

# Welcome Cyber#1

**Reader:** [reader.codaisseur.com](https://reader.codaisseur.com)

**Slack:** [codaisseur-school.slack.com](https://codaisseur-school.slack.com)

**Discord:** <https://discord.gg/qyehPh>

# Today's schedule

19:00 - 20:00      ☐ Youtube streaming

20:00 - 20:15      ☐ Break

20:15 - 20:45      ☐ Arp spoofing

20:45 - 21:00      ☐ Break

21:00 - 21:30      ☐ Homework

**Homework...**

**Uploading was hard...**

# IP-address from **youtube**....

AWS CloudFront

youtube-ui.l.google.com:

AWS EC2

MCI Communication Services

# IP-address from **youtube**....

74.125.110.x

44.236.152.8x

13.227.209.x/47

93.184.220.2x

X: to make IP-addresses private

# IP-address from **youtube**....

172.217.0.0/16	172.217.20.110	172.217.168.206	172.217.168.238
172.217.17.10	172.217.20.110	172.217.168.206	172.217.168.238
172.217.17.46	172.217.20.110	172.217.168.206	172.217.168.238
172.217.17.46	172.217.20.110	172.217.168.206	172.217.168.238
172.217.17.78	172.217.20.78	172.217.168.206	172.217.168.238
172.217.17.142	172.217.20.70		172.217.168.238
172.217.17.46	172.217.20.78		
172.217.17.99	172.217.20.78		
172.217.17.110			
172.217.17.110			
172.217.17.206			

# IP-address from **youtube**....

2a00:1450:400e:806::200e

2a00:1450:400e:80b::200e

2a00:1450:400e:809::200e

2a00:1450:400e:80a::200e

2a00:1450:400e:80e::200e



**Youtube uses....**

**CDN**

Content Delivery Network

**CDN** is....



# CDN solves....







< Quality

2160p 4K

1440p HD

1080p HD

720p

480p

360p

240p

144p

✓ Auto

Chono light



# Youtube packets....

96	4175
99	4182
540	4555
798	51249
1968	13393
2751	78143
4080	39411

# Filesize...

Photo (5MP) 1.5 MB

Video 4K(2160p) 320 MB (one minute)

Video HD(720p) 35 MB (one minute)

How **big** is a **packet**...

# How **big** is a **packet**...

## MTU

(Maximum transmission unit)

Wired: 1500 (bytes)

Wireless: 2,312 (bytes)



# Bits and Bytes....

The screenshot shows a Google search interface. The search bar contains the text "bytes to mb". Below the search bar, there are tabs for "All", "Images", "News", "Videos", "Shopping", and "More". The "All" tab is selected. To the right of the tabs are links for "Settings" and "Tools". Below the tabs, it says "About 67.000.000 results (0,67 seconds)". The main content area displays a unit converter for digital storage. It shows a dropdown menu set to "Digital Storage". Below this, there are two input fields: the left one contains "1500" and is labeled "Byte" below it; the right one contains "0.0015" and is labeled "Megabyte" below it. An equals sign "=" is between the two fields. At the bottom, there is a "Formula" section with the text "divide the digital storage value by 1e+6".

Google

bytes to mb

× |

All Images News Videos Shopping More Settings Tools

About 67.000.000 results (0,67 seconds)

Digital Storage

1500 = 0.0015

Byte Megabyte

**Formula** divide the digital storage value by 1e+6

# Bits and Bytes....

Video HD(720p) **35 MB** (one minute)

20 seconds **11 MB**

1,1e+7 bytes (11 MB)

**7333** full packets (1500 bytes)

**What protocols are used in the communication between you and youtube?**

**What is a protocol?**

# Youtube protocols....

(Missing HTTP)

TCP

TLS

TLSv1.2

TLSv1.3

HTTP

DNS

OCSP

IPV6

# Youtube protocols....

~~(Missing HTTP)~~

TCP

TLS

TLSv1.2

TLSv1.3

HTTP

DNS

OCSP

~~IPv6~~

# Youtube protocols....

**TCP** (Transmission Control Protocol)

**TLS** (Transport Layer Security)

TLSv1.2

TLSv1.3

**HTTP** (Hypertext Transfer Protocol )

**DNS** (Domain Name System)

**OCSP** (Online Certificate Status Protocol)

**NERD MODE = ON**



**10 Minute Break**

**ARP** spoofing

**15 Minute Break**

# Homework

**The End**