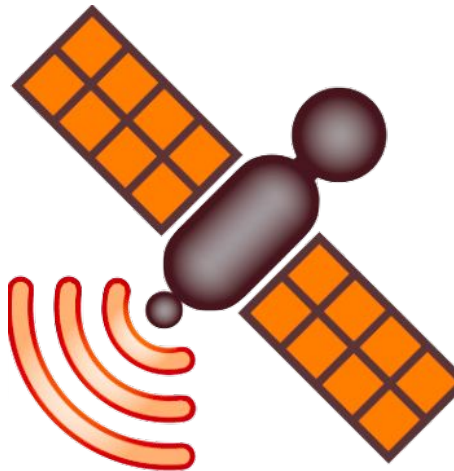


# Network

\*

저녁이 있는 프로젝트  
오상훈  
6 Hours, 1 Month

# 최종여행물 (자료 수집 가능 마인드맵)



# 과정 체험(1) - goorm.io

- ❖ 같이 하기
  - Create react Server & Access with URL

The screenshot shows the goorm.io dashboard. At the top, the 'goormide' logo is highlighted with a red box. Below it, there are navigation links: Pricing, Dashboard, Release Notes, Payment Info, Coupon, and H. The main content area has two sections. The first section, 'Stop this container', has a red box around the 'Stop' button and a warning message: 'All running 'test\_' container will be stopped.' The second section, 'Delete this container', has a red box around the 'Delete' button and a warning message: 'This action can not be undone!'. Below these is the 'Manage Network Settings' section. It has a 'Run URL & Port' table with a red box around the 'test--ffqgn.run.goorm.io' URL. The table has columns for 'URL' and 'Port'. The 'Port' is 3000. Below the table is the 'SSH' section with a table of SSH connections. The table has columns for 'Internal Port', 'IP', 'External Port', and 'Command'. The 'Command' column has a red box around the text 'ssh -p 58727 root@54.180.104.117' and a blue 'Issued Password' button.

goormide Pricing Dashboard Release Notes Payment Info Coupon H

Stop this container **Stop** All running 'test\_' container will be stopped.

Delete this container **Delete** This action can not be undone!

Manage Network Settings

Run URL & Port + Add Edit

URL	Port
test--ffqgn.run.goorm.io	3000

SSH

Internal Port	IP	External Port	Command
22	54.180.104.117	58727	ssh -p 58727 root@54.180.104.117 <b>Issued Password</b>

### ❖ URL 접속

- Run Server
- Copy URL & 브라우저 접속  
ex) <https://test--ffqgn.run.goorm.io/>

```
$ vi ?/src/index.js
```

```
...
```

```
// ReactDOM.render(<App />, ...);
```

→ 주석 처리

```
...
```

```
$ vi ?/src/index.js
```

```
...
```

```
<div id="root">Good !! </div>
```

```
...
```

- 브라우저 URL 접속과 변화 확인

### ❖ SSH 접속

- Copy SSH Command
- Access SSH Server

```
ex) $ putty.exe -ssh ssh -p 55032 root@52.79.195.169
```

```
$ cd ../workspace/test_server
```

```
$ rm ./public/index.html
```

- 브라우저 URL 접속과 변화 확인

## 현재는 어떤 사회인가 ?

- ❖ SNS의 힘  
<https://www.youtube.com/watch?v=yQ7mkhGOpHQ>
- ❖ 사물인터넷  
<https://www.youtube.com/watch?v=vE7mreyEQNs>
- ❖ 초연결 초지능 사회  
[https://www.youtube.com/watch?v=0TEdgdTA\\_T0](https://www.youtube.com/watch?v=0TEdgdTA_T0)





네트워크 = 다리 있는 섬.

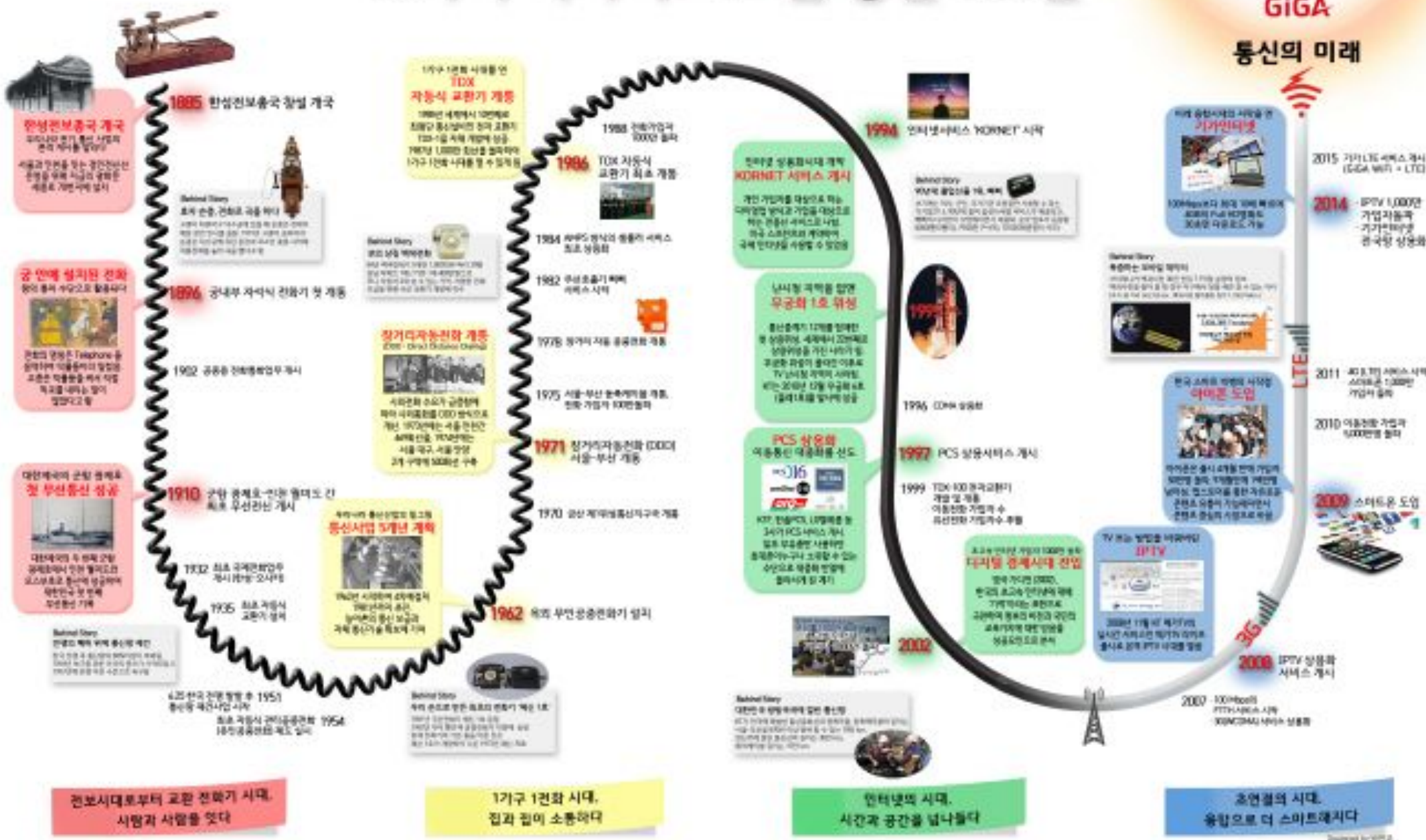




## 13가지 이야기로 보는 통신 130년

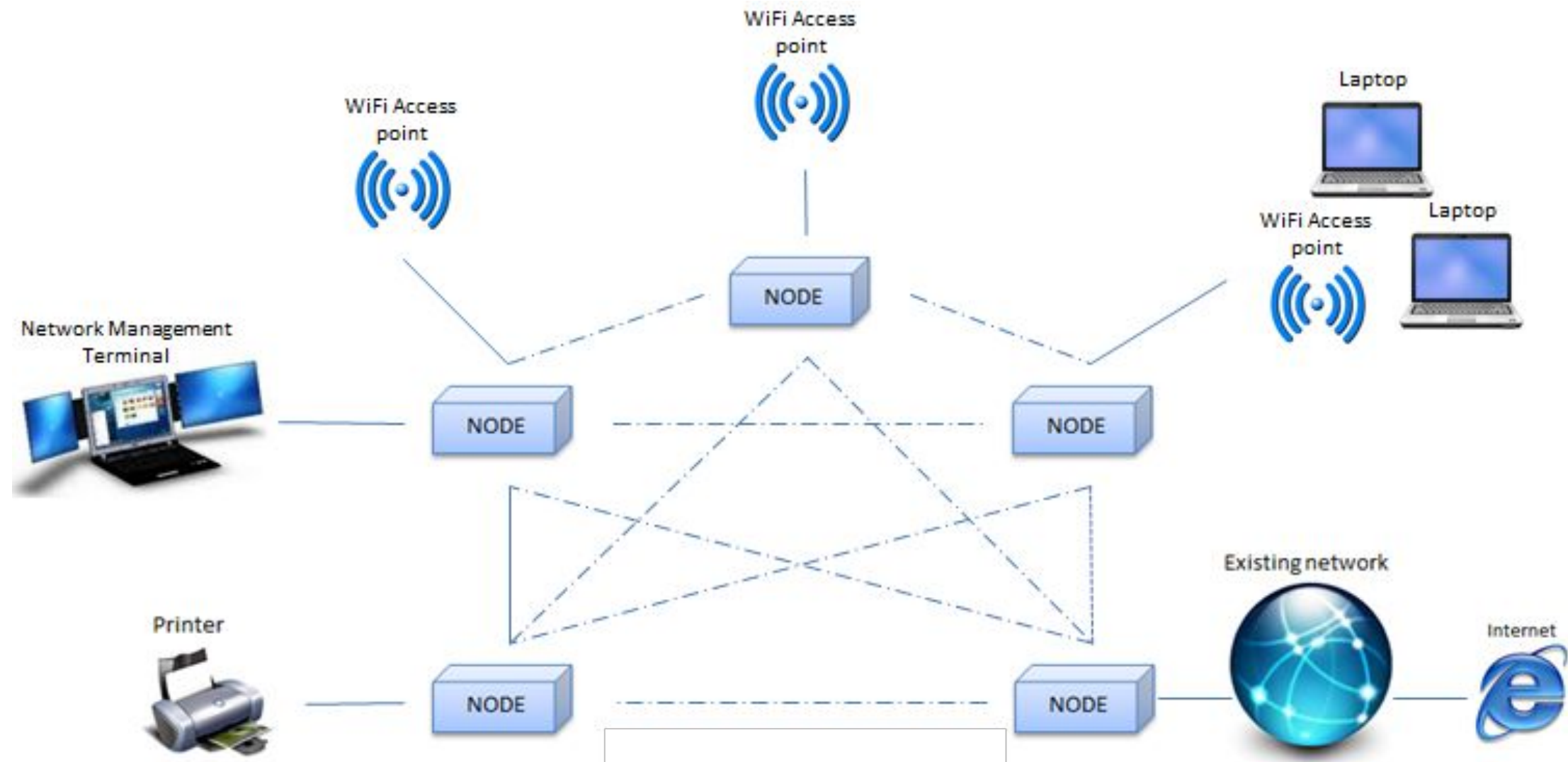
5G  
GiGA

## 통신의 미래



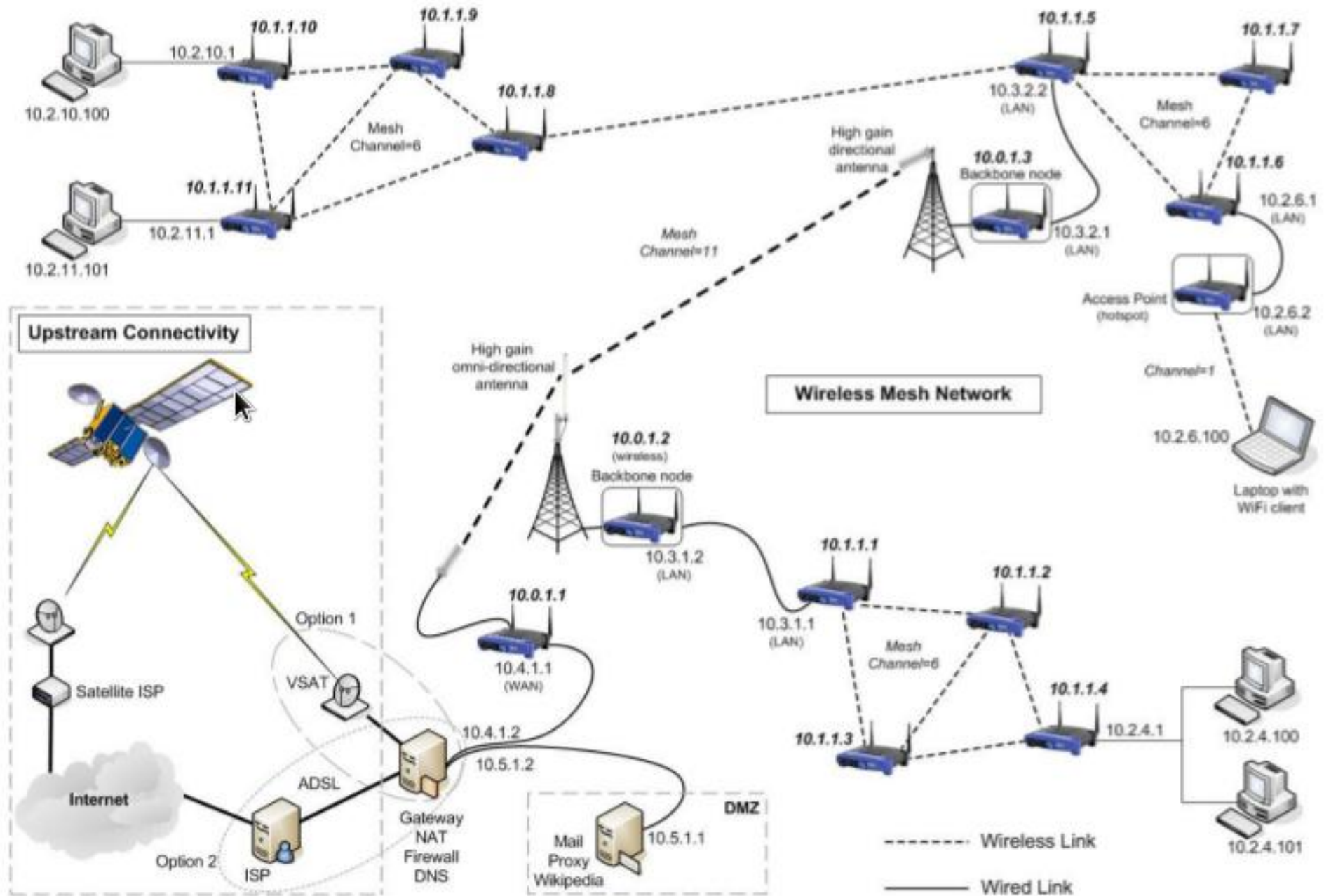
# Network

- ❖ 통신 위한 Terminal(단말), Link, Node 집합.
- ❖ 랜(LAN)이나 모뎀 등 통신 설비 갖춘 컴퓨터 이용 서로 연결시켜 주는 조직이나 체계



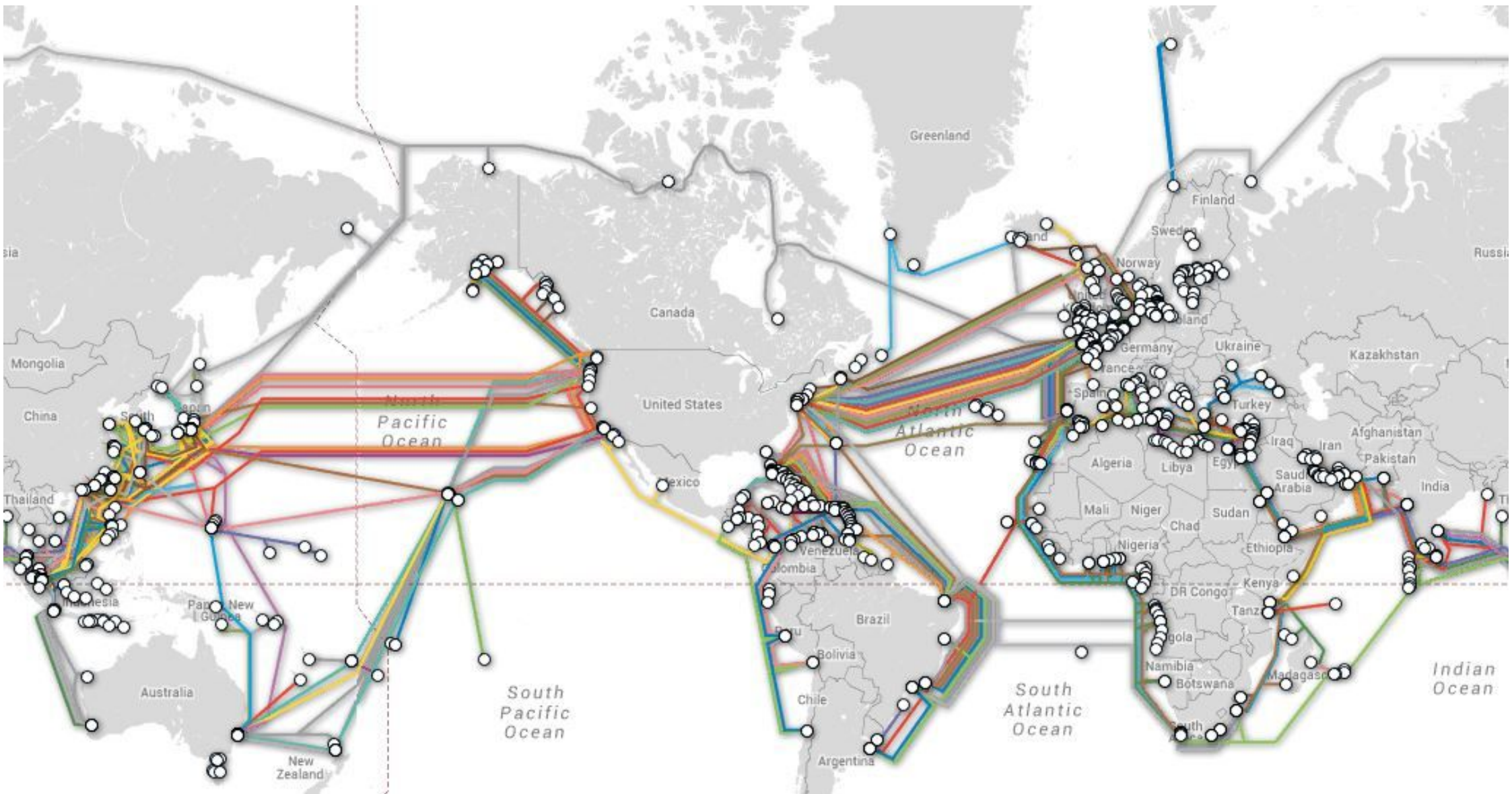


# Route - Big

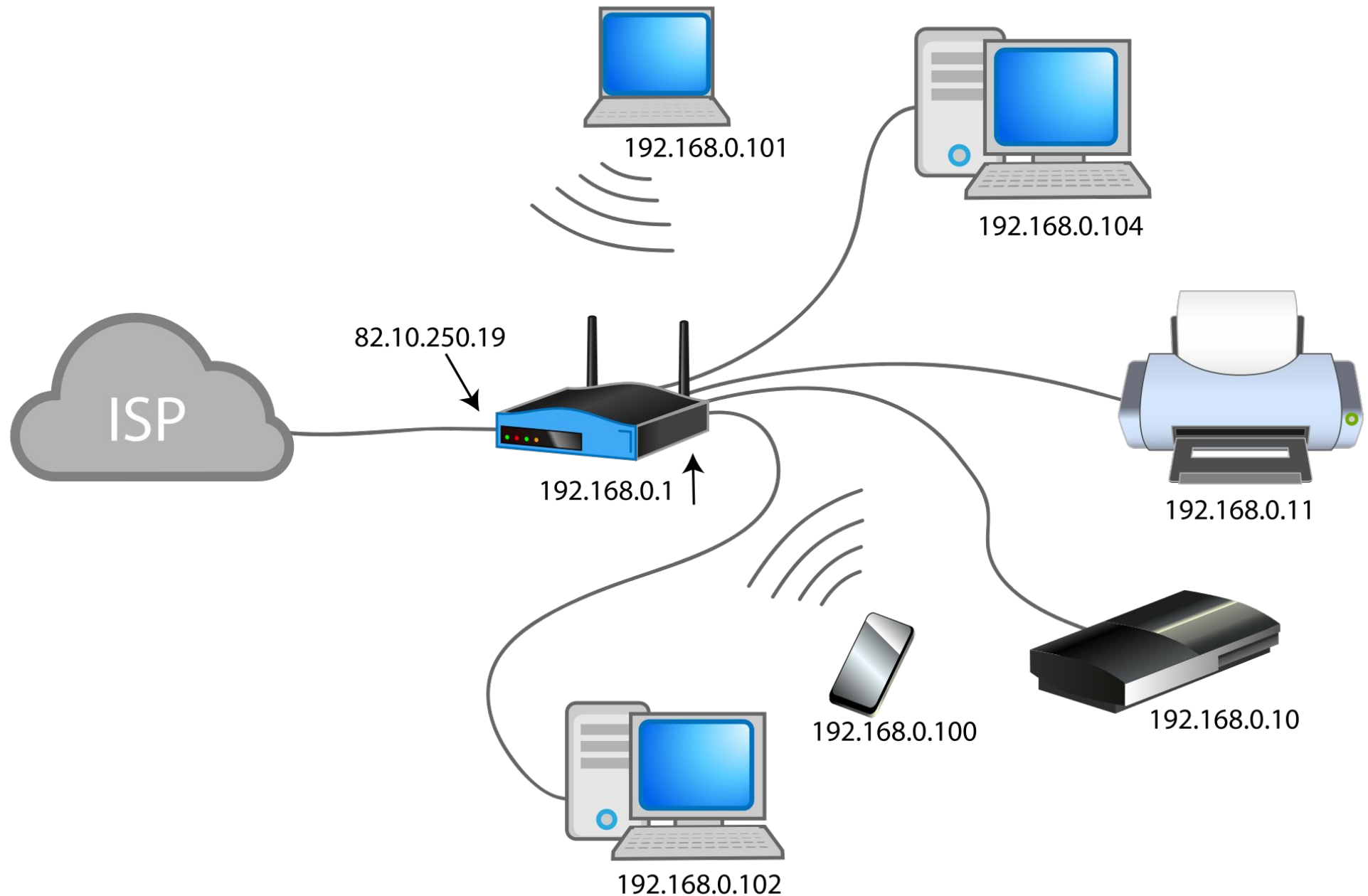


# 해저 통신 연결도

❖ <https://www.telegeography.com/>



## Route - Small(Intranet)



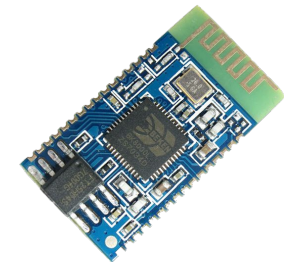
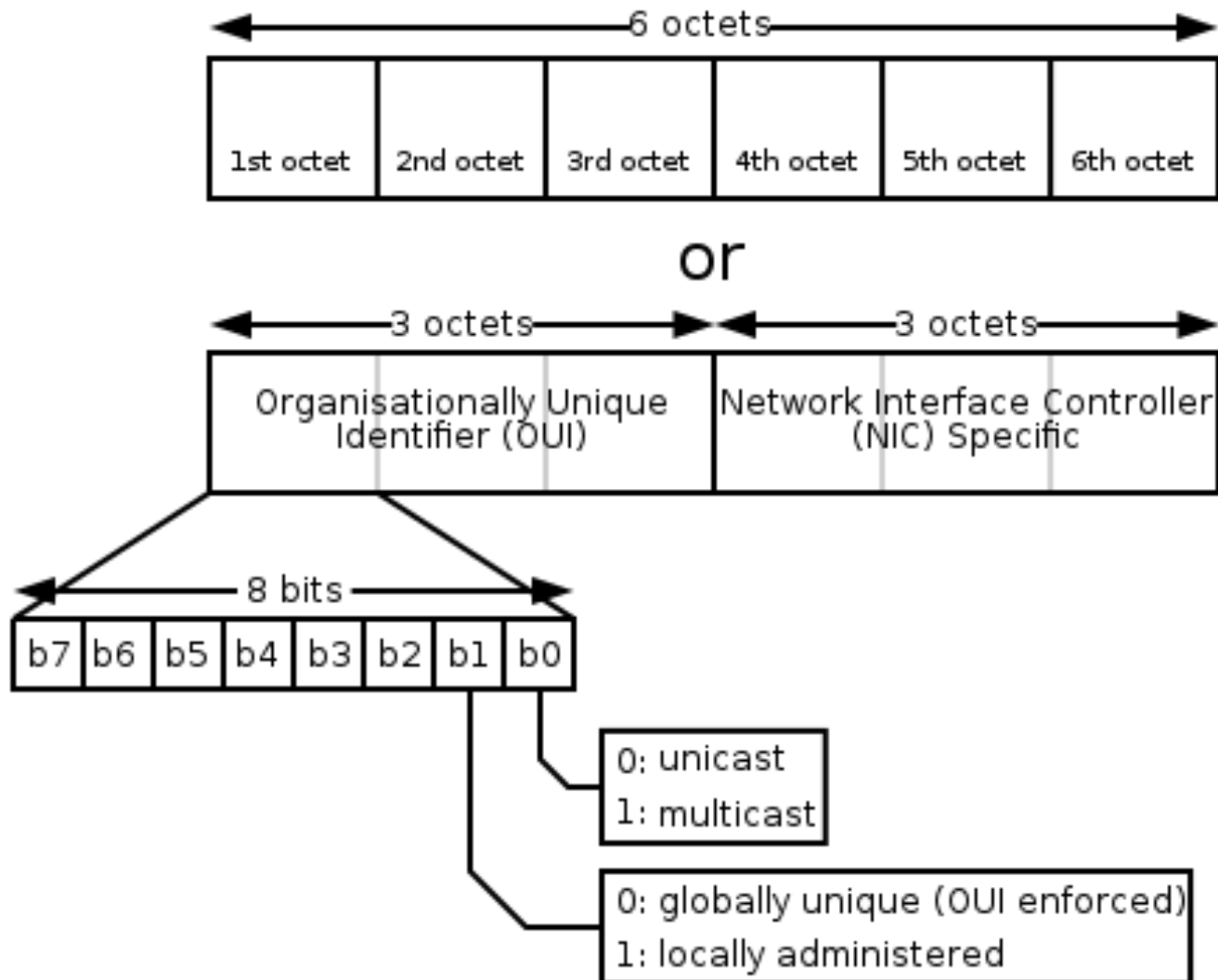


# Network - Linux Command

- ❖ **ifconfig**(interface configurator) : view and assign IP Address and Hardware / MAC address  
~\$ ifconfig -a      ~\$ ifup eth0 → Enable      ~\$ ifdown eth0 → Disable  
~\$ less /etc/hosts    ~\$ ifconfig eth0 192.168.50.5 netmask 255.255.255.0
- ❖ **ping**(Packet INternet Groper) : test connectivity between two nodes  
~\$ ping 4.2.2.2      ~\$ ping -c 5 www.tecmint.com
- ❖ **traceroute** : network troubleshooting utility, using response icmp  
~\$ traceroute google.com    ~\$ traceroute 4.2.2.2
- ❖ **nslookup** : find out DNS related query  
~\$ apt-get install dnsutils  
~\$ nslookup -debug yahoo.com  
~\$ nslookup -query=ns www.yahoo.com
- ❖ **route** : shows and manipulate ip routing table  
~\$ route add -net 10.10.10.0/24 gw 192.168.0.1    → del  
~\$ # route add default gw 192.168.0.1
- ❖ **host** : find name to IP or IP to name in IPv4 or IPv6 and also query DNS records  
~\$ host www.google.com      ~\$ host -t CNAME www.redhat.com
- ❖ **dig** (domain information groper) : query DNS related information like A Record, CNAME, MX Record etc

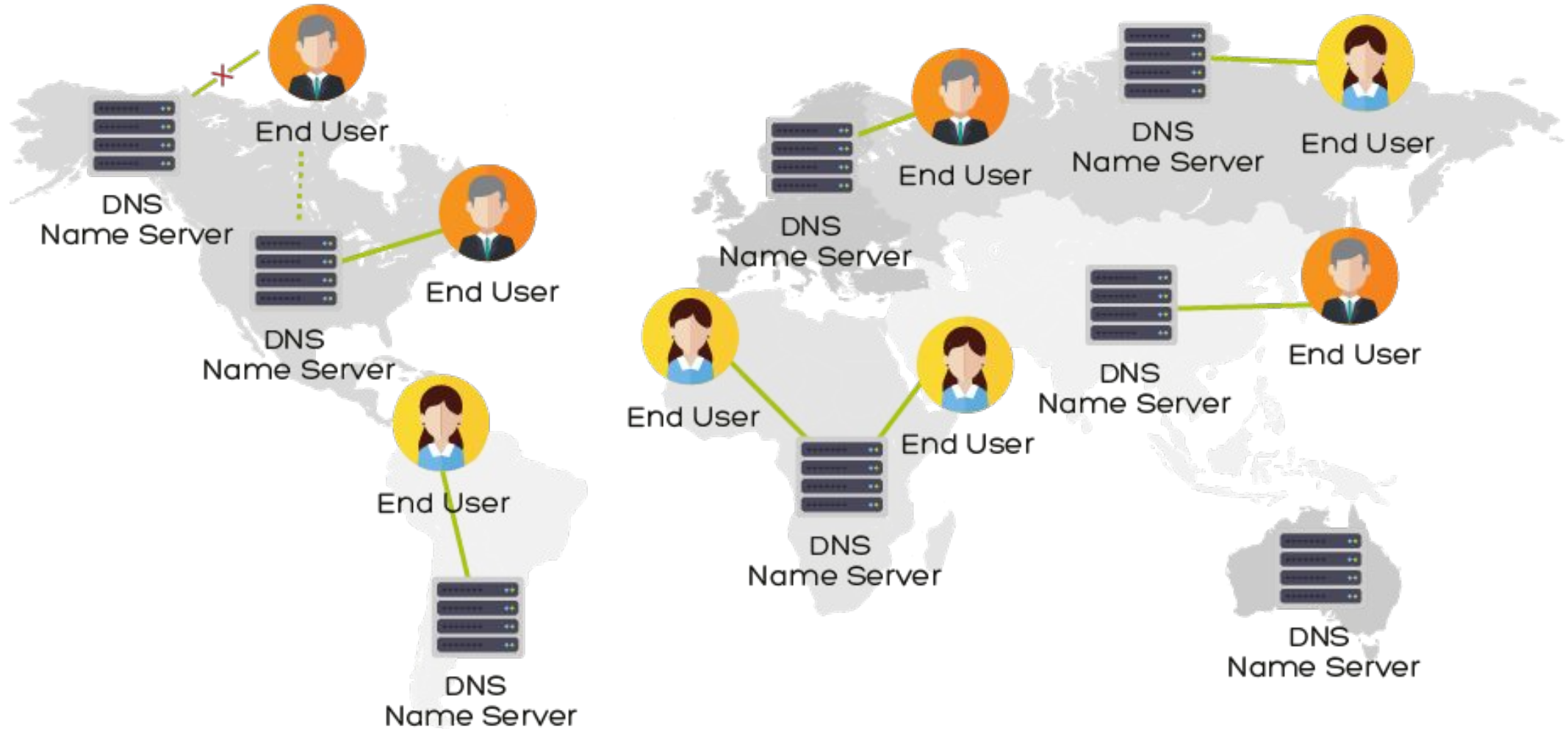
# NIC(network interface controller)

- ❖ MAC address(media access control address) : unique identifier assigned to network interfaces



# DNS(Domain Name System)

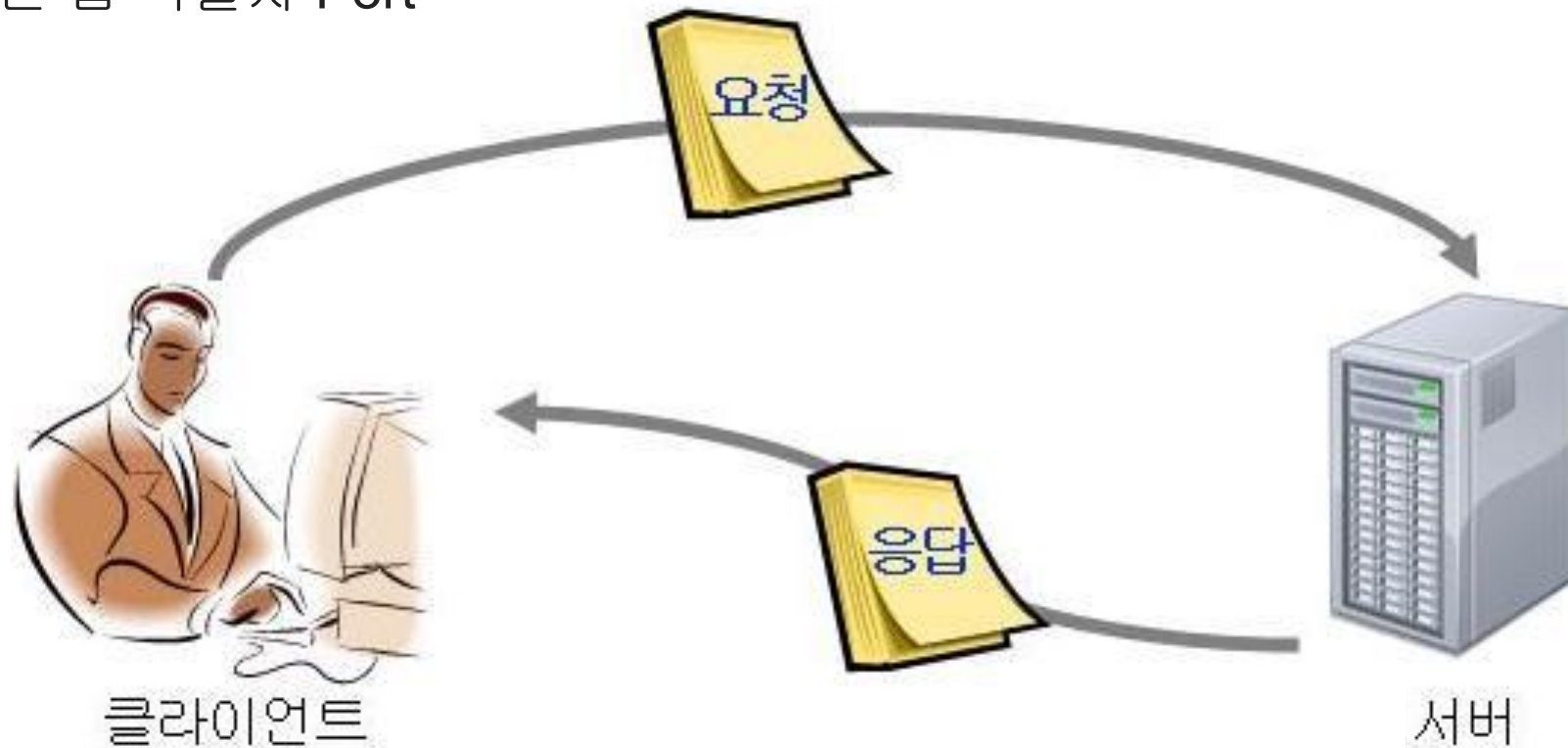
- ❖ 컴퓨터 URL 사용 거부 ?
- ❖ 도메인 이름을 호스트 네트워크 주소 변환 역할





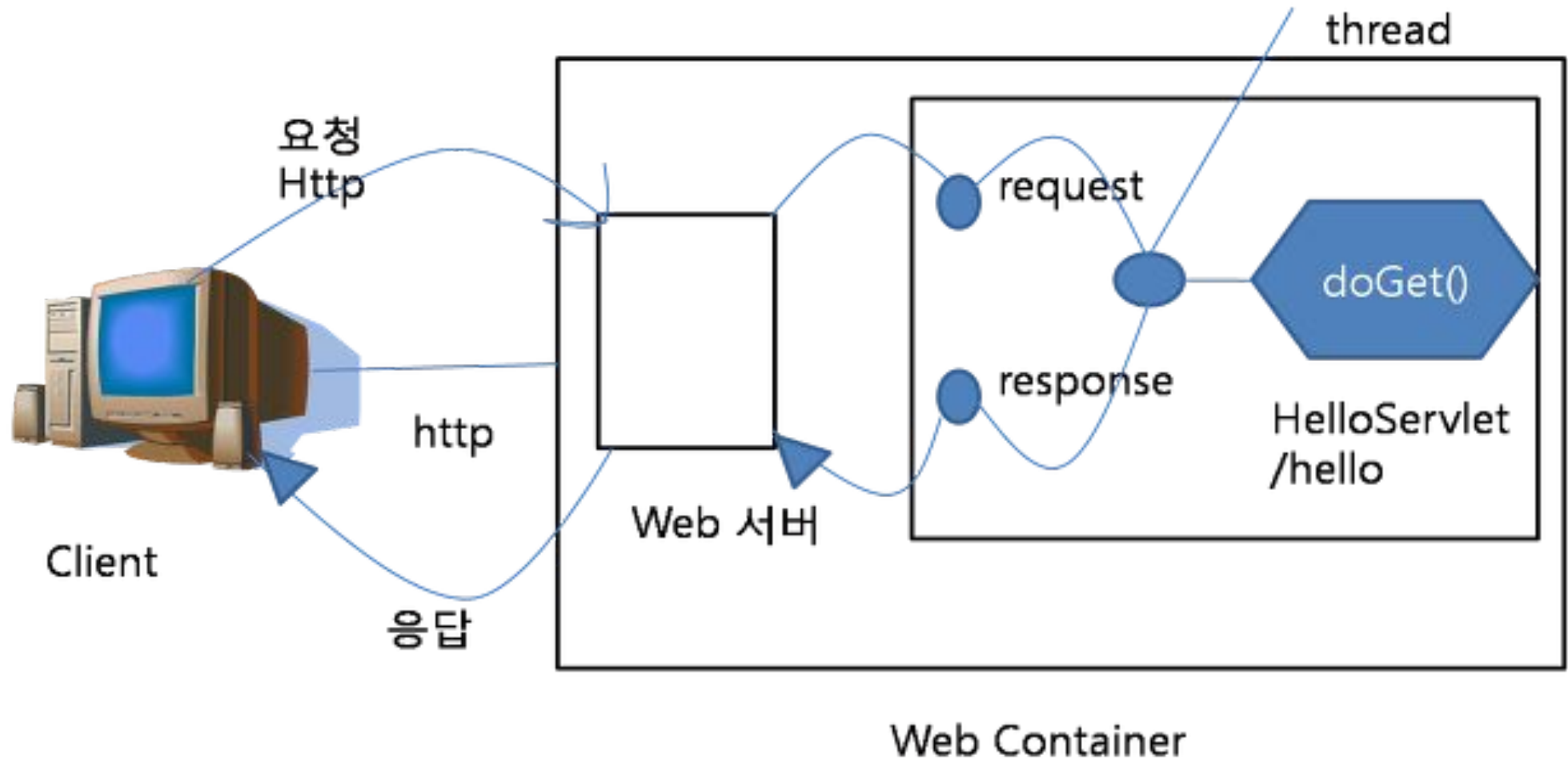
## 웹 기반 Client & Server

- ❖ UI & UX 앞 세운 대표적 발전.
- ❖ 같은 집 식별자 Port



# Web Process

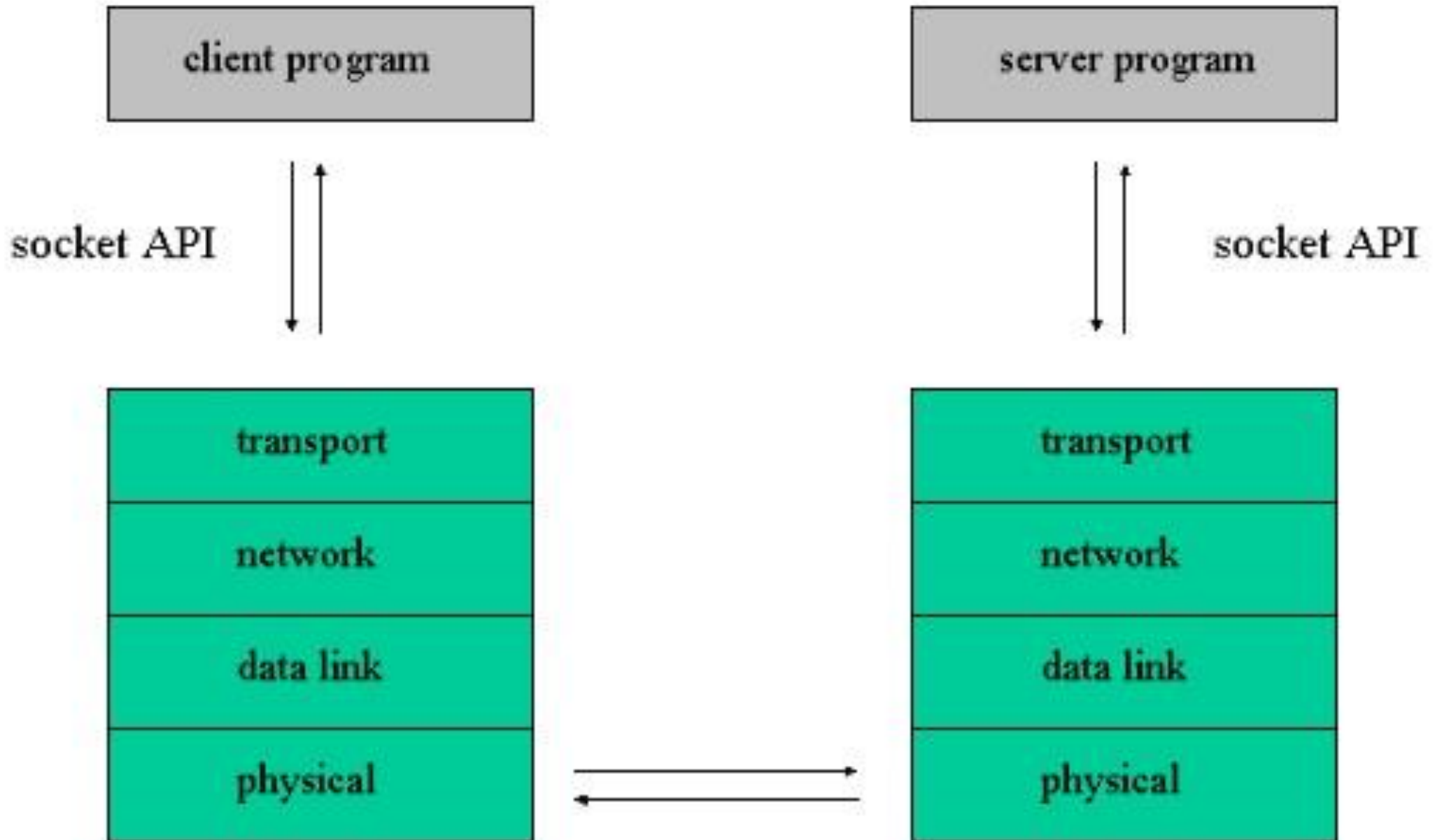
- ❖ Http 프로토콜 특징 따른 PC 정보 수집 가능(방문기록, 캐쉬 등)
- ❖ Head 이용 Client 정보 확인 가능



\* Client에서 요청을 하면 웹서버에서 받아서 web container의 doGet()이 request를 받아 들여서 response로 응답을 다시 웹서버로 보내고 그 정보를 client에게 보낸다. 이 시점에 thread와 request, response는 사라진다.

# Network Service - Client & Server

- ❖ 365/24 응답자와 규칙 필요



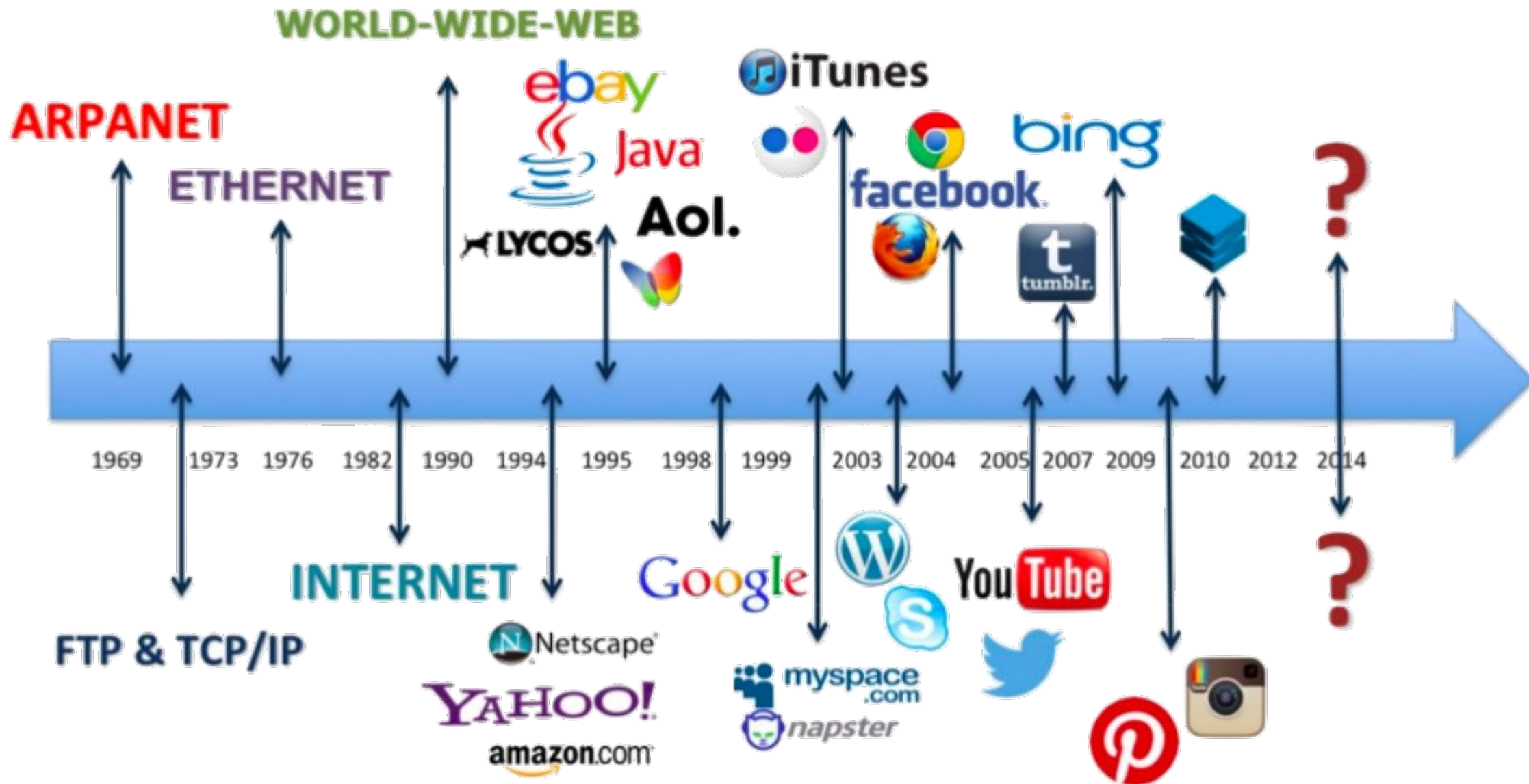


# How Website make !

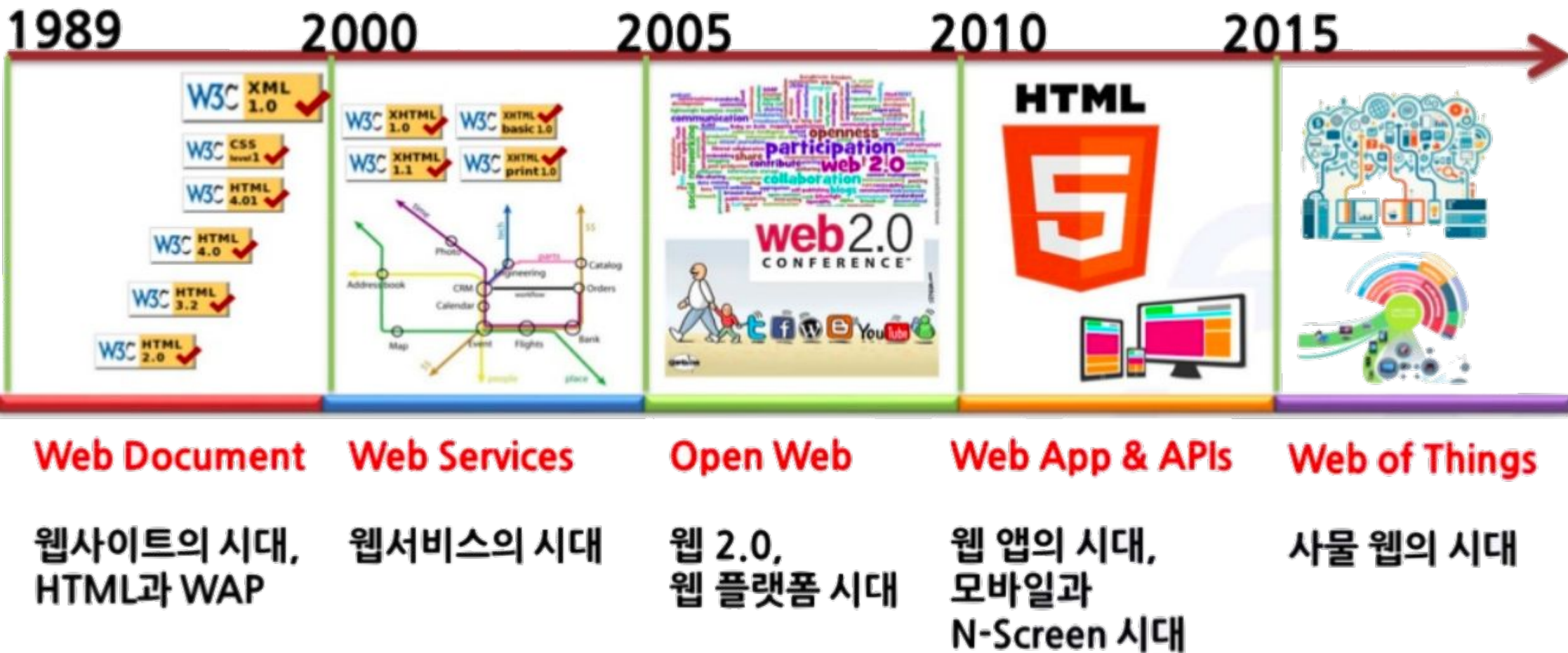
❖ <https://www.wix.com/>



# World Wide Web 진화(1)

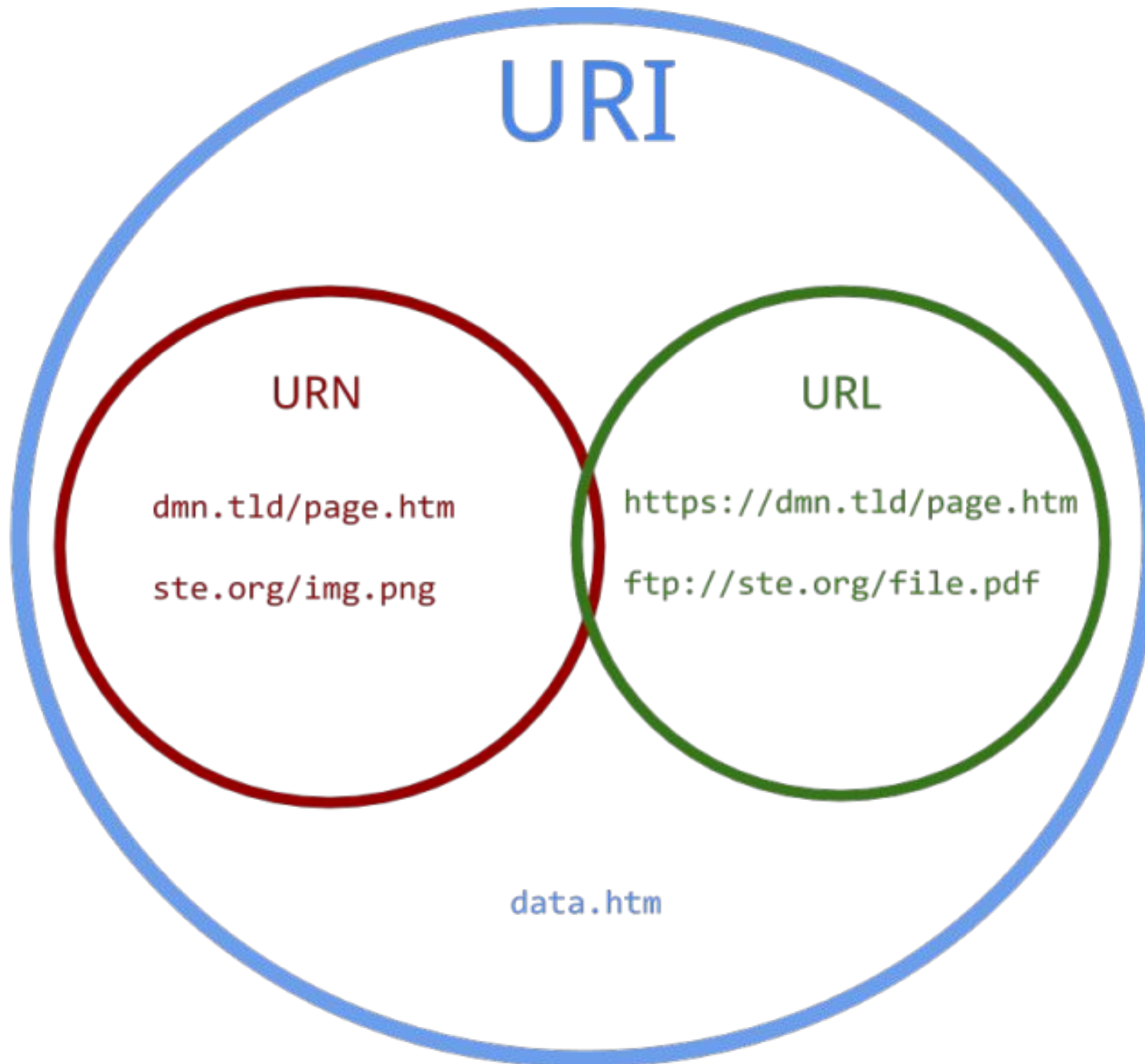


# World Wide Web 진화(2)



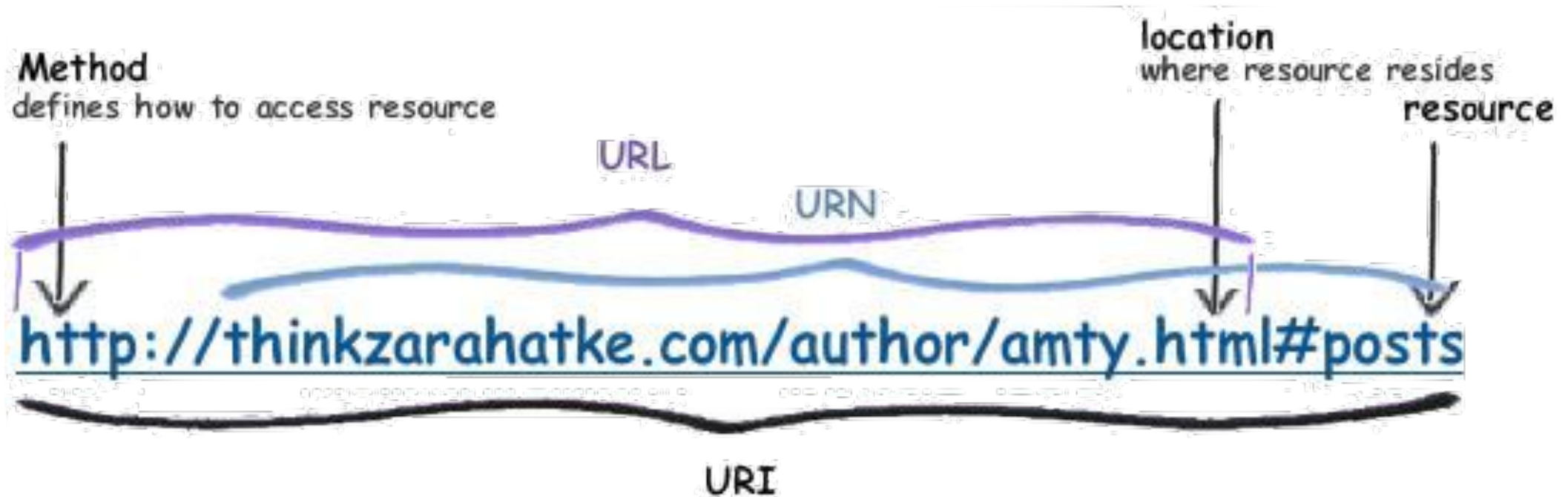


# URI vs URL vs URN(1)



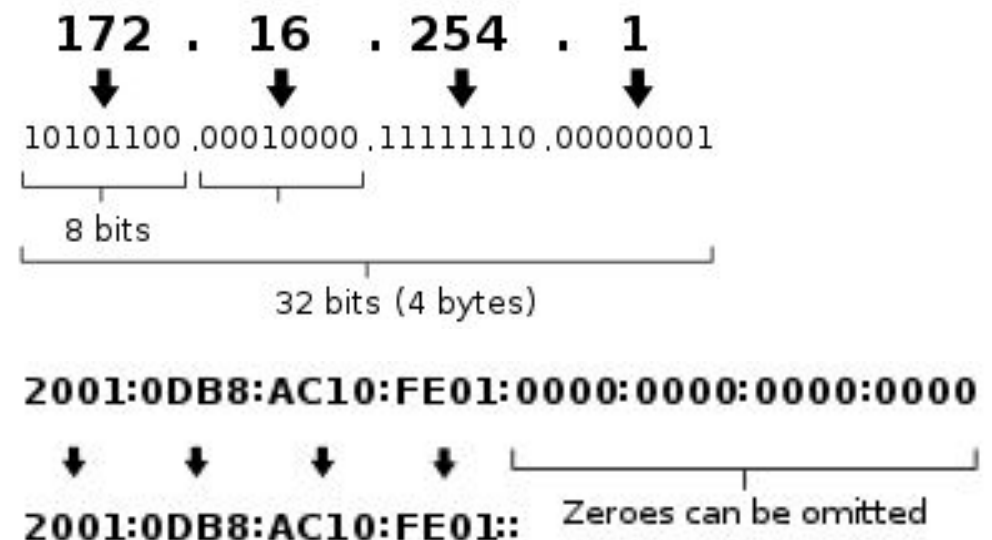
## URI vs URL vs URN(2)

### ❖ URI : 인간 위한 표기



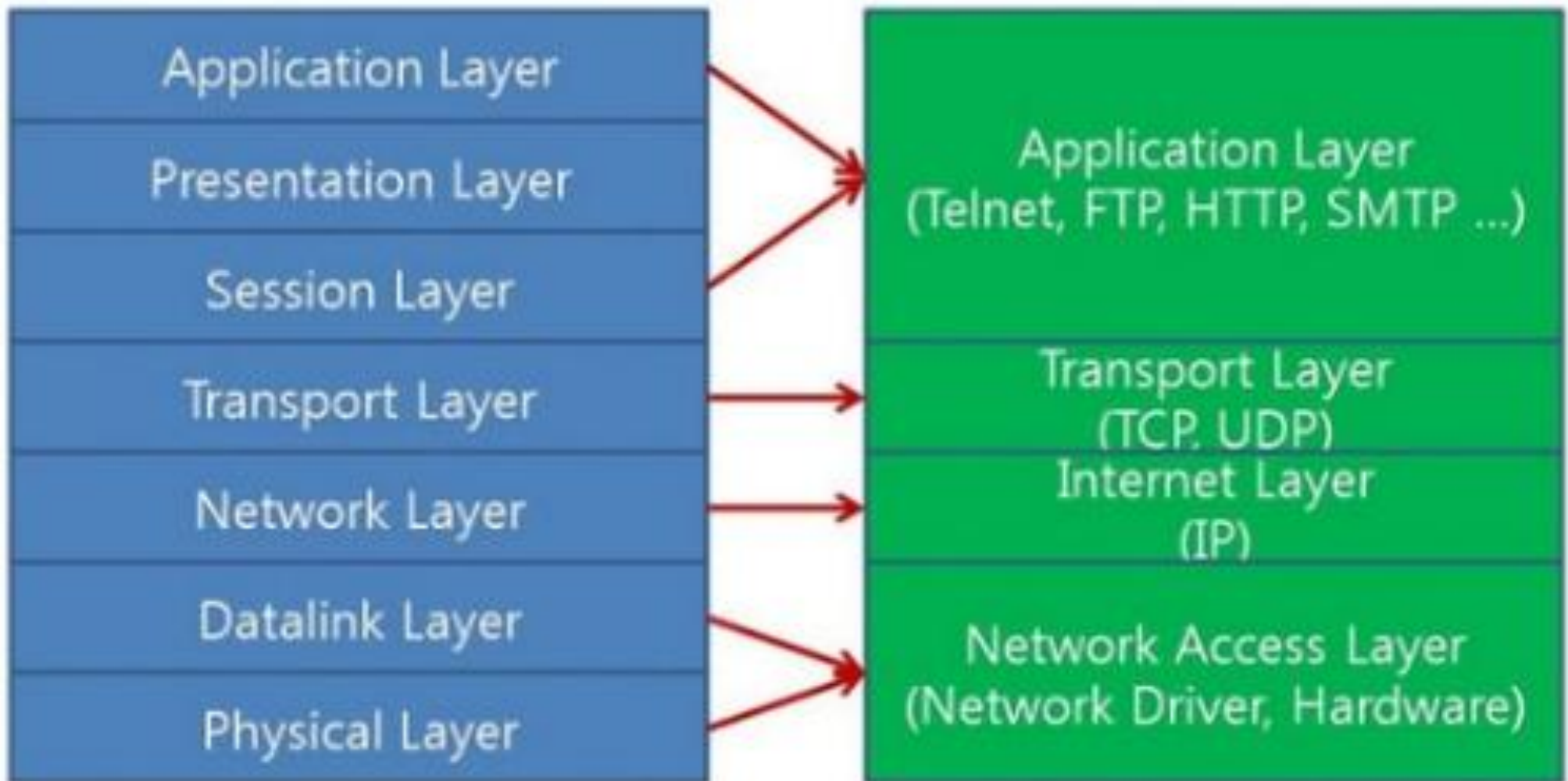
### ❖ IP address : 컴퓨터 위한 표기

- IPv4 addresses :  $2^{32}$   
ex) 192.168.0.255
- IPv6 addresses :  $2^{128}$   
ex) fe80::41:295e:2140:4b30



# OSI 7계층(Open System Interconnection 7 Layer)

- ❖ 1984년 통신 위한 이상적 프로토콜 모델 발표.
- ❖ 기존 SNA, 토큰링, FDDI 다양한 네트워크 사이 연결 호환성 위해 등장.
- ❖ Transport Layer
  - TCP(Transmission Control Protocol), UDP(User Datagram Protocol)



# IOT와 5G

- ❖ 개별 기기 아닌 중앙 서버 컨트롤 가능
  - 비용과 실용성 증가.



개인 맞춤형  
헬스케어 서비스



현금없는  
금융 서비스



무인 네트워크  
운송 서비스



사물 인터넷  
재난 대응서비스



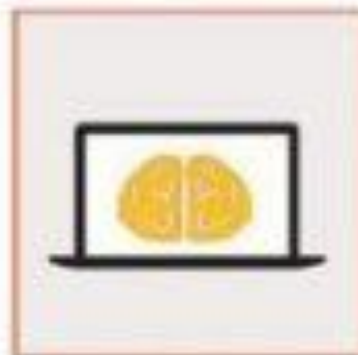
건강수명  
증진 서비스



전력 충전 서비스



그린 에너지  
플랫폼 서비스



인공지능 만능  
전문가 서비스

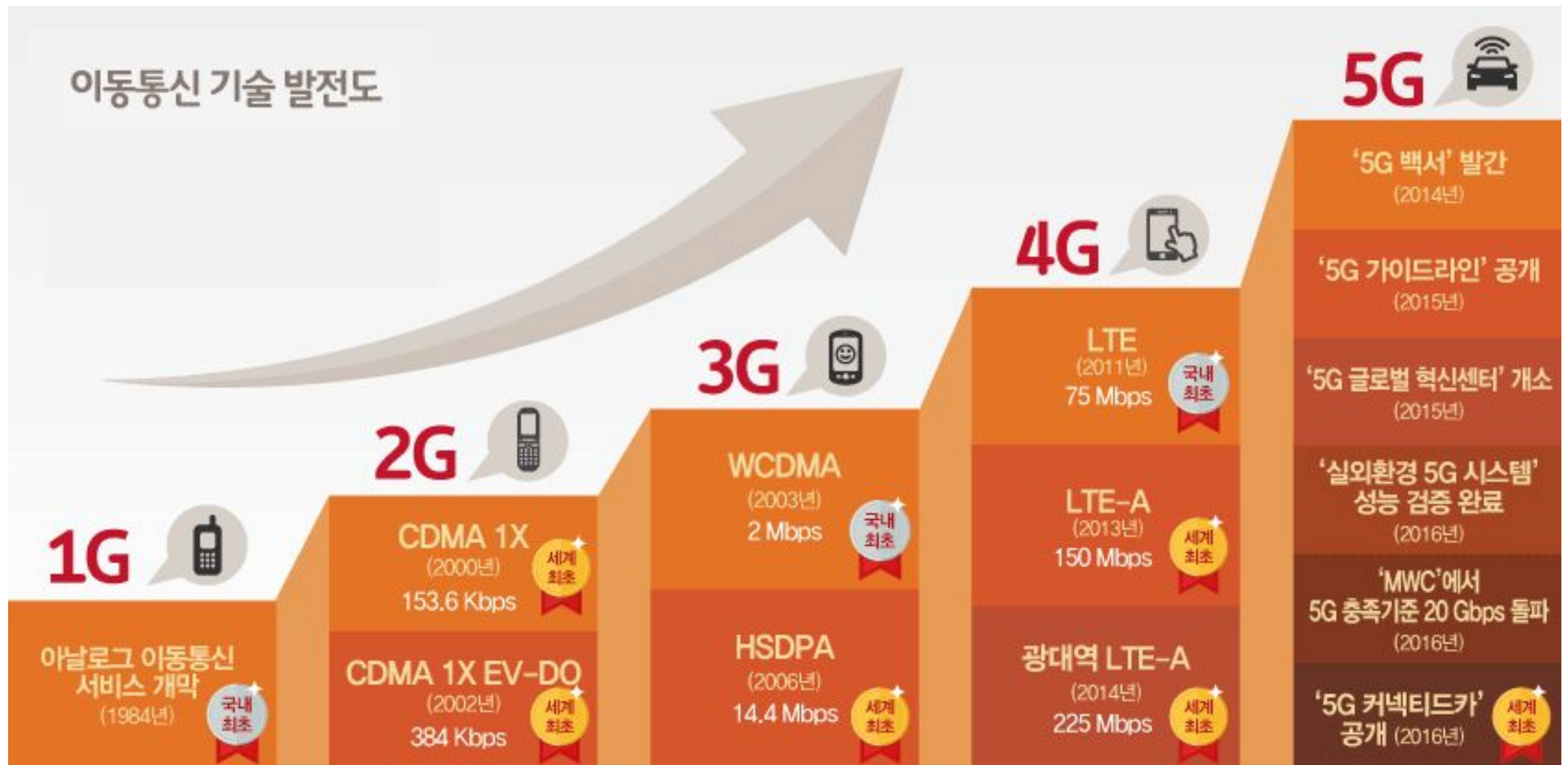


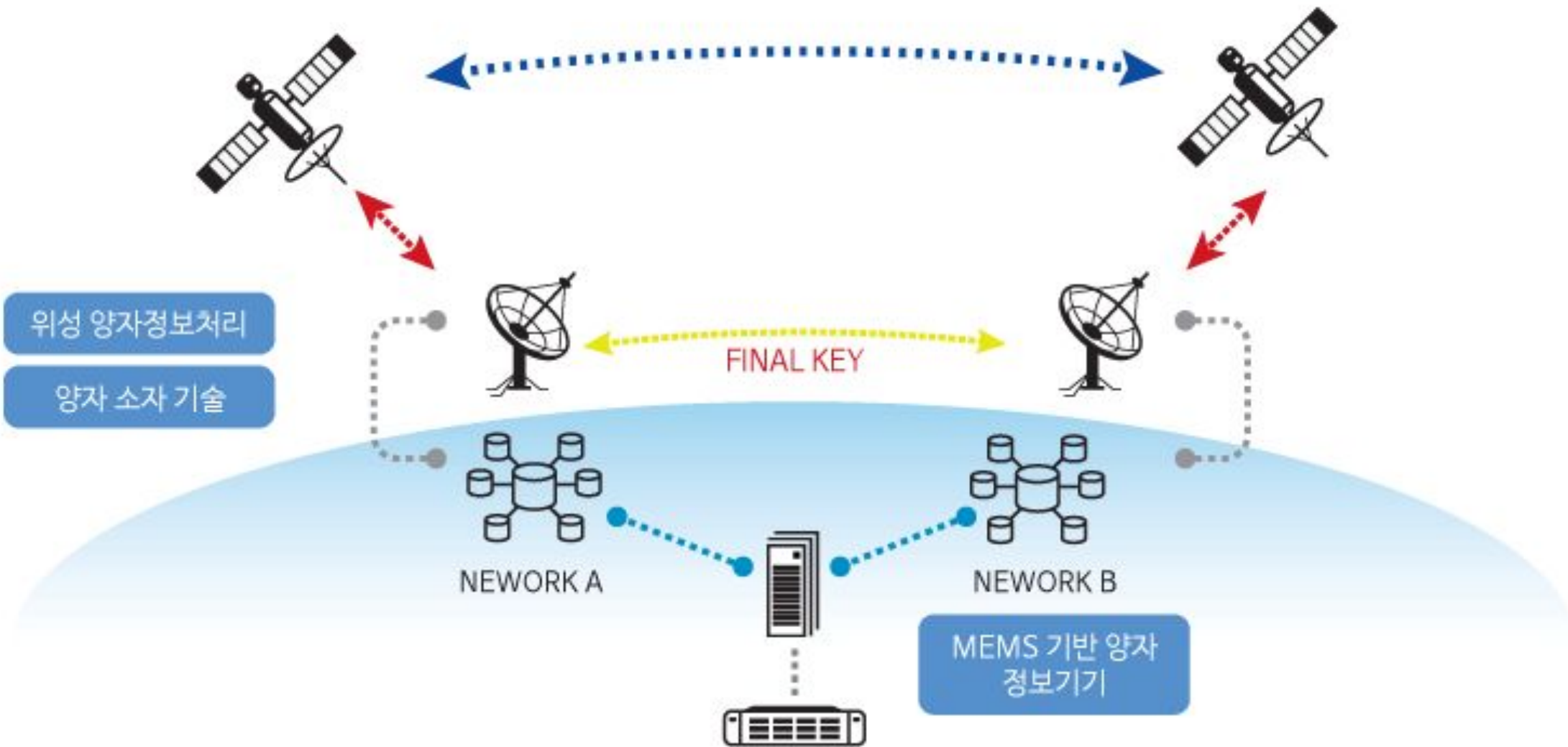
웨어러블 에너지  
공급 서비스



소셜 러닝 서비스







# 최종여행물 (자료 수집 가능 마인드맵)

❖ 각 끝점마다 IP(필요 시 Port) 부여

