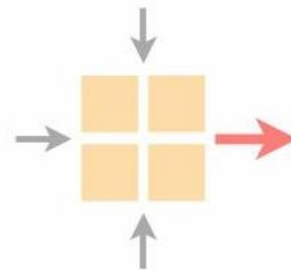


# Communication Networks

Spring 2025



Weiran Wang

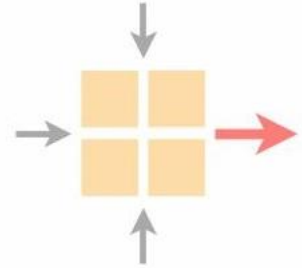
<https://comm-net.ethz.ch/>

ETH Zürich

May 22, 2025

# Communication Networks

## Exercise 11

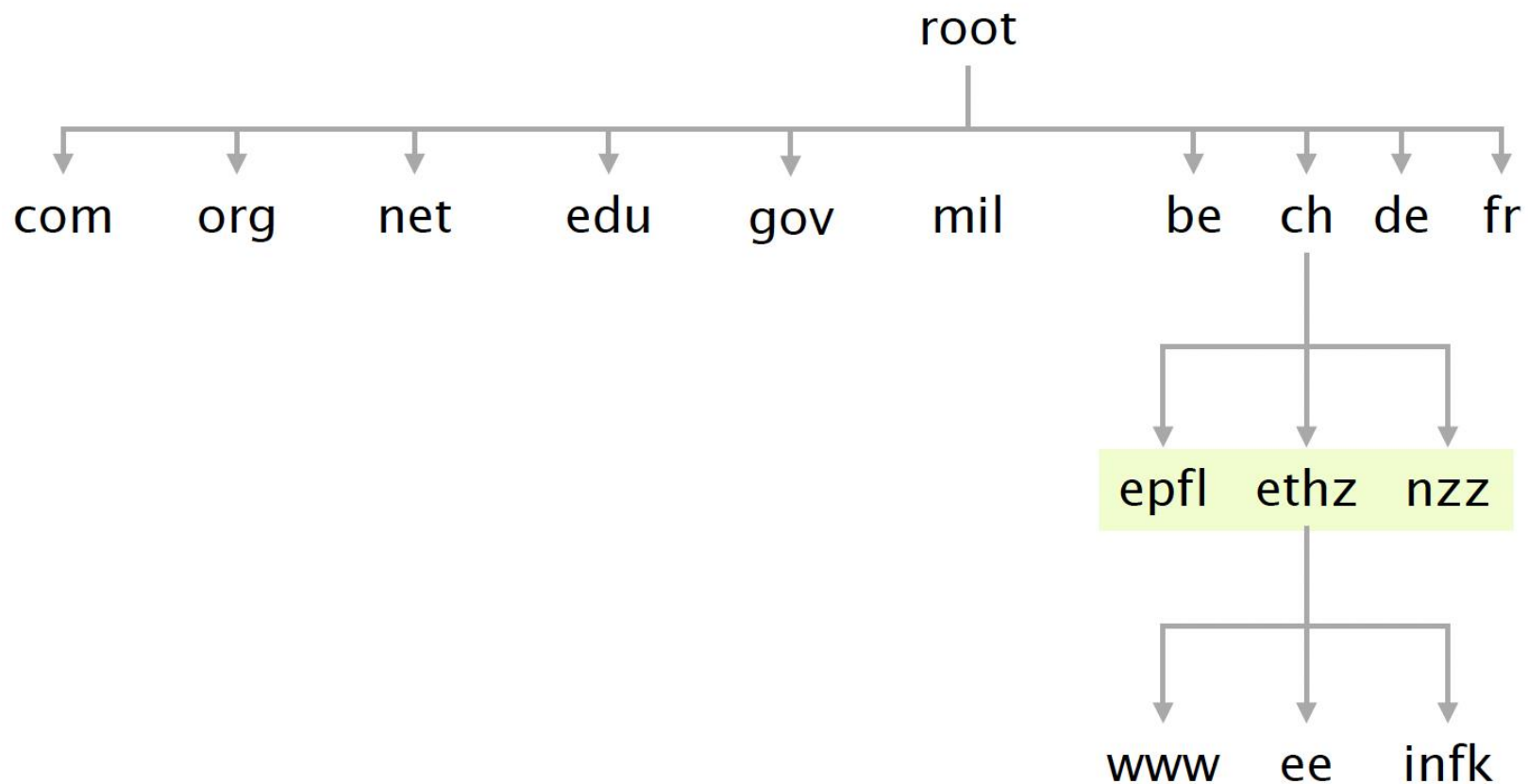


### Important lecture topics

Introduction to this week's exercise

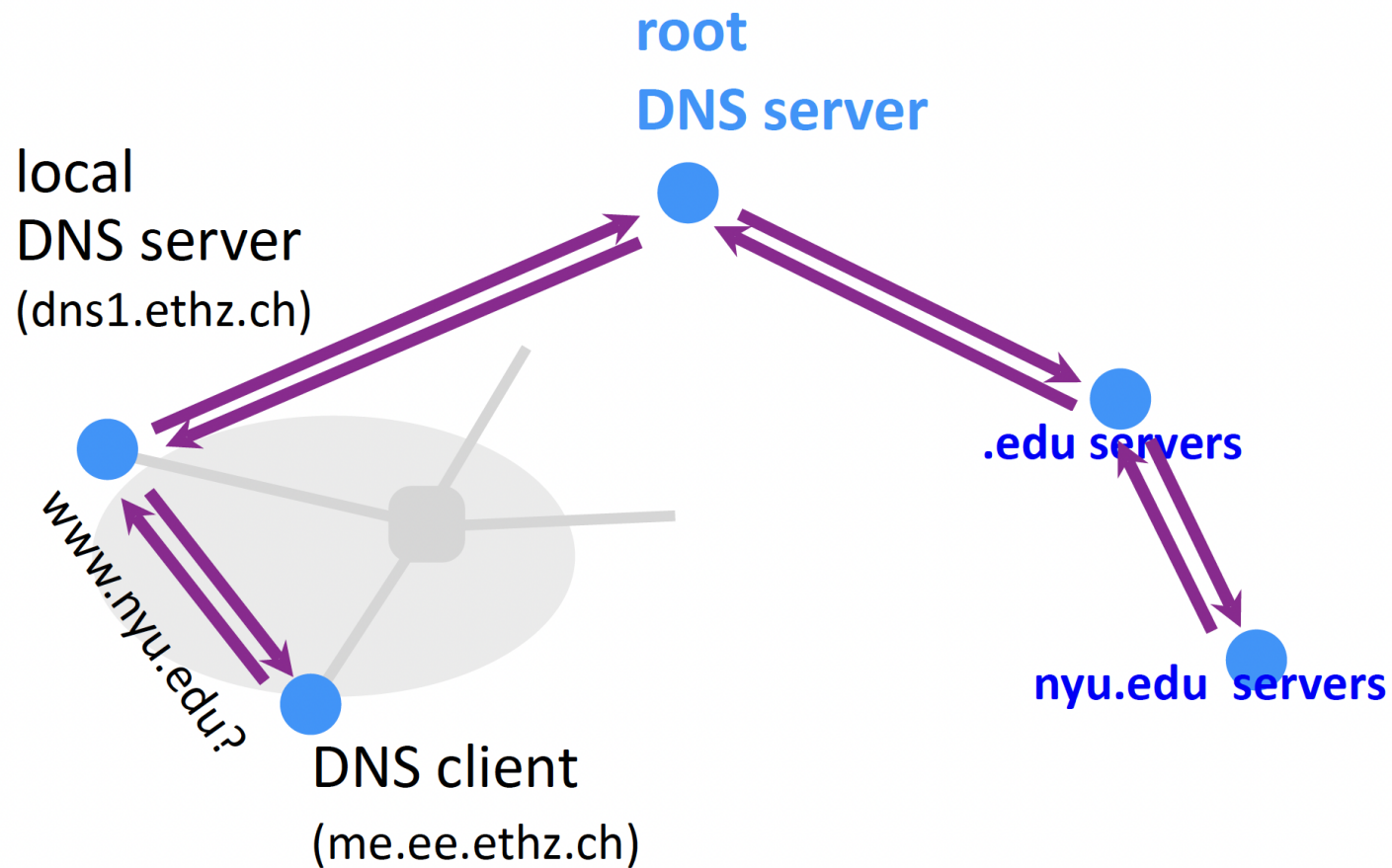
Time to solve the exercise/  
Transport project Q&A

Any TLD DNS server knows the authoritative DNS servers for its subdomains

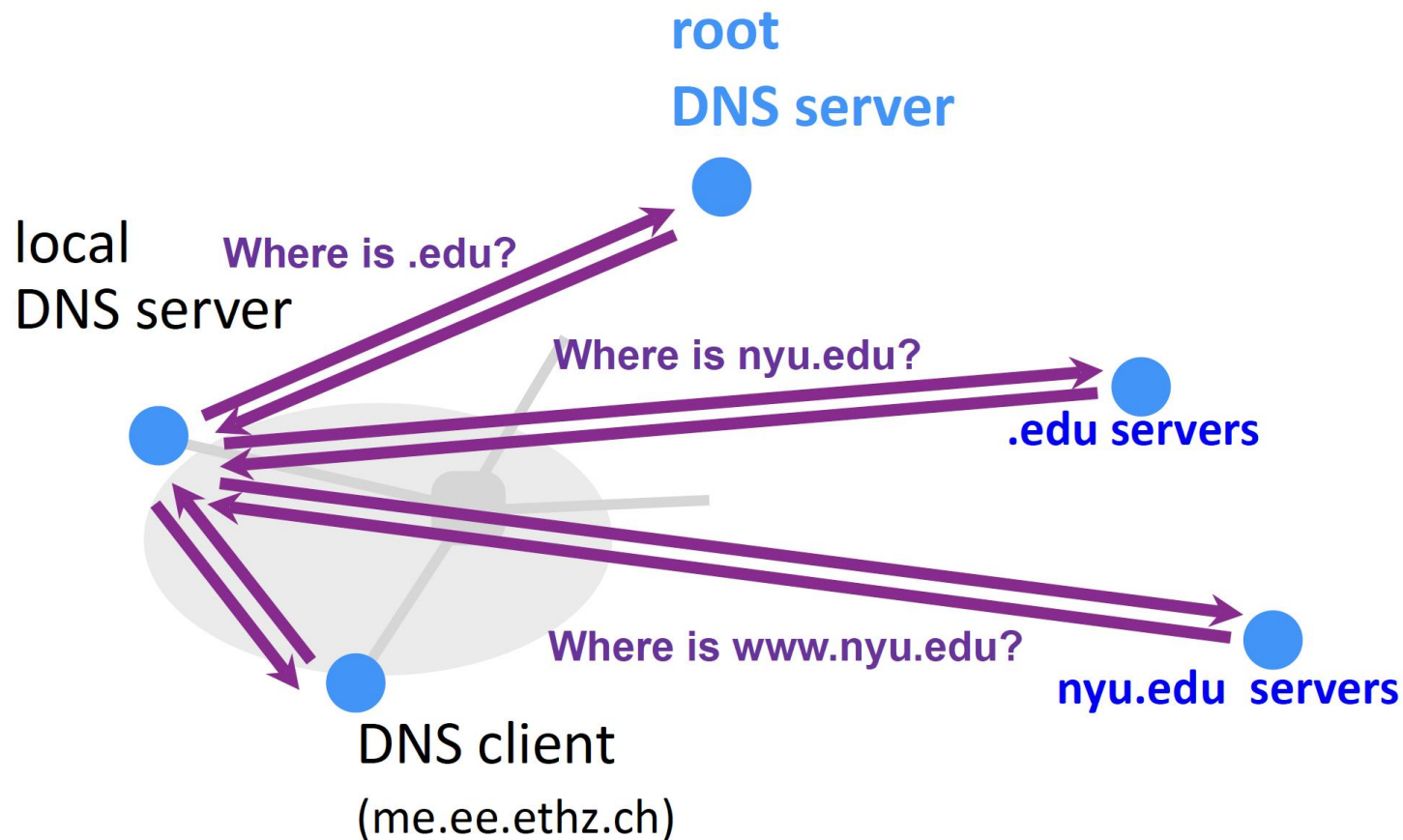


DNS resolution can either be  
recursive or iterative

A **recursive** resolver does all the work,  
and gets the final answer



An **iterative** resolver can resolve further,  
but instead returns a referral

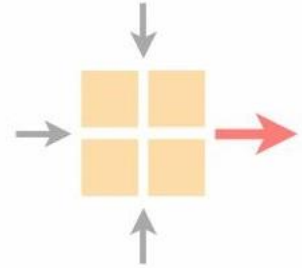


# Important Commands

<code>dig -x &lt;ip-addr&gt;</code>	Reverse lookup for IP to DNS mapping
<code>dig @&lt;root&gt; &lt;domain&gt;</code>	Perform a DNS query for a given domain using a specific DNS root server
<code>telnet &lt;domain&gt; &lt;port&gt;</code>	Test TCP connection to domain and port
<code>ip route</code>	Show the routing table
<code>cat &lt;file-path&gt;</code>	Print file content
<code>GET / HTTP/1.1</code>	Request the homepage from the server
<code>HOST: &lt;domain&gt;</code>	Specify the domain name of the server

# Communication Networks

## Exercise 11



Important lecture topics

Introduction to this week's exercise

Time to solve the exercise/  
Transport project Q&A



## Task 11.1 Local vs. authoritative DNS server

To reduce resolution times,  
DNS relies on caching.

```
dig @<DNS-Server> <Domain Name>
```

```
nslookup <Domain Name> <DNS-Server>
```

## Task 11.2 DNS basic (Exam 2019)

recursive or iterative

## Task 11.3 HTTP host header

```
telnet comm-net.ethz.ch 80
```

```
GET / HTTP/1.1
```

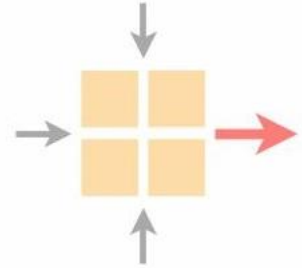
```
Host: comm-net.ethz.ch
```

## Task 11.4 Loading a website (Exam 2017)

- Stylesheet `www.your-shop.ch/style.css`
- image `www.your-shop.ch/logo.png`
- image `images.your-shop.ch/product.jpg`
- Facebook like button `cdn.facebook.com/like.png`
- Facebook “tracking” code `www.facebook.com/track.js`
- Google “tracking” code `www.google.com/track.js`

# Communication Networks

## Exercise 11



Important lecture topics

Introduction to this week's exercise

Time to solve the exercise/  
Transport project Q&A

**Reliable Transport Project Deadline: May 30**