CSCI 101
Connecting with Computer Science
Lecture 2: Introduction to WWW II

Jetic Gū

2020 Fall Semester (S3)

Fair river! in thy bright, clear flow

Fair river! in thy bright, clear flow
Of crystal, wandering water,

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Of crystal, wandering water,
Thou art an emblem of the glow

Fair river! in thy bright, clear flow
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Of beauty -- the unhidden heart --

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The playful maziness of art

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Of crystal, wandering water,
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The playful maziness of art
In old Alberto's daughter;

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But when within thy wave she looks --

Fair river! in thy bright, clear flow
Of crystal, wandering water,
Thou art an emblem of the glow
Of beauty -- the unhidden heart --
The playful maziness of art
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But when within thy wave she looks --
Which glistens then, and trembles --

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But when within thy wave she looks --
Which glistens then, and trembles --
Why, then, the prettiest of brooks

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But when within thy wave she looks --
Which glistens then, and trembles --
Why, then, the prettiest of brooks
Her worshipper resembles;

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For in my heart, as in thy stream,

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But when within thy wave she looks --
Which glistens then, and trembles --
Why, then, the prettiest of brooks
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For in my heart, as in thy stream,
Her image deeply lies --

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Her image deeply lies --
The heart which trembles at the beam

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The heart which trembles at the beam
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–Edgar Allen Poe

"When was the last time you read a poem out loud instead of taking a selfie?"

–Winston Churchill

Overview

- Focus: Internet
- Architecture: von Neumann
- Readings: 1
- Core Ideas:
    1. The WWW
    2. Things to Think about, Cont.

P1
WWW

The World-Wide Web

Summary

P1
WWW

What is WWW vs Internet?

- The internet is a much bigger physical platform that supports all kinds of services
  - The World-Wide Web (WWW) is a service offered in the Internet

Concept

P1
WWW

History of the WWW

Concept

P1
WWW

History of the WWW

- Before the WWW, there was already the internet

Concept

History of the WWW

- Before the WWW, there was already the internet
    - Each service provider will have their own programme providing services

Concept

P1
WWW

History of the WWW

- Before the WWW, there was already the internet
  - Each service provider will have their own programme providing services
  - A programme for each OS (there were a loooot of em)

Concept

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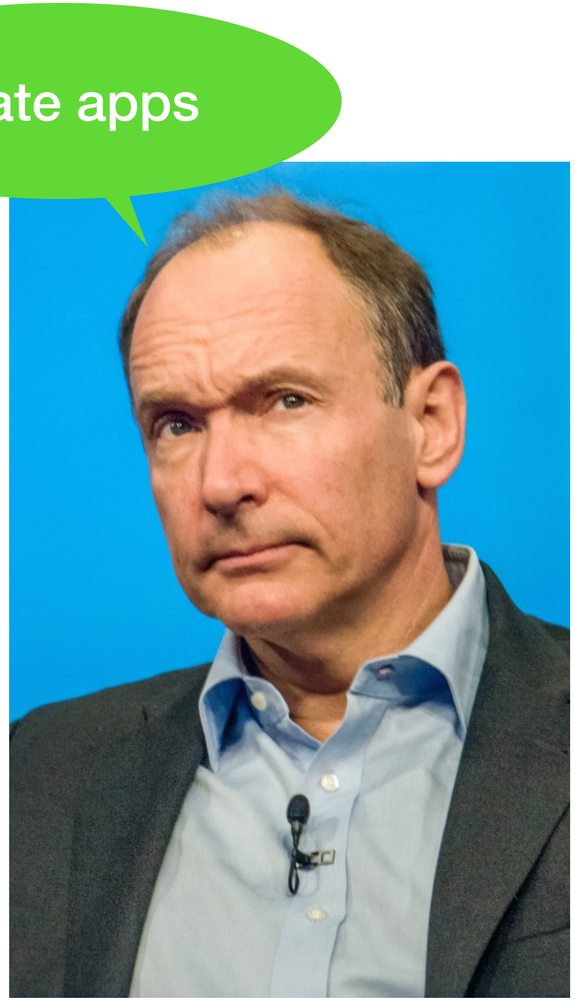

Concept

P1
WWW

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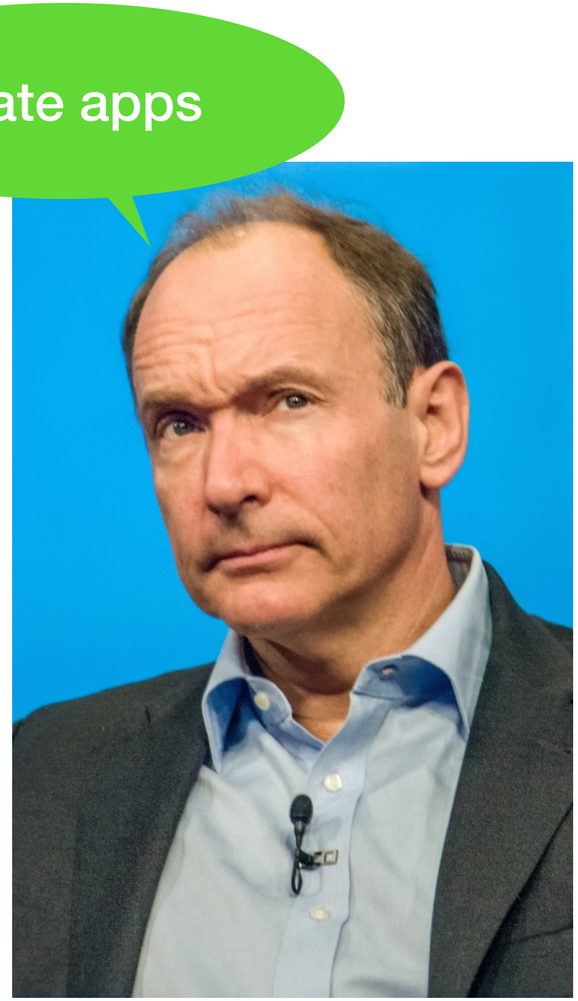
  - Let’s make it easier: using WWW



Concept

History of the WWW

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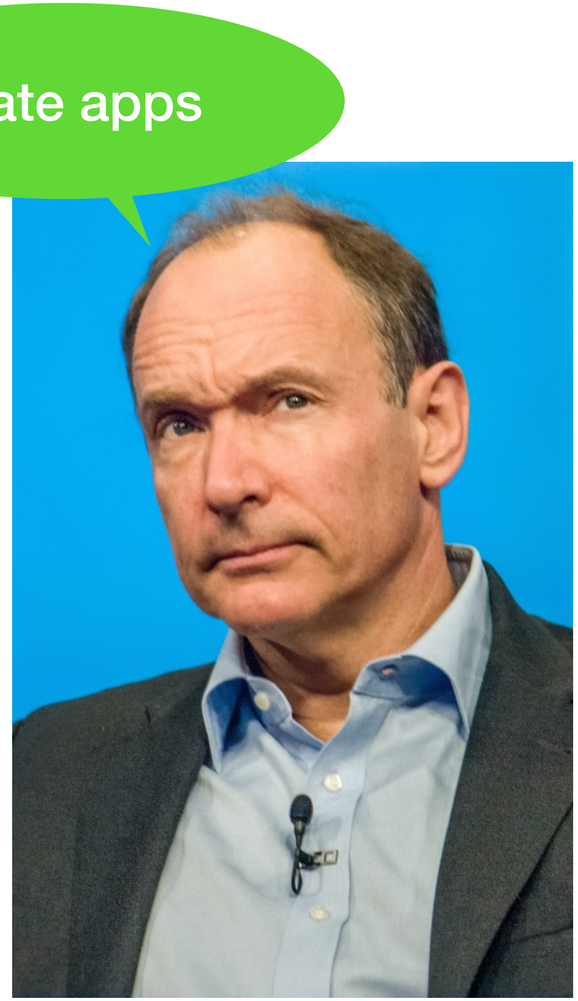
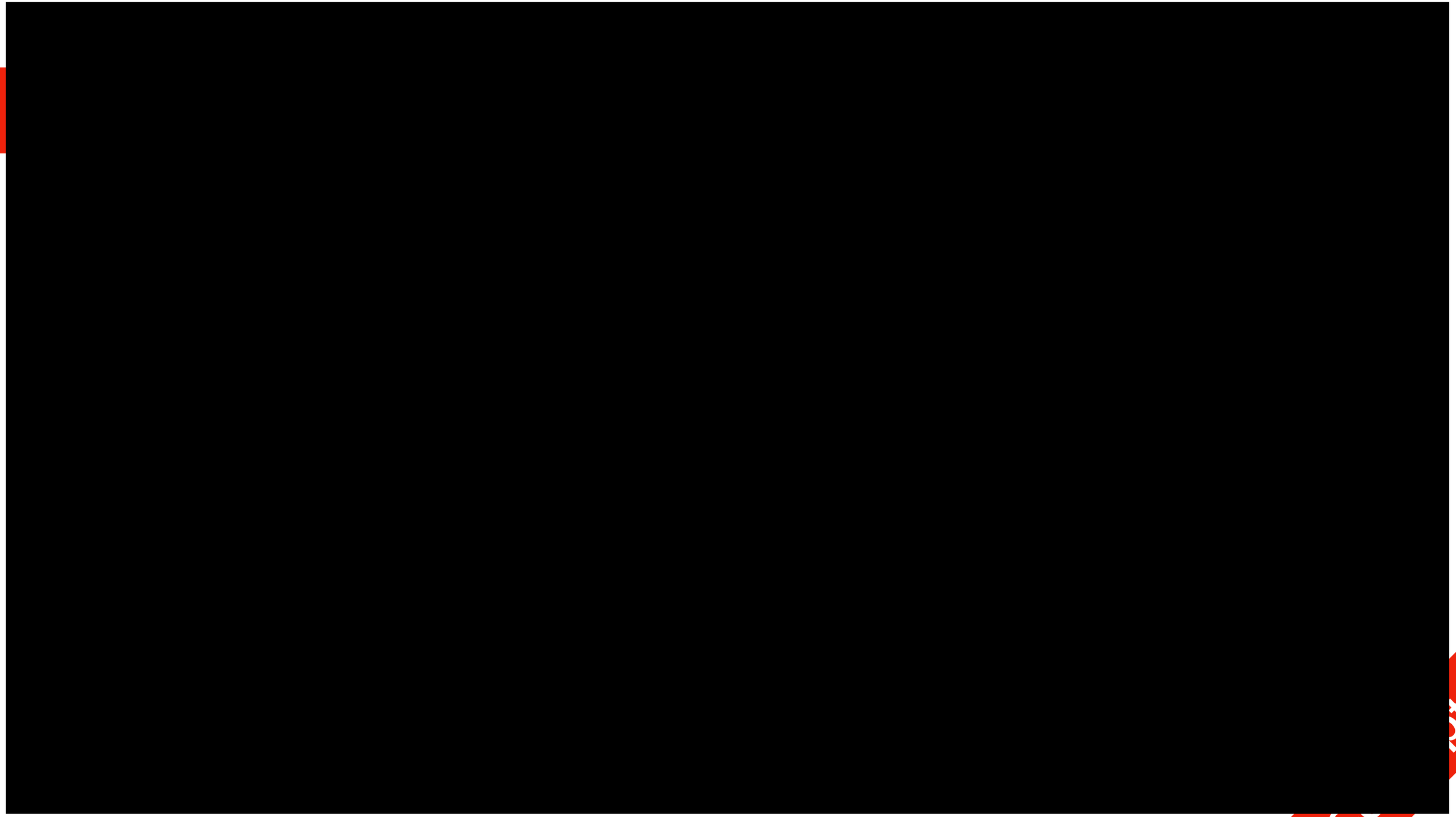
  - Each service provider will have their own programme providing services
  - A programme for each OS (there were a loooot of em)
- 1989, CERN physicist Tim Berners Lee
  - Let’s make it easier: using WWW
  - So what is the WWW? Webpages!



Concept



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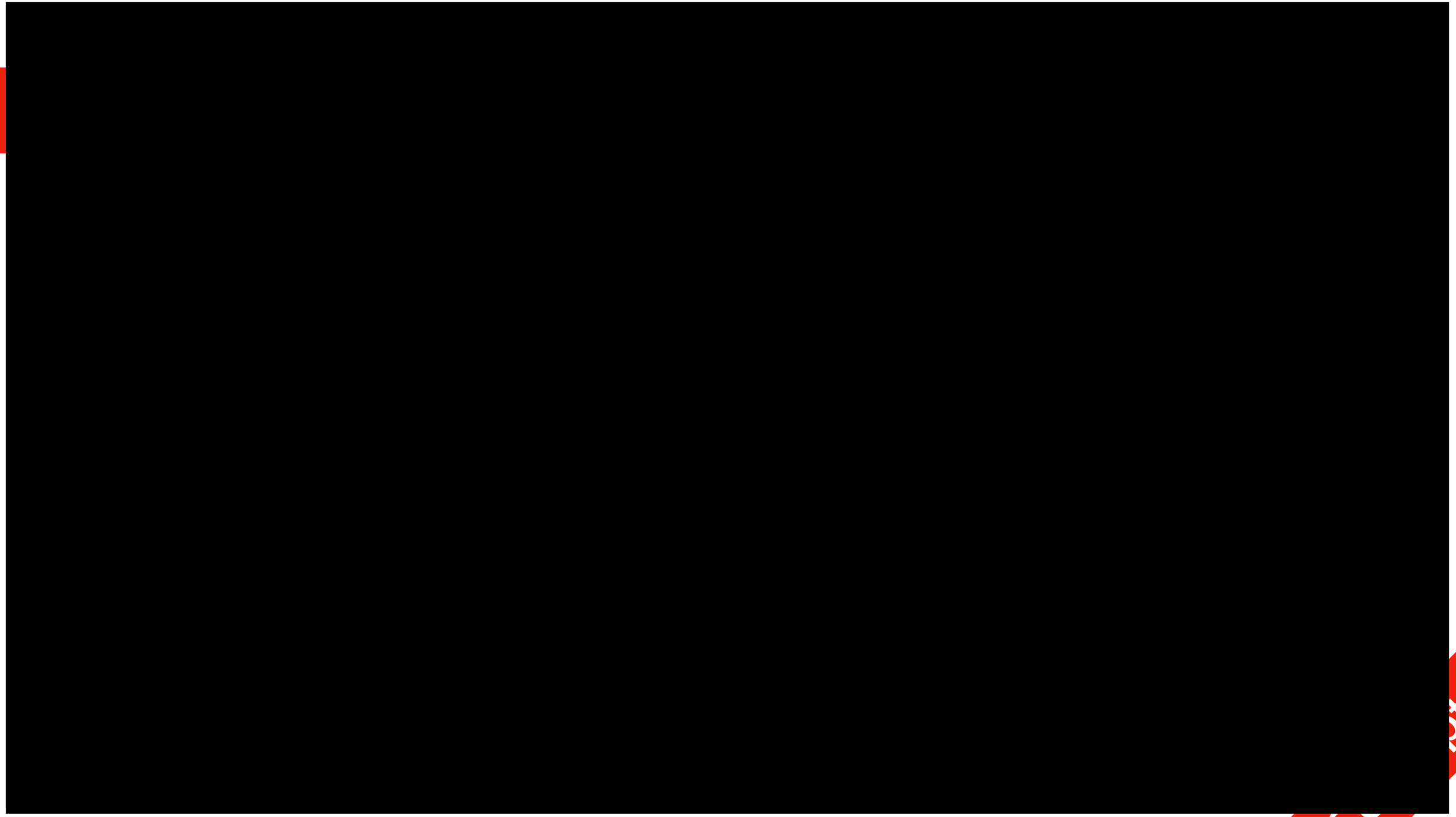

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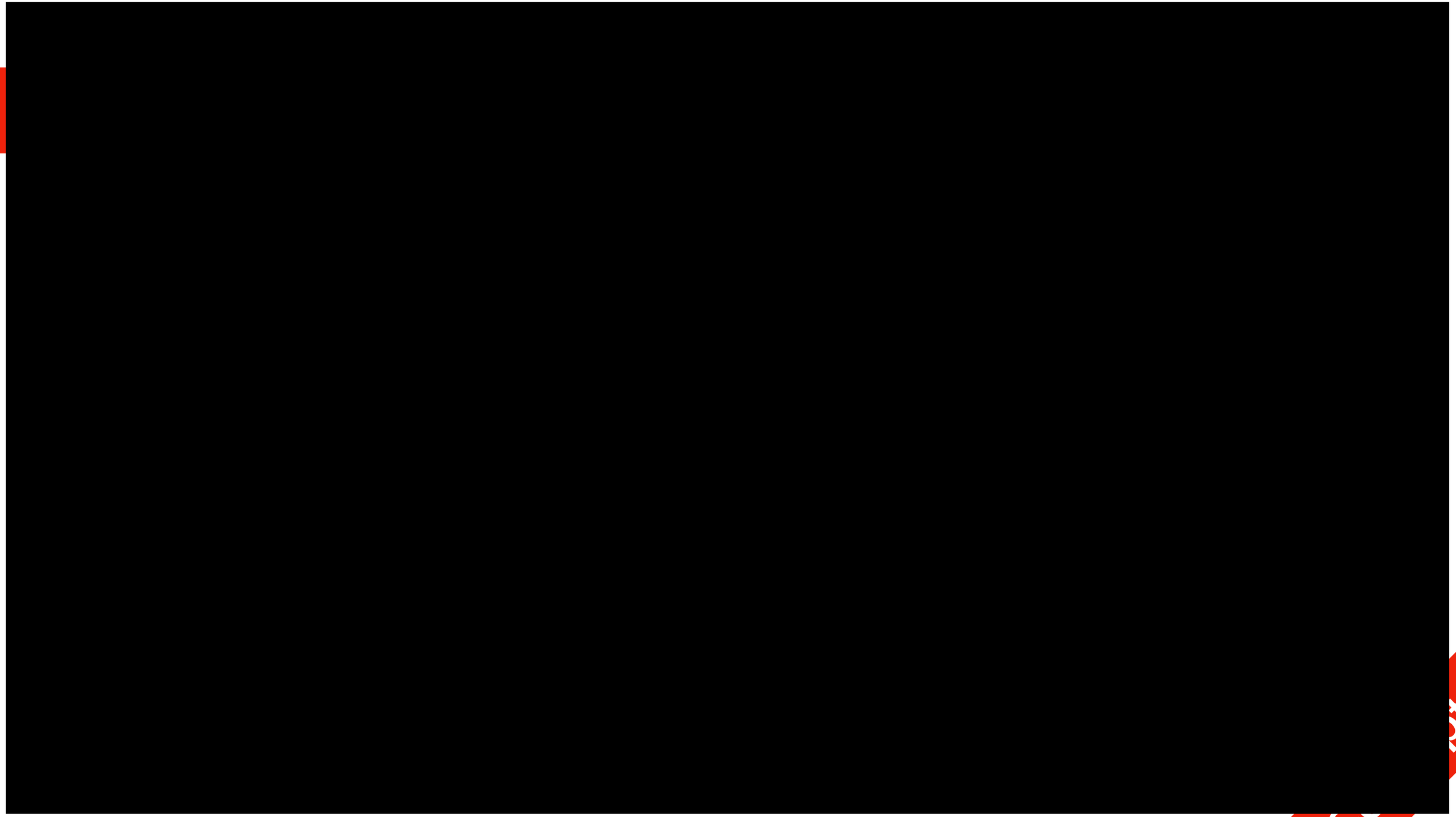

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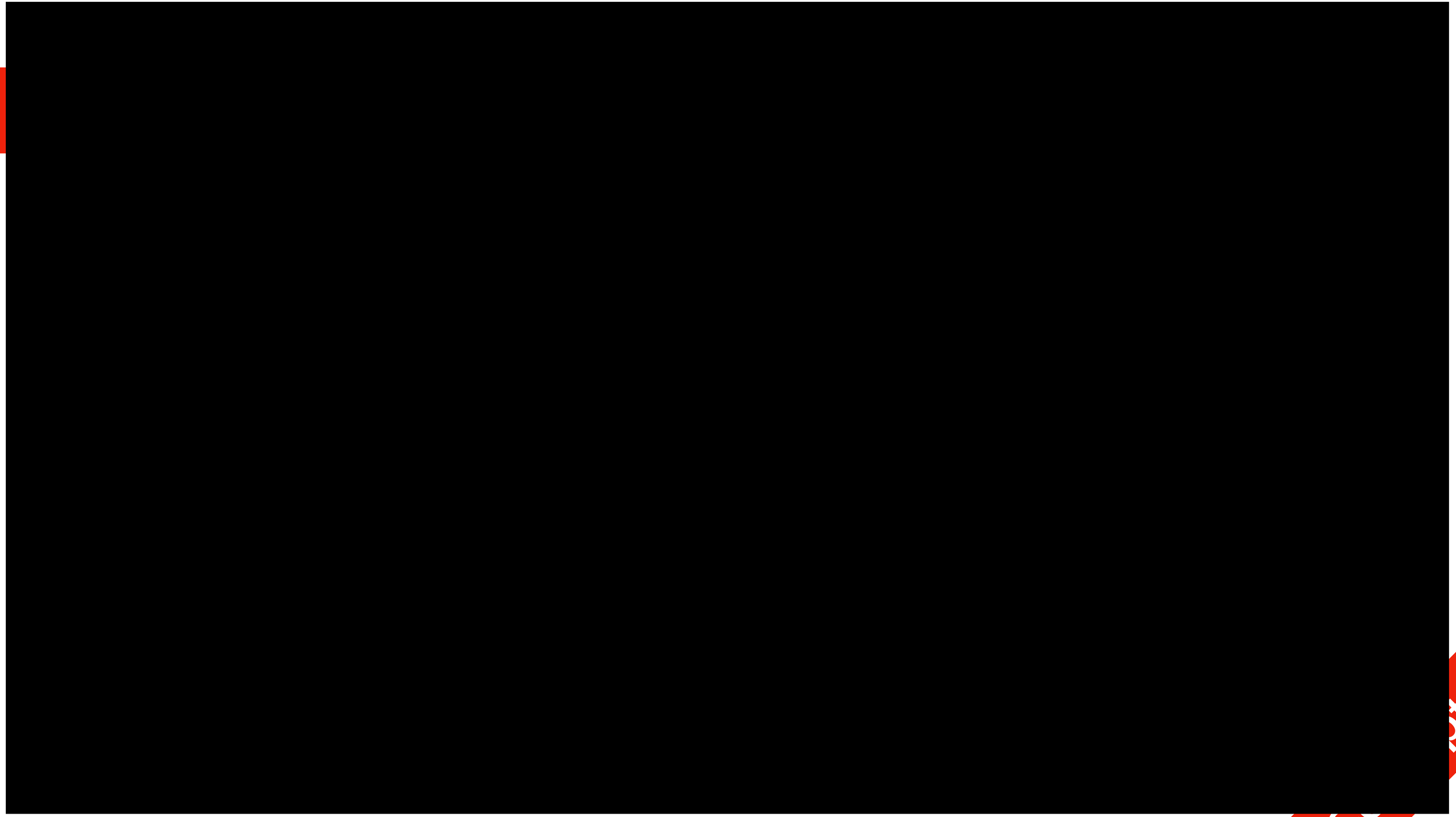

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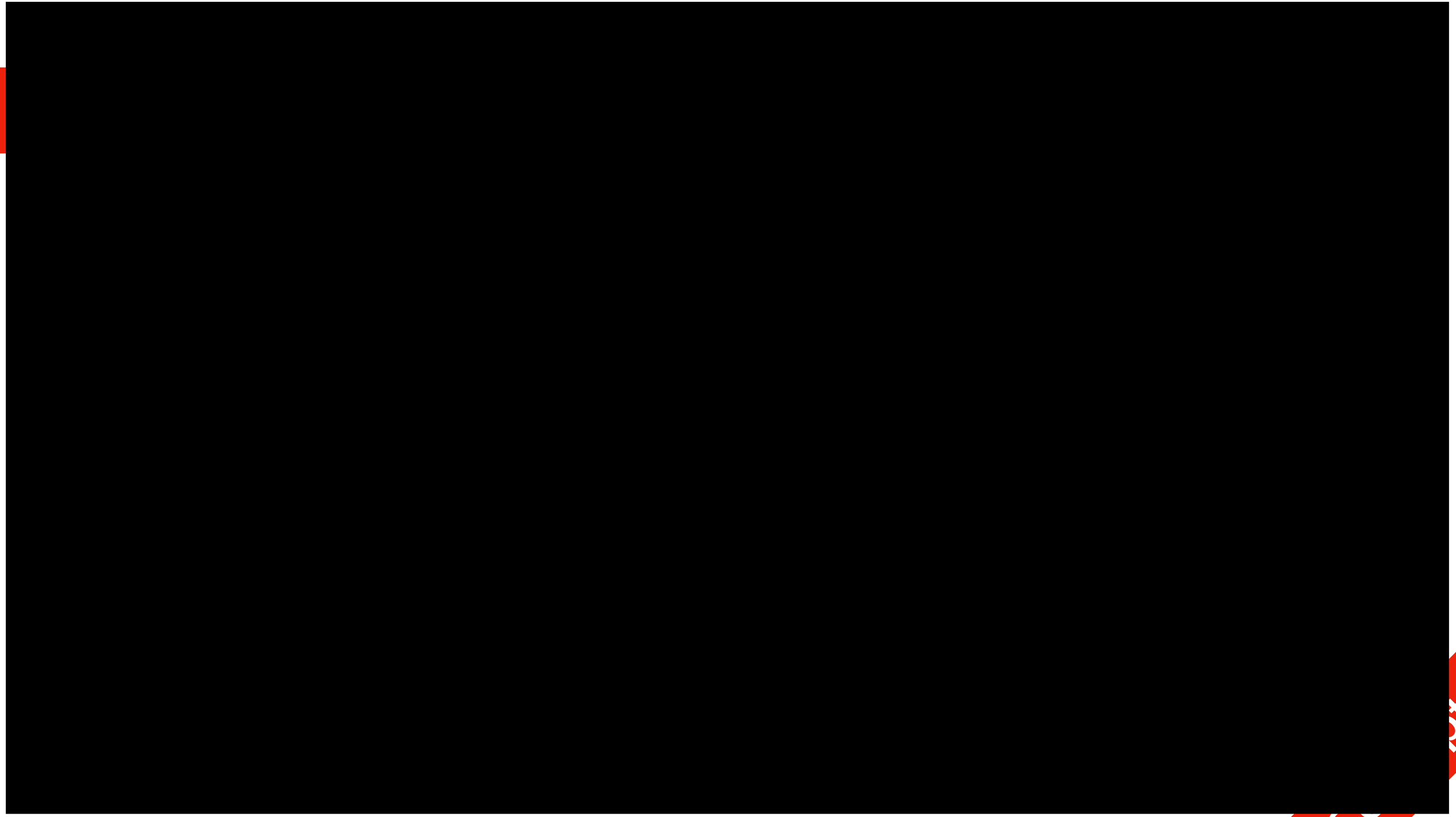

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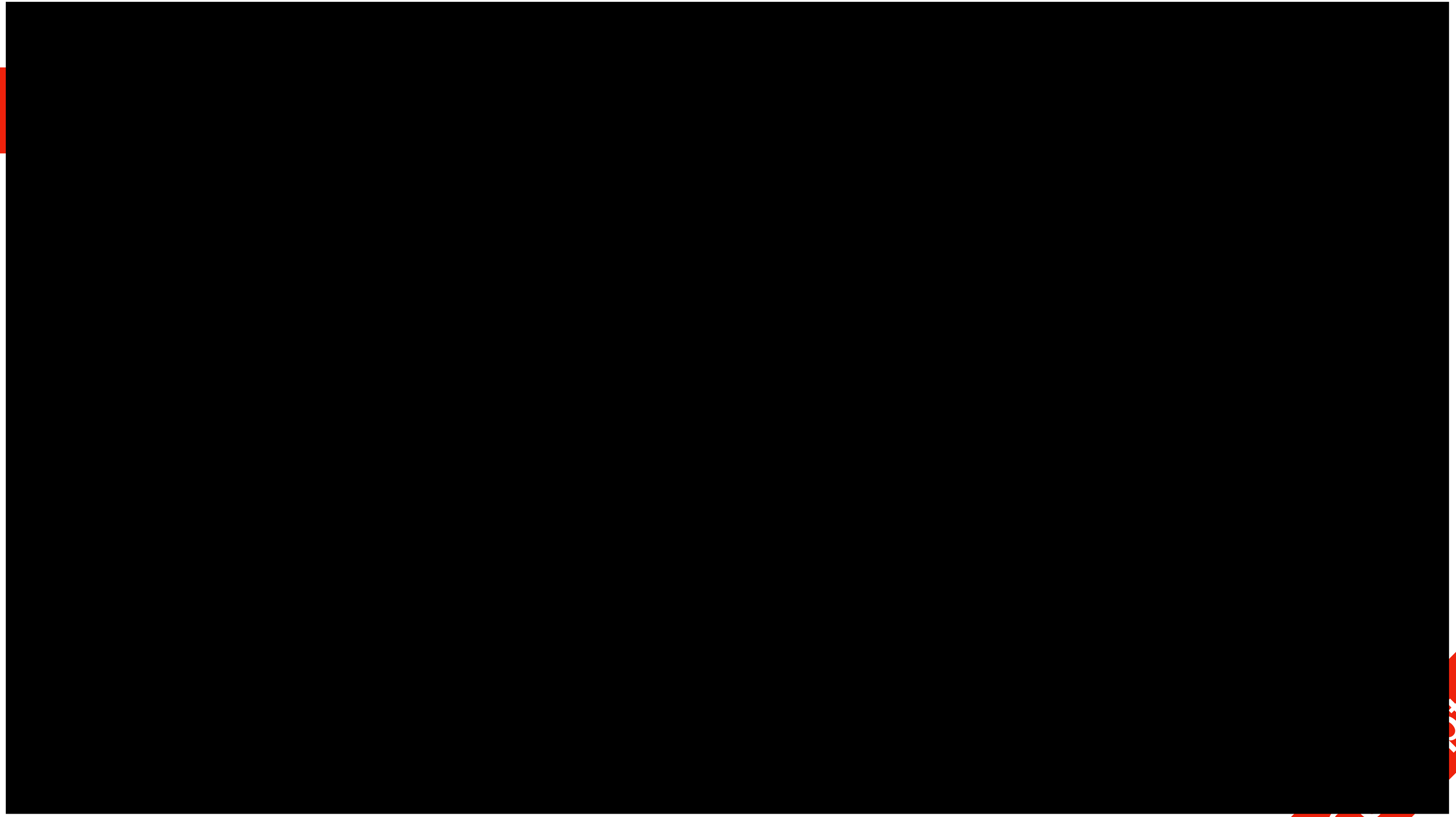

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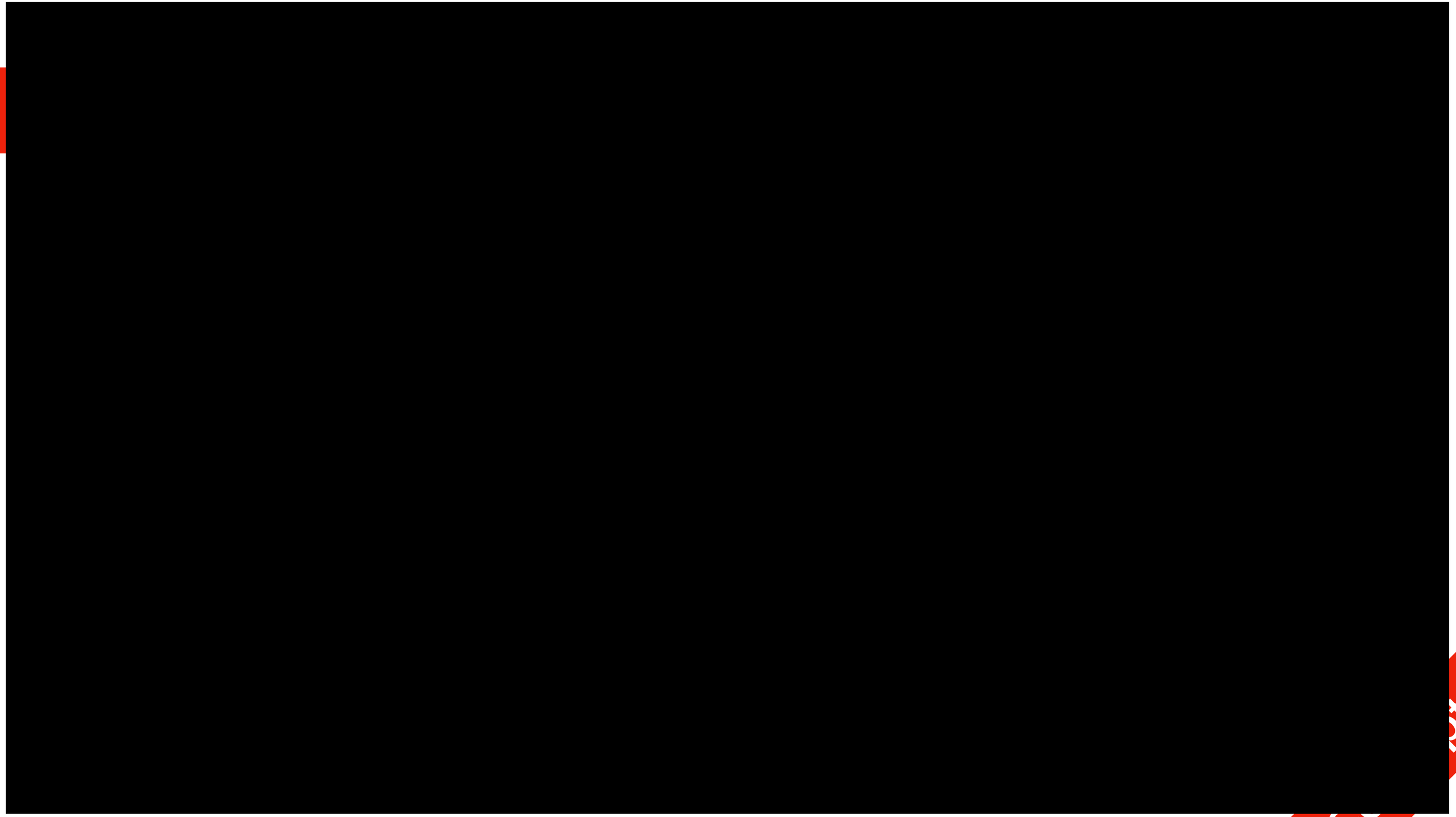

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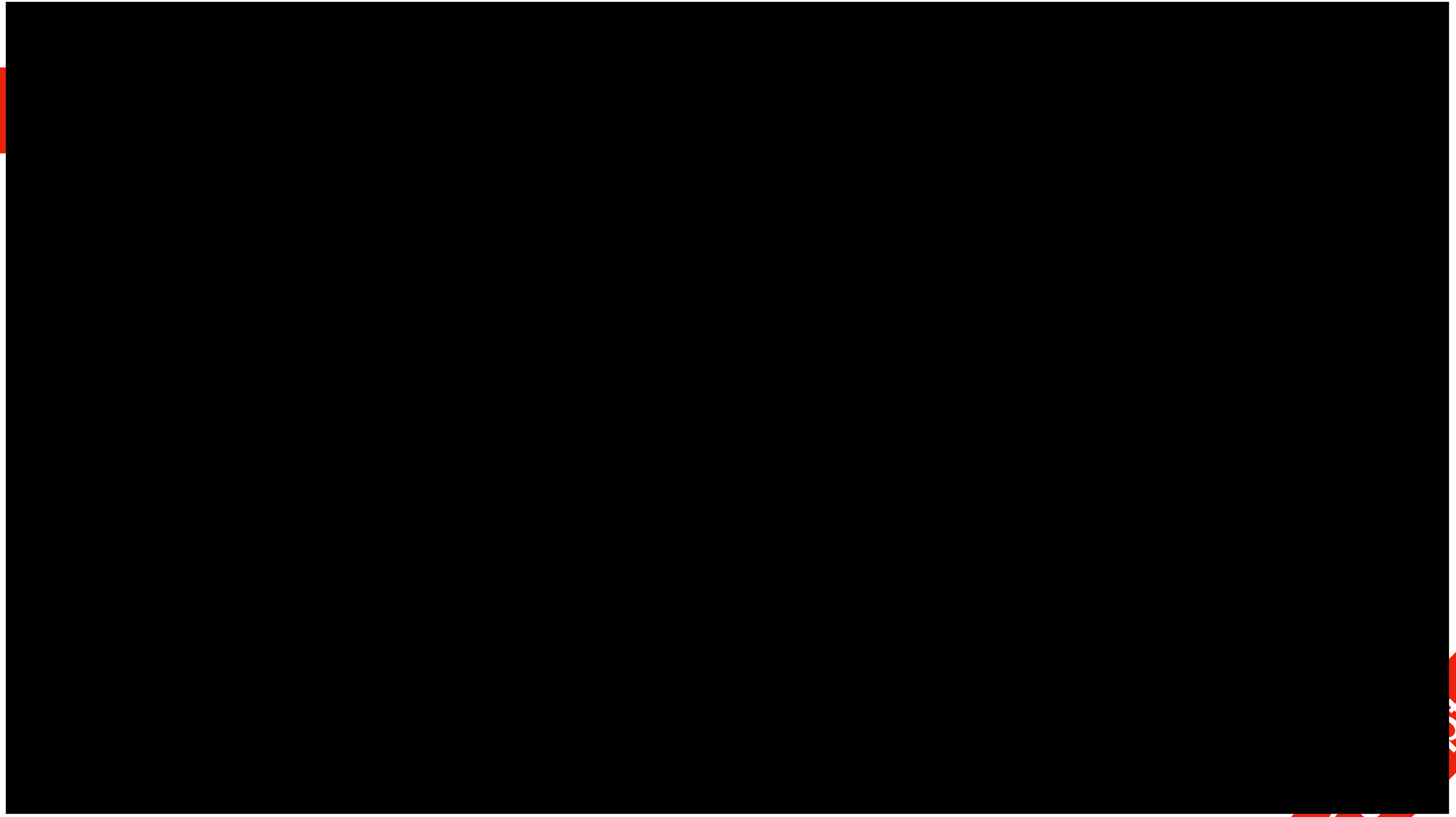

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WWW Concepts

- "A web of nodes, a user can browse at will"
- It no longer matters what computer manufacturer it is, what OS it is running if you have a browser you can access it
  - **URLs**: Uniform Resource Locator, e.g. jetic.org
  - **HTML**: Hypertext Markup Language, which embeds clickable **hyperlinks**
  - **HTTP**: Hypertext Transfer Protocol

- Tim Berners Lee: it should be Free and Open!

Concept

P1
WWW

What does it take to build a website?

- A server machine running web-hosting applications
  I am renting a server with ubuntu running apache2

- A domain
  Mine is jetic.org . All **urls** ending with *.jetic.org are mine. (like cheese.jetic.org)

- A **DNS** (Domain Name System) server with your domain records
  Computers in the Internet have **only IP addresses** as **identifiers**
  DNS server tells people the **IP address of domains**
  e.g. jetic.org**:** 139.162.15.171

Concept

P1
WWW

How does DNS work?

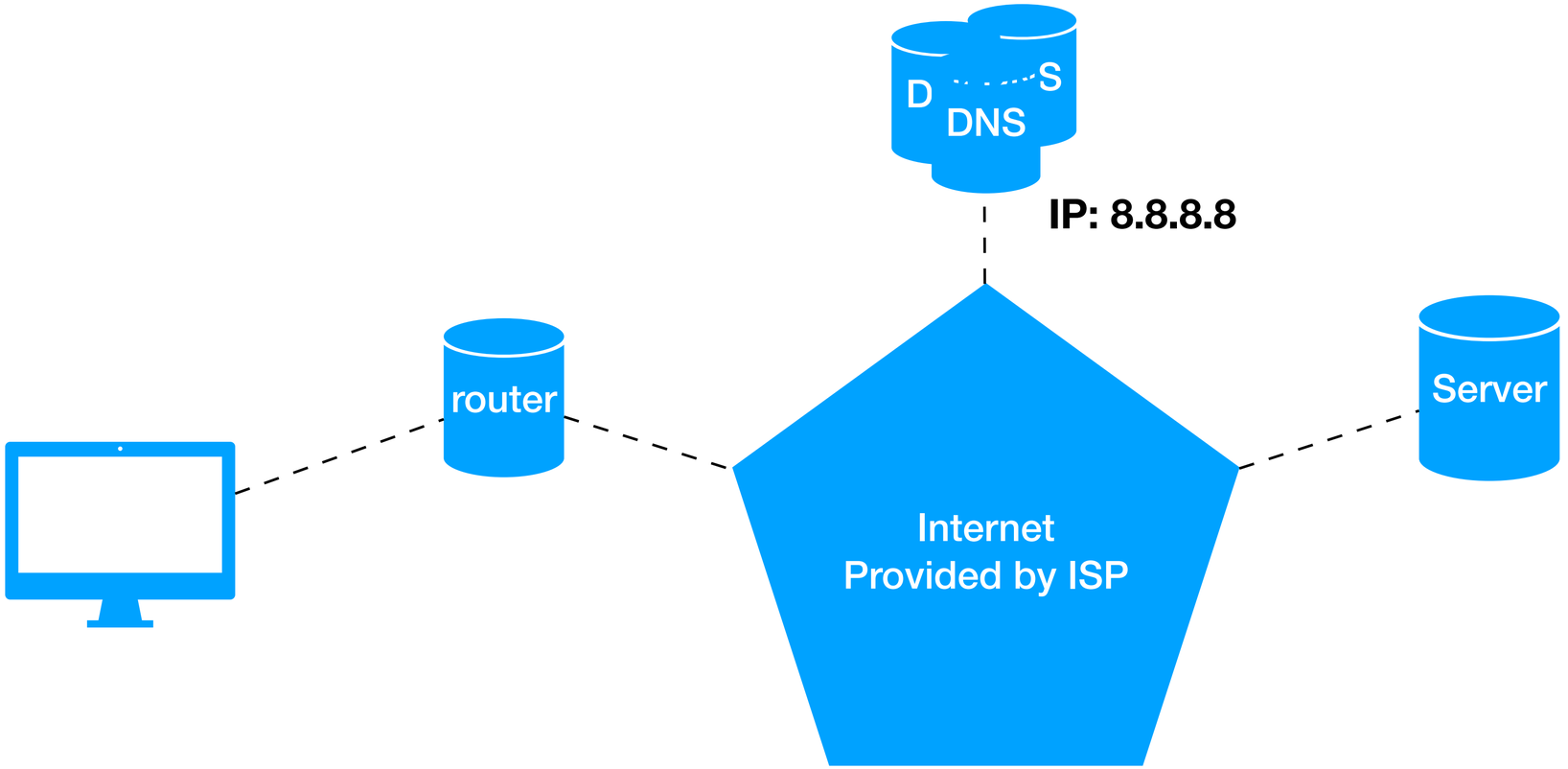
- Your computer gets a DNS server address from the router
- Your router gets a DNS server address from your ISP
- Your ISP's DNS server is synced with other local/global ISPs
  - You can select your own DNS server as well, Google's is 8.8.8.8[1]

Concept

1. This is an IP address

P1
WWW

How do you get `served`?



Concept

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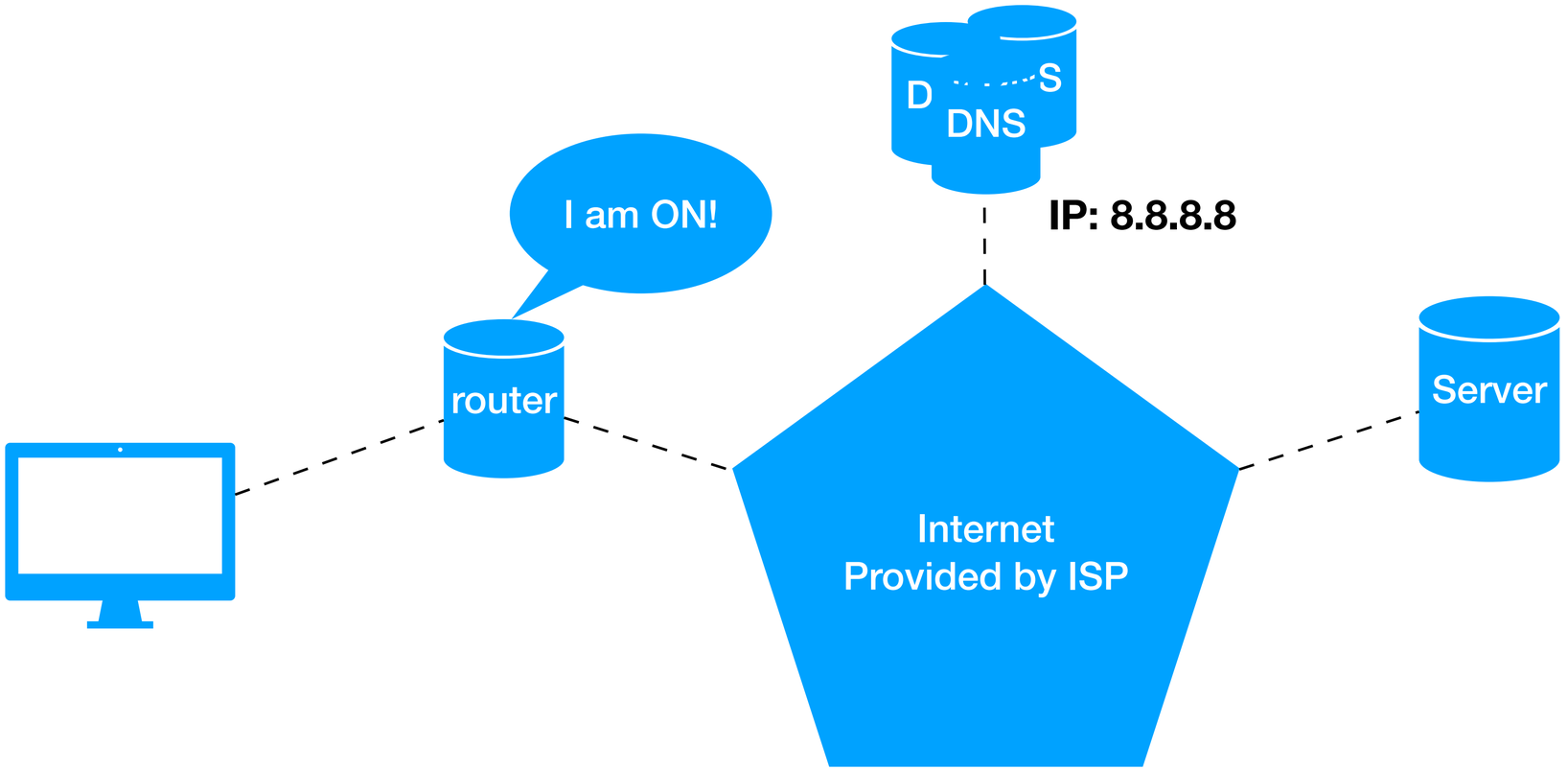

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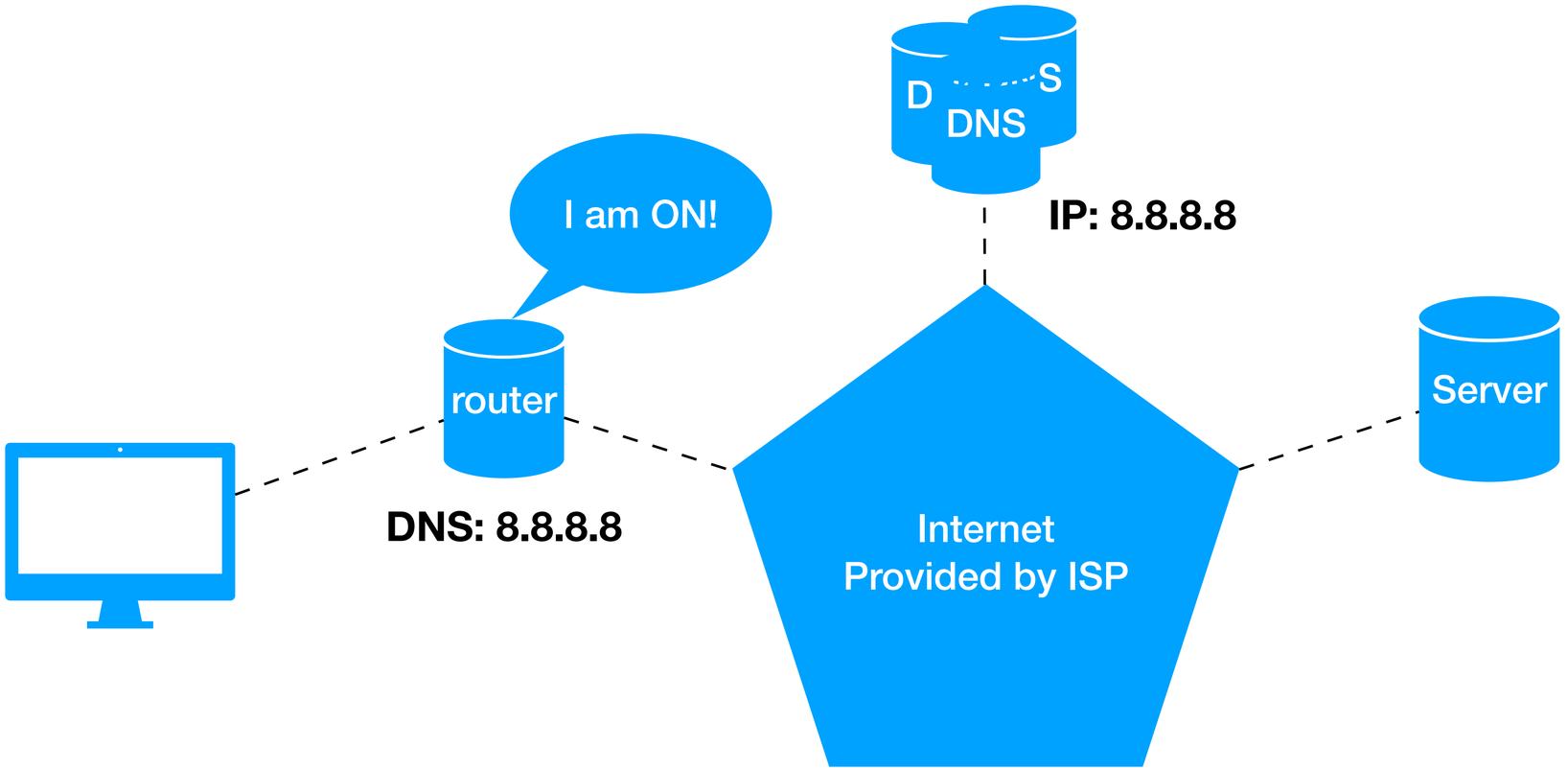

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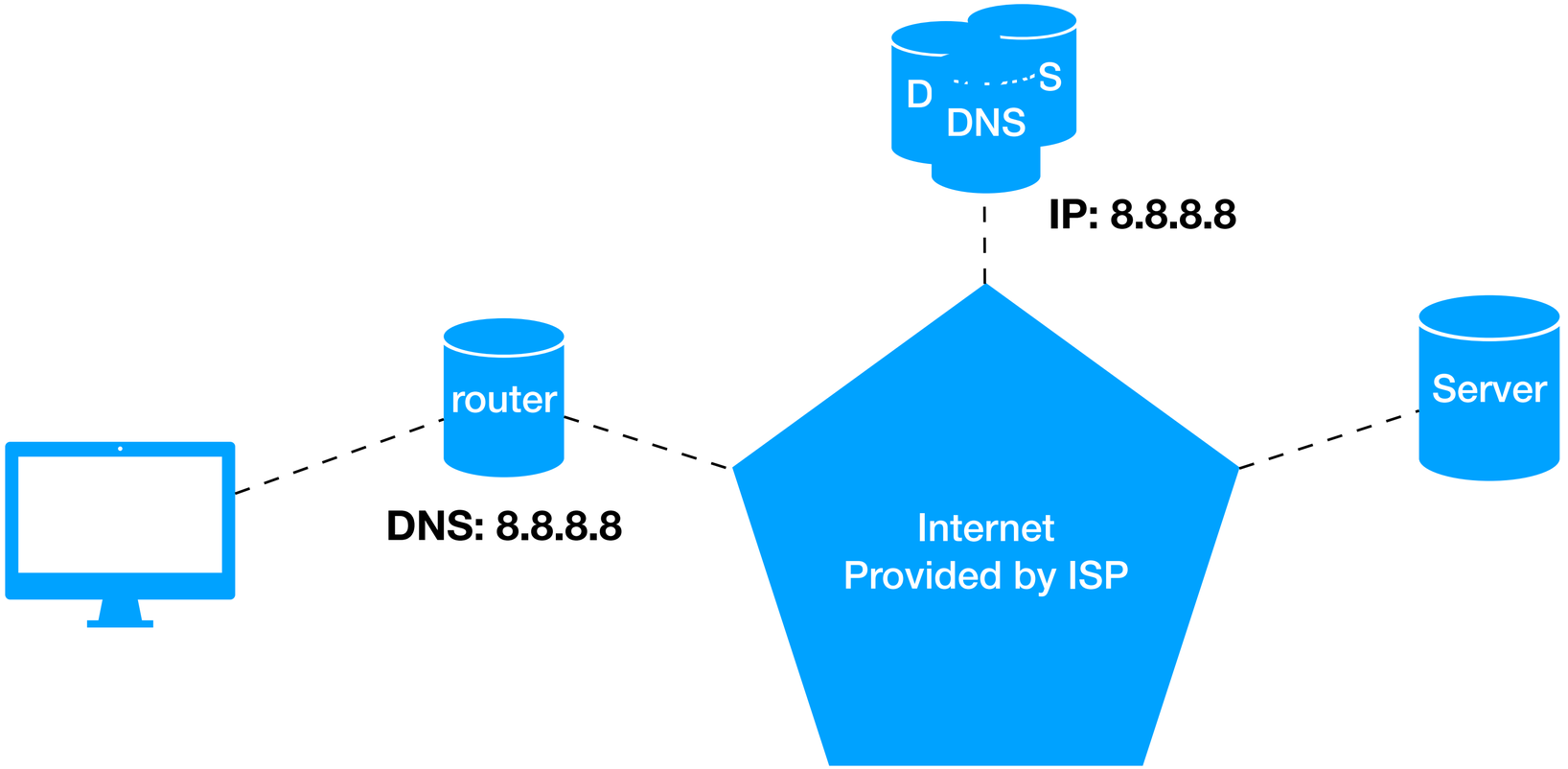

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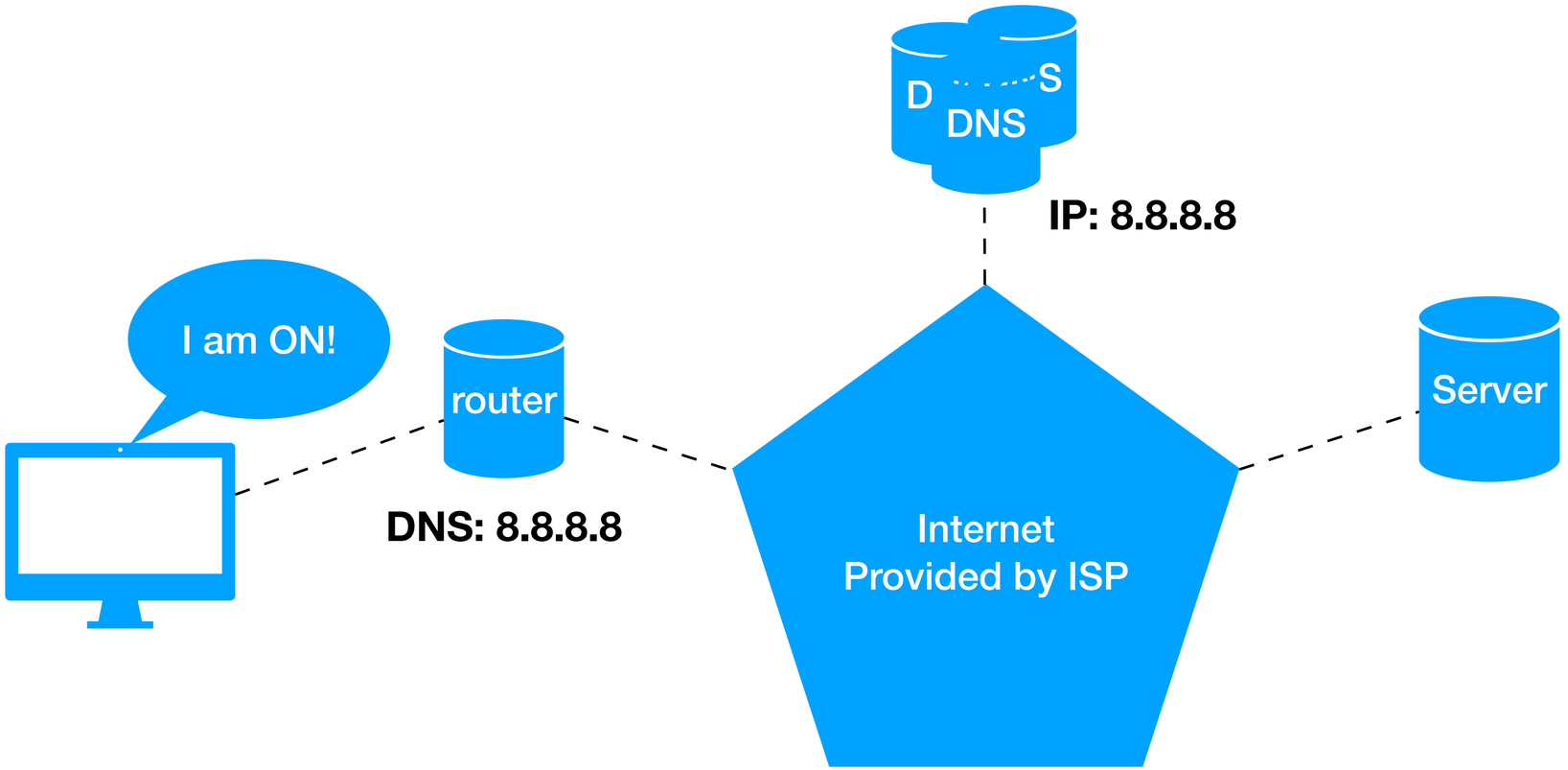

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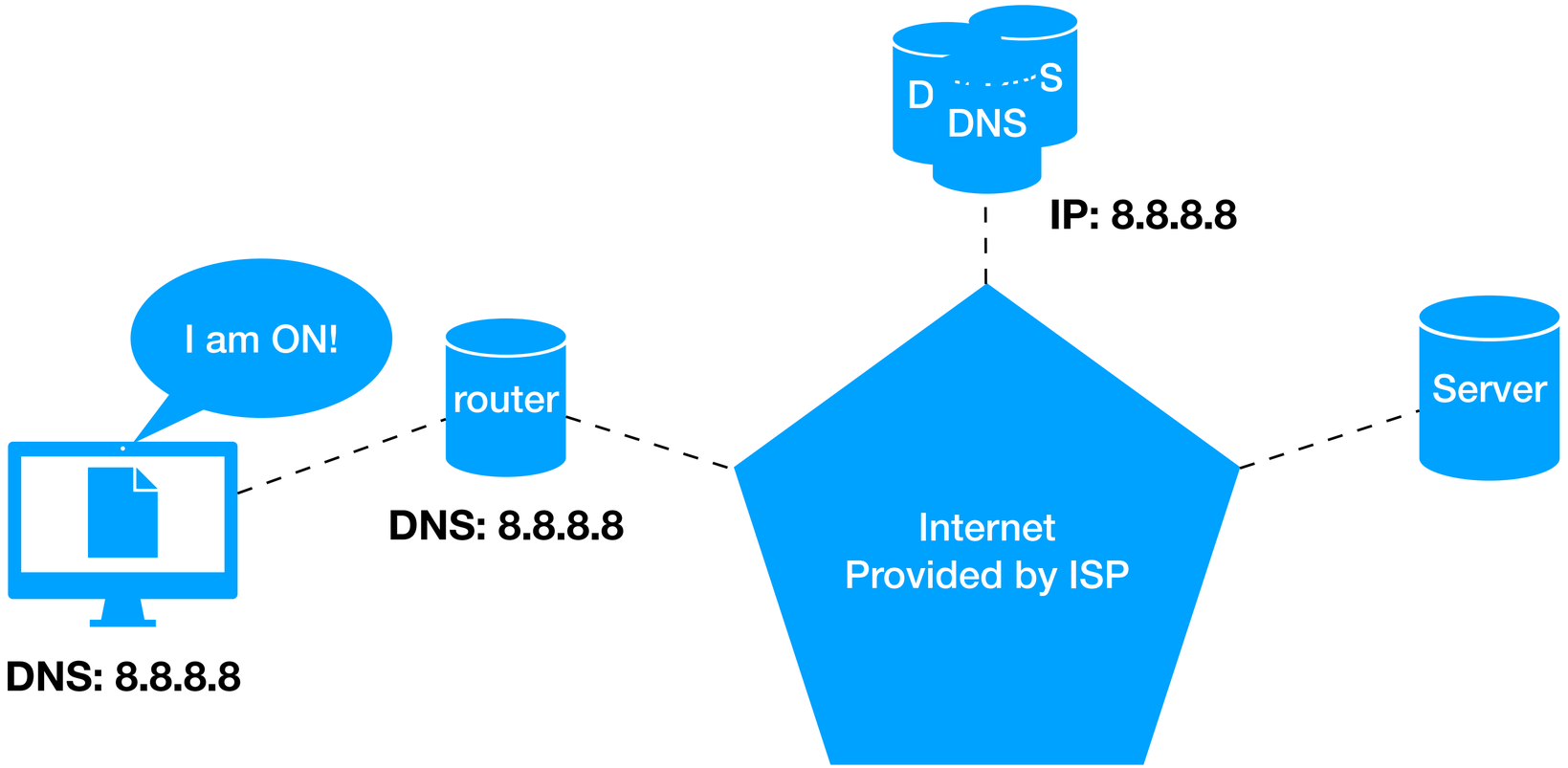

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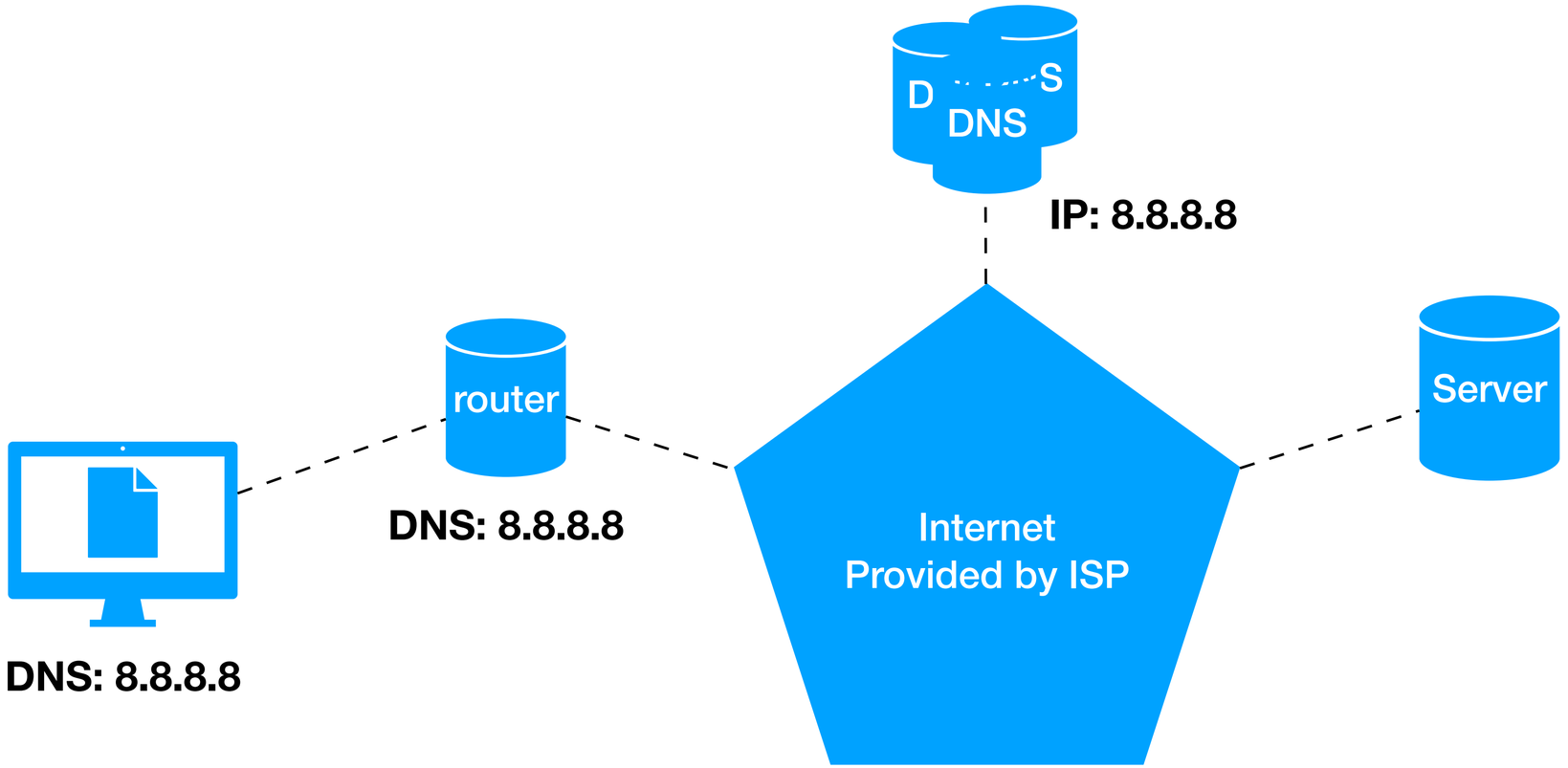

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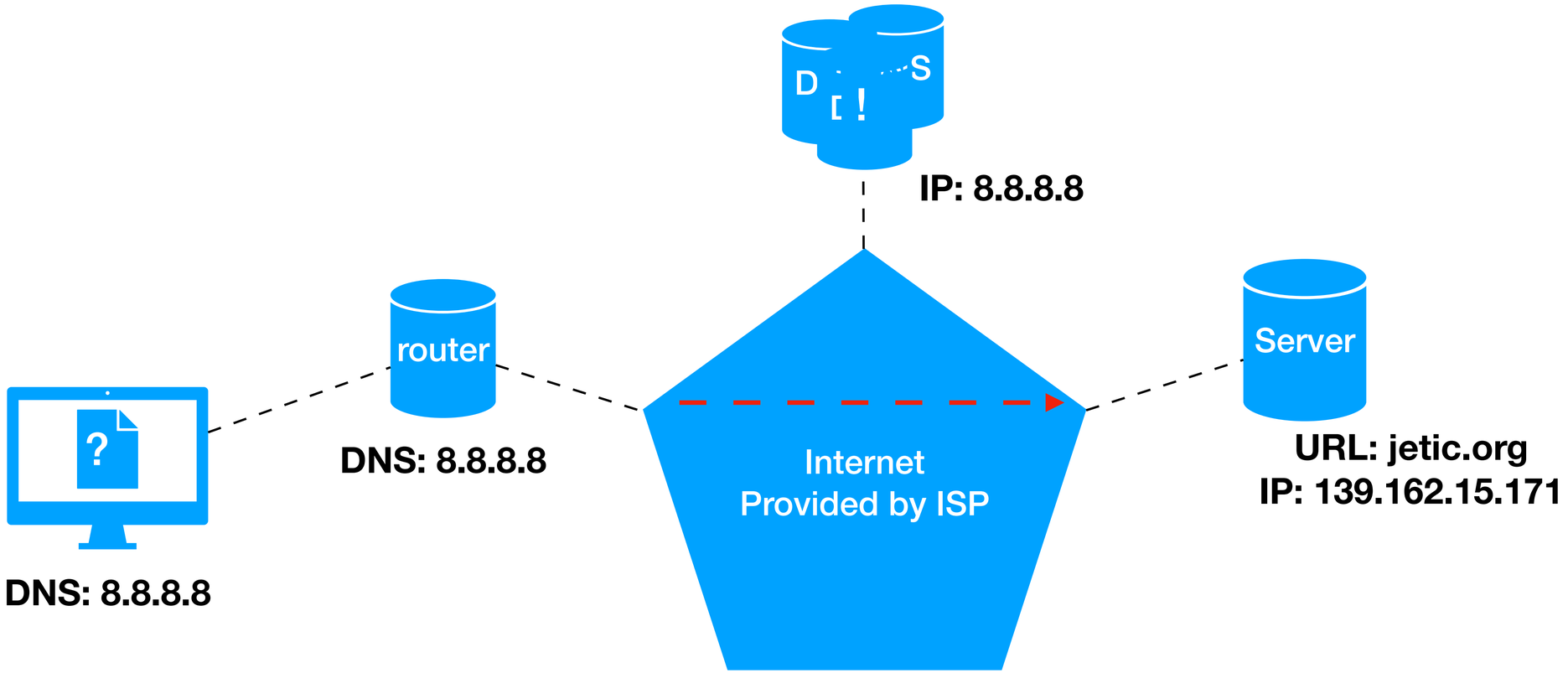

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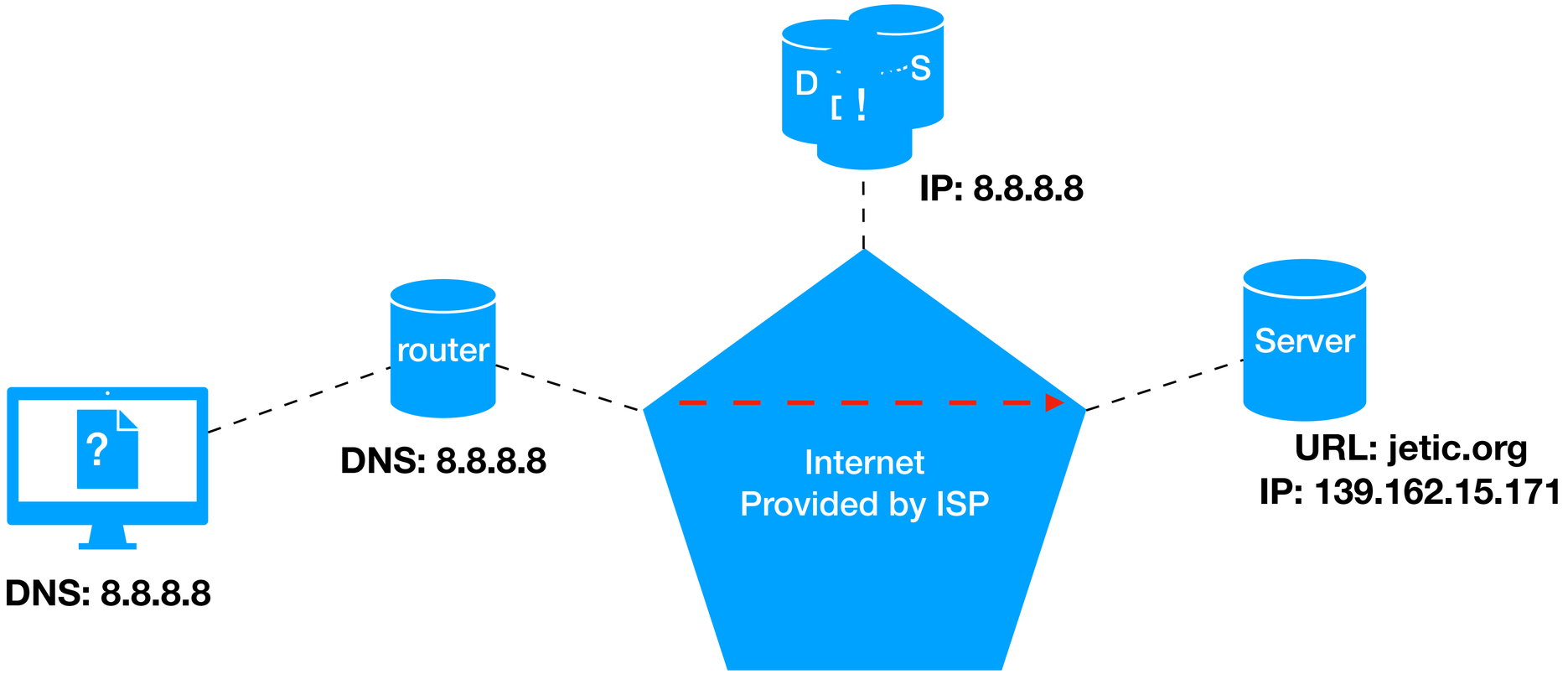

1. Request for IP address (DNS lookup)

Concept

P1
WWW

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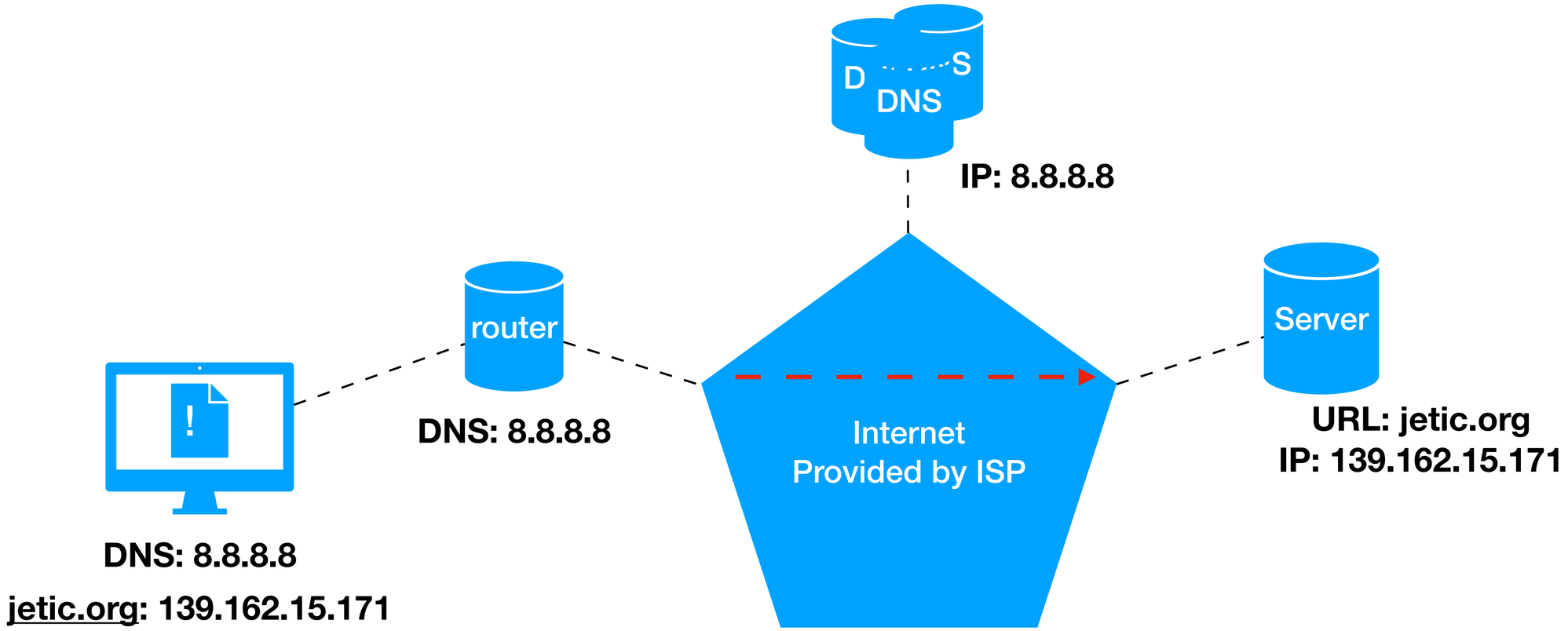

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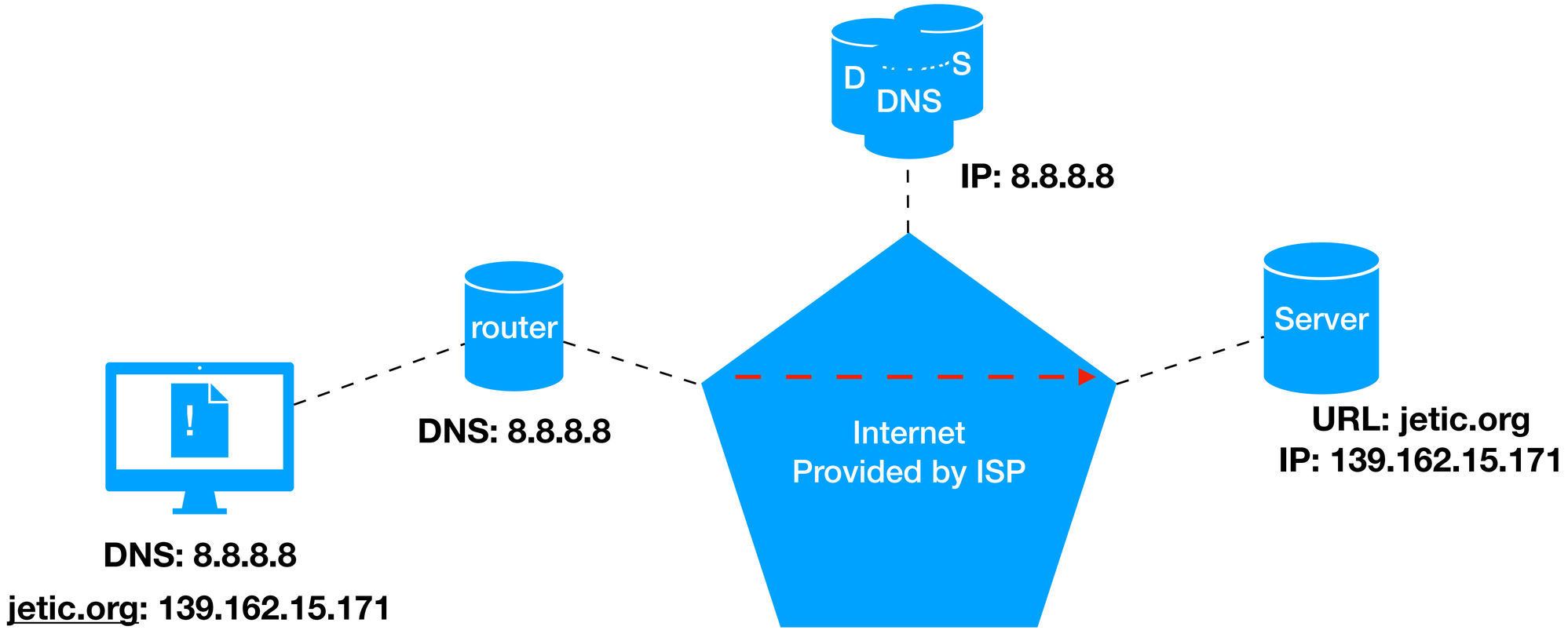

1. Request for IP address (DNS lookup)
2. Request for webpage

Concept

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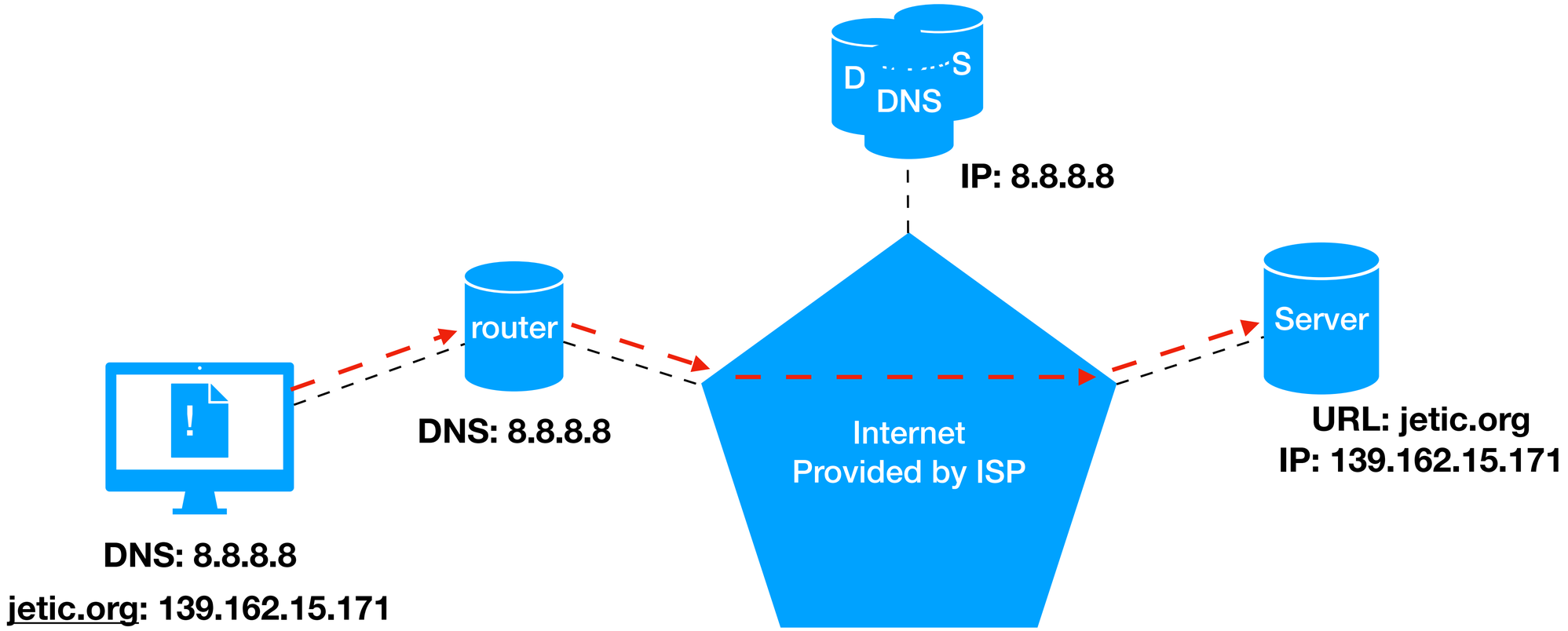

1. Request for IP address (DNS lookup)
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Concept

The Evolution of Human Race in Age of Internet Cont.

Summary

P2
Evolution

What makes the Internet so revolutionary?

- Automation
- Detachment
- Untraceable

Review

P2
Evolution

Detachment

- Are instant messages really instant?
- Polarised public opinions
  Is internet encouraging free speech or censoring it?
- Service detachment
  "Inhumane" automation of services

Review

P2
Evolution

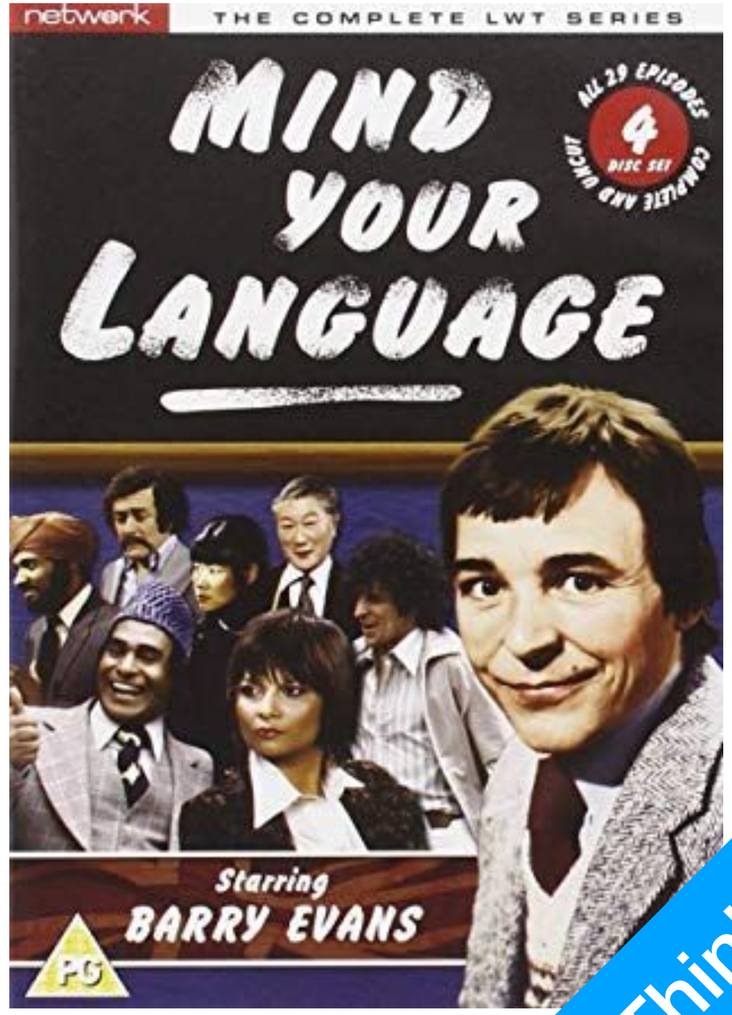
Detachment

- Have you gone out a day without internet?
- How frequent do you check your phone?
- When’s the last time you ate with friends WITHOUT ever checking your smartphone?
- Have you ever broken up with someone over SMS/Social Media?
- Have you ever had "read but no reply"?
- How often do conversations start/end with memes?

Think

P2
Evolution

Detachment



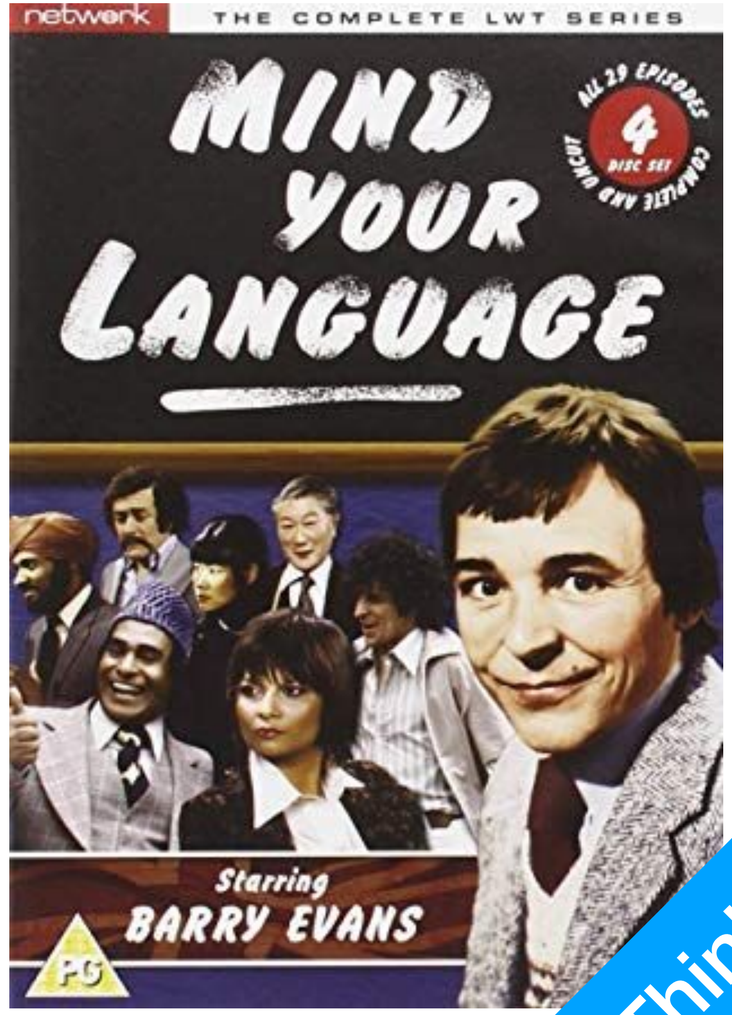
Think

1. Watch Mind Your Language on youtube, do you think this show would have been made in 2020?

P2
Evolution

Detachment

- Do you make your own choices?



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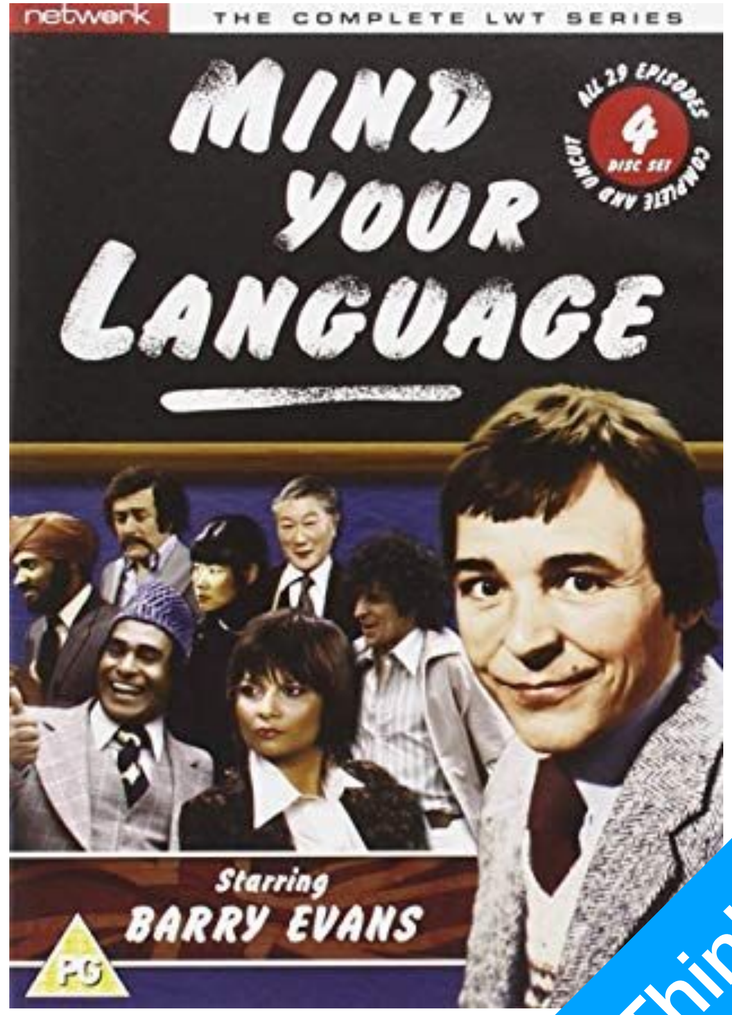
P2
Evolution

Detachment

- Do you make your own choices?

- Do you really make your own choices?
  Think about the bad things you've heard about Trump and Joe Biden. Are those sources really reliable?



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- Do you make your own choices?
- Do you really make your own choices?
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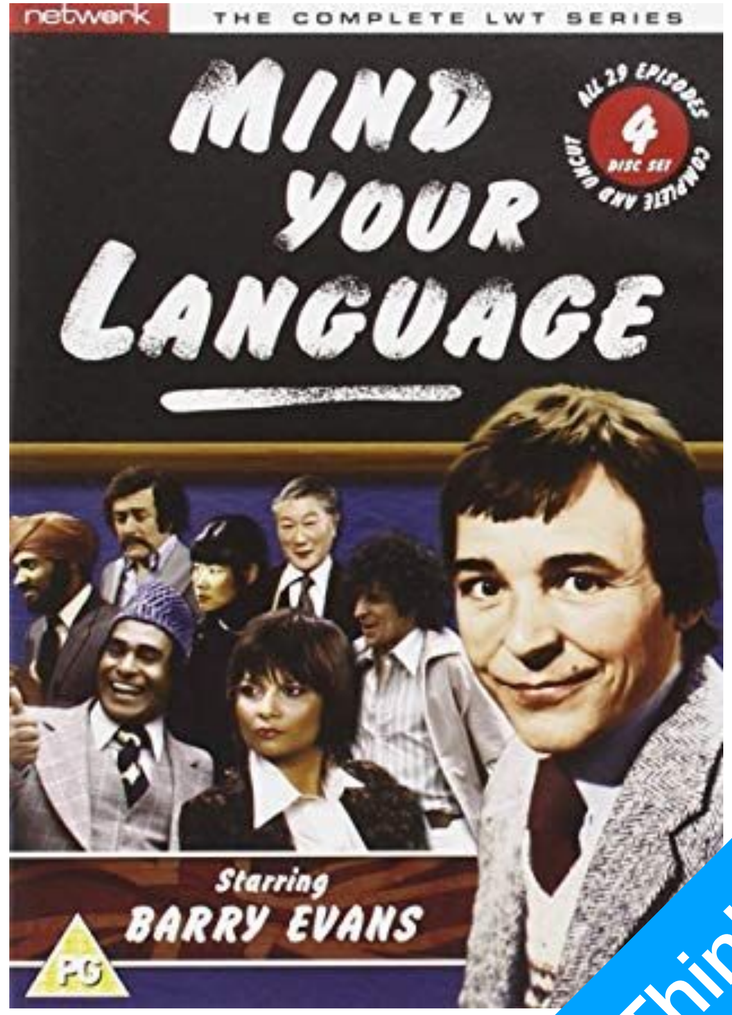
- What do you think about Political Correctness?



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P2
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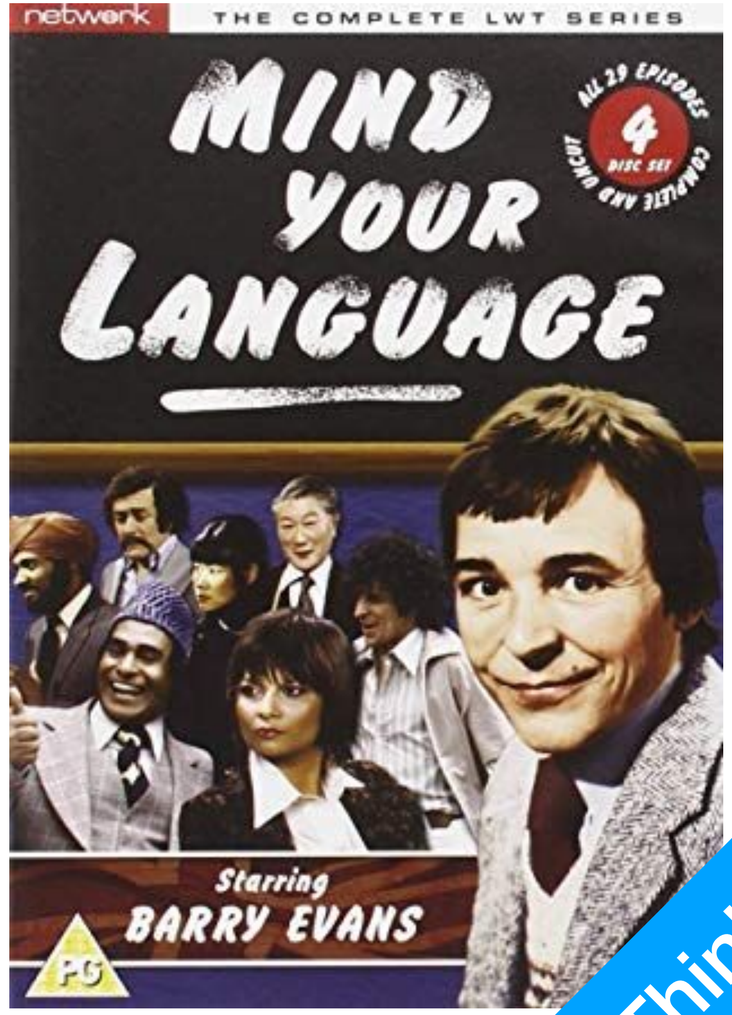
- What do you think about Political Correctness?
- What do you think about the Sino-Indian conflicts in recent days?



Think

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P2
Evolution

Detachment

Think

P2
Evolution

Detachment

- Have you tried Fido’s customer service?

Think

P2
Evolution

Detachment

- Have you tried Fido’s customer service?
- What do you think about online counselling?

Think

P2
Evolution

Detachment

- Have you tried Fido’s customer service?
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- Ever heard of Salesforce?

Think

P2
Evolution

Detachment

- Have you tried Fido’s customer service?
- What do you think about online counselling?
- Ever heard of Salesforce?
- What do you think about online education?

Think

P2
Evolution

Untraceable

- Blockchain and Cryptocurrencies
- Cyberbullying and Privacy
- Darknet

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live
    - interact with family and friends, entertain, eat, and travel

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live
    - interact with family and friends, entertain, eat, and travel
  - The way we work

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live
    - interact with family and friends, entertain, eat, and travel
  - The way we work
    - Online businesses

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live
    - interact with family and friends, entertain, eat, and travel
  - The way we work
    - Online businesses
    - Intelligent business systems

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- What has the internet changed?
  - The way we live
    - interact with family and friends, entertain, eat, and travel
  - The way we work
    - Online businesses
    - Intelligent business systems
  - The way we die

Concept

P2
Evolution

The Evolution of Human Race in Age of Internet

- Internet is a tool.
- DO NOT BE USED BY A TOOL.

Concept