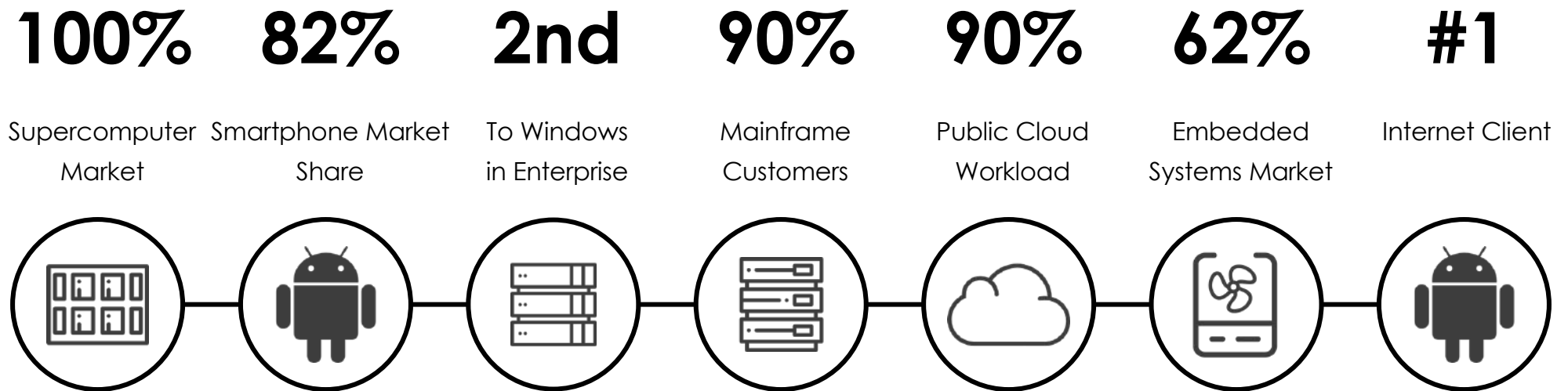


Cloud Native Computing Foundation

이제응 (Jerry Lee) 한국 Linux 재단 대표
Korea Director @ Linux Foundation APAC
CNCF, Cloud Foundry, Hyperledger, LF EDGE, LF AI, etc.



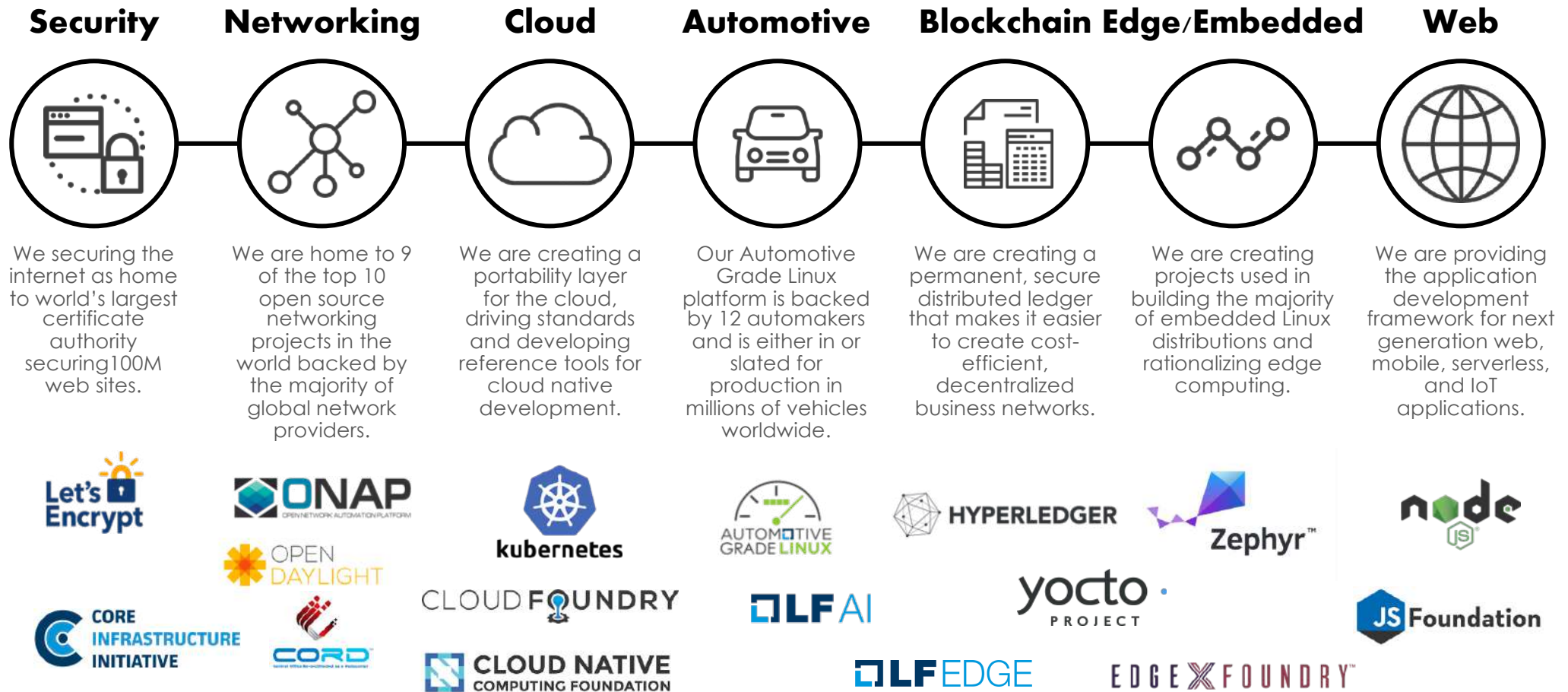
Linux는 세계에서 가장 중요한 Software Platform 성장



Linux가 도입된 영역마다 최강자로 시장 석권!



Open-source Projects; +100 Project 운영 중



오픈소스는 초고속 성장 중

23M+

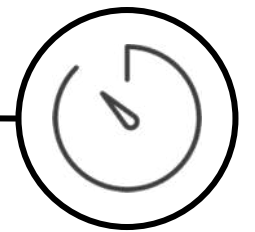
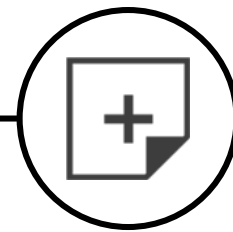
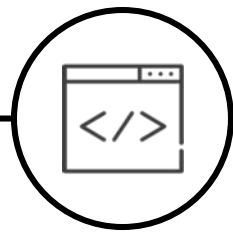
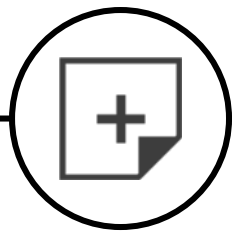
오픈소스 개발자

41B+

코드 라인 수

10,000+

신규 버전/1일



64M+

GitHub의 Repository 수

1,100+

신규 프로젝트/1일

* Source: Sourceclear, Sonatype, Github



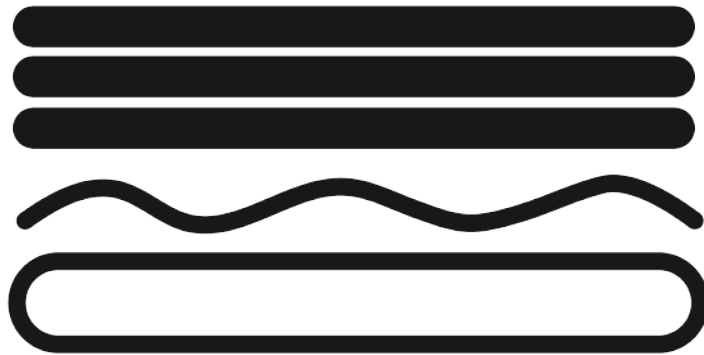
Code Club (Sandwich)



Choose a Framework



Code Club (Sandwich)

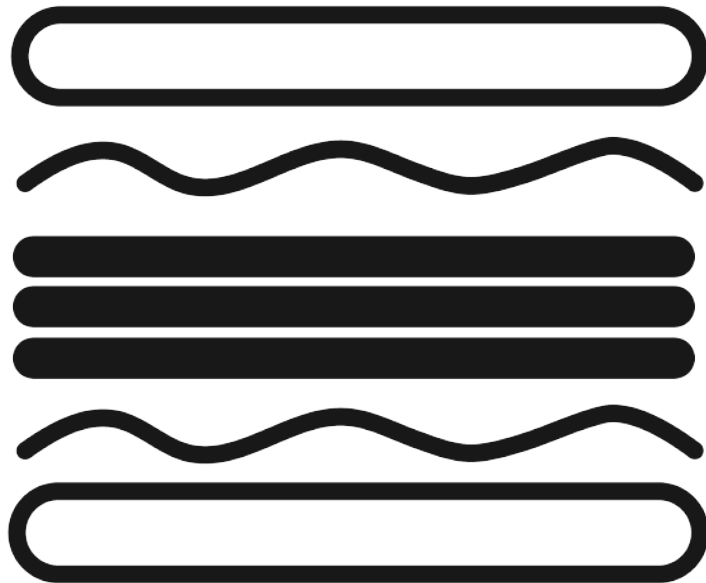


Write Custom Code

Choose a Framework



Code Club (Sandwich)



Use Open Source
Libraries to Solve Problems

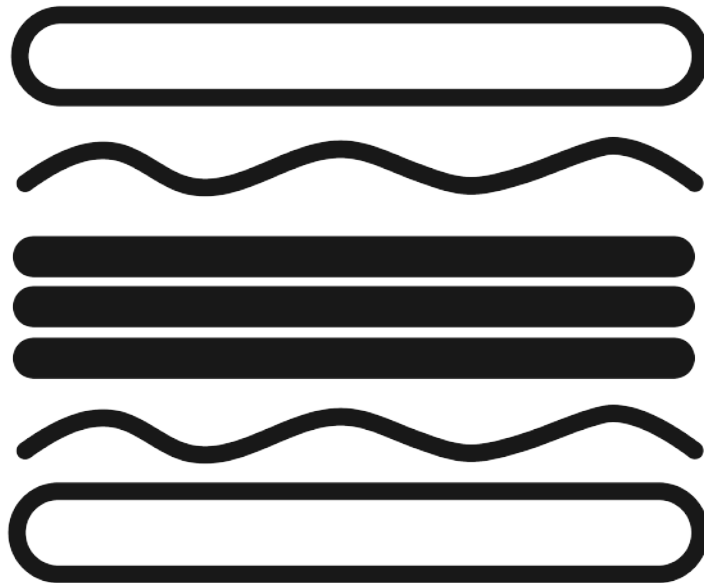
Write Custom Code

Choose a Framework



Code Club (Sandwich)

Open Source Code = ~ 90%



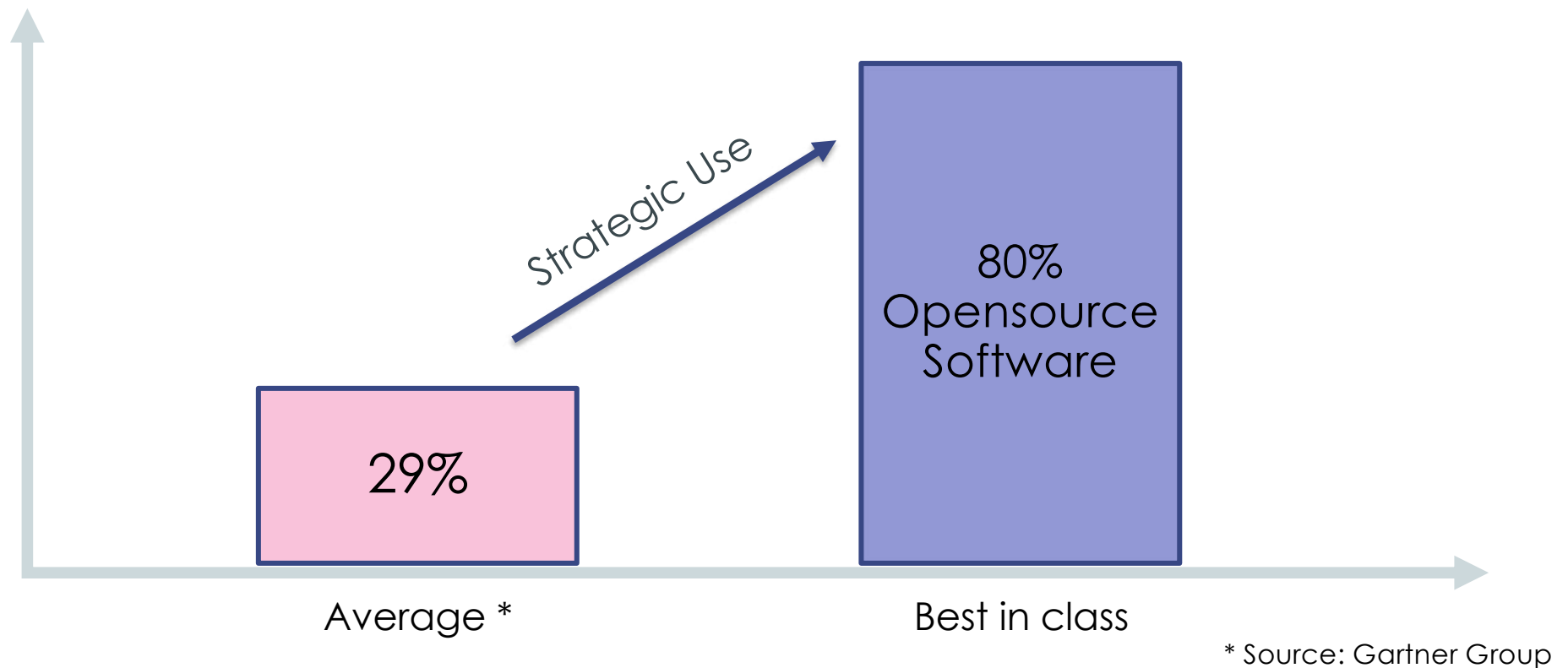
Use Open Source
Libraries to Solve Problems
Open Source Code (~70%)

Write Custom Code
Custom Code (~10%)

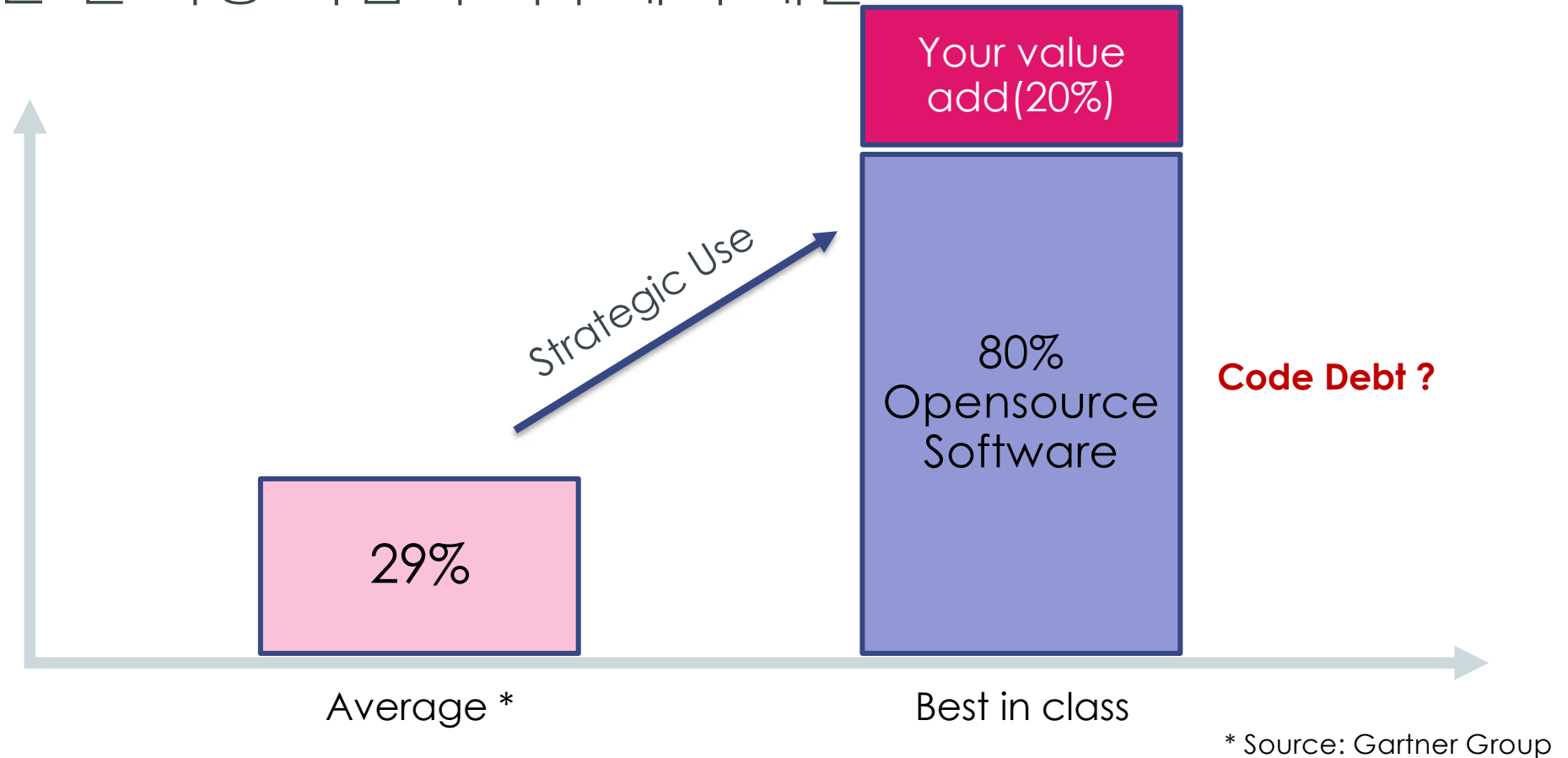
Choose a Framework
Open Source Code (~20%)



현재 IT 기술에 사용되는 System & Service Code는 대부분 실 사용 기업의 외부에서 개발

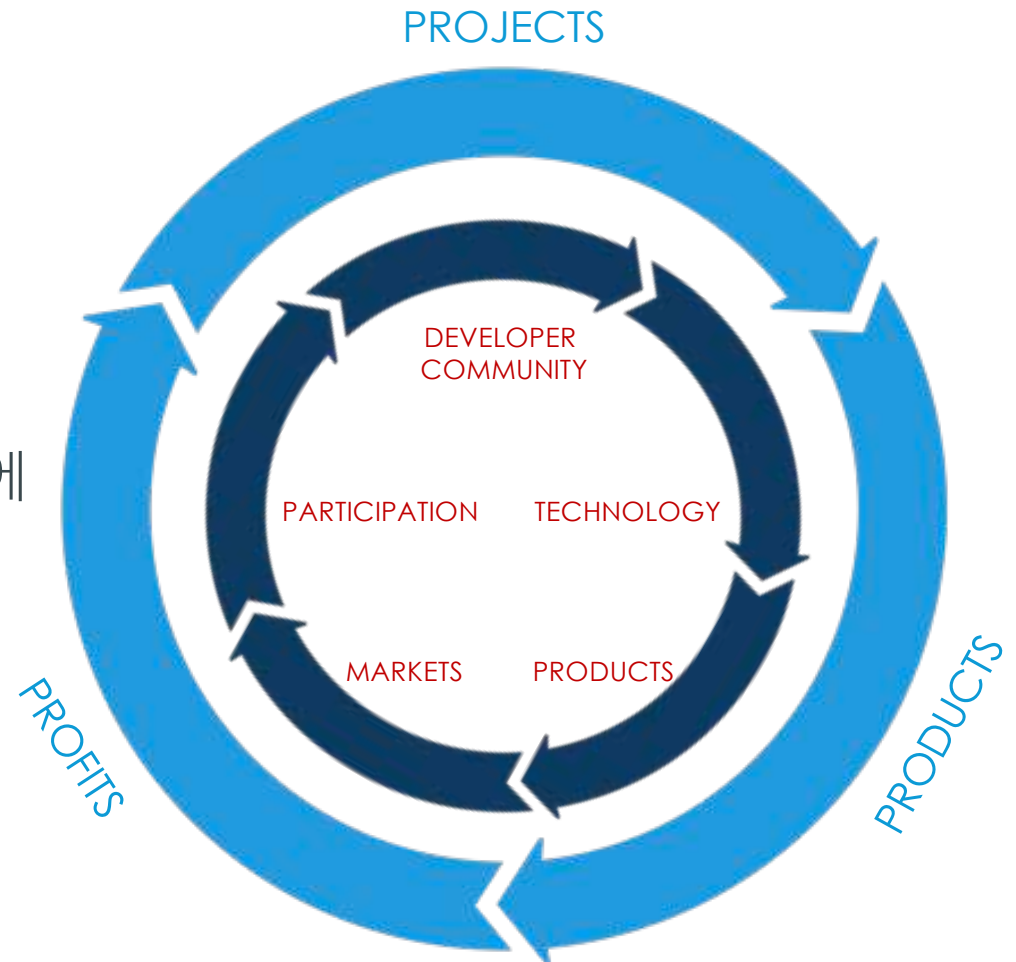


현재 IT 기술에 사용되는 System & Service Code는 대부분 실 사용 기업의 외부에서 개발



신뢰를 바탕으로한 생태계 구축

지속 가능한 프로젝트는 개발자 커뮤니티를 가지고 있으며, 프로젝트에 재투자해주며, 커뮤니티의 개발자를 고용하는 기업을 가지고 있다.





CNCF 소개

50+

Projects

97,000

Contributors

177+

Countries

13억

Lines of code

550+

Members

144

End users

CNCF(Cloud Native Computing Foundation) 소개



- 2015년 12월, Linux 비영리 재단 산하 Project 재단 <https://www.cncf.io/>

Graduated



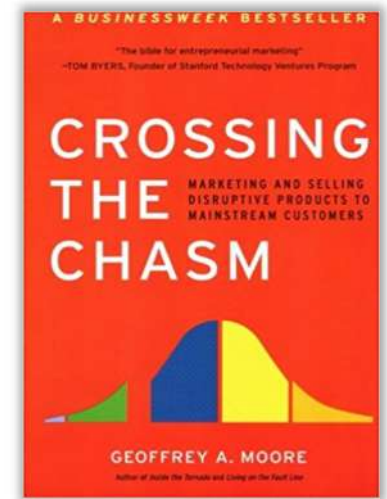
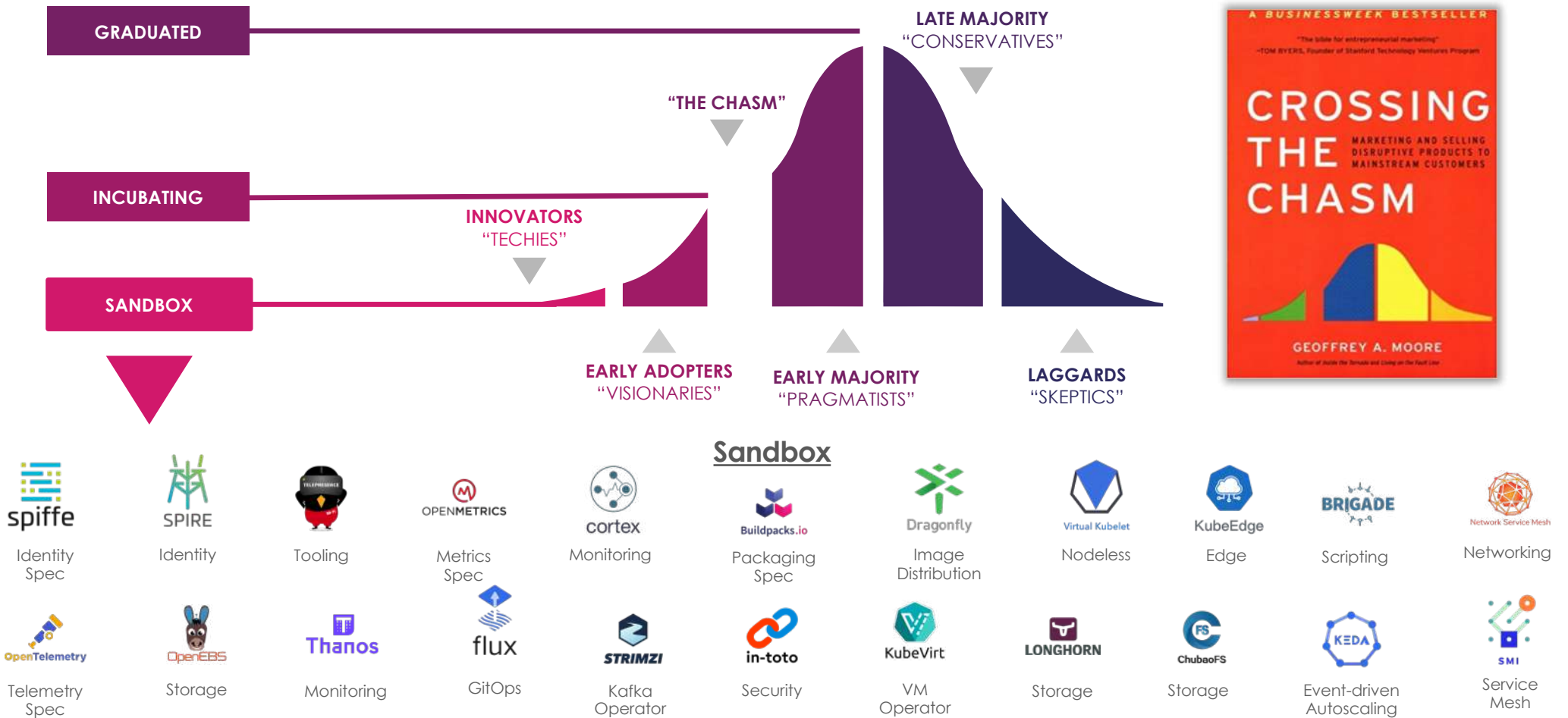
Incubating



- Platinum Member :



CNCF 프로젝트 성숙도



CNCF에 참여해야 하는 이유



- 재단의 중립성이 더 많은 공헌(Contribution) 유입
- CNCF 기술 자문 위원회(Technical Oversight Committee) 보증(Certification) 및 지원
- End User 및 Service 제공자가 속한 CNCF Community와 교류 활성화
- Full-time Press 및 System 분석팀 지원
- Documentation, Case Study 및 Support Service에 연간 수천만 달러 지원
- 중립 기반의 Committer들을 보유하고, 각 project 고유의 Governance 정의
- Full-time Support 지원 (CNCF Staff)
- KubeCon + CloudNativeCon + Kubernetes Forum 행사 및 CNCF Event에 참여하여, Member사 Project 소개
- 전 세계의 Meetup 참여 기회 제공
- CI(Cross-Cloud Integration) 및 Scale Testing을 위한 Cloud Resource 지원



신뢰할 수 있는 정책 반영

Trustworthy Governance

벤더 중립성

Open Governance

Conformance Program 및 Trademark 관리

Cloud Native Trail Map

Trail Map: l.cncf.io



CLOUD NATIVE TRAIL MAP

The Cloud Native Landscape l.cncf.io has a large number of options. This Cloud Native Trail Map is a recommended process for leveraging open source, cloud native technologies. At each step, you can choose a vendor-supported offering or do it yourself, and everything after step #3 is optional based on your circumstances.

HELP ALONG THE WAY

A. Training and Certification

Consider training offerings from CNCF and then take the exam to become a Certified Kubernetes Administrator or a Certified Kubernetes Application Developer cncf.io/training

B. Consulting Help

If you want assistance with Kubernetes and the surrounding ecosystem, consider leveraging a Kubernetes Certified Service Provider cncf.io/ksap

C. Join CNCF's End User Community

For companies that don't offer cloud native services externally cncf.io/evsuar

WHAT IS CLOUD NATIVE?

Cloud native technologies empower organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.

The Cloud Native Computing Foundation seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of open source, vendor-neutral projects. We democratize state-of-the-art patterns to make these innovations accessible for everyone.

l.cncf.io

v20191107



1. CONTAINERIZATION

- Commonly done with Docker containers
- Any size application and dependencies (even PDB-11 code running on an emulator) can be containerized
- Over time, you should aspire towards splitting suitable applications and writing future functionality as microservices

3. ORCHESTRATION & APPLICATION DEFINITION

- Kubernetes is the market-leading orchestration solution
- You should select a Certified Kubernetes Distribution, Hosted Platform, or Installer: cncf.io/ck
- Helm Charts help you define, install, and upgrade even the most complex Kubernetes application

5. SERVICE PROXY, DISCOVERY, & MESH

- CoreDNS is a fast and flexible tool that is useful for service discovery
- Envoy and Linkerd each enable service mesh architectures
- They offer health checking, routing, and load balancing

7. DISTRIBUTED DATABASE & STORAGE

When you need more resiliency and scalability than you can get from a single database, Vitess is a good option for running MySQL at scale through sharding. Rook is a storage orchestrator that integrates a diverse set of storage solutions into Kubernetes. Serving as the "brain" of Kubernetes, etcd provides a reliable way to store data across a cluster of machines. TiKV is a high performance distributed transactional key-value store written in Rust.

9. CONTAINER REGISTRY & RUNTIME

Harbor is a registry that stores, signs, and scans content. You can use alternative container runtimes. The most common, both of which are OCI-compliant, are containerd and CRI-O.

2. CI/CD

- Setup Continuous Integration/Continuous Delivery (CI/CD) so that changes to your source code automatically result in a new container being built, tested, and deployed to staging and eventually, perhaps, to production
- Setup automated rollouts, roll backs and testing

4. OBSERVABILITY & ANALYSIS

- Pick solutions for monitoring, logging and tracing
- Consider CNCF projects Prometheus for monitoring, Fluentd for logging and Jaeger for Tracing
- For tracing, look for an OpenTracing-compatible implementation like Jaeger

6. NETWORKING & POLICY

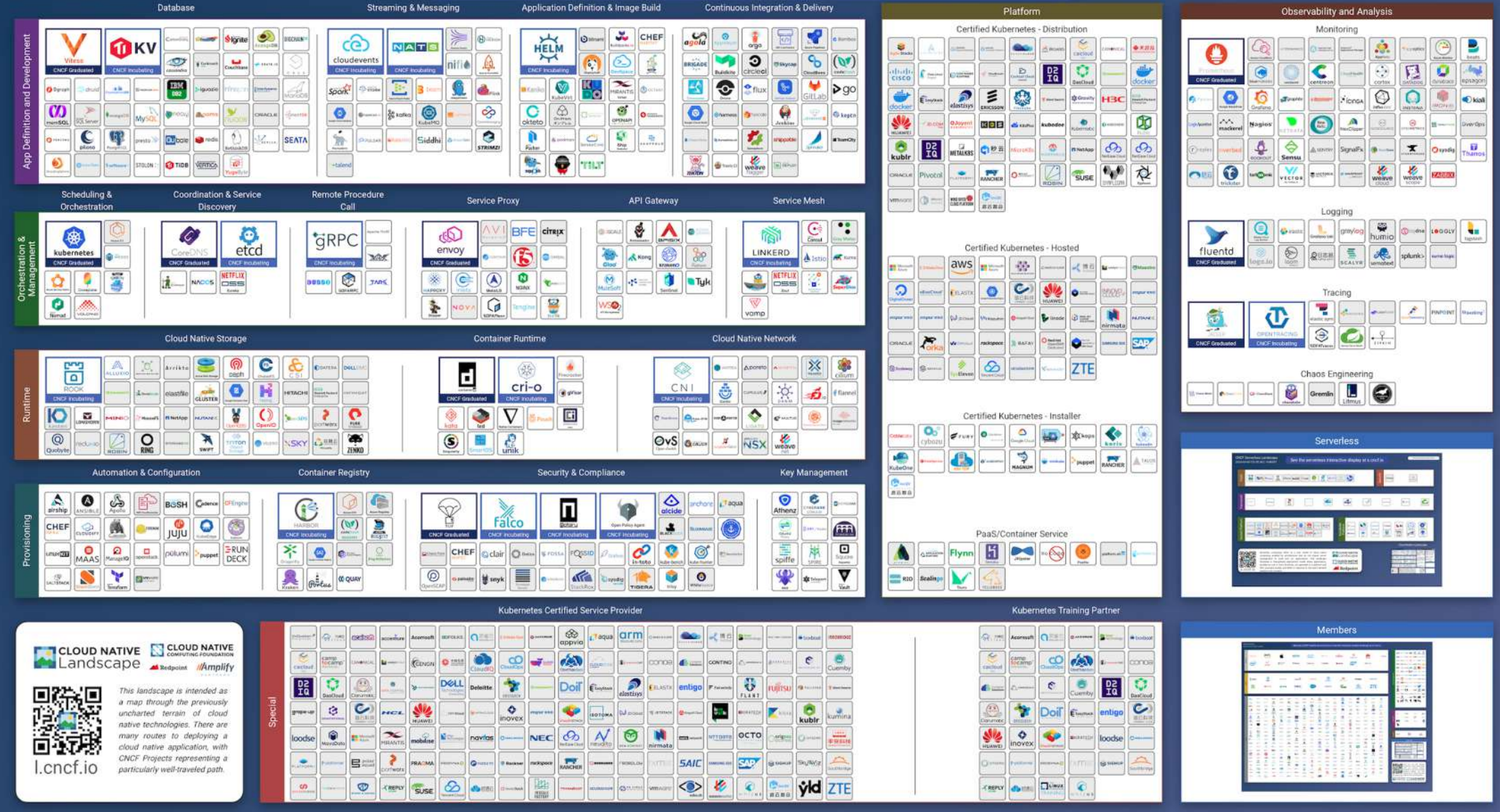
To enable more flexible networking, use a CNI-compliant network project like Calico, Flannel, or Weave Net. Open Policy Agent (OPA) is a general-purpose policy engine with uses ranging from authorization and admission control to data filtering.

8. STREAMING & MESSAGING

When you need higher performance than JSON-RPC, consider using gRPC or NATS. gRPC is a universal RPC framework. NATS is a multi-modal messaging system that includes request/reply, pub/sub and load balanced queues. CloudEvents is a specification for describing event data in common ways.

10. SOFTWARE DISTRIBUTION

If you need to do secure software distribution, evaluate Notary, an implementation of The Update Framework.



CNCF Cloud Native Interactive Landscape

Reset Filters

Grouping

No Grouping

Sort By

Stars (high to low)

Category

Any

CNCF Relation

Any

License

Any

Organization

Any

Headquarters Location

Any

Example filters:

[Cards by age](#)

[Open source landscape](#)

[Member cards](#)

[Cards by stars](#)

[Cards from China](#)

[Certified K8s/KCSP/KTP](#)

[Cards by MCap/Funding](#)

Download as CSV

The Cloud Native Trail Map (png, pdf) is CNCF's recommended path through the cloud native landscape. The cloud native landscape (png, pdf), serverless landscape (png, pdf), and member landscape (png, pdf) are dynamically generated below. Please open a pull request to correct any issues. Greyed logos are not open source. Last Updated: 2019-07-16 22:17:13Z

You are viewing 1,158 cards with a total of 1,725,127 stars, market cap of \$10.38T and funding of \$57.68B.

Try it now at
<https://l.cncf.io>

Tweet 694

Landscape

Card Mode

Serverless

Members

No Grouping (1158)

kubernetes

Kubernetes ★ 55,292
Cloud Native Computing Foundation (CNCF)

elastic

Elastic ★ 42,628
MCap: \$7.09B

NETDATA

Netdata ★ 39,579
Netdata

ANSIBLE

Ansible ★ 38,340
Red Hat MCap: \$33.43B

redis

Redis ★ 37,543
Redis Labs Funding: \$146.6M

serverless

Serverless ★ 30,993
Serverless Funding: \$13M

Grafana

Grafana ★ 29,826
Grafana Labs Funding: \$1.23M

No Code

No Code ★ 29,736
No Code

DUBBO

Dubbo ★ 27,880
Apache Software Foundation

etcd

etcd ★ 26,033
Cloud Native Computing Foundation (CNCF)

Prometheus

Prometheus ★ 25,134
Cloud Native Computing Foundation (CNCF)

traefik

Traefik ★ 23,355
Containous Funding: \$1.06M

APACHE Spark

Apache Spark ★ 22,617
Apache Software Foundation

Kong

Kong ★ 22,580
Kong Funding: \$69.1M

RethinkDB

RethinkDB ★ 22,388
Linux Foundation

gRPC

gRPC ★ 22,130
Cloud Native Computing Foundation (CNCF)

GitLab

GitLab ★ 21,901
GitLab Funding: \$168.2M

SENTRY

Sentry ★ 21,457
Sentry Funding: \$26.5M

KubeCon CloudNativeCon
Nov. 18 - 21 San Diego, CA

KubeCon CloudNativeCon
March 30 - April 2 Amsterdam

Pandemic 시대 이후에 Cloud가 점점 중요해지는 이유...

Change from Planned Cloud Usage Due to COVID-19
% of respondents

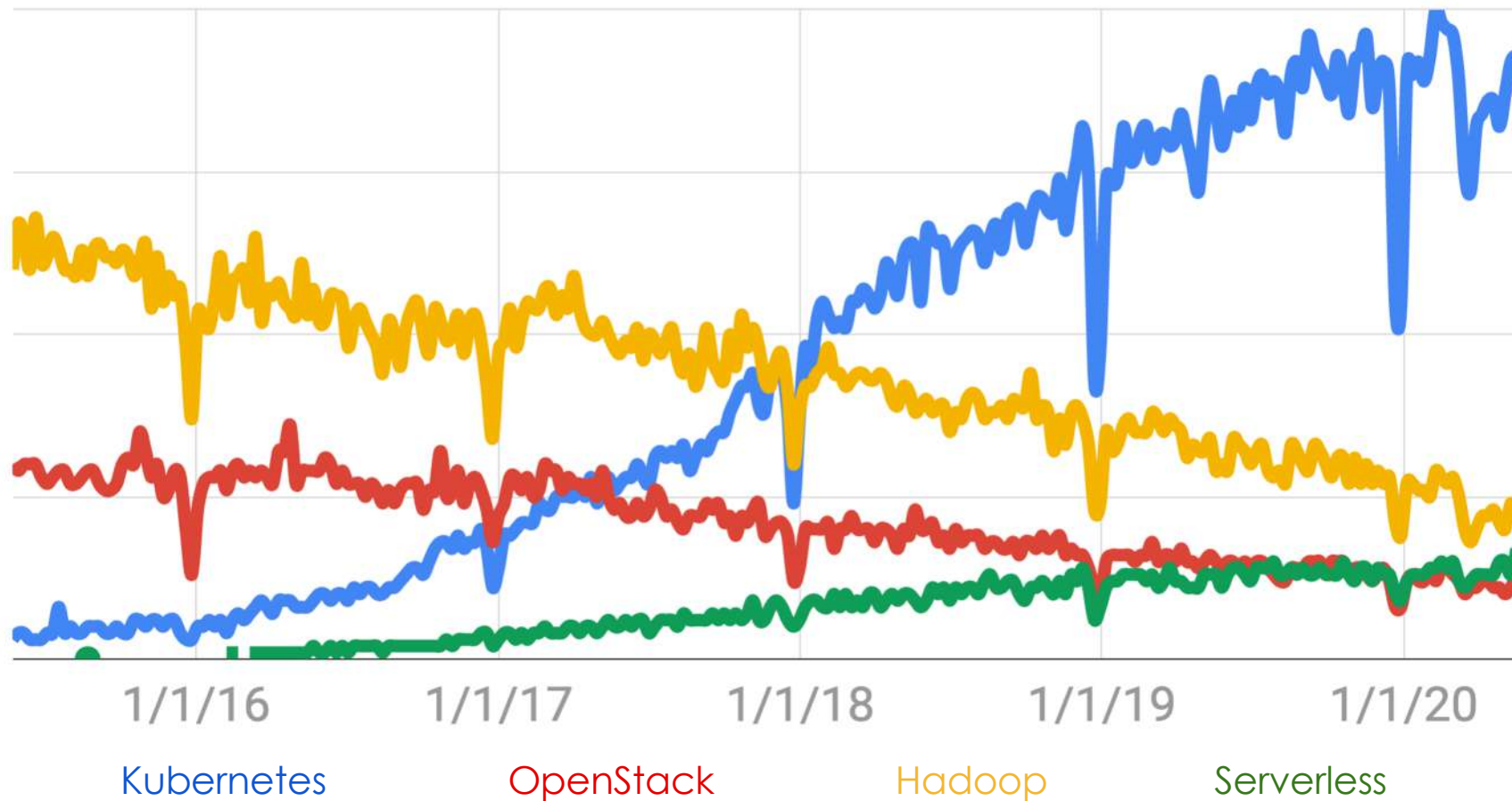


N=187, asked only of later respondents

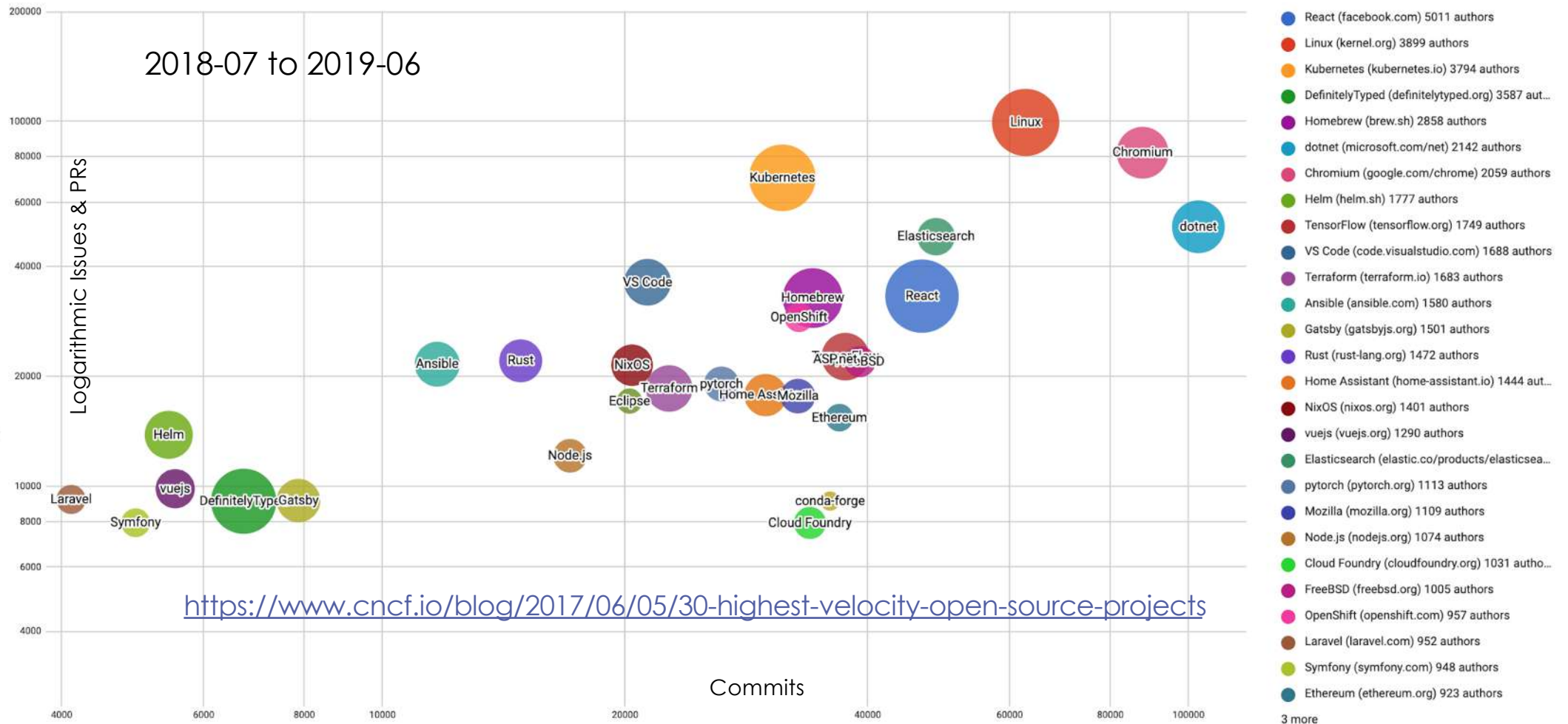
Source: Flexera 2020 State of the Cloud Report



Kubernetes(K8S) 검색 추이



30 Highest Velocity Open Source Projects



550+ Member사와 지속적인 성장

Platinum Members



Gold Members



Academic/Nonprofit Members



한국 Member사의 성장

13

Korea Members



한국 Members

Silver Member

Acornsoft

 **common
computer**

IN's Lab
INTUITIVE SOFTWARE LAB

 **kb sys**

 **n3n
CLOUD**

namu

 **NC SOFT®**


NexClipper

 **OPEN SOURCE
CONSULTING**

SAMSUNG

TmaxA&C

Non Profit Member

 **KETI** Korea Electronics
Technology Institute

 **TTA** 한국정보통신기술협회
Telecommunications Technology Association



144 End User Community





CNCF News

Certified Kubernetes Conformance




- CNCF는 Kubernetes Certified Program 출시
 - Implementation을 통한 적합성 확인 및 결과 Upload
 - Kubernetes 구현의 준수 여부를 위한 신규 Mark와 더 유연한 Kubernetes Trademark의 사용
 - <https://www.cncf.io/certification/software-conformance/>



105 Certified Kubernetes Conformance



국내 Certified Kubernetes Conformance

**CLOUD NATIVE Landscape**

[Reset Filters](#)

Grouping

Category

Sort By

Alphabetical (a to z)

Category

Certified Kubernetes - Dist...

CNCF Relation

CNCF Member Products/...

License

Any

Organization

Any

Headquarters Location

South Korea

Example filters:
[Cards by age](#)
[Open source landscape](#)
[Member cards](#)
[Cards by stars](#)
[Cards from China](#)
[Certified K8s/KCSP/KTP](#)
[Cards by MCap/Funding](#)

You are viewing 7 cards.

[Landscape](#)[Card Mode](#)[Serverless](#)[Members](#)

[Platform - Certified Kubernetes - Distribution \(2\)](#)

**Cocktail Cloud**
Acornsoft

HyperCloud
HyperCloud
TmaxA&C

[Special - Kubernetes Certified Service Provider \(4\)](#)

Acornsoft
Acornsoft (KCSP)
Acornsoft

IN's Lab
INTUITIVE SOFTWARE LAB
INS Lab (KCSP)
INSLab

**N3N CLOUD**
N3NCLOUD (KCSP)
N3N Cloud

namu
Namutech (KCSP)
NAMUTECH

CNCF MOOC 및 On-line Training



- edX 상에 무료 Introduction to Kubernetes Self-pace Course 개설
- Kubernetes Fundamentals Course
 - Certified Kubernetes Administrator (CKA) 시험 대비 Course
 - \$299, 중간 개발자 Level
- Training을 필요로하는 기업을 위한 Open-source curriculum 준비
 - CKA 시험 Coupon – 대량 구매 시, 할인가 적용



Online, Proctored Kubernetes Exams



- Online, 감독 주관하의 Kubernetes 숙련도 시험
 - Scenarios로 구성된 시험 문제를 Command Line을 통해 해결하는 시험이며, 객관식 문제는 없음
 - 시험시간 : 3 시간
 - 응시비용 : \$300
 - Quarterly exam updates to match K8s releases
- Certified Kubernetes Administrator (CKA)
 - Over 1,500 registrations already
 - <https://www.cncf.io/certification/expert/cka/>
- Certified Kubernetes Application Developer (CKAD)
 - Certifies that users can design, build, configure, and expose cloud native applications for Kubernetes
 - <https://www.cncf.io/certification/expert/cka/ckad/>



Kubernetes Certified Service Provider (KCSP)



- KCSP 인증을 획득한 Member사는 Kubernetes를 성공적으로 도입할 수 있도록 Support, Consulting, Profession Service 및 Training 등의 지원 가능한지를 사전 검증하여 Kubernetes 전문 Service 기업임을 증명
- 혜택
 - Website 상단에 노출 <https://kubernetes.io/partners/>
 - CNCF 의 Cloud 기반 Project Leader, TOC Member, 및 Governing Board 대표와 Monthly Meeting 참여
 - Website를 통해 Supporter를 찾는 End User Lead에 대한 Access 제공
- 요구 사항
 - 3명 이상의 Certified Engineer 보유(CKA)
 - Kubernetes Community에서 적극적인 공헌 및 활동 기록 증명
 - Enterprise End User를 Support 가능한 Business Model 보유



<https://www.cncf.io/certification/kcsp/>



133 Kubernetes Certified Service Providers



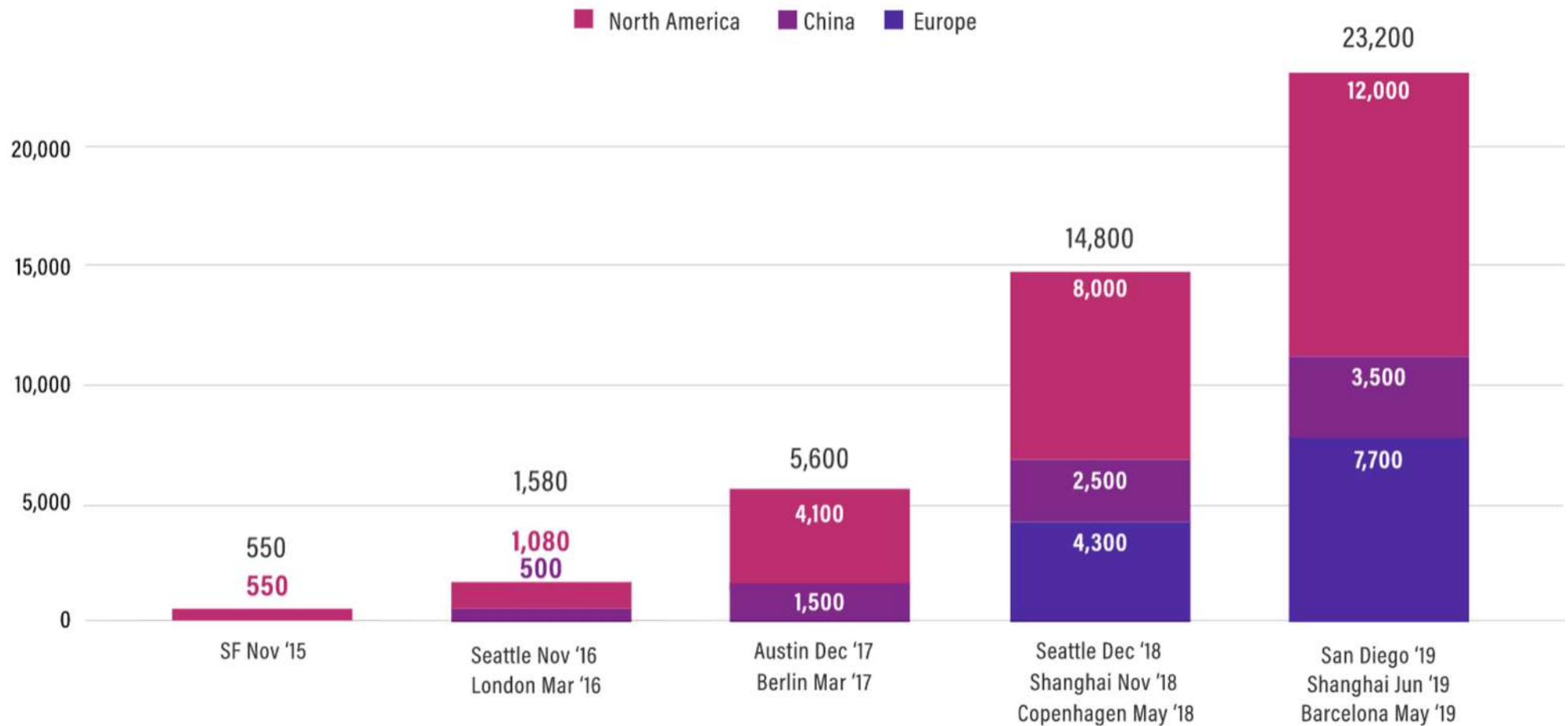
KubeCon + CloudNativeCon 관련 행사



kubcon.io



KubeCon + CloudNativeCon Attendance



감사합니다.

550+ Member사와 지속적인 성장 (Silver)



550+ Member사와 지속적인 성장 (Silver) - 계속



550+ Member사와 지속적인 성장 (Silver) - 계속

