEEE 802.11 QoS Data, Flags:F.
- Logical-Link Control
- 802.1X Authentication

The hex dump below the details pane shows the raw data of the frame:

```
0000 44 00 00 00 90 00 00 00 61 74 68 30 00 00 00 00  D..... ath0....
0010 00 00 00 00 00 00 00 00 44 00 01 00 00 00 04 00  ..... D.....
0020 1b 1d 2a 0a 44 00 02 00 00 00 04 00 70 8f d2 c4  ..*.D... ..p...
0030 44 00 03 00 00 00 04 00 24 00 00 00 44 00 04 00  D..... $.D....
0040 00 00 04 00 00 00 00 00 00 00 00 00 00 00 00 00  .....
0050 00 00 00 00 44 00 06 00 00 00 04 00 3b 00 00 00  .....

```

191 Request, Identity
200 Response, Identity
200 Response, Identity
225 Request, MS-Authentication EAP (EAP-MS-AUTH)
190 Response, Legacy Nak (Response Only)
192 Request, Protected EAP (EAP-PEAP)
296 Client Hello
322 Server Hello, Change Cipher Spec, Encrypted Handshake
322 Server Hello, Change Cipher Spec, Encrypted Handshake
241 Change Cipher Spec, Encrypted Handshake Message
288 Application Data
286 Application Data
190 Success
303 Key (Message 1 of 4)
301 Key (Message 2 of 4)
337 Key (Message 3 of 4)
279 Key (Message 4 of 4)
252 Reassociation Request, SN=2041, FN=0, Flags=....., I
303 Key (Message 1 of 4)
319 Key (Message 2 of 4)
337 Key (Message 3 of 4)
279 Key (Message 4 of 4)
252 Reassociation Request, SN=119, FN=0, Flags=....., SS
303 Key (Message 1 of 4)
319 Key (Message 2 of 4)
337 Key (Message 3 of 4)

191 bytes captured (1528 bits), 191 bytes captured (1528 bits)
.....F.
74 68 30 00 00 00 00
00 01 00 00 00 00
00 01

191 Request, Identity
 200 Response, Identity
 200 Response, Identity
 225 Request, MS Authentication EAP (EAP-MS-AUTH)
 190 Response, Legacy Nak (Response Only)
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 337 Key (Message 1 of 4)
 279 Key (Message 4 of 4)
 252 Reassociation Request, SN=119, FN=0, Flags=
 303 Key (Message 1 of 4)
 319 Key (Message 2 of 4)
 337 Key (Message 1 of 4)

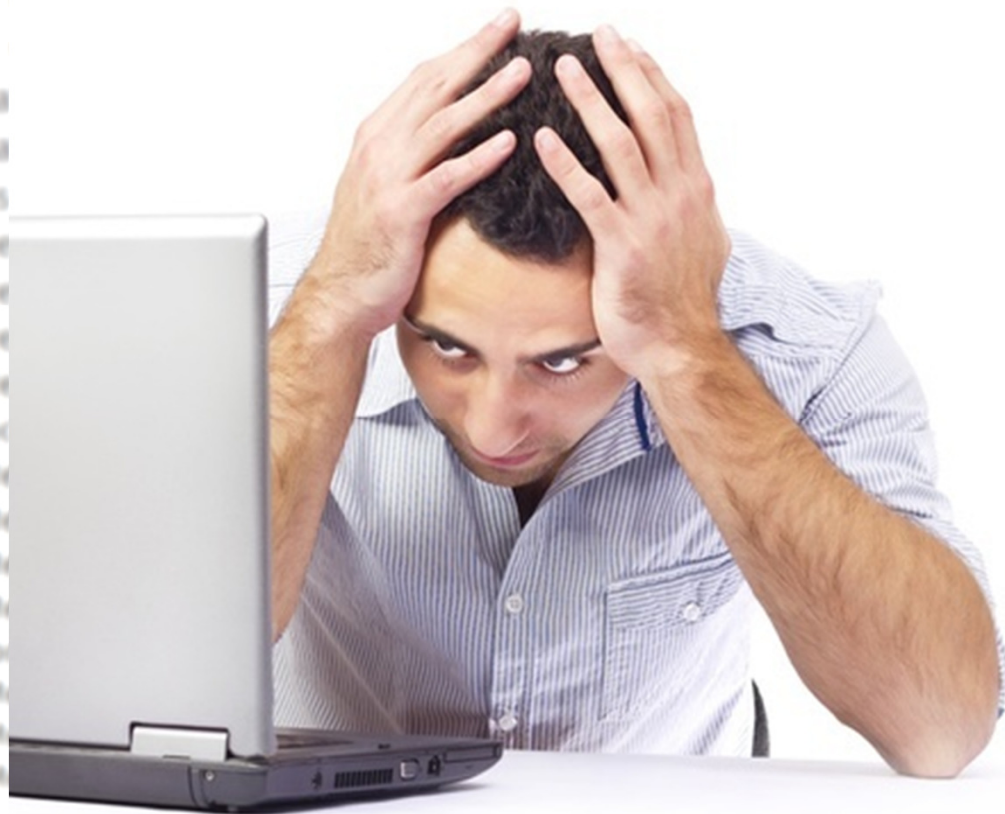
(1528 bits), 191 bytes captured (1528 bits)
 .F.

4	68	30	00	00	00	00	00
90	01	00	00	00	00	00	00
00	00	00	00	00	00	00	00



@WizShark

Are You Suffering From Packet Trace Fatigue?



@WizShark

**A PICTURE IS WORTH A
THOUSAND WORDS ...**

@WizShark

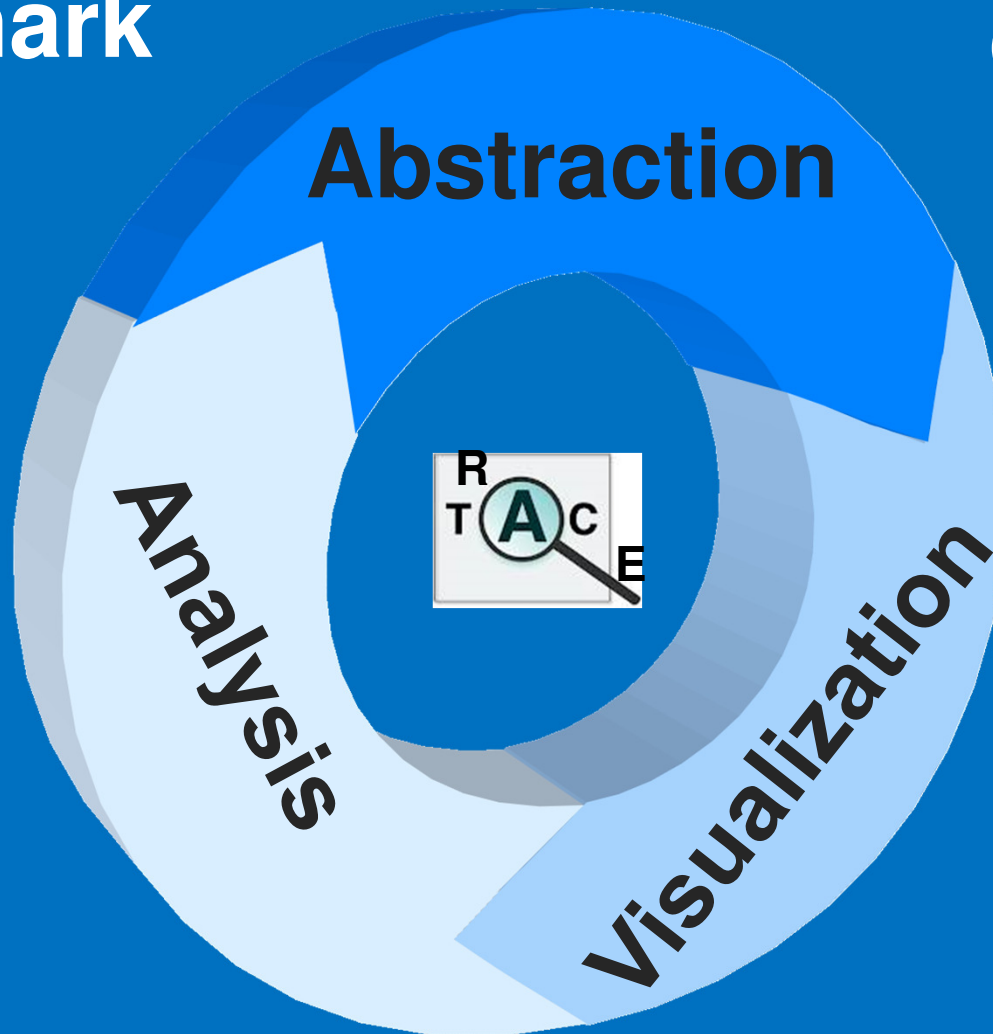


A picture is **worth**
a *thousand packets*

@WizShark

@WizShark


Failure
messages
Connection
Handshake
Data Rates



“What-if”
Scenarios
Packet
Range &
Details


Graphs &
charts
Multiple
views
(AP & client)

Followed by vivek raval and 12 others


 **WizShark** @WizShark · Aug 1
@KeithRParsons True. Objective is to help quickly identify part of traces that need frame analysis.

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Retweeted by Gustavo Mastroianni

 **Keith R. Parsons** @KeithRParsons · Jul 29
For those of you who asked... **Wizshark** does NOT remove the need for you to understand 802.11 frames and how they are supposed to interact.


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 **Keith R. Parsons** @KeithRParsons · Jul 29
Wizshark from @AirTight is a pretty cool way to do visual Wi-Fi analysis... check it out.
blog.airtightnetworks.com/wizshark-bring...

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 **Andrew von Nagy** @revolutionwifi · Jul 25
RT @CHemantC: @WizShark Brings Collaboration to #WiFi Troubleshooting shar.es/L3Q75 < Fresh ideas! Well done team! < +1 tools rock!

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 **Lee Badman** @wirednot · Jul 25
@CHemantC @WizShark WizShark is very nice. Great approach to analysis.

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Remember: We are NOT replacing the human brain or the need for knowledge

Providing better troubleshooting tools for making the process easy and enjoyable!



WizShark Demo

@WizShark

4 Key Takeaways

- ✓ **End-to-end remote troubleshooting from AirTight Cloud**
- ✓ **Troubleshooting from a mobile device**
- ✓ **Built-in trace sharing for collaboration**
- ✓ **Wi-Fi vendor agnostic -- supports PCAP family**

@WizShark

@WizShark Value



Collaboration Tool



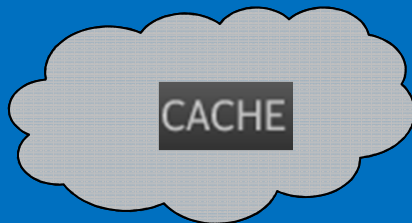
Scalability



Education Tool



Vendor Agnostic



**Caching of Traces
and Views**



MSP Value Added Service

A silhouette of a telescope on a tripod is positioned on the left side of the image, pointing towards the upper right. The background is a dark blue night sky filled with numerous small white stars. The overall scene is framed by a black border.

Questions

Comments

Suggestions

@WizShark

www.wizshark.net

**Last Chance for Private Beta: Sign Up@
<http://go.airtightnetworks.com/wizshark>**

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A hand in a light blue shirt sleeve holds a transparent rectangular card. The card displays a URL in blue text. The background is a dark blue gradient.

www.slideshare.net/gopinathkn/

@WizShark

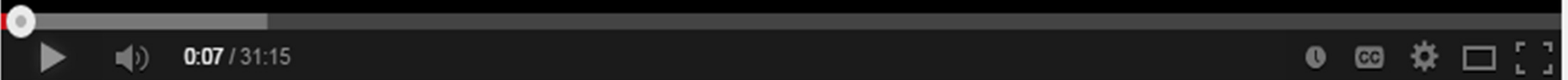


Wireless Field Day 7 AirTight Networks WizShark Demonstration Gopinath KN

August 6, 2014

@WizShark

<http://youtu.be/vTohs791ISQ>



AirTight Networks WizShark Demonstration



WizShark Brings Collaboration to Troubleshooting

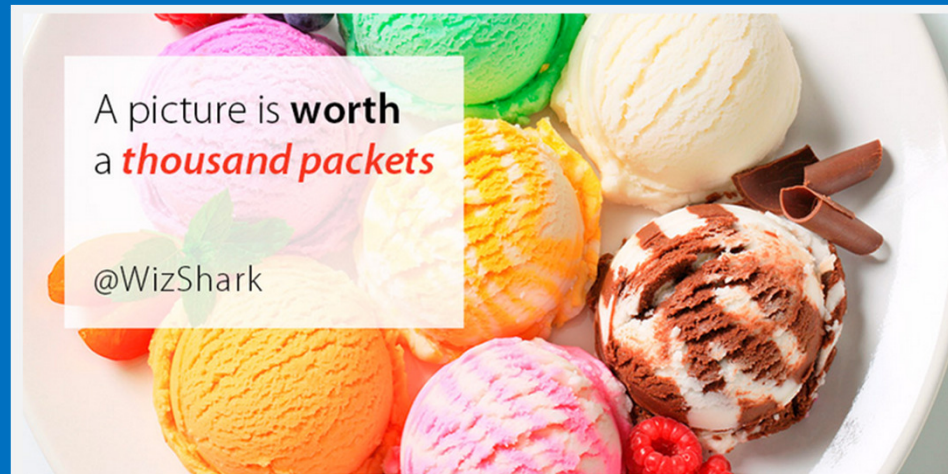
AirTight offered early beta access to WizShark, our visual WiFi troubleshooting tool in cloud, and since then it has been a fun ride for the team. It



First Annual CWNP Conference

The First Annual CWNP Conference is fast approaching. Here at AirTight Networks, as participants and presenters, we're very excited about this

blog.airtightnetworks.com



Wi-Fi Troubleshooting: Guilty until Proven Innocent

FILED UNDER: SUPPORT, WI-FI, WIFI ACCESS, WLAN NETWORKS, WLAN TROUBLESHOOTING SEPTEMBER 22, 2014 BY THE AIRTIGHT TEAM — [LEAVE A COMMENT \(EDIT\)](#)

The image features a central blue speech bubble with a white border and a slight shadow, containing the text "Thank You!" and "@WizShark" in white. The background is a dark blue field filled with a dense pattern of small, white, semi-transparent icons representing various digital and social media concepts, such as hearts, stars, gears, speech bubbles, and mobile devices.

Thank You!
@WizShark