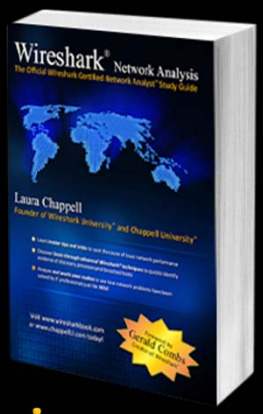
Today's handouts can be downloaded today from the ChappellU Portal at lcuportal2.com



Wireshark Network Analysis

The Official Wireshark Certified Network Analyst Study Guide

"In short, whether you are on the air or wire there is no better tool than Wireshark and there is no better book than this…!"

SecurityXploded.com
Awarded "Book of the Month"

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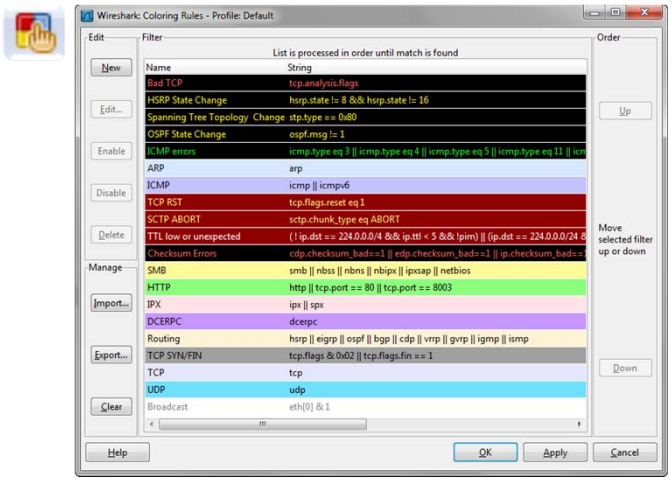
For sample trace files, videos and configuration files, visit wiresharkbook.com

Our Focus Today

- Default Coloring Rules
- Disable All/Single Coloring Rules
- Conversation Coloring
- Add New Coloring Rules [Best Practices]
- Sample Coloring Rules to Add
- Work with Coloring in Profiles
- Edit the *colorfilters* Text File
- Share Coloring Rules

20 Default Coloring Rules

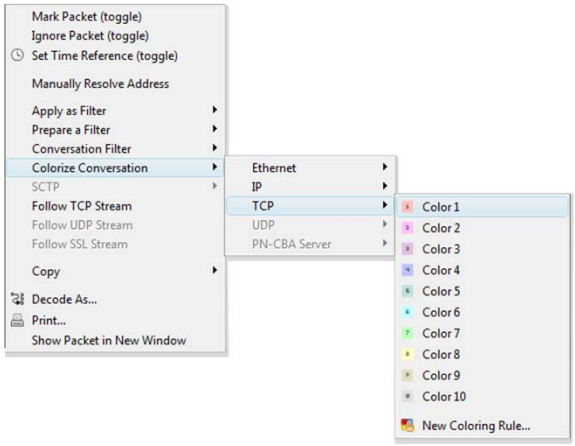


Disabling Coloring Rules

- Why disable coloring rules?
- Disabling all rules
- Disabling single coloring rules
- Restoring the default coloring rule set

Separating Conversations

- http-espn2010.pcap and voip-extension.pcap
- 10 colors
- Coloring is only temporary unless you choose “New Coloring Rule…”



New Coloring Rules – Best Practices

- Excessive coloring rules can **slow down** Wireshark processing
- Coloring rules are processed **top to bottom**
- Separate coloring rules in **profiles**
- Define a **coloring scheme**
- Use **coloring names** (often hex)
- Use a **sortable naming convention**

Sample Troubleshooting Coloring Rules

- High latency between packets
- Error responses
- Inefficient packet sizes

Consider adding security-related coloring rules as well.

Sample Troubleshooting Coloring Rules

- @T-High Delta Display Time (adjust as needed)@tcp.time_delta > 0.500000000@[63479,41891,21588][0,0,0]
- @T-DHCP NACK (DHCP Server Does Not Like Target)@(bootp.option.type == 53) && (bootp.option.value == 06)@[63479,41891,21588][0,0,0]
- @T-HTTP Error Code@http.response.code > 299 @[63479,41891,21588][0,0,0]
- @T-ICMP Type 3/Code 4 (Black Hole Detection?)@icmp.type == 3 and icmp.code == 4@[63479,41891,21588][0,0,0]

Sample Troubleshooting Coloring Rules

- @T-PPI Signal < -80 (Weak Signal Strength at Antenna Location)@ppi.80211-common.dbm.antsignal < -80@[63479,41891,21588][0,0,0]
- @T-RadioTap Signal < -80 (Weak Signal Strength at Antenna Location)@radiotap.dbm_antsignal < -80@[63479,41891,21588][0,0,0]
- @T-SIP Error Responses@sip.Status-Code >= 300@[63479,41891,21588][0,0,0]
- @T-TCP Length == 536 (MTU Issue Along Path?)@tcp.len==536@[63479,41891,21588][0,0,0]

Coloring in Profiles

- Example of Profiles
  - VoIP
  - WLAN
  - Corporate office
  - HTTP
  - Other application

The *colorfilters* File

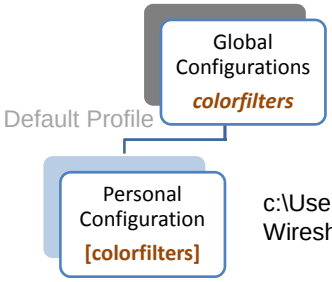
- **Simple text file**
- **Contains a warning not to edit**
- **You *CAN* edit this file with caution**

```
# DO NOT EDIT THIS FILE!  It was created by Wireshark
@Bad TCP@tcp.analysis.flags@[0,0,0][65535,24383,24383]
@HSRP State Change@hsrp.state != 8 && hsrp.state != 16@[0,0,0]
[65535,63222,0]
@Spanning Tree Topology  Change@stp.type == 0x80@[0,0,0][65535,63222,0]
@OSPF State Change@ospf.msg != 1@[0,0,0][65535,63222,0]
@ICMP errors@icmp.type eq 3 || icmp.type eq 4 || icmp.type eq 5 ||
icmp.type eq 11@[0,0,0][0,65535,3616]
@ARP@arp@[55011,59486,65534][0,0,0]
@ICMP@icmp || icmpv6@[49680,49737,65535][0,0,0]
@TCP RST@tcp.flags.reset eq 1@[37008,0,0][65535,63121,32911]
@TTL low or unexpected@( ! ip.dst == 224.0.0.0/4 && ip.ttl < 5 && !pim)
|| (ip.dst == 224.0.0.0/24 && ip.ttl != 1)@[37008,0,0]
[65535,65535,65535]
@Checksum Errors@cdp.checksum_bad==1 || edp.checksum_bad==1 ||
ip.checksum_bad==1 || tcp.checksum_bad==1 || udp.checksum_bad==1 ||
mstp.checksum_bad==1@[0,0,0][65535,24383,24383]
@SMB@smb || nbss || nbns || nbipx || ipxsap || netbios
```

How *colorfilters* is Created

c:\Program Files (x86)\Wireshark\

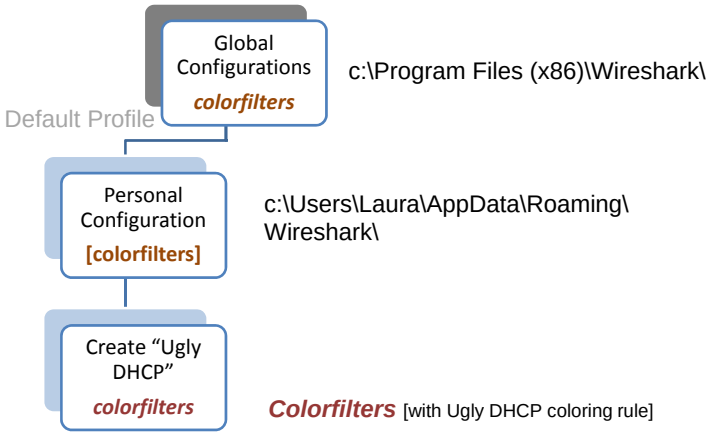
How *colorfilters* is Created



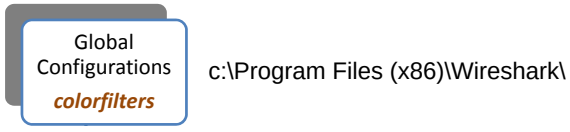
c:\Program Files (x86)\Wireshark\

c:\Users\Laura\AppData\Roaming\
Wireshark\

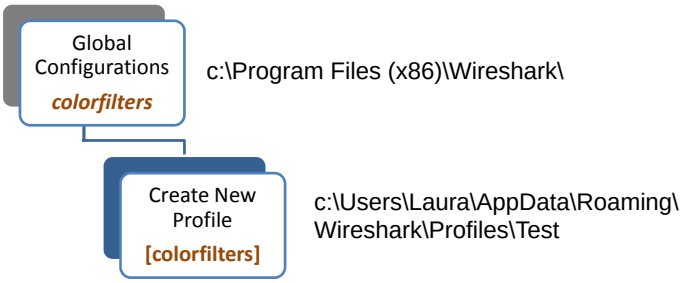
How *colorfilters* is Created



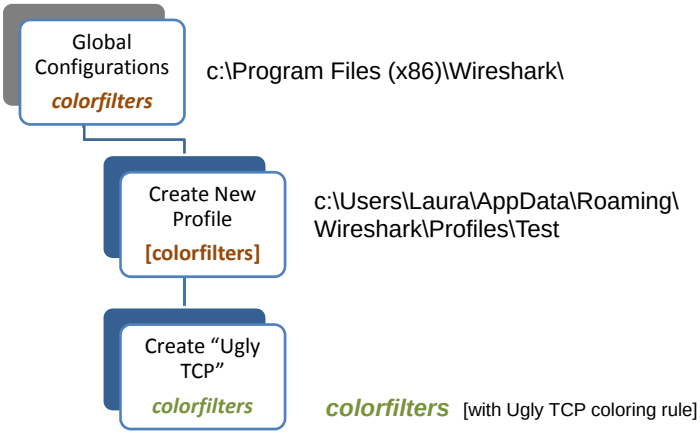
How *colorfilters* is Created



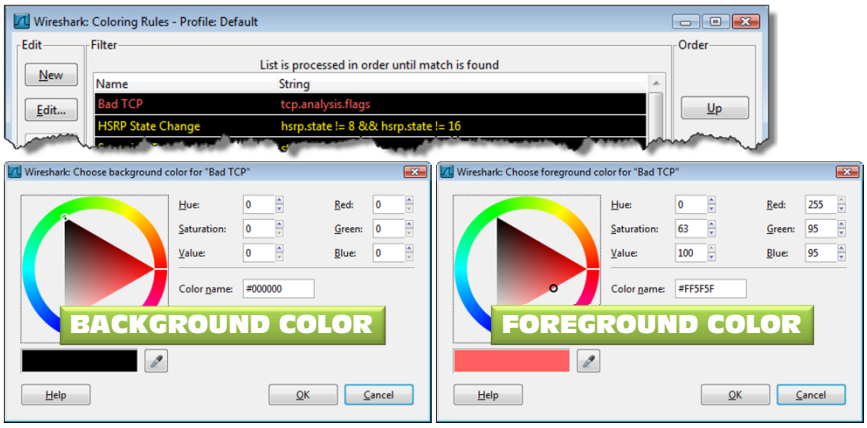
How *colorfilters* is Created



How *colorfilters* is Created

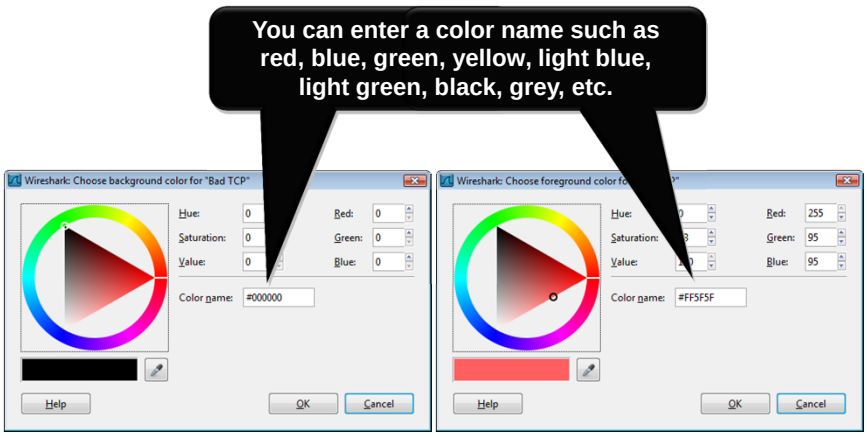


How *colorfilters* is Created

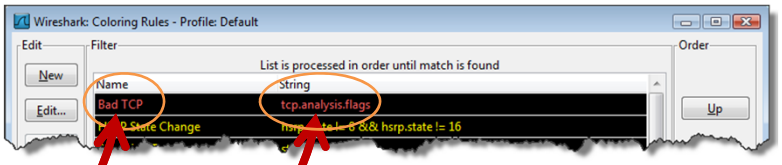



```
@Bad TCP@tcp.analysis.flags@[0,0,0][65535,24383,24383]
```


How *colorfilters* is Created



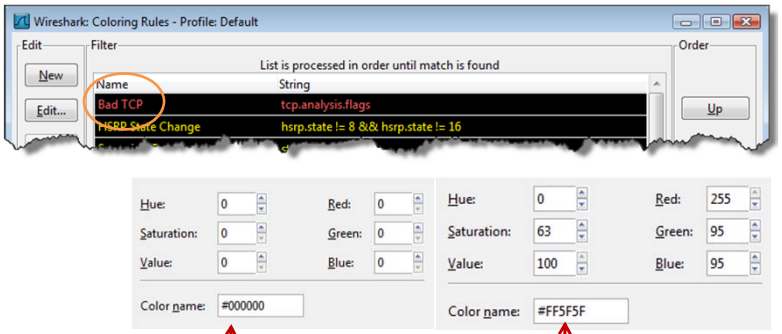
How *colorfilters* is Created



Name String

```
@Bad TCP@tcp.analysis.flags@[0,0,0][65535,24383,24383]
```


How *colorfilters* is Created

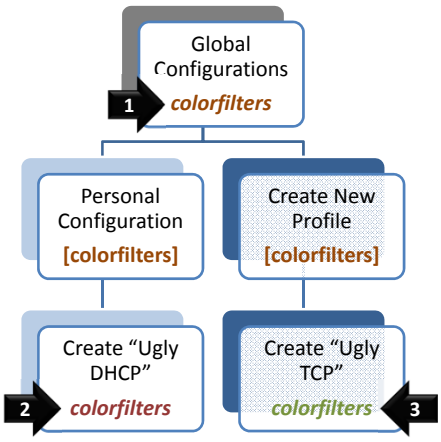



```
@Bad TCP@tcp.analysis.flags@[0,0,0][65535,24383,24383]
                                   [0xFF] [0x5F] [0x5F]
```

Let's Manually Add Coloring Rules

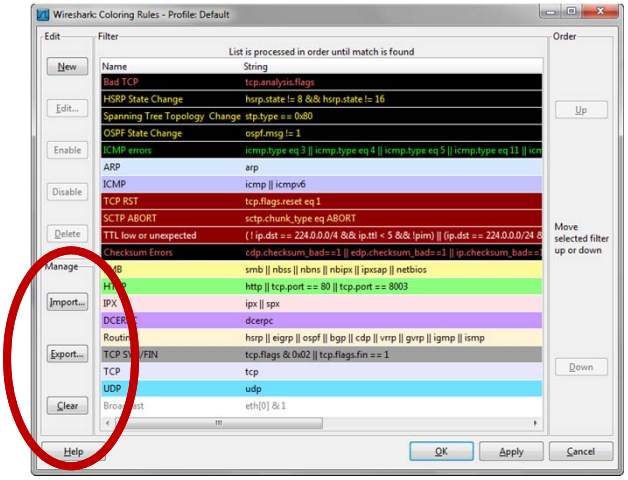
- Open in text editor
- Copy/paste existing filter to new line
- Edit name/string and color settings
- Use "!" before a coloring rule to disable it

Sharing a *colorfilters* File



- Which colorfilters file do you want to share?
- Or do you want to share one coloring rule alone?

Sharing a *colorfilters* File



Questions?

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