

Habe „[http://mp3-live.swr.de/swr4rp\\_m.m3u](http://mp3-live.swr.de/swr4rp_m.m3u)“  
im VLC geöffnet

Als erstes muss der Servername „mp3-live.swr.de“ aufgelöst werden (die IP-Adresse ermittelt):  
Dazu wird eine DNS-Anfrage gestellt:

No.	Time	Source	Destination	Protocol	Length	Info
11	13.394314	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	118	Standard query 0xa024 A m
12	13.396566	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	118	Standard query 0x3d51 AAA
13	13.423573	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	253	Standard query response 0:
14	13.427476	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	122	Standard query 0x79de AAA
15	13.430562	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	223	Standard query response 0:
16	13.447252	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	184	Standard query response 0:
27	13.703762	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	131	Standard query 0x3d06 A s
28	13.705831	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	131	Standard query 0x64ad AAA
31	13.737377	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	204	Standard query response 0:

▶ Frame 11: 118 bytes on wire (944 bits), 118 bytes captured (944 bits)  
▶ Ethernet II, Src: HuaweiTe\_fa:3c:a2 (5c:7d:5e:fa:3c:a2), Dst: JuniperN\_e3:72:c3 (28:8a:1c:e3:72:c3)  
▶ 802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 7  
▶ PPP-over-Ethernet Session  
▶ Point-to-Point Protocol  
▶ Internet Protocol Version 6, Src: 2003:c3:e7ff:28f2:5e7d:5eff:fefa:3ca2, Dst: 2003:180:2::53  
▶ User Datagram Protocol, Src Port: 56041, Dst Port: 53  
▼ Domain Name System (query)  
Transaction ID: 0xa024  
▶ Flags: 0x0100 Standard query  
Questions: 1  
Answer RRs: 0  
Authority RRs: 0  
Additional RRs: 1  
▼ Queries  
▶ mp3-live.swr.de: type A, class IN  
▶ Additional records  
[\[Response In: 15\]](#)

Als Antwort meldet der DNS-Server die IP-Adresse: 88.221.214.81

14	13.427476	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	122	Standard query 0x
15	13.430562	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	223	Standard query re
16	13.447252	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	184	Standard query re
27	13.703762	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	131	Standard query 0x
28	13.705831	2003:c3:e7ff:28f2:5...	2003:180:2::53	DNS	131	Standard query 0x
31	13.737377	2003:180:2::53	2003:c3:e7ff:28f2:5...	DNS	204	Standard query re

Answer RRs: 4  
Authority RRs: 0  
Additional RRs: 1  
▼ Queries  
▶ mp3-live.swr.de: type A, class IN  
▼ Answers  
▶ mp3-live.swr.de: type CNAME, class IN, cname mp3-live.swr.de.edgesuite.net  
▶ mp3-live.swr.de.edgesuite.net: type CNAME, class IN, cname a1467.w4.akamai.net  
▼ a1467.w4.akamai.net: type A, class IN, addr 88.221.214.18  
Name: a1467.w4.akamai.net  
Type: A (Host Address) (1)  
Class: IN (0x0001)  
Time to live: 20 (20 seconds)  
Data length: 4  
Address: 88.221.214.18  
▶ a1467.w4.akamai.net: type A, class IN, addr 88.221.214.81  
▶ Additional records

Jetzt kann die Datei über HTTP (TCP/80) geholt werden. Dazu hier der TCP Verbindungsaufbau:

10	13.447232	2003.100.21.33	2003.03.0711.2012.0...	DNS	104 Standard query response 0x790e A
17	13.450405	91.48.210.252	88.221.214.81	TCP	90 45824 → 80 [SYN] Seq=0 Win=64240
18	13.466540	HuaweiTe_fa:3c:a2	JuniperN_e3:72:c3	PPP LCP	38 Echo Request
19	13.470281	88.221.214.81	91.48.210.252	TCP	86 80 → 45824 [SYN, ACK] Seq=0 Ack=

▶ Frame 17: 90 bytes on wire (720 bits), 90 bytes captured (720 bits)  
▶ Ethernet II, Src: HuaweiTe\_fa:3c:a2 (5c:7d:5e:fa:3c:a2), Dst: JuniperN\_e3:72:c3 (28:8a:1c:e3:72:c3)  
▶ 802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 7  
▶ PPP-over-Ethernet Session  
▶ Point-to-Point Protocol  
▶ Internet Protocol Version 4, Src: 91.48.210.252, Dst: 88.221.214.81  
▶ Transmission Control Protocol, Src Port: 45824, Dst Port: 80, Seq: 0, Len: 0  
Source Port: 45824  
Destination Port: 80  
[Stream index: 2]  
[TCP Segment Len: 0]  
Sequence number: 0 (relative sequence number)  
Sequence number (raw): 1837768665  
[Next sequence number: 1 (relative sequence number)]  
Acknowledgment number: 0  
Acknowledgment number (raw): 0  
1011 .... = Header Length: 44 bytes (11)  
▶ Flags: 0x002 (SYN)  
Window size value: 64240

Hier die Übertragung der m3u-Datei:

GET /swr4rp\_m.m3u HTTP/1.1

Host: mp3-live.swr.de

Accept: \*/\*

Accept-Language: de

User-Agent: VLC/3.0.9.2 LibVLC/3.0.9.2

Range: bytes=0-

HTTP/1.1 200 OK

Server: Apache

Content-Disposition: attachment; filename="swr4rp\_mp3\_m.m3u"

ETag: "3ada9f66edf9e94e8f012b2f113e7a88"

Content-Type: audio/x-mpegurl

Cache-Control: max-age=86400

Date: Mon, 10 Aug 2020 11:20:33 GMT

Content-Length: 108

Connection: keep-alive

#EXTM3U

#EXTINF:-1,SWR4 Rheinland-Pfalz

http://swr-swr4-rp.cast.addradio.de/swr/swr4/rp/mp3/128/stream.mp3