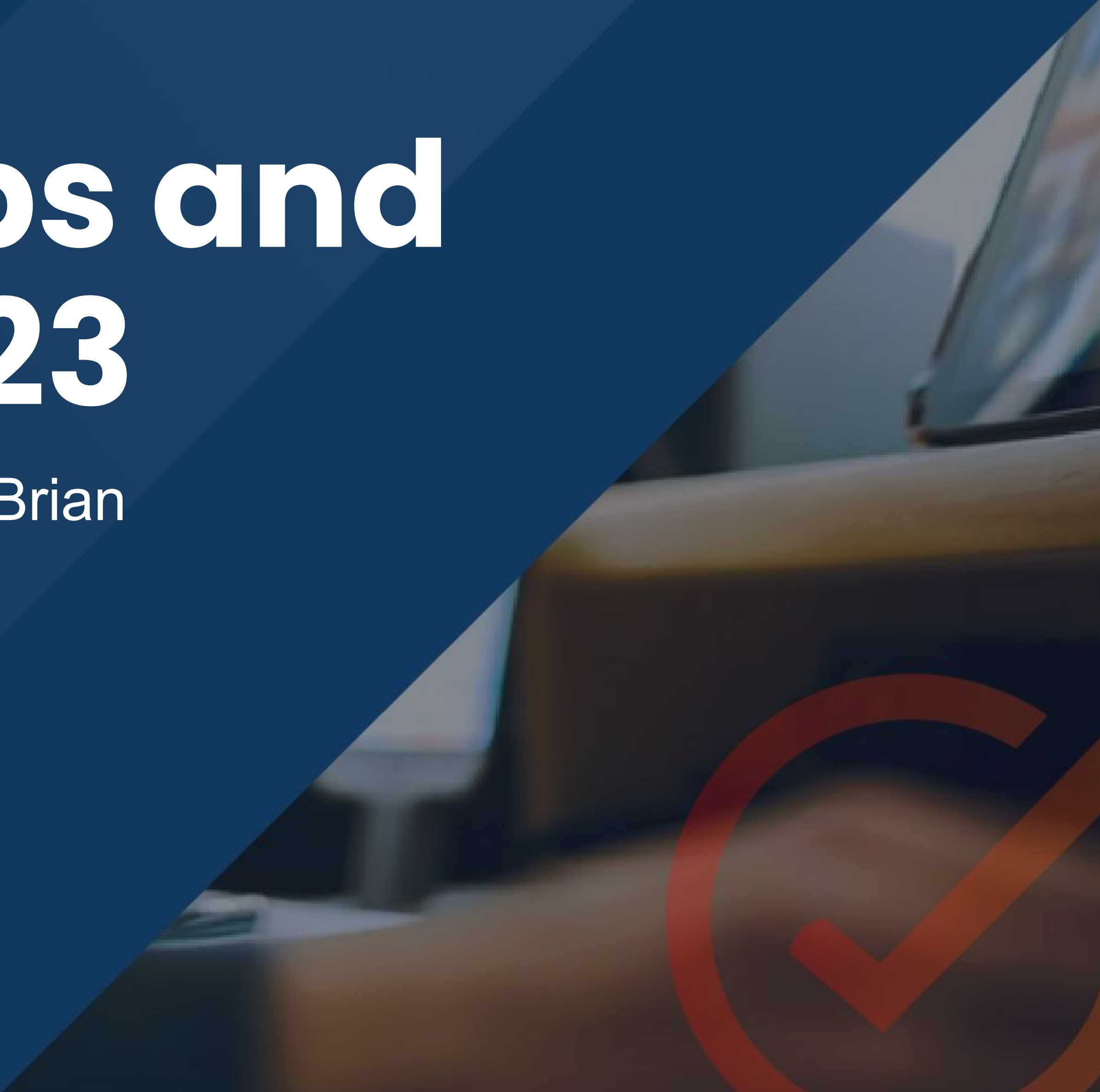
qa|cafe

CDRouter Tips and Tricks for 2023

An open panel with Matt, Brad, and Brian



Matt Langlois

QA Cafe VP of Customer Success

Brad Ritchie

QA Cafe Sr. Technology Specialist
& Head of Training

Brian Dubreuil

QA Cafe Sr. Technology Specialist
& Support Guru

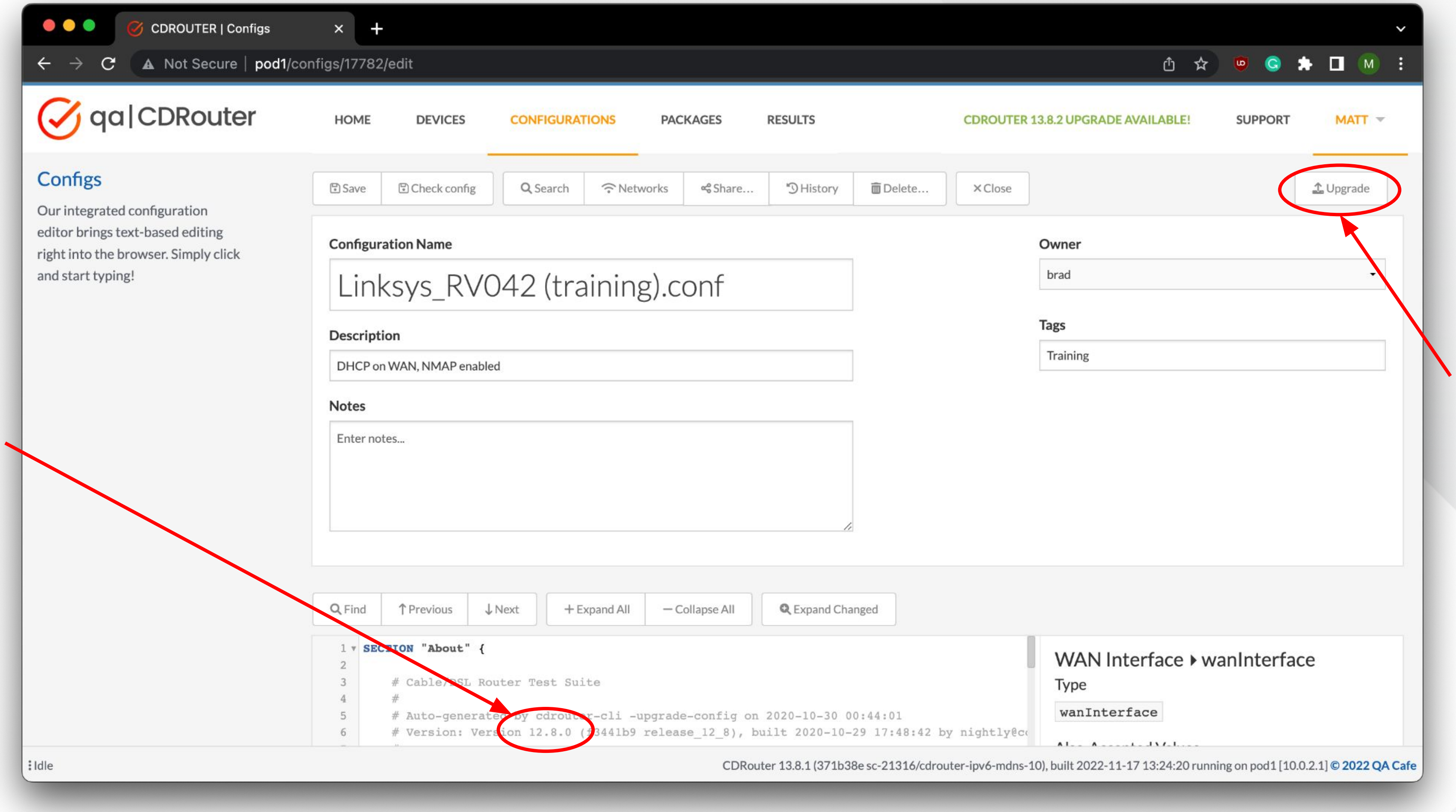
Tip #1: Keep your configs up to date

With the config upgrade feature

Tip #1: **Keep your configs up to date**

See this KB article for more information.

Are you using an ancient config? Find out in the ***About*** section of your config files.



Configs

Our integrated configuration editor brings text-based editing right into the browser. Simply click and start typing!

Configuration Name: Linksys_RV042 (training).conf

Description: DHCP on WAN, NMAP enabled

Notes: Enter notes...

Owner: brad

Tags: Training

```
SECTION "About" {

    # Cable/DSL Router Test Suite
    #
    # Auto-generated by cdrouter-cli -upgrade-config on 2020-10-30 00:44:01
    # Version: Version 12.8.0 (f3441b9 release_12_8), built 2020-10-29 17:48:42 by nightly@cc
```

WAN Interface ▸ wanInterface

Type

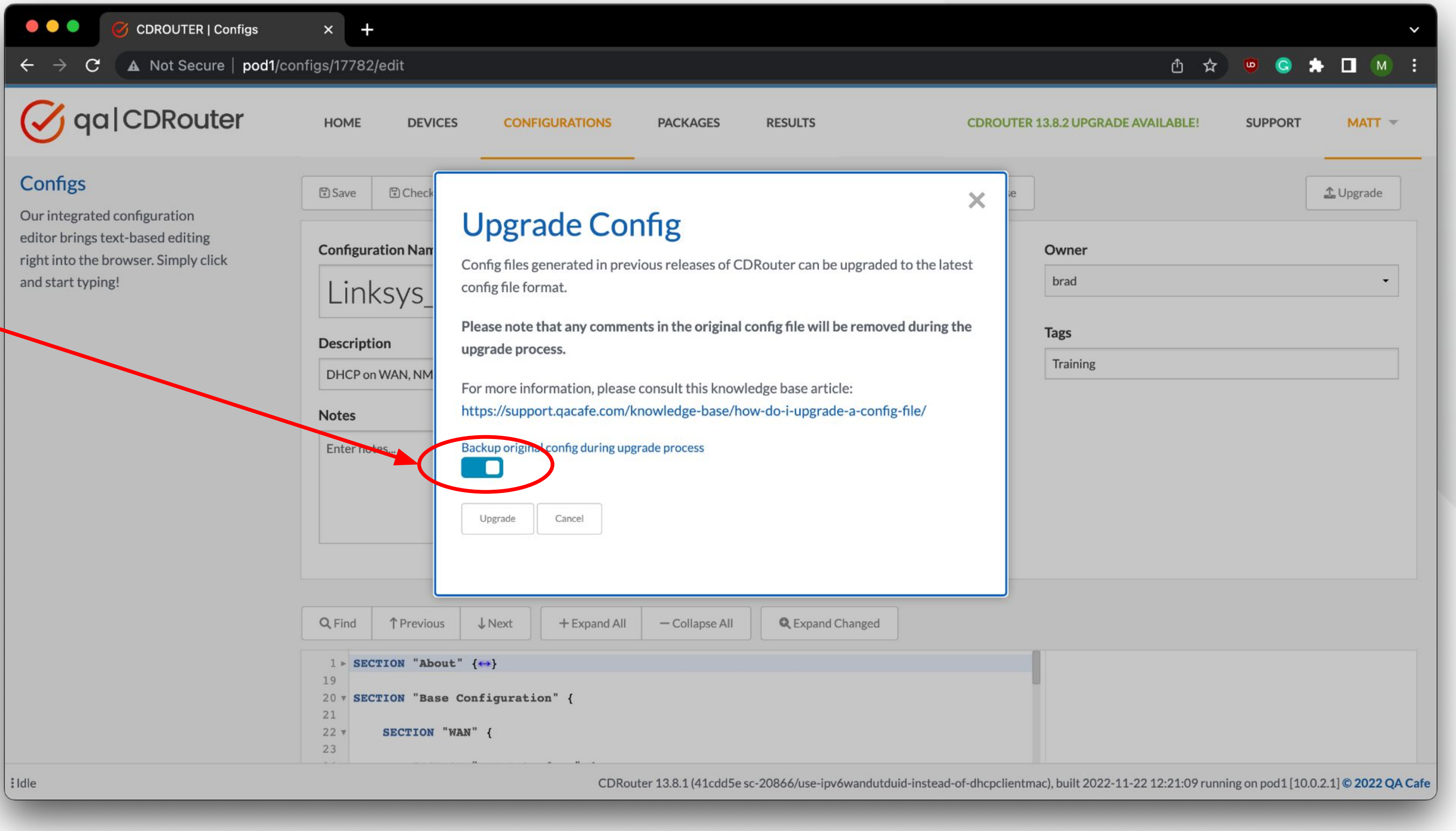
`wanInterface`

CDRouter 13.8.1 (371b38e sc-21316/cdrouter-ipv6-mdns-10), built 2022-11-17 13:24:20 running on pod1 [10.0.2.1] © 2022 QA Cafe

Upgrade your configs to ensure that you have access to all of our latest features and configuration options.

Tip #1: **Keep your configs up to date**

When upgrading you have the option of backing up the original config too.



Configs

Our integrated configuration editor brings text-based editing right into the browser. Simply click and start typing!

Configuration Name: Linksys_

Description: DHCP on WAN, NM

Notes: Enter notes...

Owner: brad

Tags: Training

Upgrade Config

Config files generated in previous releases of CDRouter can be upgraded to the latest config file format.

Please note that any comments in the original config file will be removed during the upgrade process.

For more information, please consult this knowledge base article: https://support.qacafe.com/knowledge-base/how-do-i-upgrade-a-config-file/

Backup original config during upgrade process ●

Upgrade Cancel

```
SECTION "About" {↔}

SECTION "Base Configuration" {

    SECTION "WAN" {

```

CDRouter 13.8.1 (41cdd5e sc-20866/use-ipv6wandutduid-instead-of-dhcpclientmac), built 2022-11-22 12:21:09 running on pod1 [10.0.2.1] © 2022 QA Cafe

Bulk config upgrade is coming in CDRouter 13.9!

Tip #2: Enable cloud access

Using the CDRouter Security expansion

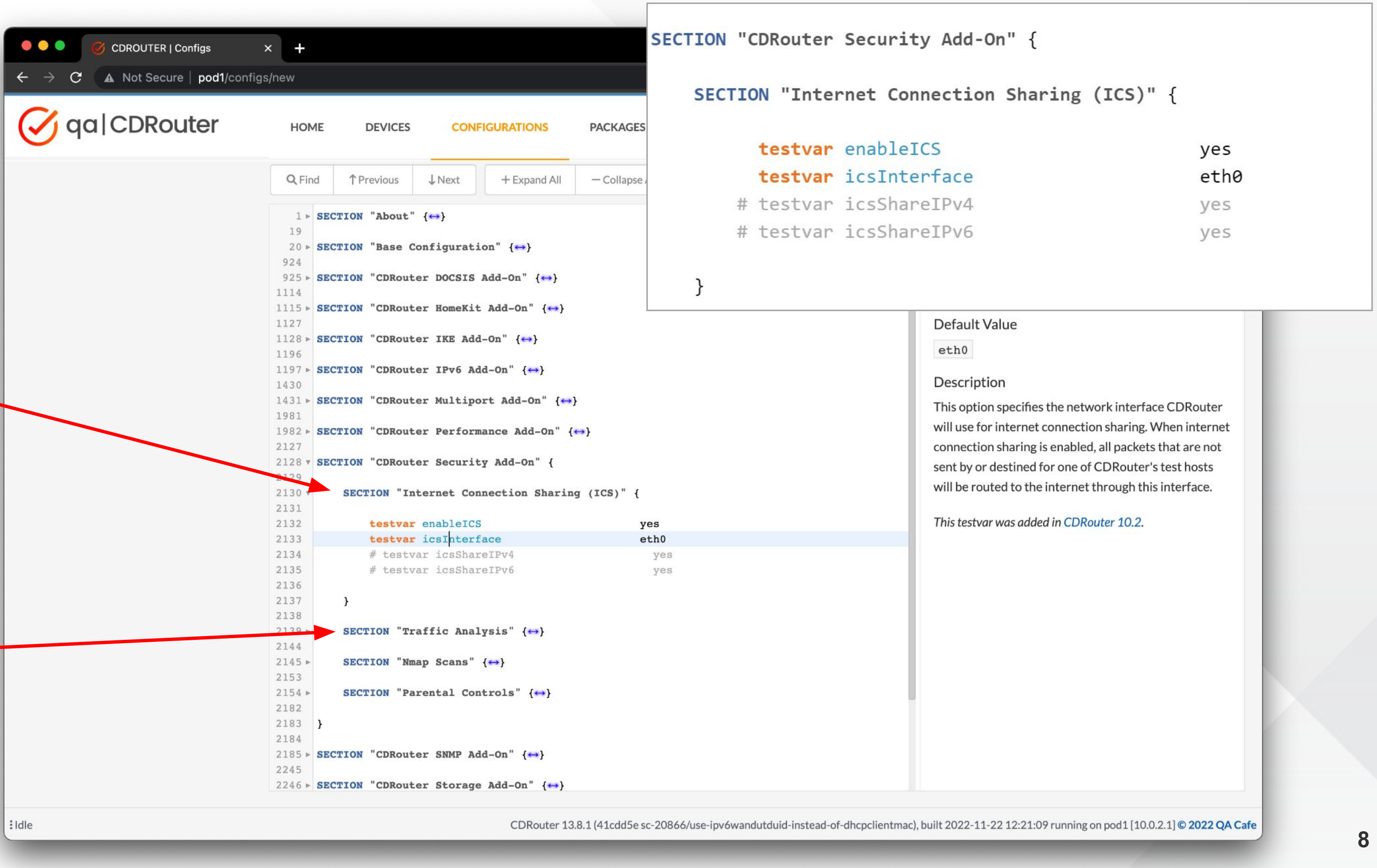
Tip #2: **Enable cloud access**

- Using the **internet connection sharing** (ICS) feature which is included with the CDRouter Security expansion.
- ICS allows DUT to access the internet for DNS and cloud-based services.
- Within CDRouter:
  - ***Packets to unknown destinations*** are forwarded to the internet via the eth0 MGMT interface of the NTA1000.
  - ***DNS requests for unknown domains*** are forwarded to the operating system's resolver and ultimately to the internet via the eth0 MGMT interface of the NTA1000.

Tip #2: **Enable cloud access**

Cloud access is enabled using the internet connection sharing (ICS) feature that is included with ***CDRouter Security***.

ICS traffic may be scanned automatically for malicious content using the Suricata-based ***Traffic Analysis*** feature.



```
SECTION "CDRouter Security Add-On" {

  SECTION "Internet Connection Sharing (ICS)" {

      testvar enableICS                     yes
      testvar icsInterface                  eth0
    # testvar icsShareIPv4                  yes
    # testvar icsShareIPv6                  yes

  }
```

```
SECTION "About" {↔}

SECTION "Base Configuration" {↔}

SECTION "CDRouter DOCSIS Add-On" {↔}

SECTION "CDRouter HomeKit Add-On" {↔}

SECTION "CDRouter IKE Add-On" {↔}

SECTION "CDRouter IPv6 Add-On" {↔}

SECTION "CDRouter Multiport Add-On" {↔}

SECTION "CDRouter Performance Add-On" {↔}

SECTION "CDRouter Security Add-On" {

    SECTION "Internet Connection Sharing (ICS)" {

        testvar enableICS                     yes
        testvar icsInterface                  eth0
        # testvar icsShareIPv4                  yes
        # testvar icsShareIPv6                  yes

    }

    SECTION "Traffic Analysis" {↔}

    SECTION "Nmap Scans" {↔}

    SECTION "Parental Controls" {↔}

}

SECTION "CDRouter SNMP Add-On" {↔}

SECTION "CDRouter Storage Add-On" {↔}
```

Default Value

`eth0`

Description

This option specifies the network interface CDRouter will use for internet connection sharing. When internet connection sharing is enabled, all packets that are not sent by or destined for one of CDRouter's test hosts will be routed to the internet through this interface.

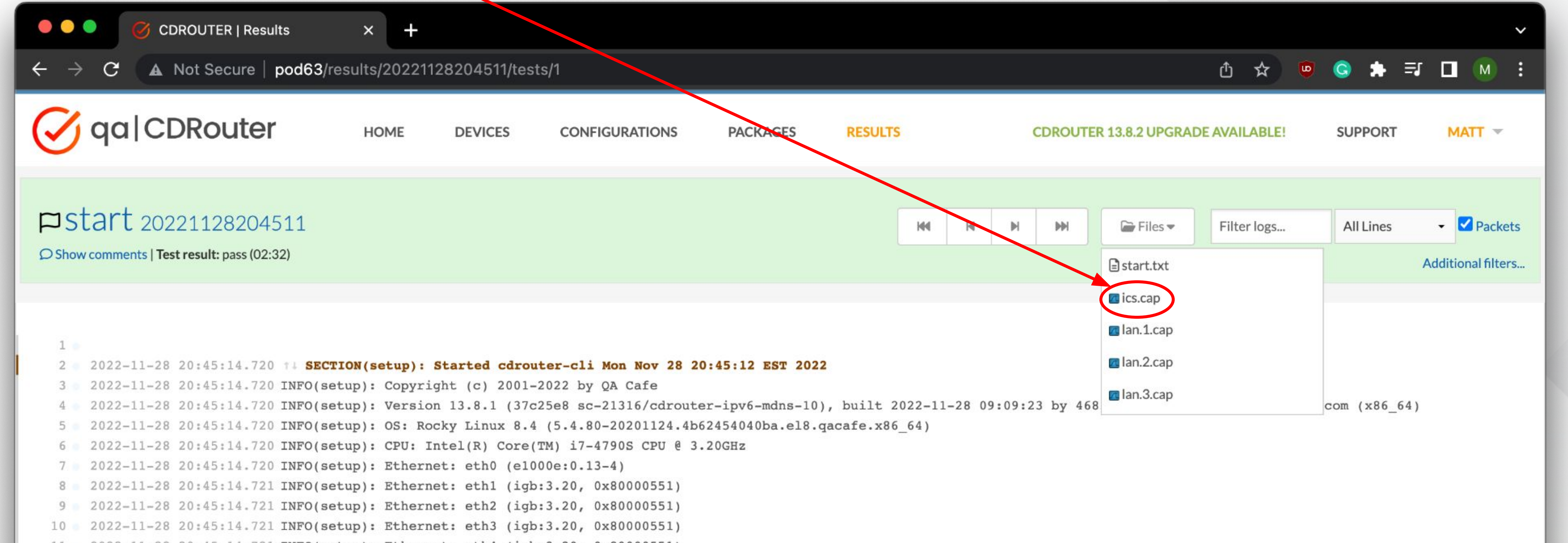
This testvar was added in CDRouter 10.2.

CDRouter 13.8.1 (41cdd5e sc-20866/use-ipv6wandutduid-instead-of-dhcpclientmac), built 2022-11-22 12:21:09 running on pod1 [10.0.2.1] © 2022 QA Cafe

Tip #2: **Enable cloud access**

When ICS is enabled, a separate capture file is generated for ICS traffic. Capture files may be viewed directly within CDRouter or pushed automatically to CloudShark for access to more advanced pcap analysis features.

Click here for more information on the CDRouter Security expansion!



start 20221128204511

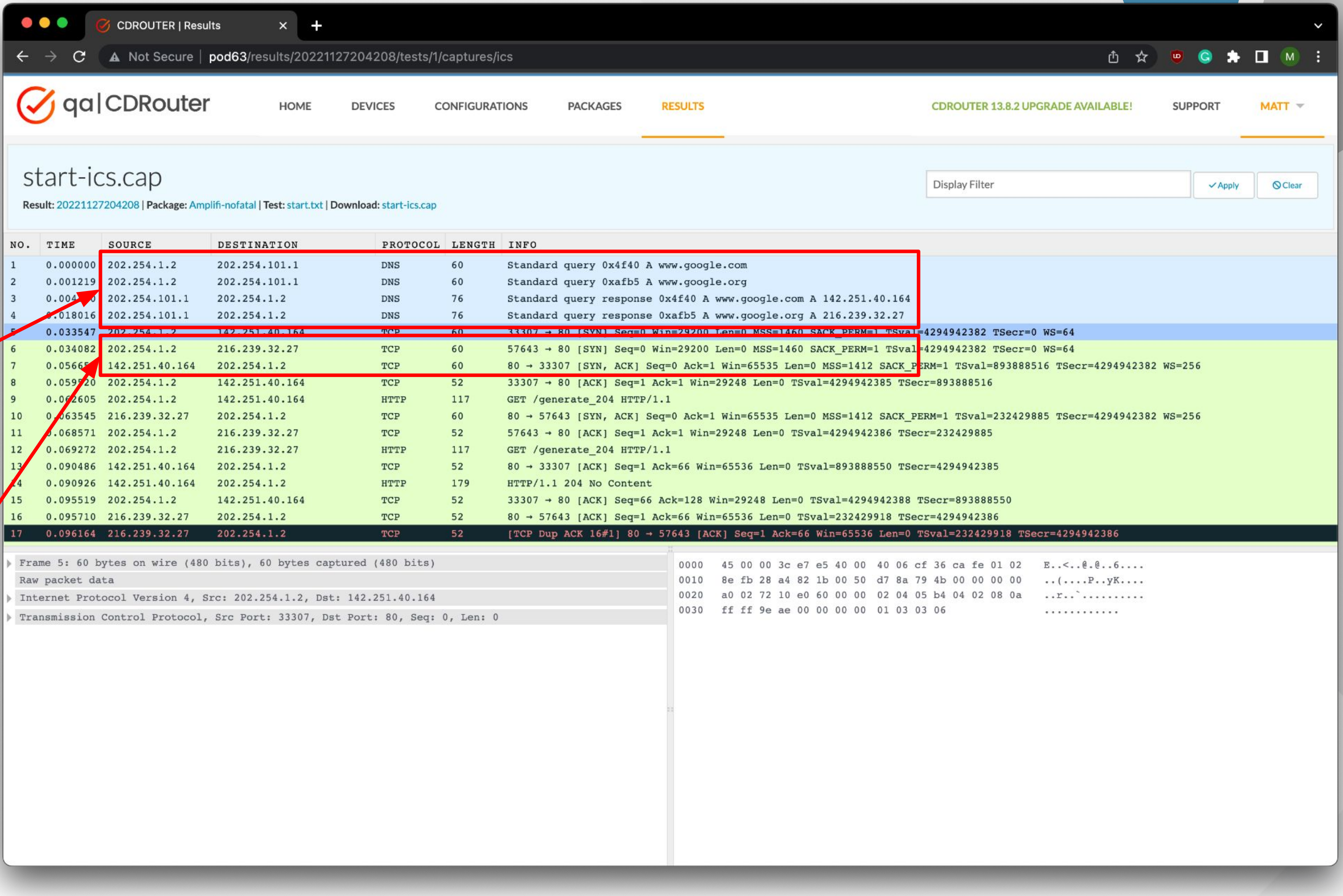
Show comments | **Test result:** pass (02:32)

```
2022-11-28 20:45:14.720    SECTION(setup): Started cdrouter-cli Mon Nov 28 20:45:12 EST 2022
2022-11-28 20:45:14.720 INFO(setup): Copyright (c) 2001-2022 by QA Cafe
2022-11-28 20:45:14.720 INFO(setup): Version 13.8.1 (37c25e8 sc-21316/cdrouter-ipv6-mdns-10), built 2022-11-28 09:09:23 by 468          com (x86_64)
2022-11-28 20:45:14.720 INFO(setup): OS: Rocky Linux 8.4 (5.4.80-20201124.4b62454040ba.el8.qacafe.x86_64)
2022-11-28 20:45:14.720 INFO(setup): CPU: Intel(R) Core(TM) i7-4790S CPU @ 3.20GHz
2022-11-28 20:45:14.720 INFO(setup): Ethernet: eth0 (e1000e:0.13-4)
2022-11-28 20:45:14.721 INFO(setup): Ethernet: eth1 (igb:3.20, 0x80000551)
2022-11-28 20:45:14.721 INFO(setup): Ethernet: eth2 (igb:3.20, 0x80000551)
2022-11-28 20:45:14.721 INFO(setup): Ethernet: eth3 (igb:3.20, 0x80000551)
```

Tip #2: **Enable cloud access**

With ICS enabled, DNS queries from the DUT are sent to CDRouter first and the system resolver second. This allows some DNS queries to be resolved by real servers.

With ICS enabled, non-test traffic is forwarded to the MGMT interface and out to the internet.



start-ics.cap

Result: 20221127204208 | **Package:** Amplifi-nofatal | **Test:** start.txt | **Download:** start-ics.cap

NO.	TIME	SOURCE	DESTINATION	PROTOCOL	LENGTH	INFO
1	0.000000	202.254.1.2	202.254.101.1	DNS	60	Standard query 0x4f40 A www.google.com
2	0.001219	202.254.1.2	202.254.101.1	DNS	60	Standard query 0xafb5 A www.google.org
3	0.004[illegible]0	202.254.101.1	202.254.1.2	DNS	76	Standard query response 0x4f40 A www.google.com A 142.251.40.164
4	0.018016	202.254.101.1	202.254.1.2	DNS	76	Standard query response 0xafb5 A www.google.org A 216.239.32.27
5	0.033547	202.254.1.2	142.251.40.164	TCP	60	33307 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=4294942382 TSecr=0 WS=64
6	0.034082	202.254.1.2	216.239.32.27	TCP	60	57643 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=4294942382 TSecr=0 WS=64
7	0.05665[illegible]	142.251.40.164	202.254.1.2	TCP	60	80 → 33307 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1412 SACK_PERM=1 TSval=893888516 TSecr=4294942382 WS=256
8	0.059[illegible]20	202.254.1.2	142.251.40.164	TCP	52	33307 → 80 [ACK] Seq=1 Ack=1 Win=29248 Len=0 TSval=4294942385 TSecr=893888516
9	0.062605	202.254.1.2	142.251.40.164	HTTP	117	GET /generate_204 HTTP/1.1
10	0.063545	216.239.32.27	202.254.1.2	TCP	60	80 → 57643 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1412 SACK_PERM=1 TSval=232429885 TSecr=4294942382 WS=256
11	0.068571	202.254.1.2	216.239.32.27	TCP	52	57643 → 80 [ACK] Seq=1 Ack=1 Win=29248 Len=0 TSval=4294942386 TSecr=232429885
12	0.069272	202.254.1.2	216.239.32.27	HTTP	117	GET /generate_204 HTTP/1.1
13	0.090486	142.251.40.164	202.254.1.2	TCP	52	80 → 33307 [ACK] Seq=1 Ack=66 Win=65536 Len=0 TSval=893888550 TSecr=4294942385
14	0.090926	142.251.40.164	202.254.1.2	HTTP	179	HTTP/1.1 204 No Content
15	0.095519	202.254.1.2	142.251.40.164	TCP	52	33307 → 80 [ACK] Seq=66 Ack=128 Win=29248 Len=0 TSval=4294942388 TSecr=893888550
16	0.095710	216.239.32.27	202.254.1.2	TCP	52	80 → 57643 [ACK] Seq=1 Ack=66 Win=65536 Len=0 TSval=232429918 TSecr=4294942386
17	0.096164	216.239.32.27	202.254.1.2	TCP	52	[TCP Dup ACK 16#1] 80 → 57643 [ACK] Seq=1 Ack=66 Win=65536 Len=0 TSval=232429918 TSecr=4294942386

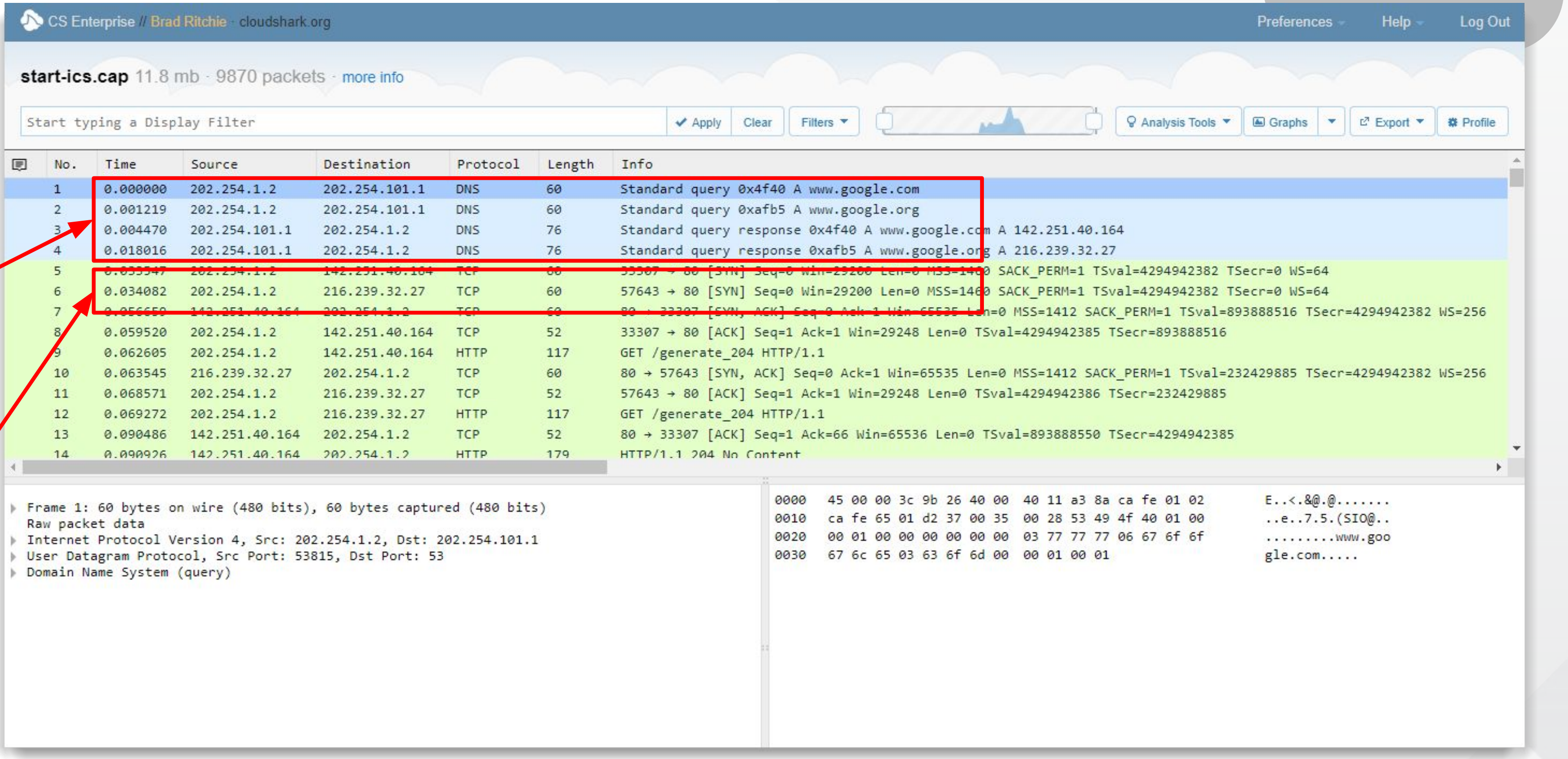
```
Frame 5: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
Raw packet data
Internet Protocol Version 4, Src: 202.254.1.2, Dst: 142.251.40.164
Transmission Control Protocol, Src Port: 33307, Dst Port: 80, Seq: 0, Len: 0
```

```
0000   45 00 00 3c e7 e5 40 00  40 06 cf 36 ca fe 01 02   E..<..@.@..6....
0010   8e fb 28 a4 82 1b 00 50  d7 8a 79 4b 00 00 00 00   ..(....P..yK....
0020   a0 02 72 10 e0 60 00 00  02 04 05 b4 04 02 08 0a   ..r..`..........
0030   ff ff 9e ae 00 00 00 00  01 03 03 06               ............
```

Tip #2: **Enable cloud access**

With ICS enabled, DNS queries from the DUT are sent to CDRouter first and the system resolver second. This allows some DNS queries to be resolved by real servers.

With ICS enabled, non-test traffic is forwarded to the MGMT interface and out to the internet.


CS Enterprise // Brad Ritchie · cloudshark.org
Preferences
Help
Log Out
start-ics.cap 11.8 mb · 9870 packets · more info
Start typing a Display Filter
✓ Apply
Clear
Filters
Analysis Tools
Graphs
Export
Profile

```
No.  Time      Source          Destination     Protocol  Length  Info
1    0.000000  202.254.1.2     202.254.101.1   DNS       60      Standard query 0x4f40 A www.google.com
2    0.001219  202.254.1.2     202.254.101.1   DNS       60      Standard query 0xafb5 A www.google.org
3    0.004470  202.254.101.1   202.254.1.2     DNS       76      Standard query response 0x4f40 A www.google.com A 142.251.40.164
4    0.018016  202.254.101.1   202.254.1.2     DNS       76      Standard query response 0xafb5 A www.google.org A 216.239.32.27
5    0.033547  202.254.1.2     142.251.40.164  TCP       60      33307 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=4294942382 TSecr=0 WS=64
6    0.034082  202.254.1.2     216.239.32.27   TCP       60      57643 → 80 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=4294942382 TSecr=0 WS=64
7    0.056659  142.251.40.164  202.254.1.2     TCP       60      80 → 33307 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1412 SACK_PERM=1 TSval=893888516 TSecr=4294942382 WS=256
8    0.059520  202.254.1.2     142.251.40.164  TCP       52      33307 → 80 [ACK] Seq=1 Ack=1 Win=29248 Len=0 TSval=4294942385 TSecr=893888516
9    0.062605  202.254.1.2     142.251.40.164  HTTP      117     GET /generate_204 HTTP/1.1
10   0.063545  216.239.32.27   202.254.1.2     TCP       60      80 → 57643 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1412 SACK_PERM=1 TSval=232429885 TSecr=4294942382 WS=256
11   0.068571  202.254.1.2     216.239.32.27   TCP       52      57643 → 80 [ACK] Seq=1 Ack=1 Win=29248 Len=0 TSval=4294942386 TSecr=232429885
12   0.069272  202.254.1.2     216.239.32.27   HTTP      117     GET /generate_204 HTTP/1.1
13   0.090486  142.251.40.164  202.254.1.2     TCP       52      80 → 33307 [ACK] Seq=1 Ack=66 Win=65536 Len=0 TSval=893888550 TSecr=4294942385
14   0.090926  142.251.40.164  202.254.1.2     HTTP      179     HTTP/1.1 204 No Content
```

```
▸ Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits)
  Raw packet data
▸ Internet Protocol Version 4, Src: 202.254.1.2, Dst: 202.254.101.1
▸ User Datagram Protocol, Src Port: 53815, Dst Port: 53
▸ Domain Name System (query)
```

```
0000   45 00 00 3c 9b 26 40 00  40 11 a3 8a ca fe 01 02     E..<.&@.@.......
0010   ca fe 65 01 d2 37 00 35  00 28 53 49 4f 40 01 00     ..e..7.5.(SIO@..
0020   00 01 00 00 00 00 00 00  03 77 77 77 06 67 6f 6f     .........www.goo
0030   67 6c 65 03 63 6f 6d 00  00 01 00 01                 gle.com.....
```

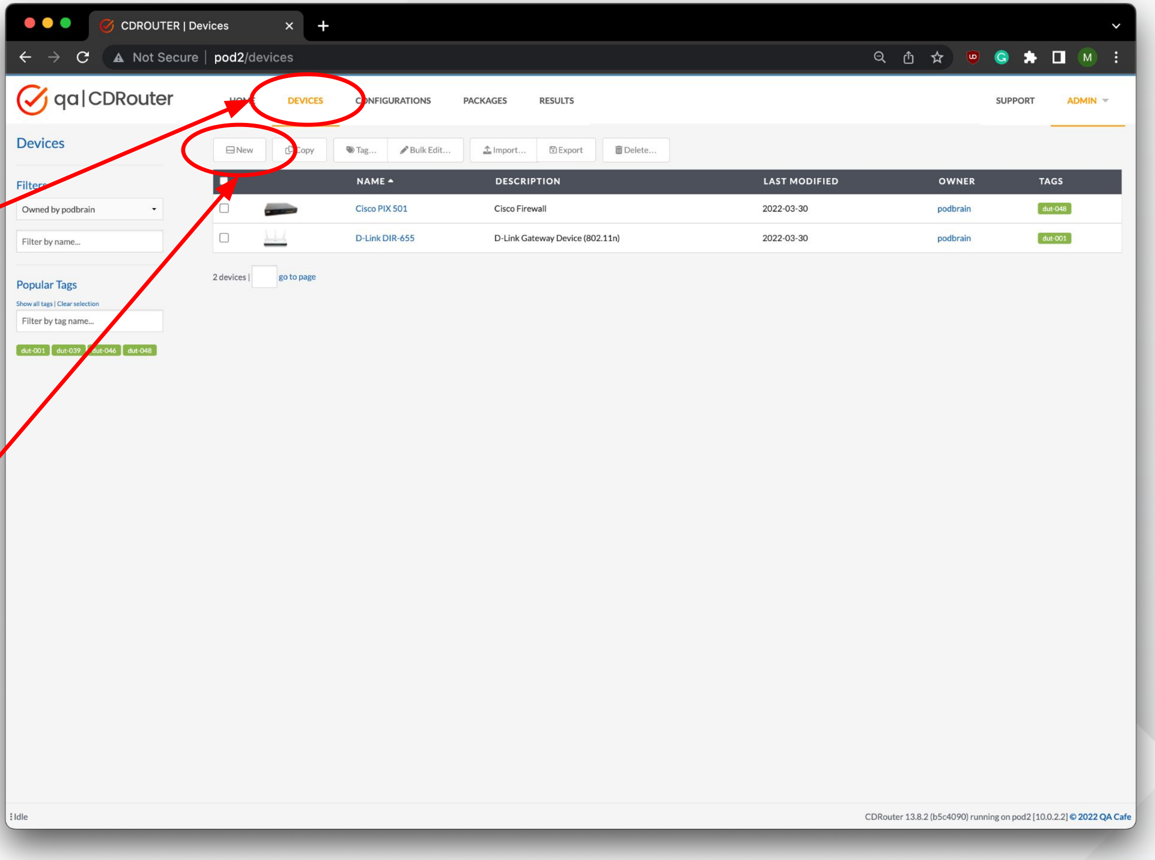
Tip #3: Manage DUTs remotely

Using the device connect feature

Tip #3:
Manage the DUT remotely

Step 1: Click on the ***Devices*** tab to access the device manager. The device manager allows you to associate configs, packages, and results to specific DUTs and firmware versions improving analysis and reporting.

Step 2: Click the ***New*** button to create a new device for the DUT. Be sure to fill out of the information in the Management section. The device connect feature will not work properly without it!



	NAME ▲	DESCRIPTION	LAST MODIFIED	OWNER	TAGS
□	Cisco PIX 501	Cisco Firewall	2022-03-30	podbrain	dut-048
□	D-Link DIR-655	D-Link Gateway Device (802.11n)	2022-03-30	podbrain	dut-001

2 devices | go to page

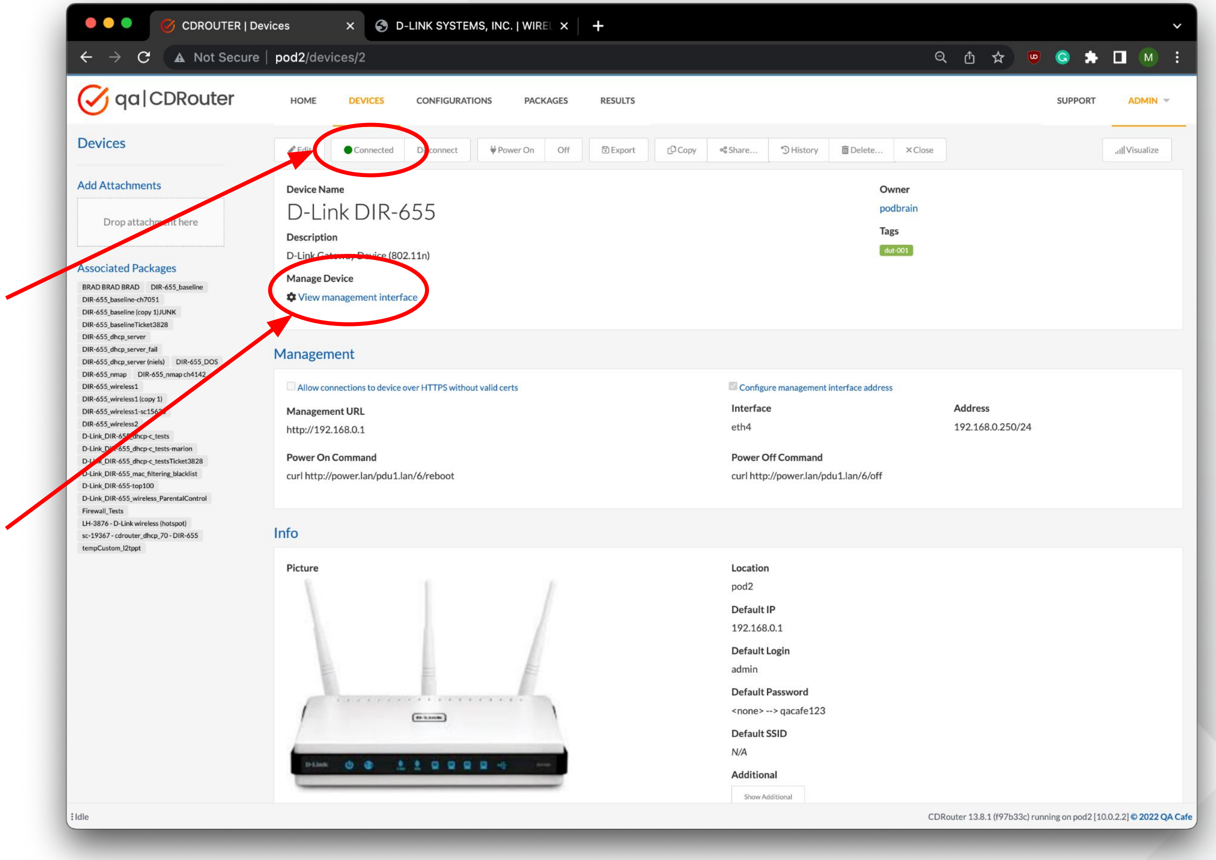
CDRouter 13.8.2 (b5c4090) running on pod2 [10.0.2.2] © 2022 QA Cafe

Tip #3:
Manage the DUT remotely

Step 3: Once the DUT has been added to the Devices tab, click the ***Connect*** button to establish a connection to the DUT's management interface from CDRouter.

Step 4: Once connected, click this link to open the DUT's management interface in a new tab.

DUT firmware and config files may also be stored in the device manager!



Associated Packages

BRAD BRAD BRAD · DIR-655_baseline · DIR-655_baseline-ch7051 · DIR-655_baseline (copy 1)JUNK · DIR-655_baselineTicket3828 · DIR-655_dhcp_server · DIR-655_dhcp_server_fail · DIR-655_dhcp_server (niels) · DIR-655_DOS · DIR-655_nmap · DIR-655_nmap ch4142 · DIR-655_wireless1 · DIR-655_wireless1 (copy 1) · DIR-655_wireless1-sc1562 · DIR-655_wireless2 · D-Link_DIR-655_dhcp-c_tests · D-Link_DIR-655_dhcp-c_tests-marion · D-Link_DIR-655_dhcp-c_testsTicket3828 · D-Link_DIR-655_mac_filtering_blacklist · D-Link_DIR-655-top100 · D-Link_DIR-655_wireless_ParentalControl · Firewall_Tests · LH-3876 - D-Link wireless (hotspot) · sc-19367 - cdrouter_dhcp_70 - DIR-655 · tempCustom_l2tpt

Device Name
D-Link DIR-655

Description
D-Link Gateway Device (802.11n)

Manage Device
⚙ View management interface

Owner
podbrain

Tags
dut-001

Management

□ Allow connections to device over HTTPS without valid certs

☑ Configure management interface address

Management URL
http://192.168.0.1

Interface
eth4

Address
192.168.0.250/24

Power On Command
curl http://power.lan/pdu1.lan/6/reboot

Power Off Command
curl http://power.lan/pdu1.lan/6/off

Info

Picture

Location
pod2

Default IP
192.168.0.1

Default Login
admin

Default Password
<none> --> qacafe123

Default SSID
N/A

Additional

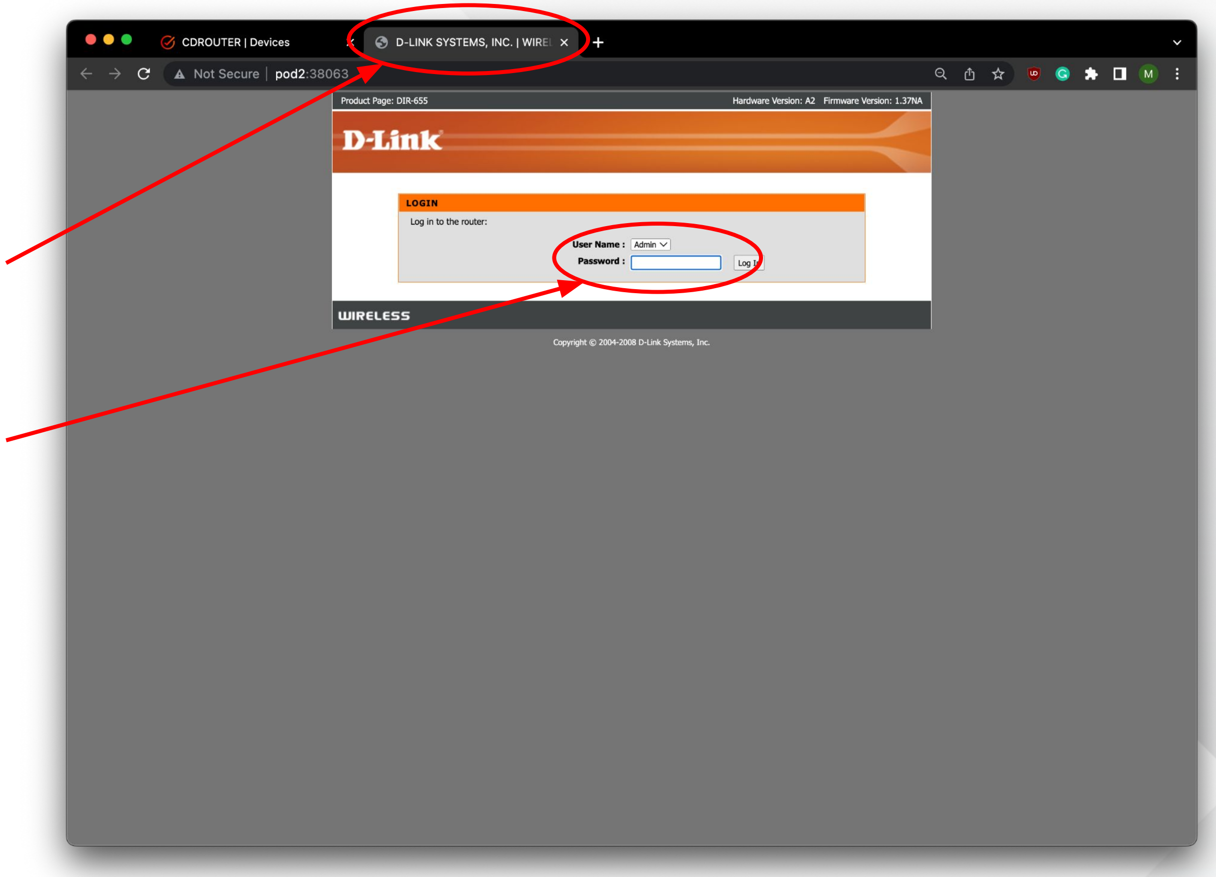
CDRouter 13.8.1 (f97b33c) running on pod2 [10.0.2.2] © 2022 QA Cafe

Tip #3:
Manage the DUT remotely

Step 5: Click on the new tab to access the DUTs management interface through CDRouter.

Step 6: Log in to the DUT and manage it without leaving your chair!

It is also now possible to manage devices while tests are running!



Product Page: DIR-655

Hardware Version: A2 Firmware Version: 1.37NA

LOGIN

Log in to the router:

User Name : Admin

Password :

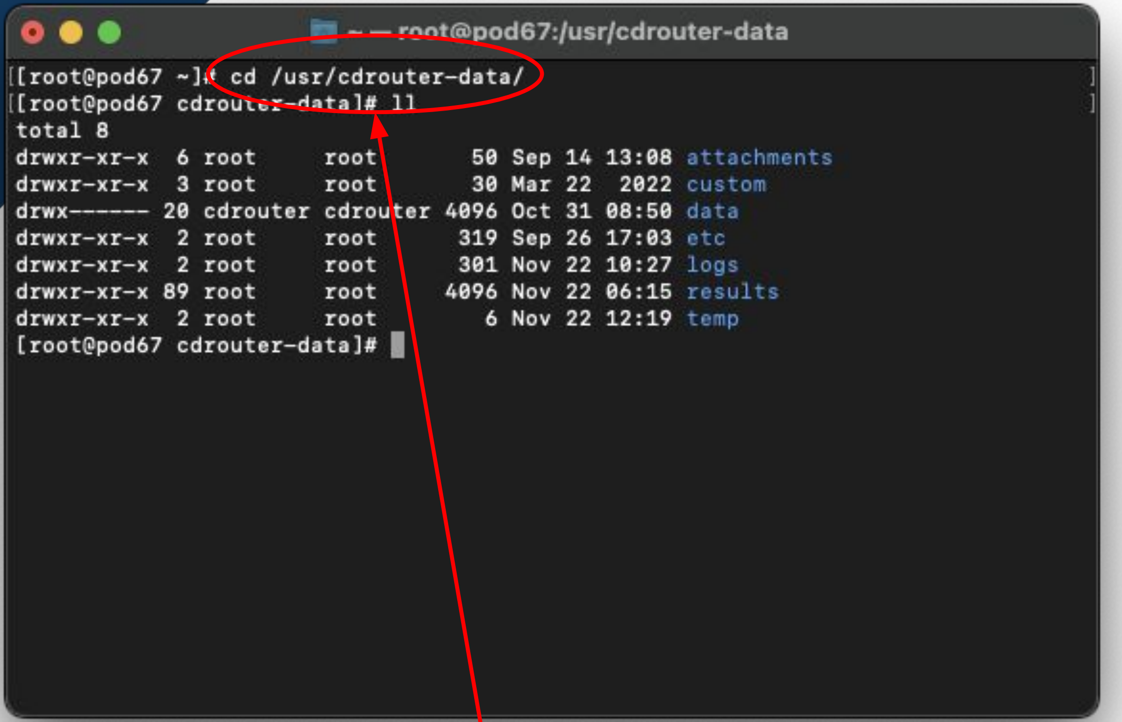
Copyright © 2004-2008 D-Link Systems, Inc.

Tip #4: Back your test data up

Using the the CDRouter backup tool

Tip #4: **Backup your data**

See this [KB article](#) for more information!

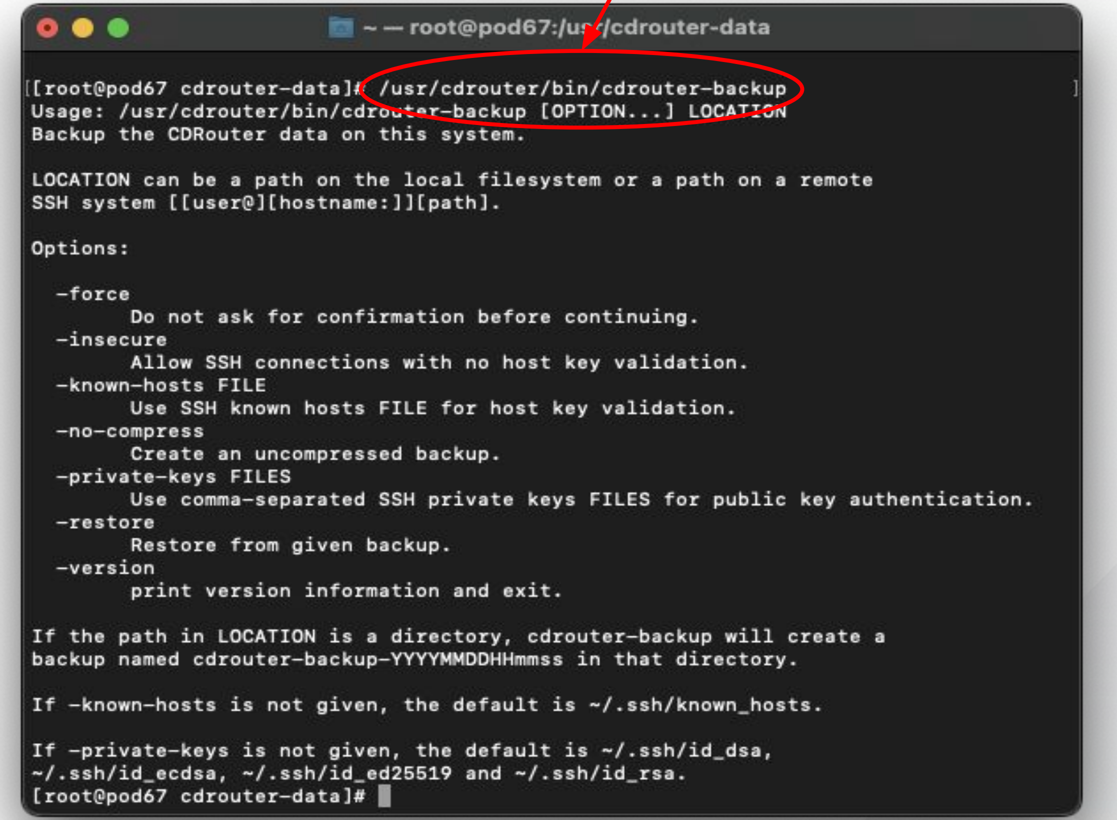


```
[[root@pod67 ~]# cd /usr/cdrouter-data/
[[root@pod67 cdrouter-data]# ll
 total 8
 drwxr-xr-x  6 root     root       50 Sep 14 13:08 attachments
 drwxr-xr-x  3 root     root       30 Mar 22  2022 custom
 drwx------ 20 cdrouter cdrouter 4096 Oct 31 08:50 data
 drwxr-xr-x  2 root     root      319 Sep 26 17:03 etc
 drwxr-xr-x  2 root     root      301 Nov 22 10:27 logs
 drwxr-xr-x 89 root     root     4096 Nov 22 06:15 results
 drwxr-xr-x  2 root     root        6 Nov 22 12:19 temp
 [root@pod67 cdrouter-data]#
```

CDRouter stores all its data (configuration files, package definitions, and results) in the directory `/usr/cdrouter-data`.

We recommend keeping your external scripts and files here too!

CDRouter includes its own backup and restore tool using ssh/rsync to backup everything in the `/usr/cdrouter-data` directory



```
[[root@pod67 cdrouter-data]# /usr/cdrouter/bin/cdrouter-backup
 Usage: /usr/cdrouter/bin/cdrouter-backup [OPTION...] LOCATION
 Backup the CDRouter data on this system.

 LOCATION can be a path on the local filesystem or a path on a remote
 SSH system [[user@][hostname:]][path].

 Options:

   -force
         Do not ask for confirmation before continuing.
   -insecure
         Allow SSH connections with no host key validation.
   -known-hosts FILE
         Use SSH known hosts FILE for host key validation.
   -no-compress
         Create an uncompressed backup.
   -private-keys FILES
         Use comma-separated SSH private keys FILES for public key authentication.
   -restore
         Restore from given backup.
   -version
         print version information and exit.

 If the path in LOCATION is a directory, cdrouter-backup will create a
 backup named cdrouter-backup-YYYYMMDDHHmmss in that directory.

 If -known-hosts is not given, the default is ~/.ssh/known_hosts.

 If -private-keys is not given, the default is ~/.ssh/id_dsa,
 ~/.ssh/id_ecdsa, ~/.ssh/id_ed25519 and ~/.ssh/id_rsa.
 [root@pod67 cdrouter-data]#
```

Tip #5: Automate your testing

And level up with the CDRouter API

Tip #5: **Level up with the API**

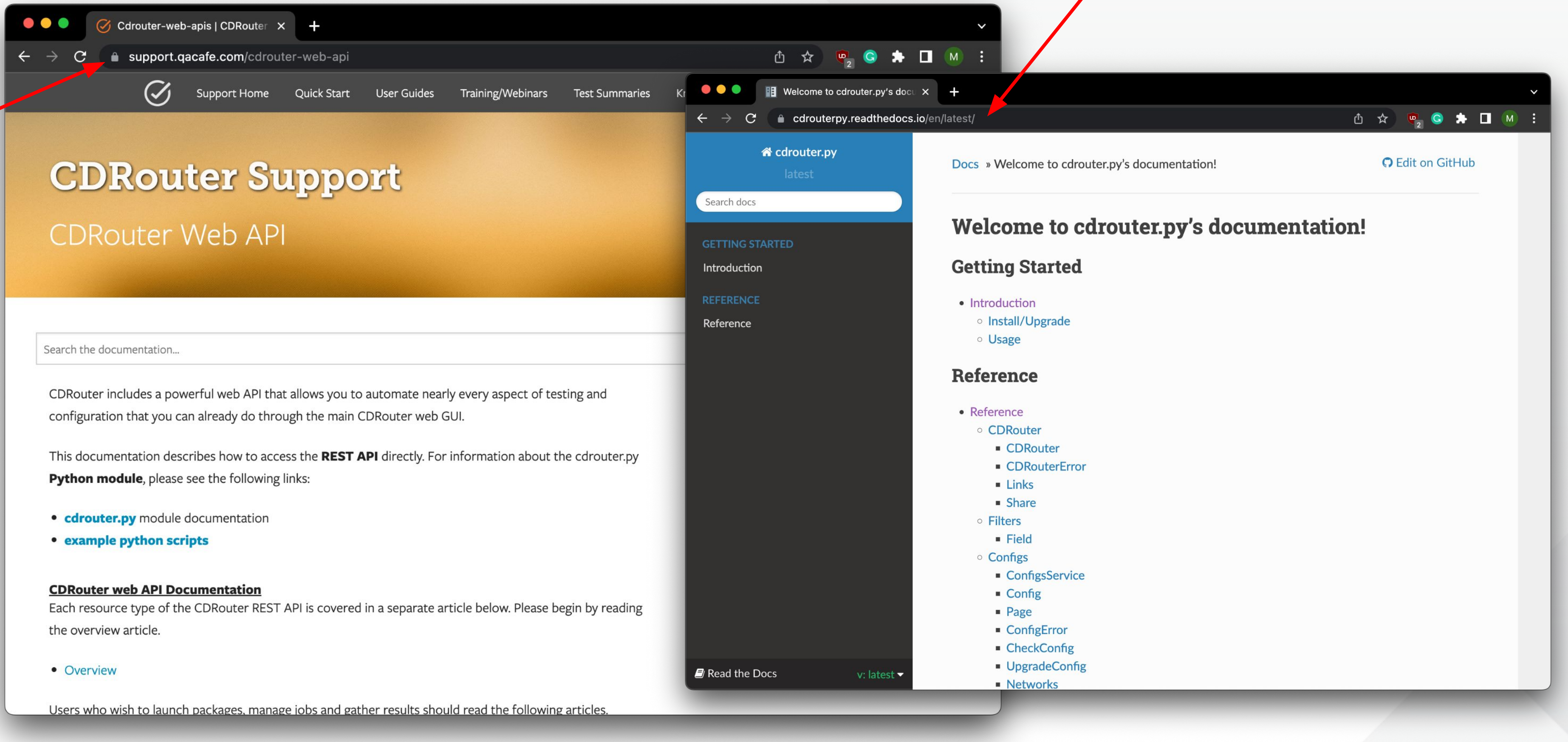
- CDRouter's web API gives you **full control over CDRouter**. Use the API to automate your testing.
- Anything you can do in the browser based web GUI can be done via the API as well, including:
  - Launching tests
  - Monitoring progress & retrieving results
  - Searching and filtering logs
  - Rerunning and/or excluding specific tests
  - Creating and editing configs

Click here for more info on using CDRouter to automate testing within GitLab pipelines!

Tip #5: **Level up with the API**

Using Python to automate your testing? If so, click here for info on the **cdrouter.py** module.

For more information on CDRouter's RESTful web API please visit our support site or click here!


Cdrouter-web-apis | CDRouter
support.qacafe.com/cdrouter-web-api
Support Home
Quick Start
User Guides
Training/Webinars
Test Summaries
Welcome to cdrouter.py's doc
cdrouterpy.readthedocs.io/en/latest/

CDRouter Support

CDRouter Web API

Search the documentation...

CDRouter includes a powerful web API that allows you to automate nearly every aspect of testing and configuration that you can already do through the main CDRouter web GUI.

This documentation describes how to access the **REST API** directly. For information about the cdrouter.py **Python module**, please see the following links:

- **cdrouter.py** module documentation
- **example python scripts**

CDRouter web API Documentation
Each resource type of the CDRouter REST API is covered in a separate article below. Please begin by reading the overview article.

- Overview

Users who wish to launch packages, manage jobs and gather results should read the following articles.

cdrouter.py
latest

Search docs

GETTING STARTED

Introduction

REFERENCE

Reference

Read the Docs v: latest

Docs » Welcome to cdrouter.py's documentation! Edit on GitHub

Welcome to cdrouter.py's documentation!

Getting Started

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Reference

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Tip #6: Test for stability over time

With this simple yet tasty recipe

What is **stability testing** and why is it important?

- Stability testing is the continuous verification of device functionality ***and*** performance over long periods of time.
- It often reveals issues that may otherwise be hidden if testing is focused solely on functional ***or*** performance verification.
- Stability testing highlights how normal functional protocol interactions impact performance over time and vice-versa.

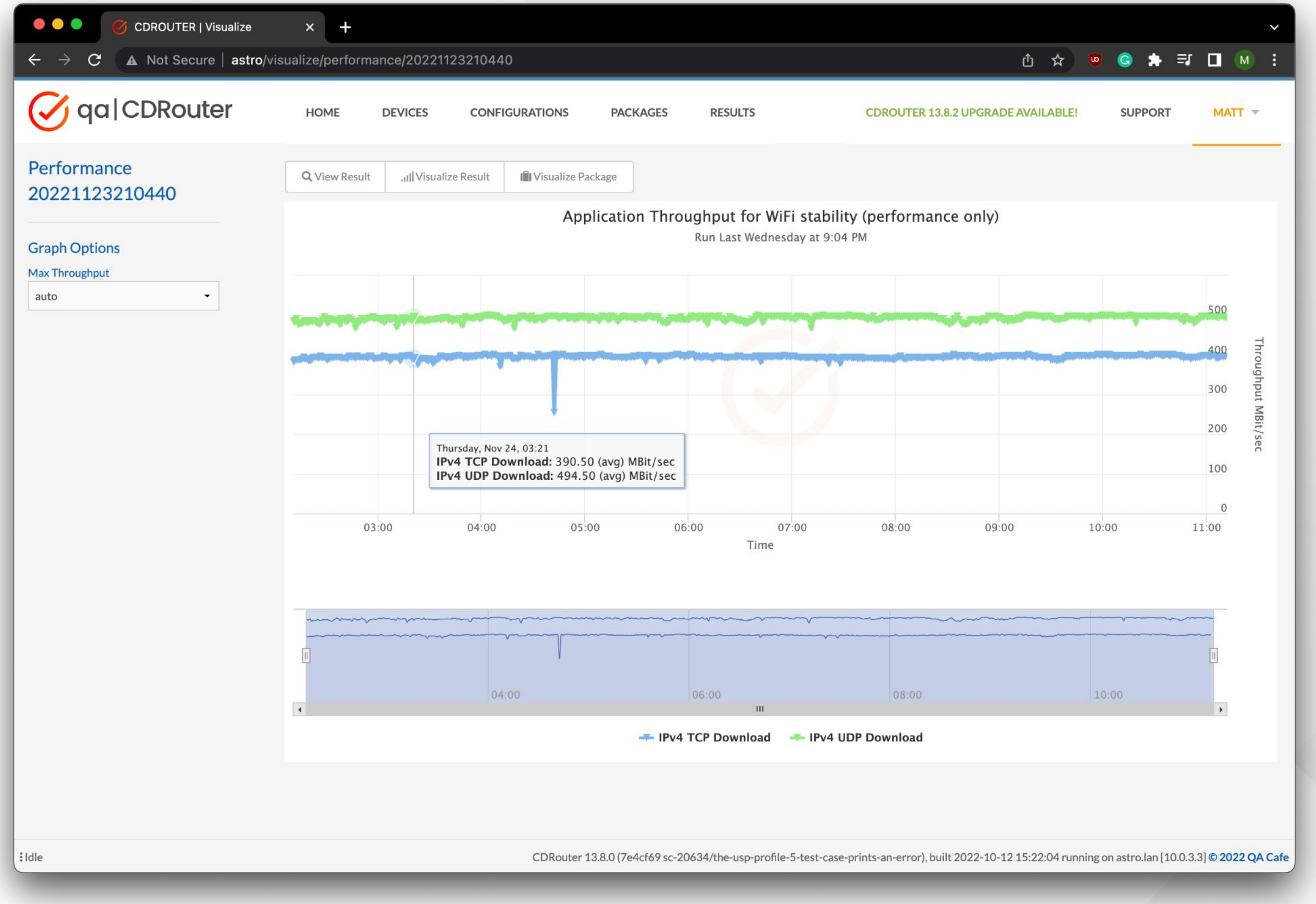
CDRouter makes stability testing very easy! Check out our "Beyond the phy, testing fully feature Wi-Fi products" webinar for more information! link

Tip #6:
Test for stability over time

Many devices will exhibit consistent and sustained performance over time in simple environments with few clients and minimal protocol interactions.

Increasing the functional load on the DUT while running performance tests is more realistic and interesting.

Performance testing alone is __not good enough!__



Performance
20221123210440

Graph Options
Max Throughput: auto

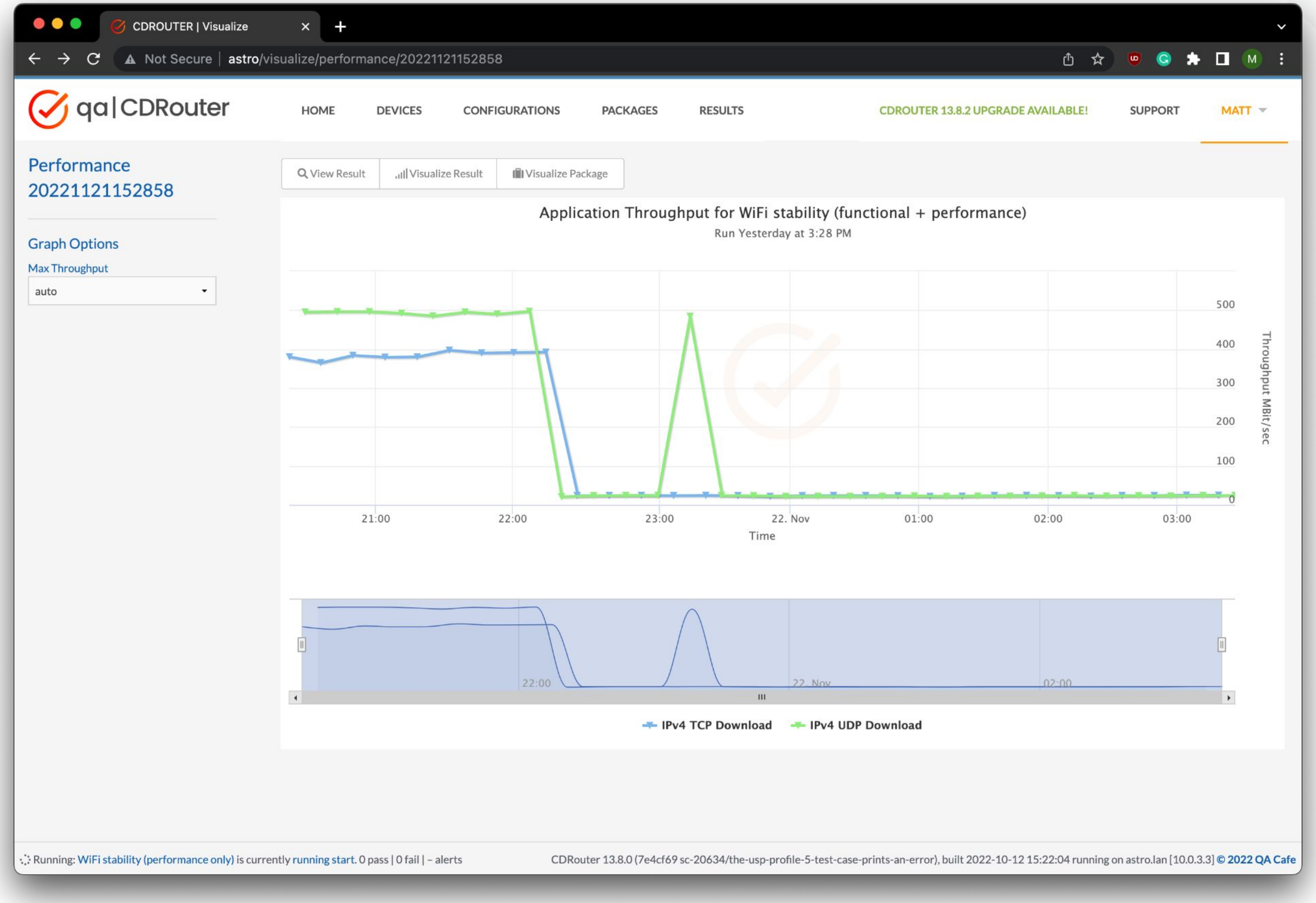
Application Throughput for WiFi stability (performance only)
Run Last Wednesday at 9:04 PM

Thursday, Nov 24, 03:21
IPv4 TCP Download: 390.50 (avg) MBit/sec
IPv4 UDP Download: 494.50 (avg) MBit/sec

CDRouter 13.8.0 (7e4cf69 sc-20634/the-usp-profile-5-test-case-prints-an-error), built 2022-10-12 15:22:04 running on astro.lan [10.0.3.3] © 2022 QA Cafe

Tip #6:

Test for stability over time



Application Throughput for WiFi stability (functional + performance)

Run Yesterday at 3:28 PM

Running: WiFi stability (performance only) is currently running start. 0 pass | 0 fail | – alerts

CDRouter 13.8.0 (7e4cf69 sc-20634/the-usp-profile-5-test-case-prints-an-error), built 2022-10-12 15:22:04 running on astro.lan [10.0.3.3] © 2022 QA Cafe

Common protocol interactions often have a significant impact on device performance **over time**.

Stability testing will reveal sneaky performance issues that are very difficult to identify otherwise.

Stability testing takes the right tools and time. CDRouter makes it easy!

Tip #6:
Test for stability over time

Matt's stability testing recipe

Start with a new test package. Add:

- The Top 100 test list
- The **wifi** test module
- Sprinkle in the **cdrouter_scale_1** and **perf_1** through **perf_4** test cases

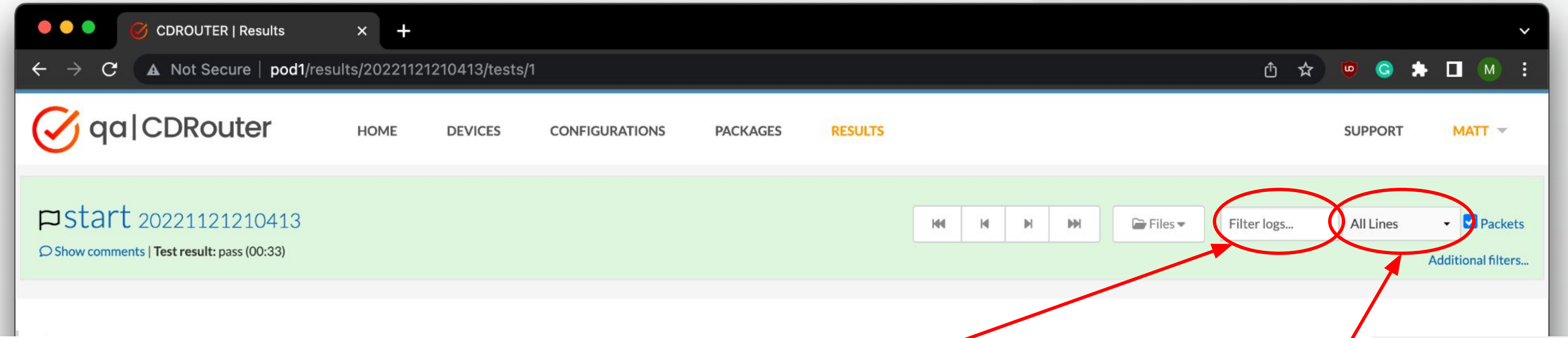
Loop 50 times with 10 clients. Enjoy consistent functional results and stable performance!*

* Kick it up a notch by adding IPv6 tests!

Tip #7: Find what you’re looking for

Using CDRouter’s log filtering tools

Tip #7: **Prune the test logs**



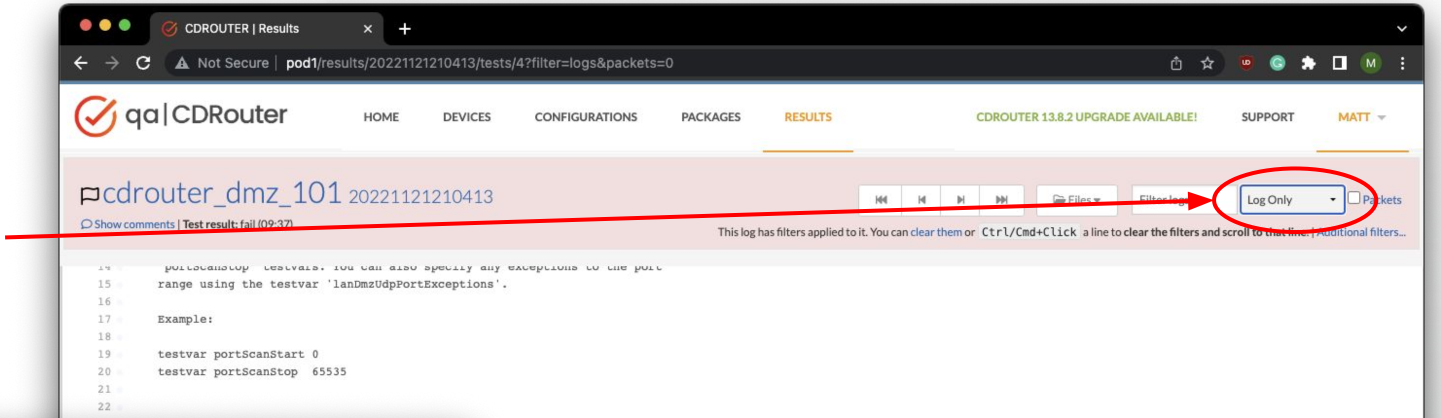
This text box allows filtering of the log file using keywords.

Filter on the 'type' of log lines.

To jump to a specific line in the expanded log, click CMD + SHIFT on the filtered log line.

Tip #7: **Prune the test logs**

The ***Log Only*** view strips packets and log messages from the individual stacks in use. Only log lines from CDRouter's main process are displayed.



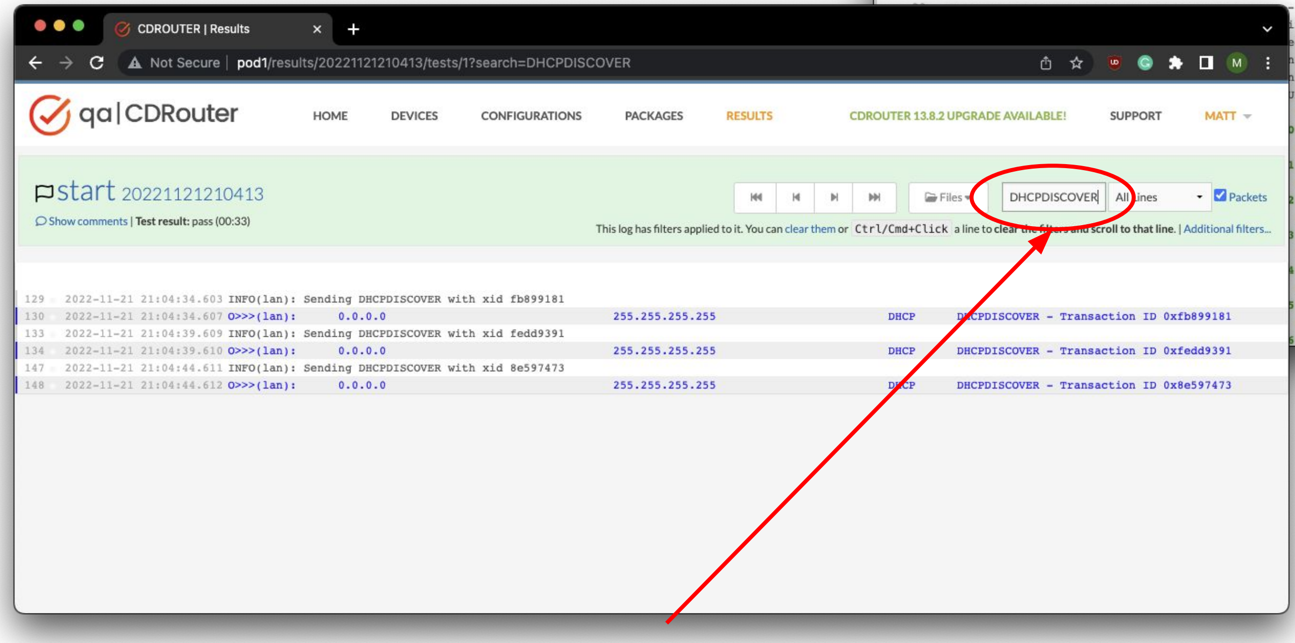
cdrouter_dmz_101 20221121210413

Show comments | Test result: fail (09:37)

□ Packets

This log has filters applied to it. You can clear them or `Ctrl/Cmd+Click` a line to clear the filters and scroll to that line. | Additional filters...

```
14     portScanStop' testvars. You can also specify any exceptions to the port
15     range using the testvar 'lanDmzUdpPortExceptions'.
16
17     Example:
18
19     testvar portScanStart 0
20     testvar portScanStop  65535
21
22
       -------------------------------
       ing test cdrouter_dmz_101 (399)
       ed 'host2' mac=b0:75:0c:82:d2:a2 (eth6,ethernet)
       ng ping to resolve DMZ host arp entry
       ng UDP port scan test on IP 192.168.200.2
       UDP ports 0 to 65535
        Running port scan test on port 0 1
       0 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 1 1
       1 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 2 1
       2 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 3 1
       3 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 4 1
       4 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 5 1
       5 was forwarded to DMZ host 192.168.10.100
        Running port scan test on port 6 1
       6 was forwarded to DMZ host 192.168.10.100
```



start 20221121210413

Show comments | Test result: pass (00:33)

☑ Packets

This log has filters applied to it. You can clear them or `Ctrl/Cmd+Click` a line to clear the filters and scroll to that line. | Additional filters...

```
129  2022-11-21 21:04:34.603 INFO(lan): Sending DHCPDISCOVER with xid fb899181
130  2022-11-21 21:04:34.607 O>>>(lan):       0.0.0.0                 255.255.255.255             DHCP     DHCPDISCOVER - Transaction ID 0xfb899181
133  2022-11-21 21:04:39.609 INFO(lan): Sending DHCPDISCOVER with xid fedd9391
134  2022-11-21 21:04:39.610 O>>>(lan):       0.0.0.0                 255.255.255.255             DHCP     DHCPDISCOVER - Transaction ID 0xfedd9391
147  2022-11-21 21:04:44.611 INFO(lan): Sending DHCPDISCOVER with xid 8e597473
148  2022-11-21 21:04:44.612 O>>>(lan):       0.0.0.0                 255.255.255.255             DHCP     DHCPDISCOVER - Transaction ID 0x8e597473
```

This makes it easy to filter the log on specific keywords, like DHCPDISCOVER, for example.

Did you know that you can annotate logs and change from absolute to relative time within a log?

Tip #8: Enhance your testing

With user defined scripts

Tip #8: **Run user-defined scripts**

Run external commands and custom scripts during your CDRouter test run to **gain greater control and insight into your DUT**:

- Query the DUT for statistics
- Check connectivity
- Enable debugging and gather data
- Update configuration and/or firmware

Tip #8: **Run user-defined scripts**

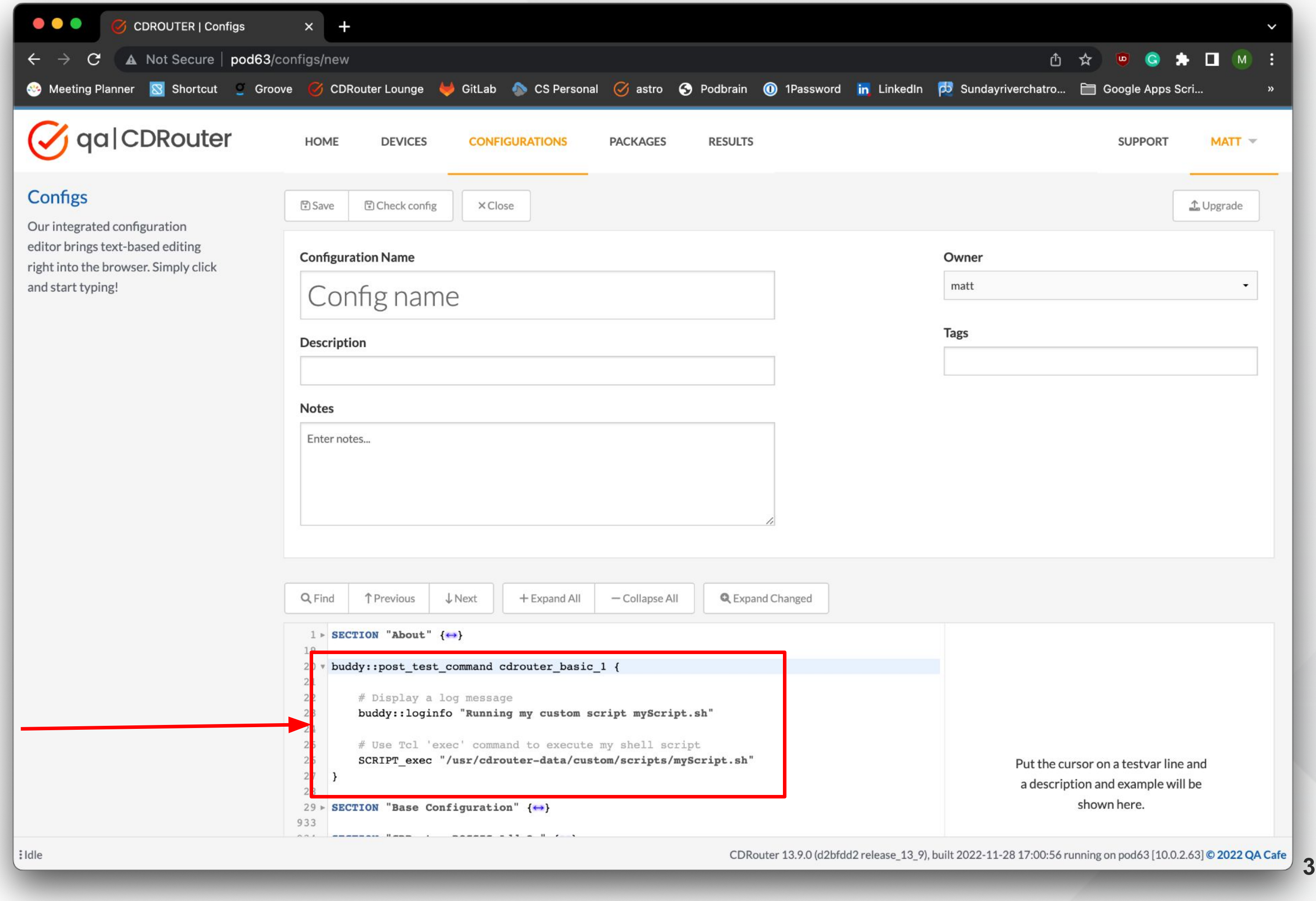
- Run external CLI commands or your own custom scripts
- Run the same script before or after every test case
- Run a different script before or after a specific test
- Run external scripts from within your custom test cases

Tip #8: **Run user-defined scripts**

`SCRIPT_exec` allows external scripts to run without suspending CDRouter.

- Access testvar values
- Pass arguments
- Capture output returned by script

Embed SCRIPT_exec calls within your config file to run your scripts in between test cases!



Configs

Our integrated configuration editor brings text-based editing right into the browser. Simply click and start typing!

Configuration Name: Config name

Owner: matt

Description

Tags

Notes: Enter notes...

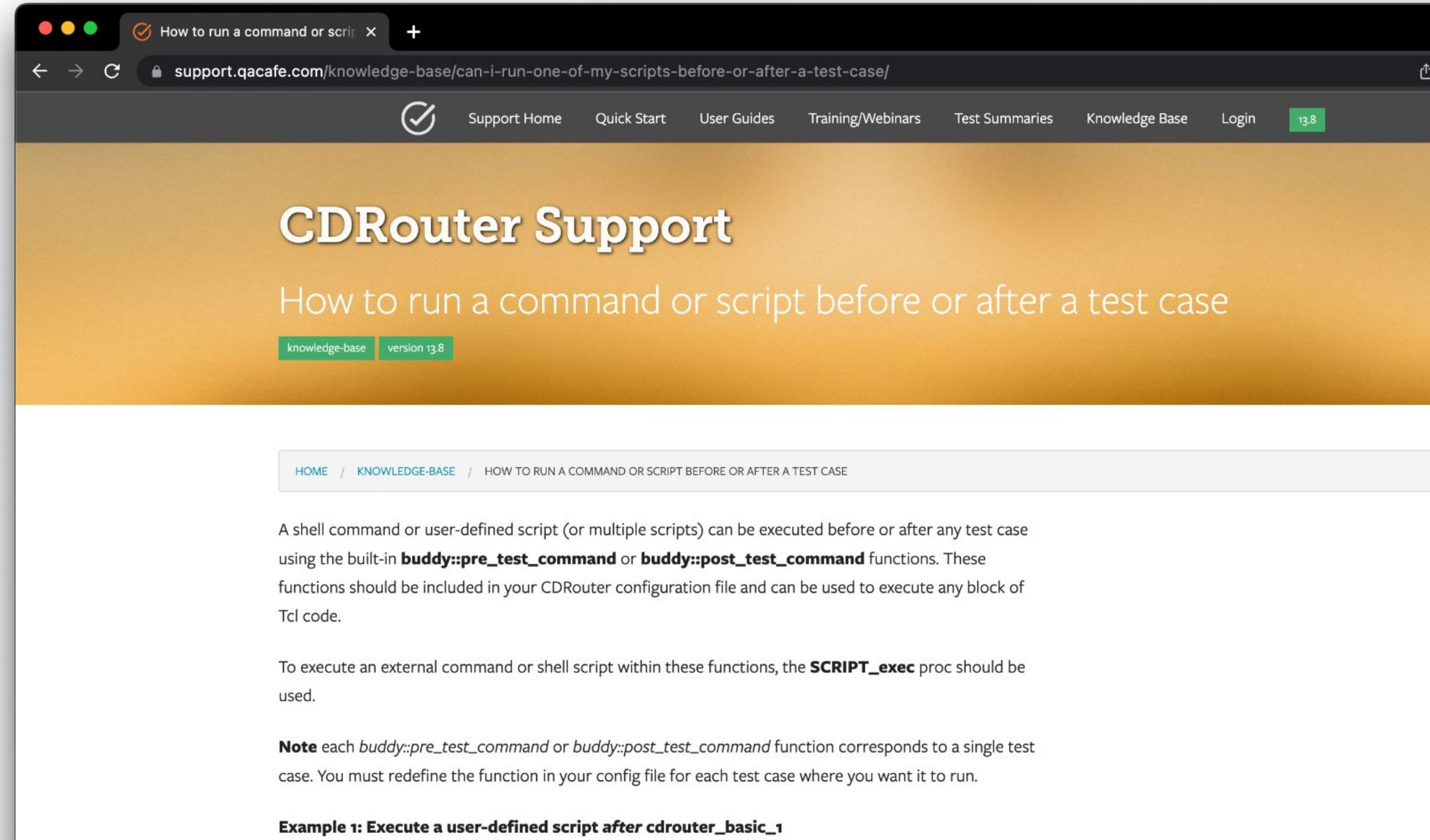
```
SECTION "About" {↔}

buddy::post_test_command cdrouter_basic_1 {

    # Display a log message
    buddy::loginfo "Running my custom script myScript.sh"

    # Use Tcl 'exec' command to execute my shell script
    SCRIPT_exec "/usr/cdrouter-data/custom/scripts/myScript.sh"
}

SECTION "Base Configuration" {↔}
```

Put the cursor on a testvar line and a description and example will be shown here.

CDRouter 13.9.0 (d2bfdd2 release_13_9), built 2022-11-28 17:00:56 running on pod63 [10.0.2.63] © 2022 QA Cafe

Tip #8: **Run user-defined scripts**

See this KB article for more information and a few examples!



How to run a command or scrip
support.qacafe.com/knowledge-base/can-i-run-one-of-my-scripts-before-or-after-a-test-case/
Support Home
Quick Start
User Guides
Training/Webinars
Test Summaries
Knowledge Base
Login
13.8

CDRouter Support

How to run a command or script before or after a test case

knowledge-base version 13.8

HOME / KNOWLEDGE-BASE / HOW TO RUN A COMMAND OR SCRIPT BEFORE OR AFTER A TEST CASE

A shell command or user-defined script (or multiple scripts) can be executed before or after any test case using the built-in **buddy::pre_test_command** or **buddy::post_test_command** functions. These functions should be included in your CDRouter configuration file and can be used to execute any block of Tcl code.

To execute an external command or shell script within these functions, the **SCRIPT_exec** proc should be used.

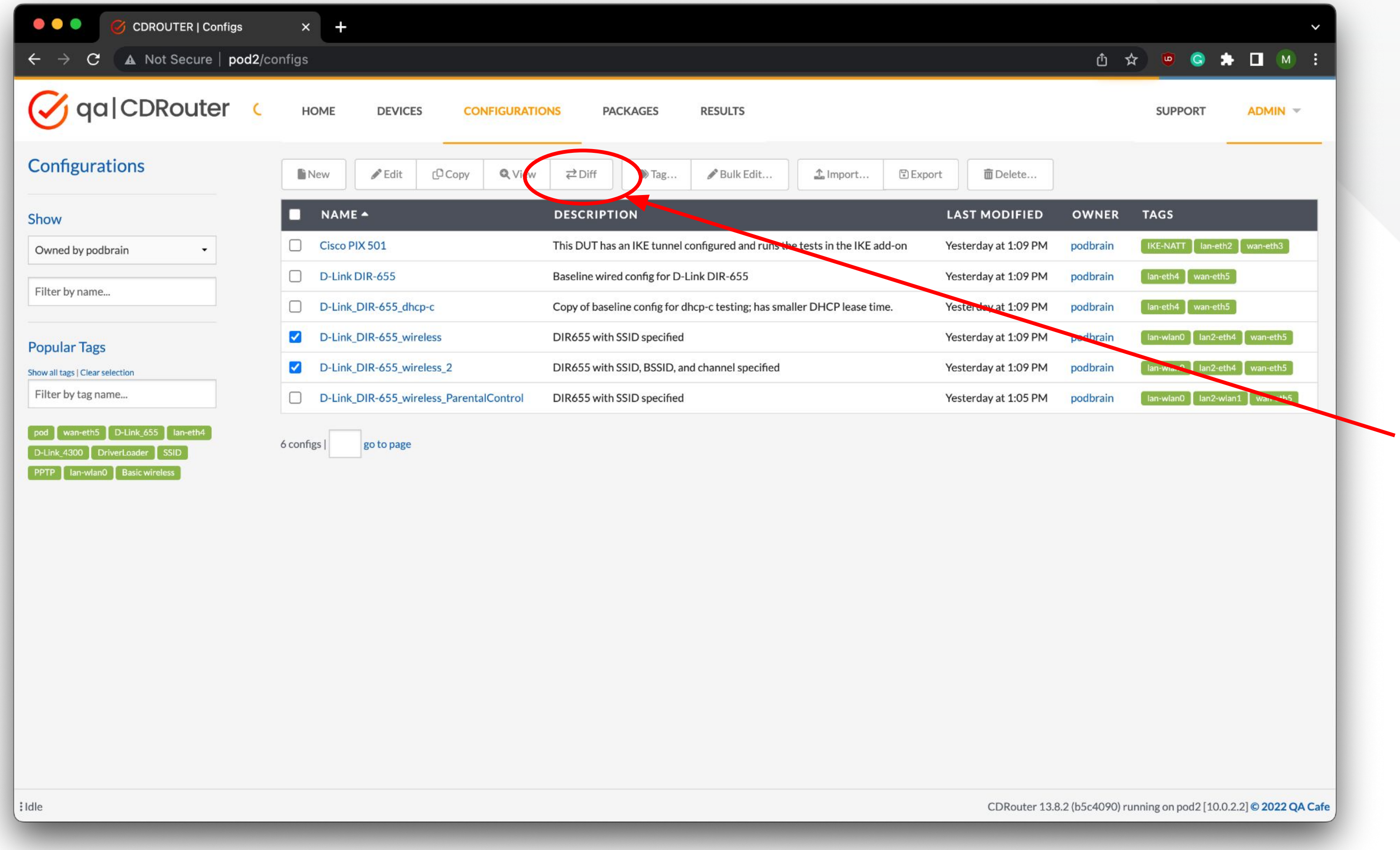
Note each *buddy::pre_test_command* or *buddy::post_test_command* function corresponds to a single test case. You must redefine the function in your config file for each test case where you want it to run.

Example 1: Execute a user-defined script *after* cdrouter_basic_1

Tip #9: Spot deltas quickly

Using the config and result diff feature

Tip #9:
Spot *config* diffs quickly



☐	NAME ▲	DESCRIPTION	LAST MODIFIED	OWNER	TAGS
☐	Cisco PIX 501	This DUT has an IKE tunnel configured and runs the tests in the IKE add-on	Yesterday at 1:09 PM	podbrain	IKE-NATT lan-eth2 wan-eth3
☐	D-Link DIR-655	Baseline wired config for D-Link DIR-655	Yesterday at 1:09 PM	podbrain	lan-eth4 wan-eth5
☐	D-Link_DIR-655_dhcp-c	Copy of baseline config for dhcp-c testing; has smaller DHCP lease time.	Yesterday at 1:09 PM	podbrain	lan-eth4 wan-eth5
☑	D-Link_DIR-655_wireless	DIR655 with SSID specified	Yesterday at 1:09 PM	podbrain	lan-wlan0 lan2-eth4 wan-eth5
☑	D-Link_DIR-655_wireless_2	DIR655 with SSID, BSSID, and channel specified	Yesterday at 1:09 PM	podbrain	lan-wlan0 lan2-eth4 wan-eth5
☐	D-Link_DIR-655_wireless_ParentalControl	DIR655 with SSID specified	Yesterday at 1:05 PM	podbrain	lan-wlan0 lan2-wlan1 wan-eth5

6 configs | go to page

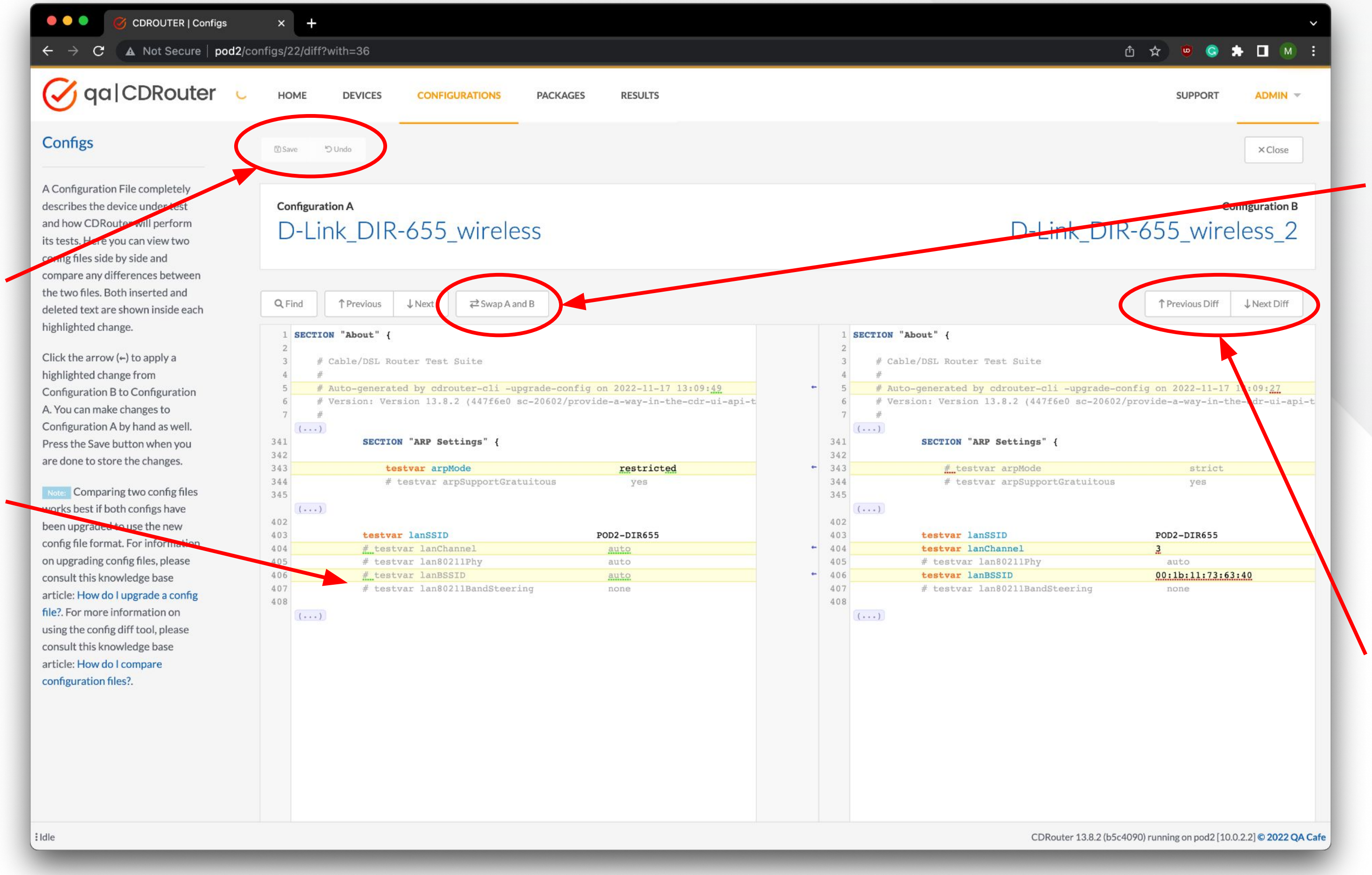
CDRouter 13.8.2 (b5c4090) running on pod2 [10.0.2.2] © 2022 QA Cafe

To get started: Select two configs and click the ***Diff*** button, OR select a single config and click the ***Diff*** button to compare to the default config.

Tip #9:
Spot *config* diffs quickly

Configuration A may be modified directly from the diff view.

Differences between the two configs will be highlighted in yellow.



Configs

A Configuration File completely describes the device under test and how CDRouter will perform its tests. Here you can view two config files side by side and compare any differences between the two files. Both inserted and deleted text are shown inside each highlighted change.

Click the arrow (⇠) to apply a highlighted change from Configuration B to Configuration A. You can make changes to Configuration A by hand as well. Press the Save button when you are done to store the changes.

Note: Comparing two config files works best if both configs have been upgraded to use the new config file format. For information on upgrading config files, please consult this knowledge base article: How do I upgrade a config file?. For more information on using the config diff tool, please consult this knowledge base article: How do I compare configuration files?.

Configuration A
D-Link_DIR-655_wireless

Configuration B
D-Link_DIR-655_wireless_2

```
SECTION "About" {

    # Cable/DSL Router Test Suite
    #
    # Auto-generated by cdrouter-cli -upgrade-config on 2022-11-17 13:09:49
    # Version: Version 13.8.2 (447f6e0 sc-20602/provide-a-way-in-the-cdr-ui-api-t
    #
(...)
            SECTION "ARP Settings" {

                testvar arpMode                              restricted
                # testvar arpSupportGratuitous                yes

(...)

            testvar lanSSID                              POD2-DIR655
            # testvar lanChannel                          auto
            # testvar lan80211Phy                         auto
            # testvar lanBSSID                            auto
            # testvar lan80211BandSteering                none

(...)
```

```
SECTION "About" {

    # Cable/DSL Router Test Suite
    #
    # Auto-generated by cdrouter-cli -upgrade-config on 2022-11-17 13:09:27
    # Version: Version 13.8.2 (447f6e0 sc-20602/provide-a-way-in-the-cdr-ui-api-t
    #
(...)
            SECTION "ARP Settings" {

                # testvar arpMode                            strict
                # testvar arpSupportGratuitous                yes

(...)

            testvar lanSSID                              POD2-DIR655
            testvar lanChannel                           3
            # testvar lan80211Phy                         auto
            testvar lanBSSID                             00:1b:11:73:63:40
            # testvar lan80211BandSteering                none

(...)
```

Idle

CDRouter 13.8.2 (b5c4090) running on pod2 [10.0.2.2] © 2022 QA Cafe

Configuration A and B may be swapped, making it possible to edit either configuration from the diff view.

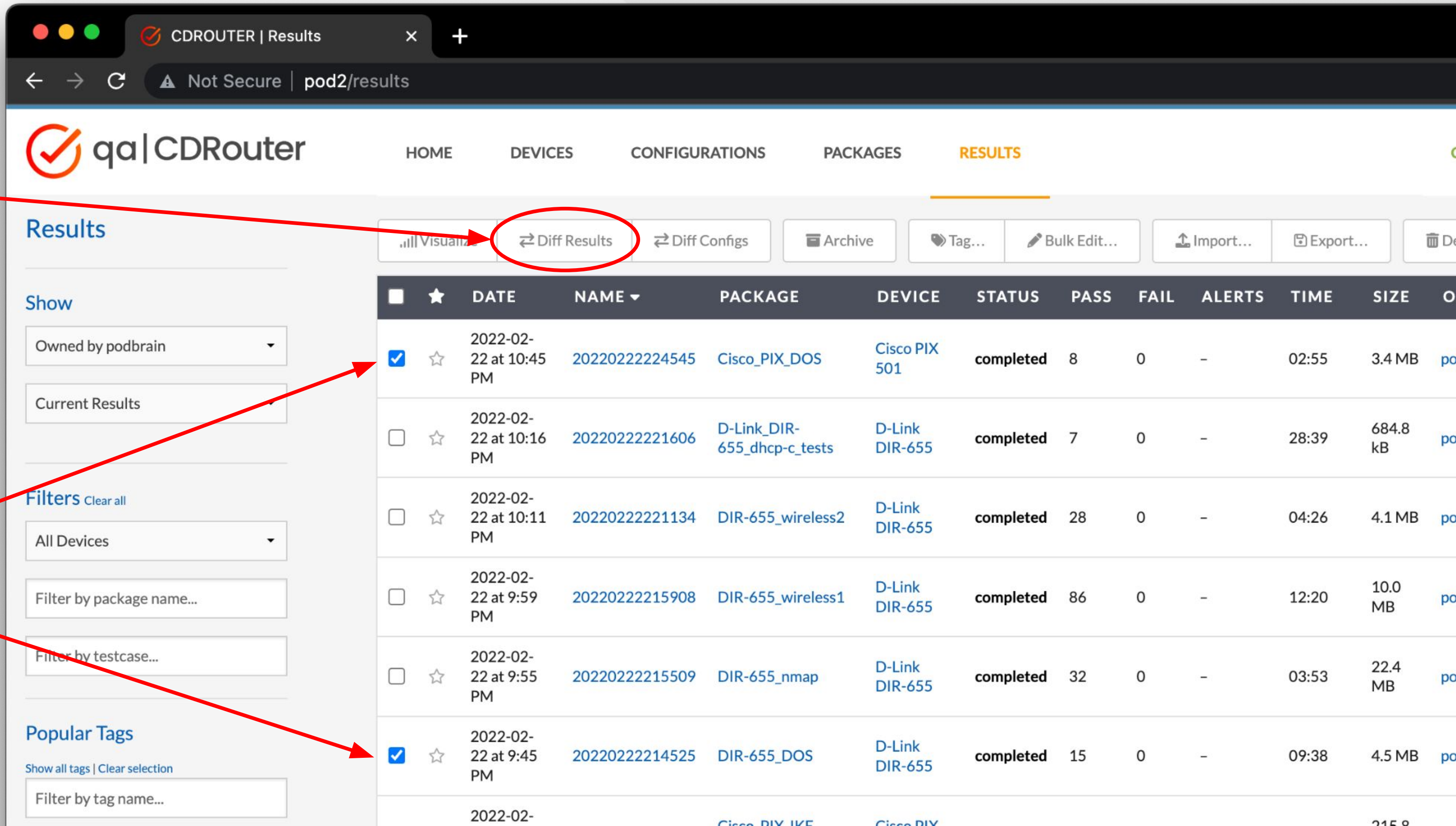
Find, ***Previous***, and ***Next*** buttons make it easy to navigate to individual diffs in either Configuration A or B.

Tip #9:
Spot *result* diffs quickly

Configs may be diffed directly from the Results page as well!

Click the ***Diff Results*** button to display the selected results in a new view.

Up to five results may be diffed simultaneously.



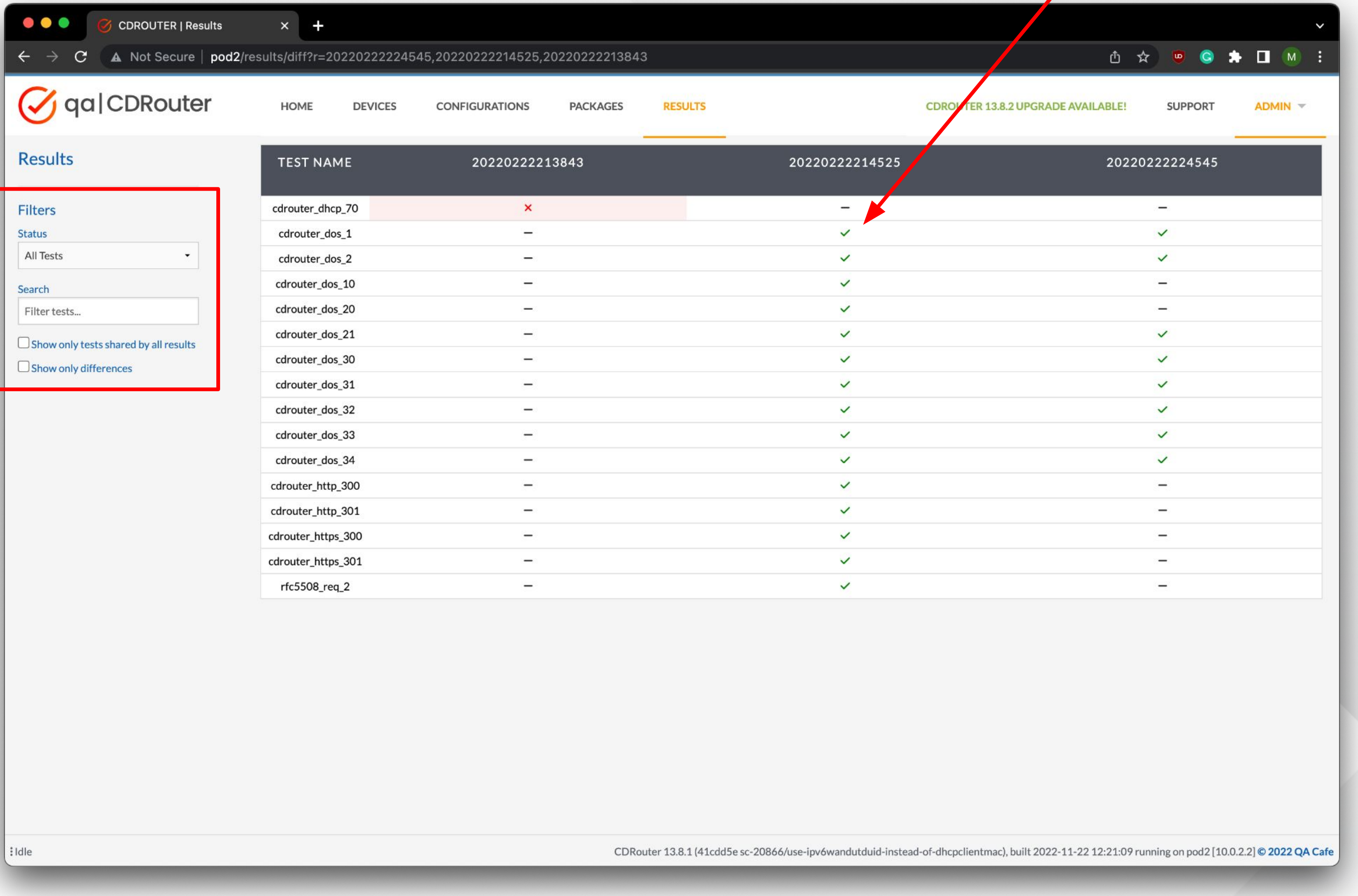
☐	★	DATE	NAME ▾	PACKAGE	DEVICE	STATUS	PASS	FAIL	ALERTS	TIME	SIZE	O
☑	☆	2022-02-22 at 10:45 PM	20220222224545	Cisco_PIX_DOS	Cisco PIX 501	completed	8	0	-	02:55	3.4 MB	po
☐	☆	2022-02-22 at 10:16 PM	20220222221606	D-Link_DIR-655_dhcp-c_tests	D-Link DIR-655	completed	7	0	-	28:39	684.8 kB	po
☐	☆	2022-02-22 at 10:11 PM	20220222221134	DIR-655_wireless2	D-Link DIR-655	completed	28	0	-	04:26	4.1 MB	po
☐	☆	2022-02-22 at 9:59 PM	20220222215908	DIR-655_wireless1	D-Link DIR-655	completed	86	0	-	12:20	10.0 MB	po
☐	☆	2022-02-22 at 9:55 PM	20220222215509	DIR-655_nmap	D-Link DIR-655	completed	32	0	-	03:53	22.4 MB	po
☑	☆	2022-02-22 at 9:45 PM	20220222214525	DIR-655_DOS	D-Link DIR-655	completed	15	0	-	09:38	4.5 MB	po
		2022-02-		Cisco_PIX_IKE	Cisco PIX						215.8	

Tip #9:
Spot *result* diffs quickly

Click on a pass/fail indicator to navigate directly to the test log.

Use the filtering and searching features to quickly zoom in on any deltas.

The Diff Results tool is very useful for identifying changes in behavior when performing regression tests.


CDROUTER | Results
Not Secure
pod2/results/diff?r=20220222224545,20220222214525,20220222213843
qa|CDRouter
HOME
DEVICES
CONFIGURATIONS
PACKAGES
RESULTS
CDROUTER 13.8.2 UPGRADE AVAILABLE!
SUPPORT
ADMIN

Results

Filters

Status: All Tests

Search: Filter tests...

□ Show only tests shared by all results

□ Show only differences

TEST NAME	20220222213843	20220222214525	20220222224545
cdrouter_dhcp_70	✕	–	–
cdrouter_dos_1	–	✓	✓
cdrouter_dos_2	–	✓	✓
cdrouter_dos_10	–	✓	–
cdrouter_dos_20	–	✓	–
cdrouter_dos_21	–	✓	✓
cdrouter_dos_30	–	✓	✓
cdrouter_dos_31	–	✓	✓
cdrouter_dos_32	–	✓	✓
cdrouter_dos_33	–	✓	✓
cdrouter_dos_34	–	✓	✓
cdrouter_http_300	–	✓	–
cdrouter_http_301	–	✓	–
cdrouter_https_300	–	✓	–
cdrouter_https_301	–	✓	–
rfc5508_req_2	–	✓	–

Idle

CDRouter 13.8.1 (41cdd5e sc-20866/use-ipv6wandutduid-instead-of-dhcpclientmac), built 2022-11-22 12:21:09 running on pod2 [10.0.2.2] © 2022 QA Cafe

Other new features

Introducing the NTA1000v7M

- Support for 802.11ax virtualization
- Simulate multiple 802.11ax clients

Expand your coverage with parallel testing

- Run multiple tests in parallel on a single NTA1000
- Ideal for high-volume testing working with CI/CD systems
- Maximize use of NTA1000 ports
- Requires additional license

qa | CDRouter

Simplified fixed-wireless support

- Working with test equipment vendor to provide simplified 5G/LTE connectivity support in your lab
- Allows CDRouter to wrap around the test setup just like any other access concentrator
- Look for more news in Q1 2023

Resources

https://www.qacafe.com/cdrouter-training

https://www.qacafe.com/how-to-build-automated-test-strategy-guide/

https://support.qacafe.com/knowledge-base/

https://support.qacafe.com/knowledge-base/cdrouter-gitlab-integration/

Testing end devices (smart home, STB, etc.)? Ask us about PassPort!

qa|PassPort