

Make Cloud Native UBIQUITOUS

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목 차

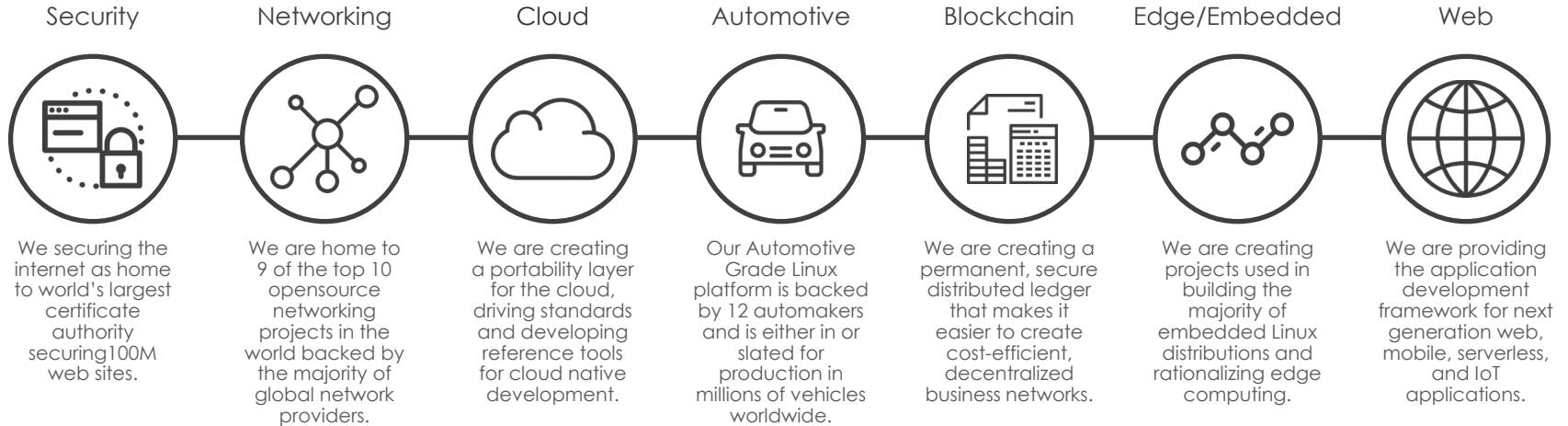
- 클라우드 네이티브 재단은 무슨 일을 하는가?
- 22년 클라우드 네이티브 오픈소스 사용 보고서
- 신규/유망 오픈소스 소개 - Crossplane, Cilium, dex
- 오픈소스 참여는 어떻게 하는가?



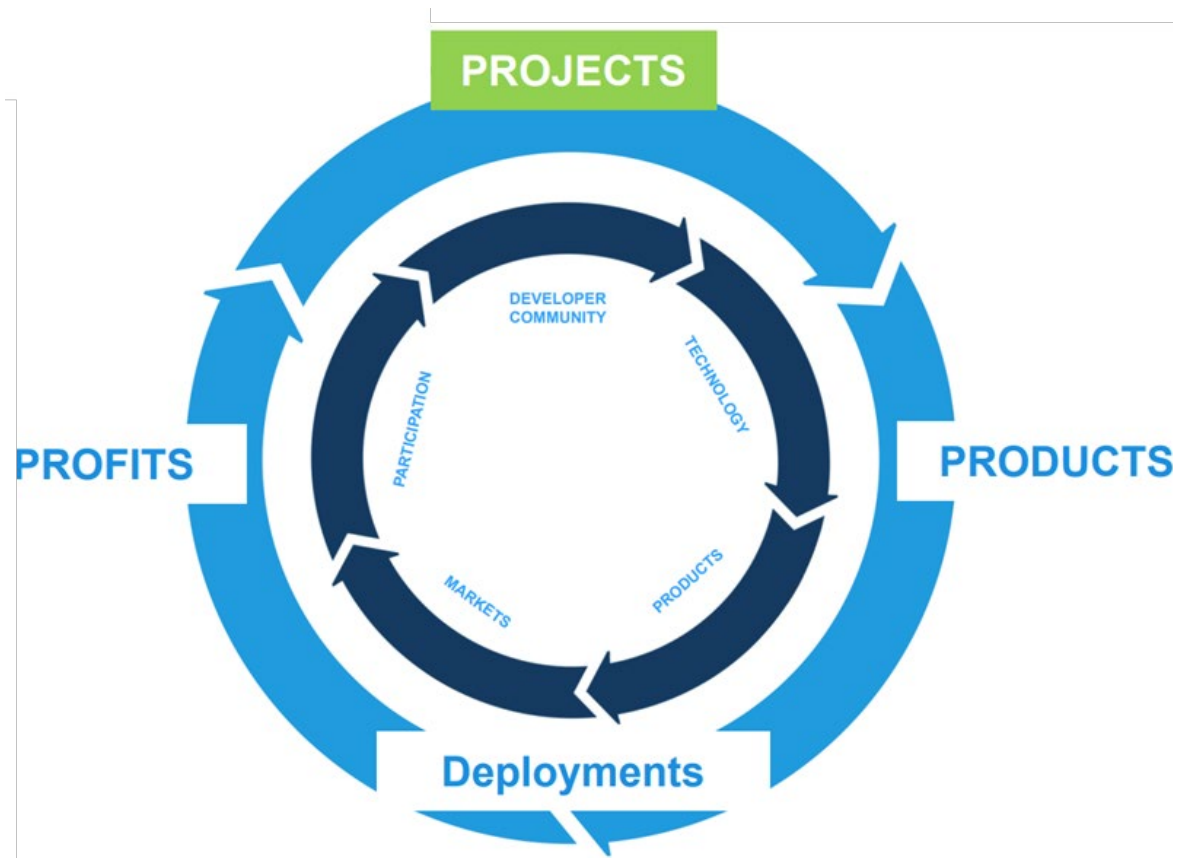
- 클라우드 네이티브 재단은 무슨 일을 하는가?

Linux 재단 개요

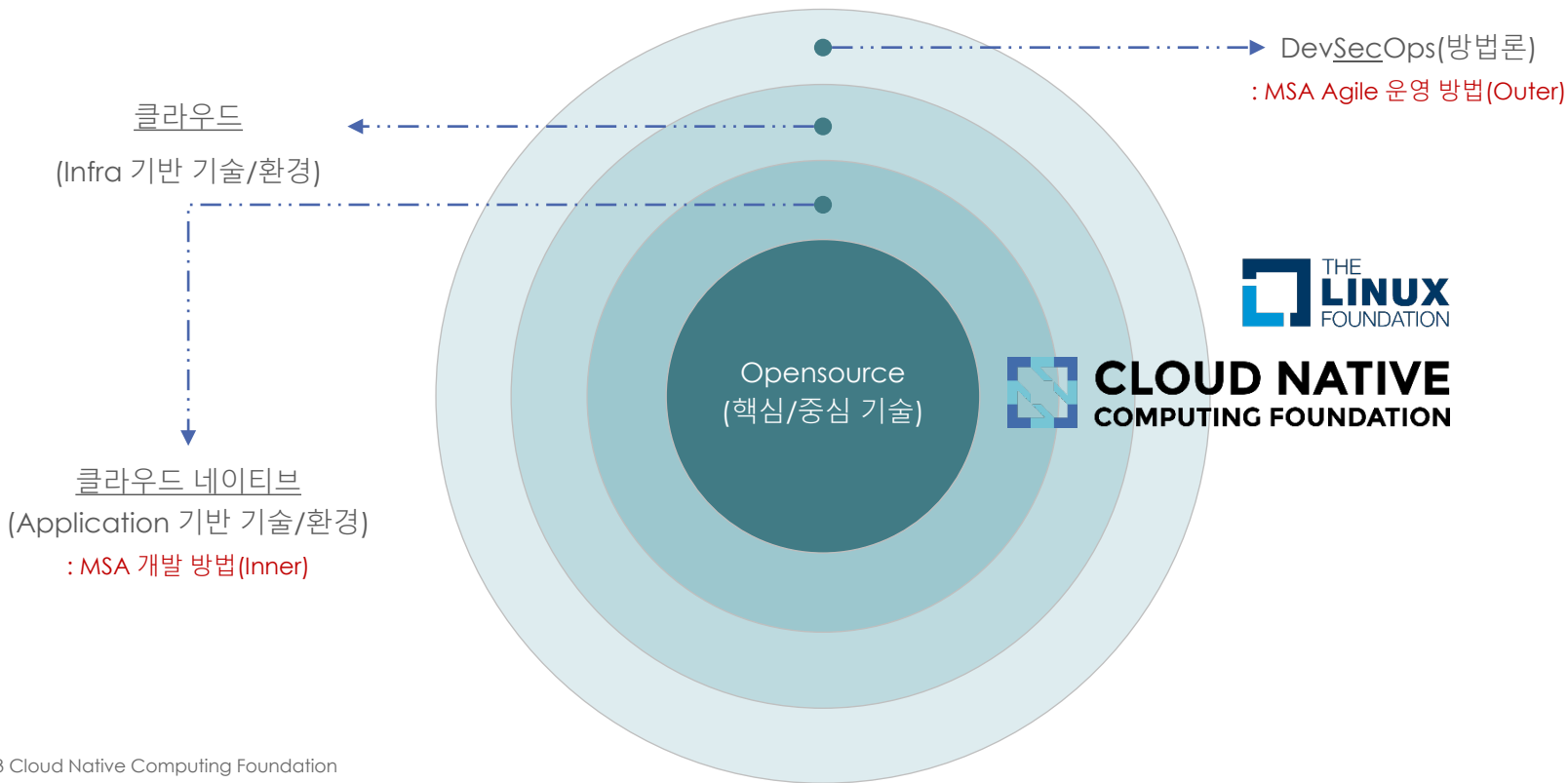
- 글로벌 최대 오픈소스 재단으로 오픈소스 성숙도 향상으로, 전 산업 분야에서 IT 표준화로 자리 매김
- +150 여개의 산하 재단 및 프로젝트 운영 중 ; Cloud Native, BlockChain, AI, IoT, Security, Energy 등 다양한 영역



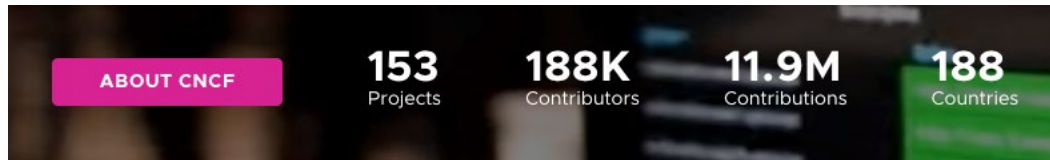
- 오픈소스 여정



- 데브옵스, 클라우드, 클라우드 네이티브, 오픈소스, 어플리케이션 현대화 등 용어 정의



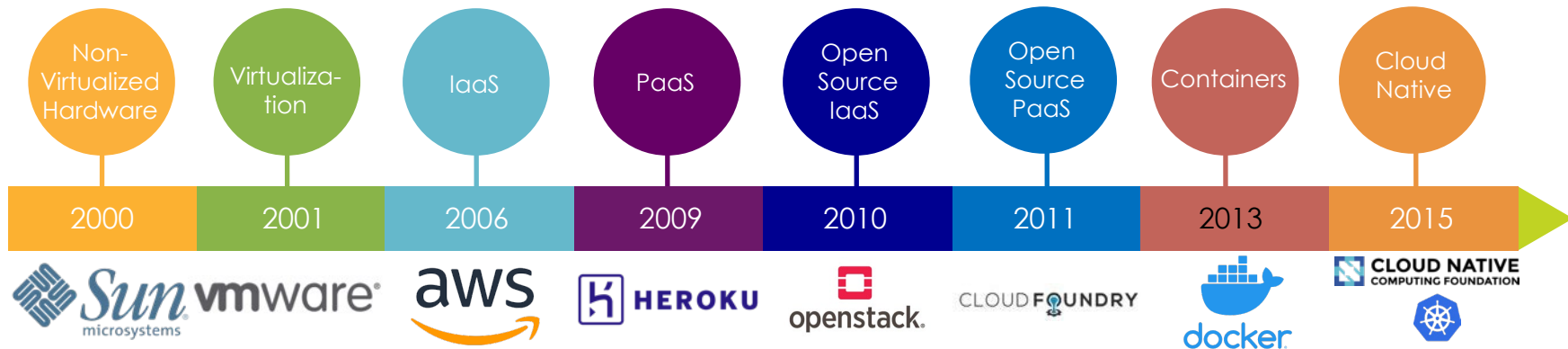
- 가상화에서 클라우드 네이티브까지



kubernetes

클라우드 네이티브는 오픈소스SW 스택을 활용합니다.





















- 마이크로서비스 단위로 애플리케이션 분리
- 컨테이너 단위로 구성
- 리소스 활용 최대화를 위한 컨테이너 코디네이션 및 관리



■ CNCF Projects - 147개 오픈소스 프로젝트 운영 중

- Founded in Dec. 2015

Graduated Projects (20)

 argo ★ 11,666 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 containerd ★ 12,854 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 CoreDNS ★ 10,121 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 envoy ★ 21,336 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 etcd ★ 42,234 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 fluentd ★ 11,705 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 flux ★ 4,267 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 HARBOR ★ 19,095 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 HELM ★ 23,393 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 JAEGER ★ 16,857 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 kubernetes ★ 94,776 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 LINKERD ★ 9,370 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Open Policy Agent ★ 7,517 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Prometheus ★ 46,154 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 ROOK ★ 10,610 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 spiffe ★ 1,151 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 SPIRE ★ 1,324 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 The Update Framework (TUF) ★ 1,470 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 TKV ★ 12,417 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Vitess ★ 15,281 Cloud Native Computing Foundation (CNCF) Funding: \$3M

































































































Incubating Projects (35)

 Backstage ★ 20,027 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Buildpacks.io ★ 1,805 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 cert-manager ★ 1,777 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Chaos Mesh ★ 5,415 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 cilium ★ 10,037 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Cloud Custodian ★ 4,101 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 cloudevents ★ 5,935 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 CNI ★ 6,410 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 CONTOUR ★ 2,291 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 cortex ★ 4,144 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 cri-o ★ 4,547 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Crossplane ★ 10,105 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 CubeFS ★ 5,034 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 dapr ★ 10,705 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 Dragonfly ★ 118 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 EMISSARY INGRESS ★ 3,563 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 falco ★ 5,474 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 gRPC ★ 36,536 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 in-toto ★ 611 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Istio ★ 21,117 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 KEDA ★ 5,831 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 keptn ★ 1,022 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Knative ★ 4,814 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 KubeEdge ★ 1,036 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 KubeVirt ★ 2,702 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Kyverno ★ 3,034 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Litmus ★ 2,042 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 LONGHORN ★ 4,075 Cloud Native Computing Foundation (CNCF) Funding: \$3M
 NATS ★ 10,117 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Notary ★ 2,953 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 OpenMetrics ★ 1,949 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 OpenTelemetry ★ 650 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 OPERATOR FRAMEWORK ★ 6,203 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 Thanos ★ 11,330 Cloud Native Computing Foundation (CNCF) Funding: \$3M	 VOLCANO ★ 2,790 Cloud Native Computing Foundation (CNCF) Funding: \$3M



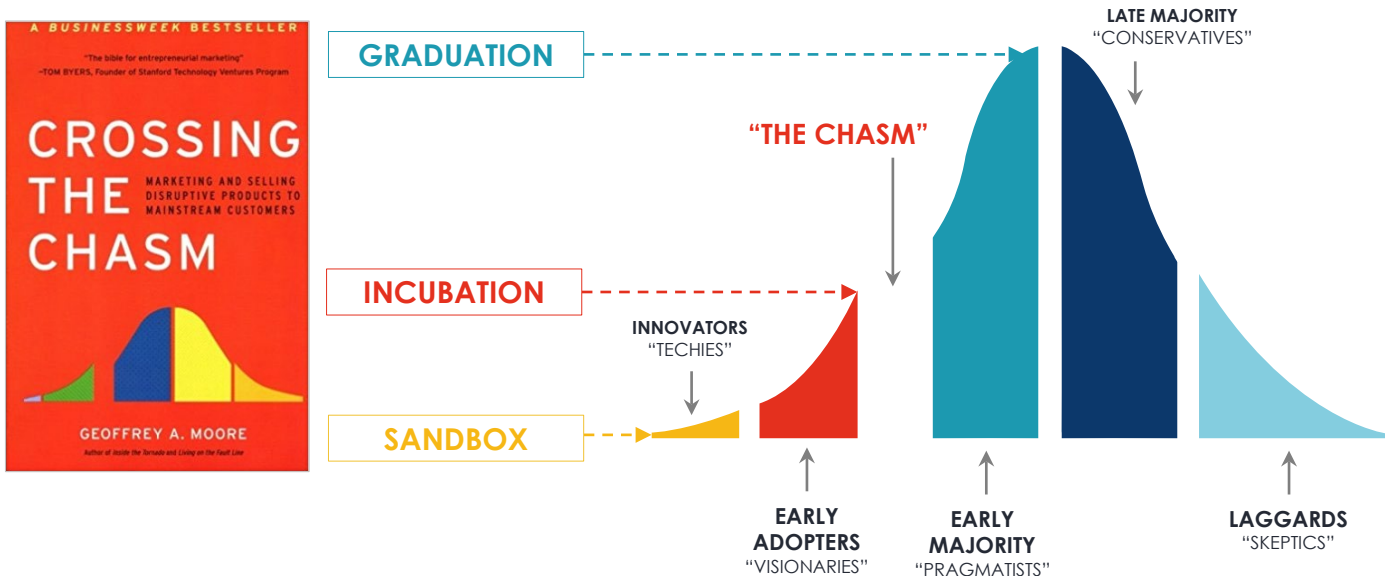
■ CNCF Projects - 147개 오픈소스 프로젝트 운영 중

Sandbox Projects (95)

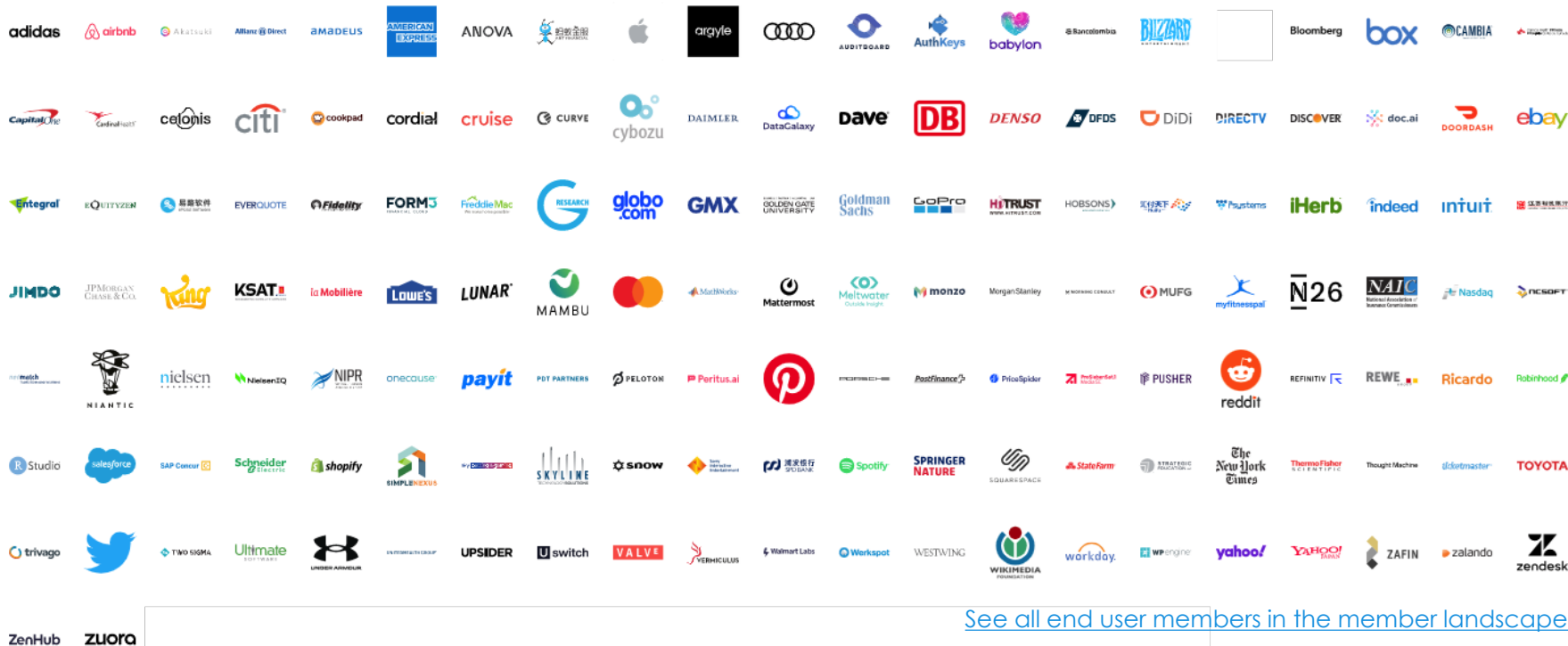
 Aeraki Mesh Aeraki Mesh Cloud Native Computing Foundation (CNCF) Pending 2024	 Akr-i Akr-i Cloud Native Computing Foundation (CNCF) Pending 2024	 ANTREA Antrea Cloud Native Computing Foundation (CNCF) Pending 2024	 ARMADA Armada Cloud Native Computing Foundation (CNCF) Pending 2024	 ArctiC4HUB ArctiC4HUB Cloud Native Computing Foundation (CNCF) Pending 2024	 Athenz Athenz Cloud Native Computing Foundation (CNCF) Pending 2024	 BFE BFE Cloud Native Computing Foundation (CNCF) Pending 2024	 Carina Carina Cloud Native Computing Foundation (CNCF) Pending 2024	 CARVEL CARVEL Cloud Native Computing Foundation (CNCF) Pending 2024	 CCK for Kubernetes (CCKM) CCK for Kubernetes (CCKM) Cloud Native Computing Foundation (CNCF) Pending 2024	 ChaosBlade ChaosBlade Cloud Native Computing Foundation (CNCF) Pending 2024	 Clusterpedia Clusterpedia Cloud Native Computing Foundation (CNCF) Pending 2024	 CNI-Genie CNI-Genie Cloud Native Computing Foundation (CNCF) Pending 2024	 CONFIDENTIAL CONTAINERS CONFIDENTIAL CONTAINERS Cloud Native Computing Foundation (CNCF) Pending 2024	
 ContainerSSH ContainerSSH Cloud Native Computing Foundation (CNCF) Pending 2024	 Curiefense Curiefense Cloud Native Computing Foundation (CNCF) Pending 2024	 Curve Curve Cloud Native Computing Foundation (CNCF) Pending 2024	 Devfile.io Devfile.io Cloud Native Computing Foundation (CNCF) Pending 2024	 DevSpace DevSpace Cloud Native Computing Foundation (CNCF) Pending 2024	 DevStream DevStream Cloud Native Computing Foundation (CNCF) Pending 2024	 dex dex Cloud Native Computing Foundation (CNCF) Pending 2024	 DISTRIBUTION DISTRIBUTION Cloud Native Computing Foundation (CNCF) Pending 2024	 edklib-ansible edklib-ansible Cloud Native Computing Foundation (CNCF) Pending 2024	 EKS-Edge EKS-Edge Cloud Native Computing Foundation (CNCF) Pending 2024	 FLUID FLUID Cloud Native Computing Foundation (CNCF) Pending 2024	 FONIO FONIO Cloud Native Computing Foundation (CNCF) Pending 2024	 Hexa Hexa Cloud Native Computing Foundation (CNCF) Pending 2024	 INCLAVARE INCLAVARE Cloud Native Computing Foundation (CNCF) Pending 2024	
 K3S K3S Cloud Native Computing Foundation (CNCF) Pending 2024	 K8GB K8GB Cloud Native Computing Foundation (CNCF) Pending 2024	 k8up k8up Cloud Native Computing Foundation (CNCF) Pending 2024	 KARMADA KARMADA Cloud Native Computing Foundation (CNCF) Pending 2024	 Keylime Keylime Cloud Native Computing Foundation (CNCF) Pending 2024	 ko ko Cloud Native Computing Foundation (CNCF) Pending 2024	 KONVEYOR KONVEYOR Cloud Native Computing Foundation (CNCF) Pending 2024	 KRATOR KRATOR Cloud Native Computing Foundation (CNCF) Pending 2024	 KUSTLEST KUSTLEST Cloud Native Computing Foundation (CNCF) Pending 2024	 Kube-OVN Kube-OVN Cloud Native Computing Foundation (CNCF) Pending 2024	 kubernetes kubernetes Cloud Native Computing Foundation (CNCF) Pending 2024	 kubearmor kubearmor Cloud Native Computing Foundation (CNCF) Pending 2024	 KubeDL KubeDL Cloud Native Computing Foundation (CNCF) Pending 2024	 kuberhealthy kuberhealthy Cloud Native Computing Foundation (CNCF) Pending 2024	
 Kubescape Kubescape Cloud Native Computing Foundation (CNCF) Pending 2024	 KubeVela KubeVela Cloud Native Computing Foundation (CNCF) Pending 2024	 KUBEWARDEN KUBEWARDEN Cloud Native Computing Foundation (CNCF) Pending 2024	 KUDO KUDO Cloud Native Computing Foundation (CNCF) Pending 2024	 Kuma Kuma Cloud Native Computing Foundation (CNCF) Pending 2024	 Kured Kured Cloud Native Computing Foundation (CNCF) Pending 2024	 Lima Lima Cloud Native Computing Foundation (CNCF) Pending 2024	 M M Cloud Native Computing Foundation (CNCF) Pending 2024	 MESHERY MESHERY Cloud Native Computing Foundation (CNCF) Pending 2024	 Mellanox Mellanox Cloud Native Computing Foundation (CNCF) Pending 2024	 Network Service Mesh Network Service Mesh Cloud Native Computing Foundation (CNCF) Pending 2024	 Nocalhost Nocalhost Cloud Native Computing Foundation (CNCF) Pending 2024	 Open Cluster Management Open Cluster Management Cloud Native Computing Foundation (CNCF) Pending 2024	 Open Policy Containers Open Policy Containers Cloud Native Computing Foundation (CNCF) Pending 2024	
 Open Service Mesh Open Service Mesh Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenCost OpenCost Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenEBS OpenEBS Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenELB OpenELB Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenFeature OpenFeature Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenFGA OpenFGA Cloud Native Computing Foundation (CNCF) Pending 2024	 OPEN FUNCTION OpenFunction Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenGitOps OpenGitOps Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenKruise OpenKruise Cloud Native Computing Foundation (CNCF) Pending 2024	 OpenYurt OpenYurt Cloud Native Computing Foundation (CNCF) Pending 2024	 ORAS ORAS Cloud Native Computing Foundation (CNCF) Pending 2024	 PARALUS PARALUS Cloud Native Computing Foundation (CNCF) Pending 2024	 PARSEC PARSEC Cloud Native Computing Foundation (CNCF) Pending 2024	 Piraeus Piraeus Cloud Native Computing Foundation (CNCF) Pending 2024	
 PIXIE Pixie Cloud Native Computing Foundation (CNCF) Pending 2024	 Porter Porter Cloud Native Computing Foundation (CNCF) Pending 2024	 Pravega Pravega Cloud Native Computing Foundation (CNCF) Pending 2024	 SCHEMAHERD SCHEMAHERD Cloud Native Computing Foundation (CNCF) Pending 2024	 sealer sealer Cloud Native Computing Foundation (CNCF) Pending 2024	 SERVERLESS DEVS Serverless Devs Cloud Native Computing Foundation (CNCF) Pending 2024	 Serverless Workflow Serverless Workflow Cloud Native Computing Foundation (CNCF) Pending 2024	 Serverless Workflow Serverless Workflow Cloud Native Computing Foundation (CNCF) Pending 2024	 Serverless Workflow Serverless Workflow Cloud Native Computing Foundation (CNCF) Pending 2024	 Serverless Workflow Serverless Workflow Cloud Native Computing Foundation (CNCF) Pending 2024	 Skooner Skooner Cloud Native Computing Foundation (CNCF) Pending 2024	 STRIMZI STRIMZI Cloud Native Computing Foundation (CNCF) Pending 2024	 SUBMARINER SUBMARINER Cloud Native Computing Foundation (CNCF) Pending 2024	 SuperEdge SuperEdge Cloud Native Computing Foundation (CNCF) Pending 2024	
 teller teller Cloud Native Computing Foundation (CNCF) Pending 2024	 tinkerbell tinkerbell Cloud Native Computing Foundation (CNCF) Pending 2024	 Tremor Tremor Cloud Native Computing Foundation (CNCF) Pending 2024	 trickster trickster Cloud Native Computing Foundation (CNCF) Pending 2024	 Vineyard Vineyard Cloud Native Computing Foundation (CNCF) Pending 2024	 Virtual Kubelet Virtual Kubelet Cloud Native Computing Foundation (CNCF) Pending 2024	 wasmcloud wasmcloud Cloud Native Computing Foundation (CNCF) Pending 2024	 WarmGatekeeper WarmGatekeeper Cloud Native Computing Foundation (CNCF) Pending 2024	 WarmGatekeeper WarmGatekeeper Cloud Native Computing Foundation (CNCF) Pending 2024	 WarmGatekeeper WarmGatekeeper Cloud Native Computing Foundation (CNCF) Pending 2024	 werf werf Cloud Native Computing Foundation (CNCF) Pending 2024	 zot zot Cloud Native Computing Foundation (CNCF) Pending 2024			

- 진정한 클라우드 네이티브를 위한 오픈소스 활용과 성숙도
 - Linux 재단의 산하 재단인 CNCF(Cloud Native Computing Foundation)에서 Cloud Native Opensource 기술의 Governance 및 정책 주관
 - Opensource 성숙도 평가 방법론 ; Crossing The Chasm

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



End User가 견인하는 커뮤니티 - 170+ End User 회원사



[See all end user members in the member landscape!](#)

Plus 17 non-public members



- 세계 최대의 클라우드 및 소프트웨어 기업이 참여 중

Platinum Members



Gold Members

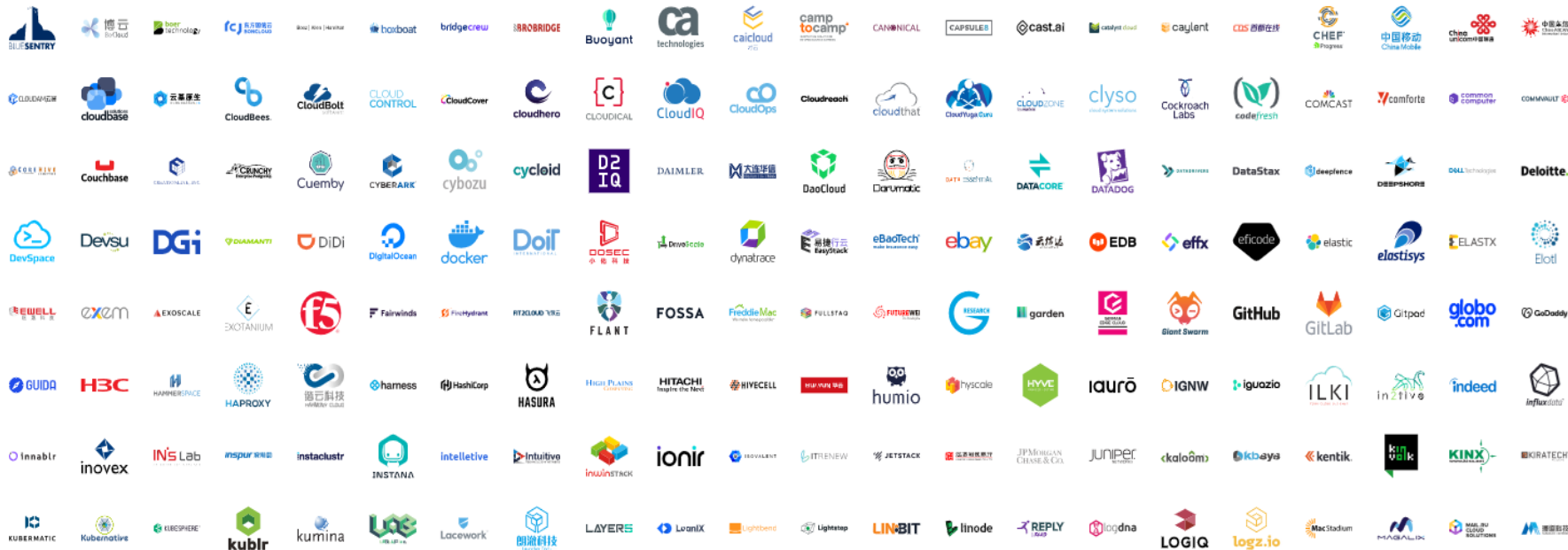


Academic/Nonprofit Members



- 실버 회원사 - 630+ members

Silver Members



[See all Silver members in the member landscape!](#)



▪ 국내 회원사(28)

Acornsoft



clai^on



Didim365



INNOGRID



kt NexR



MakinaRocks

manTech
better solution



Cloud

namu



PINPOINT



SAMSUNG SDS

TmaxCloud

UWS™



NIA 한국지능정보사회진흥원
NATIONAL INFORMATION SOCIETY AGENCY

TTA 한국정보통신기술협회
Telecommunications Technology Association



- 기업이 클라우드 네이티브를 채택하는 이유
 - 개별 애플리케이션, 시스템 및 데이터 센터 장애 시 복원력 및 가용성이 향상됩니다
 - 더 적은 수의 서버에서 동일한 수의 서비스를 운영할 수 있는 높은 리소스 효율성을 보장합니다
 - 클라우드 네이티브는 멀티 클라우드(퍼블릭 클라우드 간 전환 또는 여러 클라우드에서 실행) 및 하이브리드 클라우드(데이터 센터와 퍼블릭 클라우드 간에 워크로드 이동)를 허용합니다
 - 클라우드 네이티브 인프라는 개발 속도를 높이고 위험을 낮추면서 서비스를 더 빠르게 개선할 수 있습니다



- 22년 클라우드 네이티브 오픈소스 사용 보고서

CNCF 2022

ANNUAL SURVEY



보고서 다운로드



New Normal이 된 컨테이너

- 79% 프로덕션 상에서 컨테이너 사용 중

Used for **most or all** production applications and business segments throughout the organization

44%

대부분/전체 프로덕션 사용

Used for **a few** production applications and business segments in the organization

35%

일부 프로덕션에서 사용

Piloting or **actively evaluating**

9%

파일럿/ 검토 중



WebAssembly의 부상

- Serverless 에서로 진화
 - 37% End User WebAssembly조직이 WebAssembly 기반으로 앱 배포 경험 있음.

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 **cloud native 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.

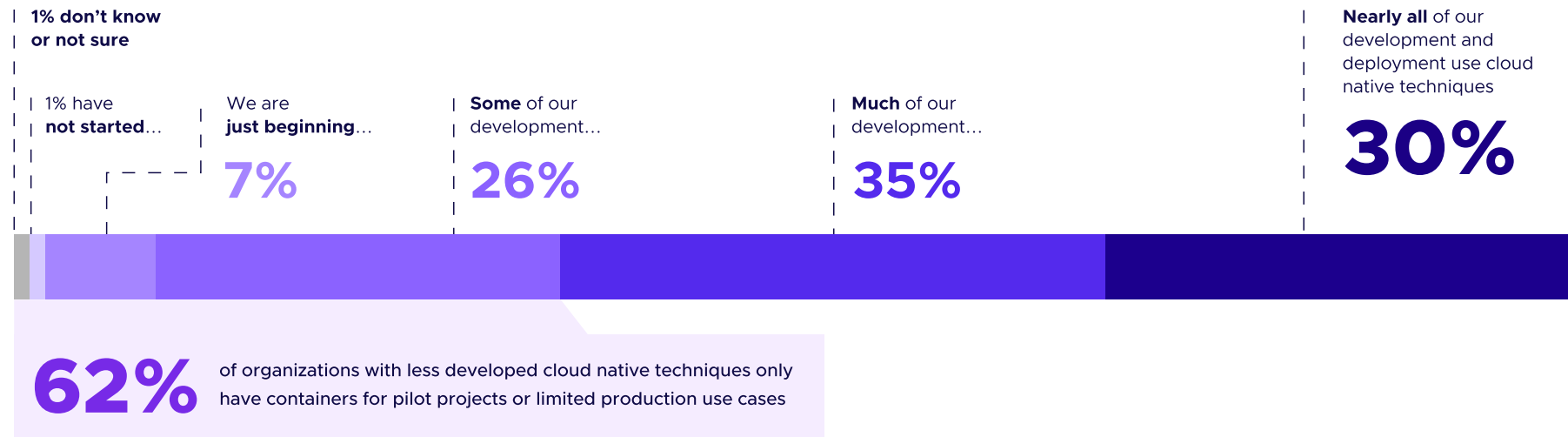
With containers now mainstream, in 2022 the uptake of serverless architecture is setting the stage for WebAssembly, which was asked about for the first time in this survey. Overall, 37% of end user organizations have some experience deploying applications with WebAssembly. Although many are still just personally testing the waters, WasmEdge and WAMR are the top runtimes being used.

출처: CNCF 2022 Annual Survey



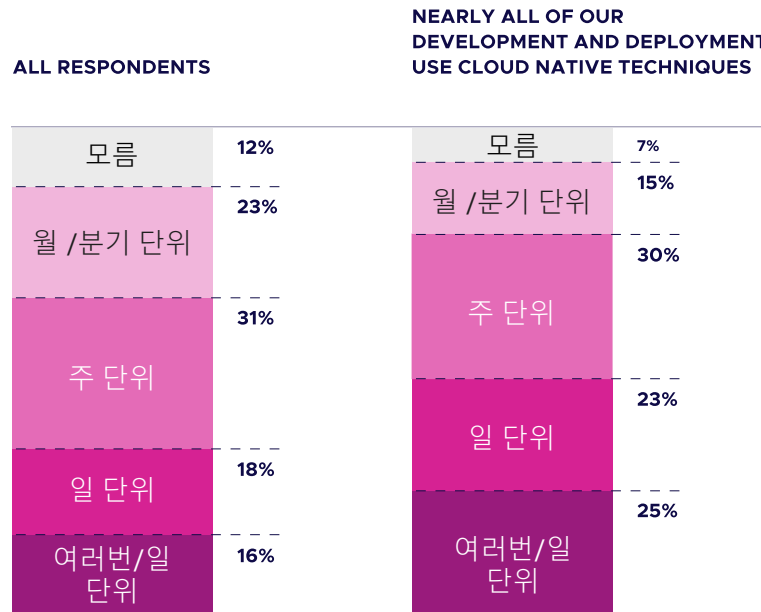
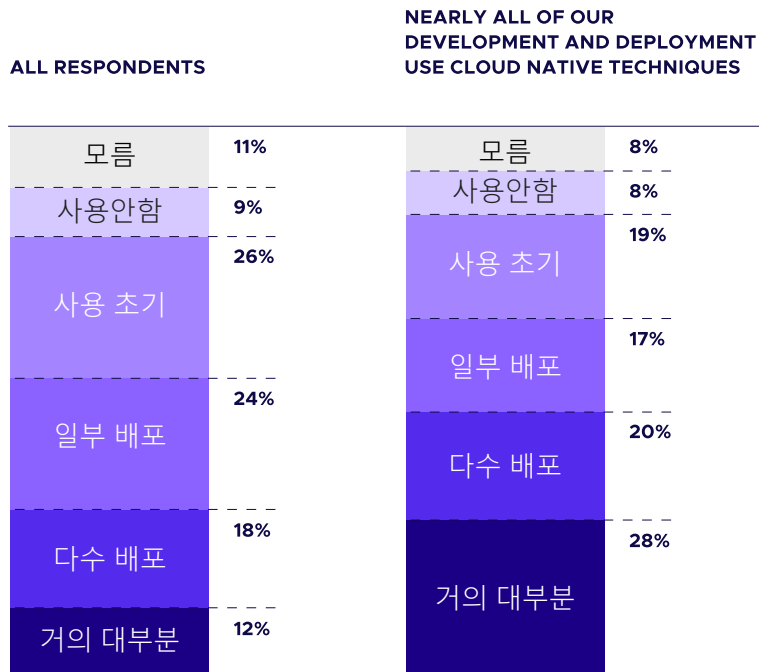
컨테이너 기술 채택의 속도

- 기업이 컨테이너 기술을 도입하는 속도가 클라우드 네이티브 기술의 발전속도 보다 빠름



클라우드 네이티브 조직과 GitOps

- 클라우드 네이티브의 사용이 익숙한 조직일수록 GitOps 도입율이 높음 (4배)
- 클라우드 네이티브 방식을 활용하는 조직이 더 빈번한 배포 사이클 가능함



쿠버네티스 사용자 분석

- CNCF End User는 벤더, 컨설팅, 교육 파트너 또는 통신사를 제외한 내부적으로 클라우드 네이티브 기술을 활용하지만, 클라우드 네이티브 서비스를 직접 판매하지 않는 CNCF 멤버사로 정의함.

END USERS

CNCF End Users are member companies that use cloud native technologies internally, do not sell any cloud native services externally, and aren't vendors, consultancies, training partners, or telecommunications companies. Individuals within these end user companies are passionate about solving problems using cloud native architectures and providing teams with self-service solutions which create a more inclusive, iterative process.

쿠버네티스 사용자 분석

- CNCF End User의 쿠버네티스 활용 수준은 Non-End user 보다 상당히 높음



END USERS

64%

Using in production

25%

Piloting / evaluating



NON-END USERS

49%

Using in production

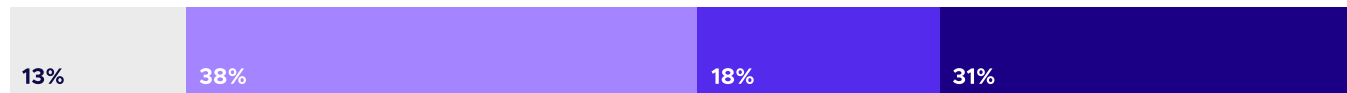
20%

Piloting / evaluating

END USERS



NON-END USERS

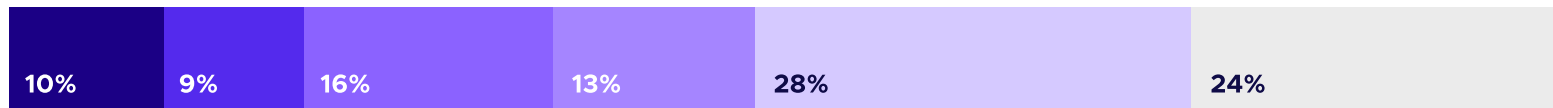


쿠버네티스 사용자 분석

- 컨테이너 오케스트레이션을 위한 대안 툴을 검토하는 End User의 비율도 상당히 높음

END USERS

72%



NON-END USERS

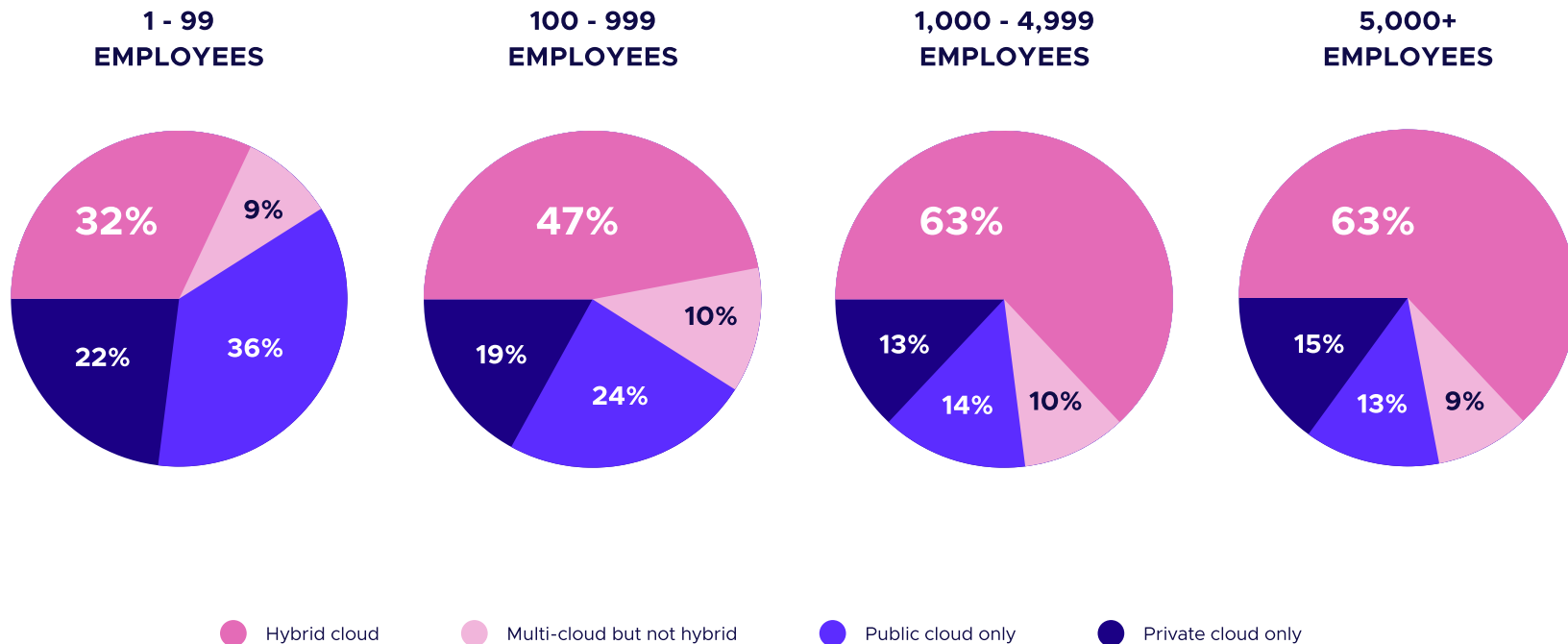
48%

● 4 or more tools ● 3 Tools ● 2 Tools ● 1 Tool ● 0 Tools ● Don't Know / Not Sure



쿠버네티스 사용자 분석

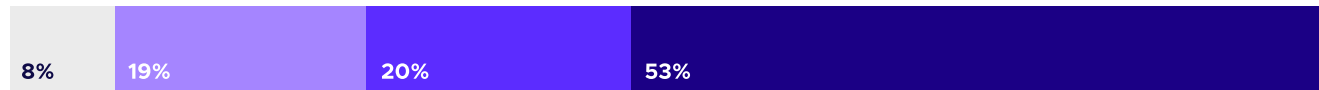
- 대기업일수록 하이브리드 클라우드를 운영하는 경우가 더 높음



쿠버네티스 사용자 분석

- 프로덕션에서 클러스터 운영수가 많을 수록 하이브리드 클라우드 선호

HYBRID CLOUD



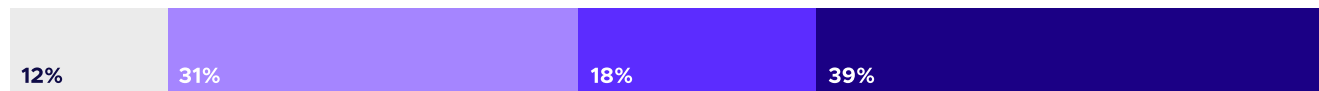
● Don't Know / Not Sure

● 1-5 Clusters

● 6-10 Clusters

● 10+ Clusters

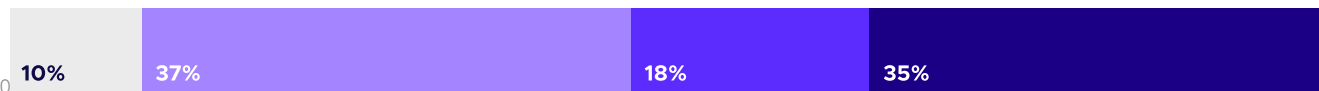
MULTI-CLOUD BUT NOT HYBRID



PUBLIC CLOUD ONLY



PRIVATE CLOUD ONLY



쿠버네티스는 이제 클라우드 운영 시스템으로 부상

- 쿠버네티스 활용범위 확대되면서 Operating system으로 부상
 - Application workload 중심에서 non-application workload(system and auxiliary workload) 사용으로 활용범위가 확대
 - 쿠버네티스 클러스터의 Auxiliary workload 가 211% YoY 성장

30% ↑

APPLICATION WORKLOADS

2021
59%

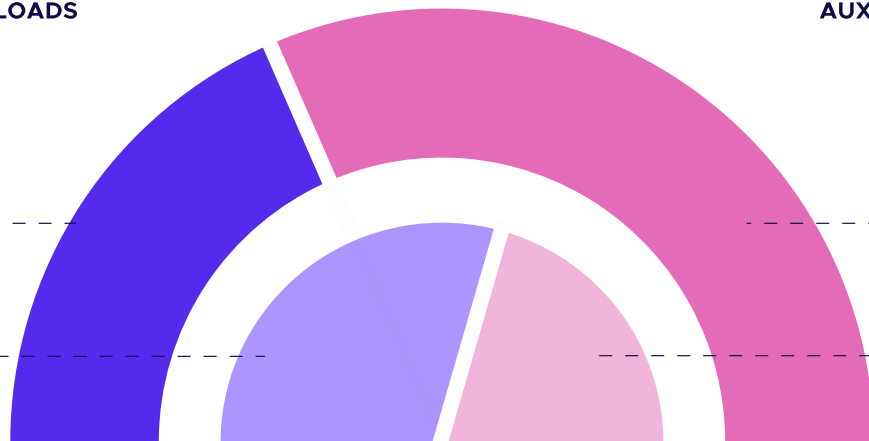
2022
37%

211% ↑

AUXILIARY WORKLOADS

2021
41%

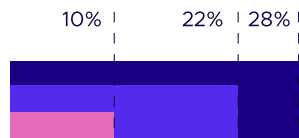
2022
63%



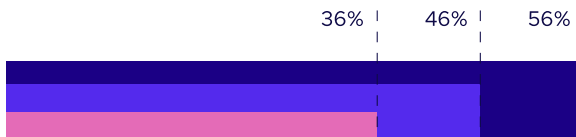
눈 여겨볼 CNCF Projects

- OpenTelemetry, Argo, Containerd, CoreDNS 의 사용량 급증

ARGO ↑ (Graduated)



CONTAINERD ↑ (Graduated)

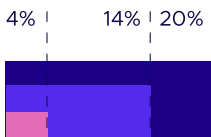


● 2020 ● 2021 ● 2022

COREDNS ↑ (Graduated)



OPEN TELEMETRY ↑ (Incubating)

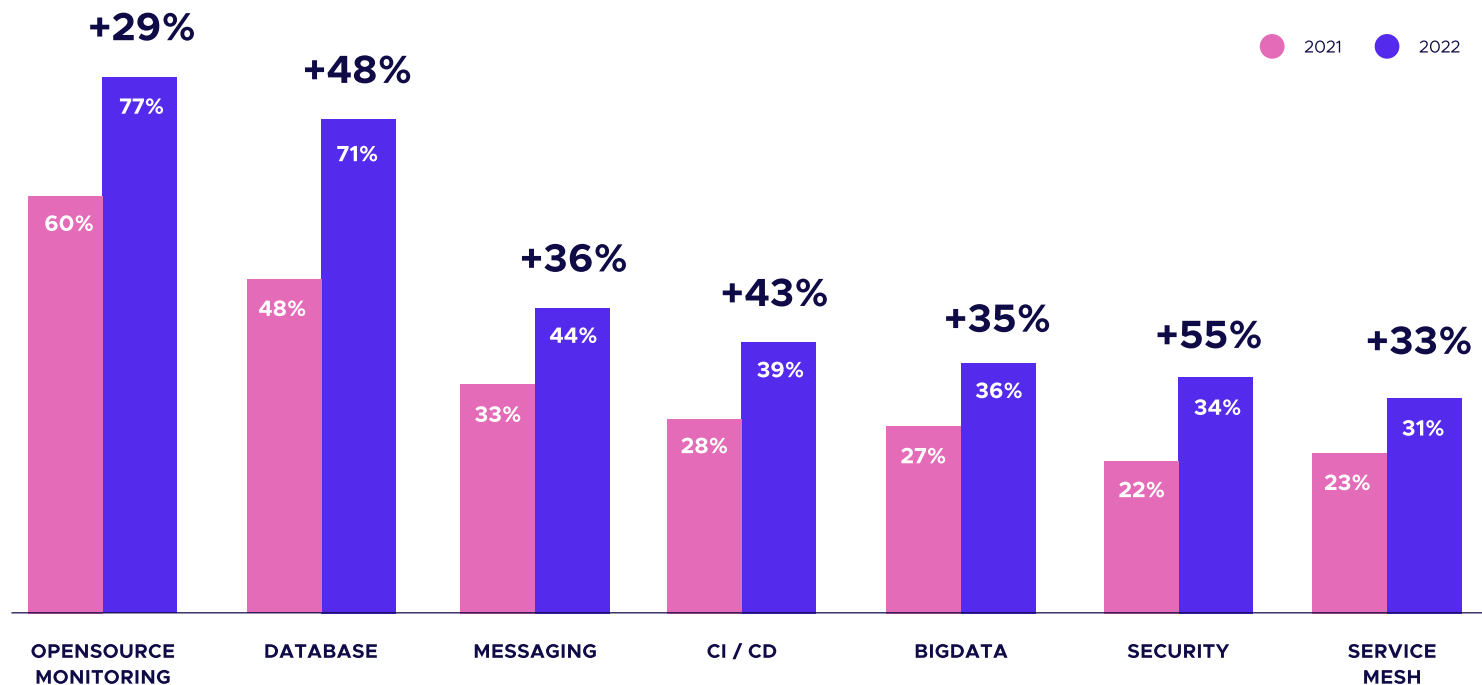


The adoption of CNCF incubated and graduated projects once again increased in 2022, with [OpenTelemetry](#) and [Argo](#) scoring the largest jumps in usage. The former rose from 4% in 2020 to 20% in 2022 and the latter from 10% to 28%. Meanwhile [Containerd](#) (36% to 56%) and [CoreDNS](#) (48% to 56%) are the graduated projects with the greatest increase in use and evaluation.



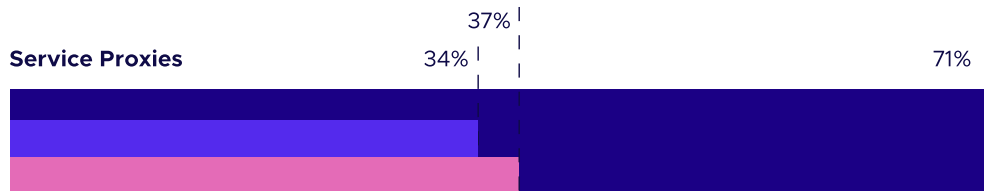
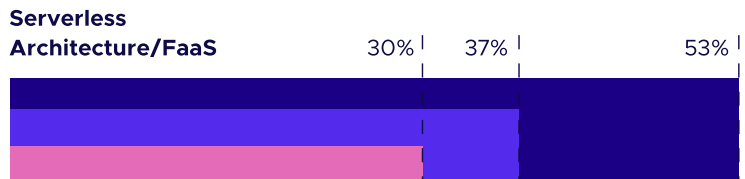
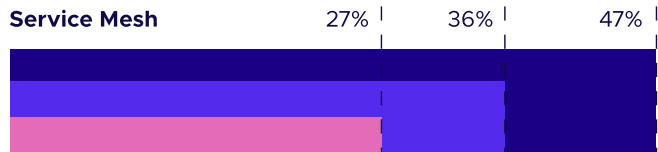
프로덕션에서 다양한 툴 사용 증가

- Observability, Security, Database, CI/CD 등 쿠버네티스 클러스터 운영에 필요한 다양한 클라우드 네이티브 툴이 성장



예상보다 높은 프로덕션상의 기술 활용

- 프로덕션에서 클라우드 네이티브 기술의 활용이 예상보다 높음
 - 서비스 메시 2020년 27% → 2022년 47%
 - 서버리스 아키텍처/FaaS 2020년 30% → 2022년 53%



● 2020 ● 2021 ● 2022



CNCF Project 사용시 어려움



- 사용자들은 보안 정책과 GitOps 도입을 통한 불안요소 최소화
- CNCF 보안 프로젝트의 적극 활용을 통한 보안 강화
- CNCF 의 Graduate project 사용 (Incubating 프로젝트 대비 보안 성숙도가 높음)



- 신규/유망 오픈소스 프로젝트 소개 – Crossplane, Cilium, dex

Reset Filters

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.

- Grouping
 - No Grouping
- Sort By
 - Stars (high to low)
- Category
 - Any
- CNCF Relation
 - Any
- License
 - Any
- Organization
 - Any
- Headquarters Location
 - Any

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

Landscape Card Mode Serverless Members

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

Tweet 694

No Grouping (1158)



kubernetes

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



elastic

Elastic
★ 42,628
MCap: \$7.09B



NETDATA

Netdata
★ 39,579




ANSIBLE

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



redis

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



serverless

Serverless
★ 30,993
Funding: \$13M

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



Grafana

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



No Code

No Code
★ 29,736



Dubbo

Dubbo
Apache Software Foundation
★ 27,880



etcd

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



Prometheus

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



traefik

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



APACHE Spark

Apache Spark
★ 22,617



Kong

Kong
★ 22,580
Funding: \$69.1M



RethinkDB

RethinkDB
Linux Foundation
★ 22,388




gRPC

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



GitLab

GitLab
★ 21,901
Funding: \$168.2M



SENTRY

Sentry
★ 21,457
Funding: \$26.5M



KubeCon CloudNativeCon
Nov. 18 - 21 San Diego, CA



KubeCon CloudNativeCon
March 30 - April 2 Amsterdam

App Definition and Development

Database: KV, V, ...
 Streaming & Messaging: CloudEvents, ...
 Application Definition & Image Build: HELM, ...
 Continuous Integration & Delivery: argo, flux, ...

Orchestration & Management

Scheduling & Orchestration: kubernetes, ...
 Coordination & Service Discovery: CoreDNS, etcd, ...
 Remote Procedure Call: gRPC, ...
 Service Proxy: envoy, ...
 API Gateway: ...
 Service Mesh: LINKERD, ...

Runtime

Cloud Native Storage: ...
 Container Runtime: cri-o, ...
 Cloud Native Network: cilium, CNi, ...

Provisioning

Automation & Configuration: ...
 Container Registry: ...
 Security & Compliance: ...
 Key Management: spiffe, ...

Special

Kubernetes Certified Service Provider: ...
 Kubernetes Training Partner: ...

Platform

Certified Kubernetes - Distribution: ...
 Certified Kubernetes - Hosted: ...
 Certified Kubernetes - Installer: ...
 PaaS/Container Service: ...

Serverless

...

Members

...

CD Foundation Landscape

...

Observability and Analysis

Monitoring: Thanos, ...
 Logging: fluentd, ...
 Tracing: ...
 Chaos Engineering: Litmus, ...

CLOUD NATIVE Landscape

Cloud Native Open Source Foundation
 Redhat | Amplify

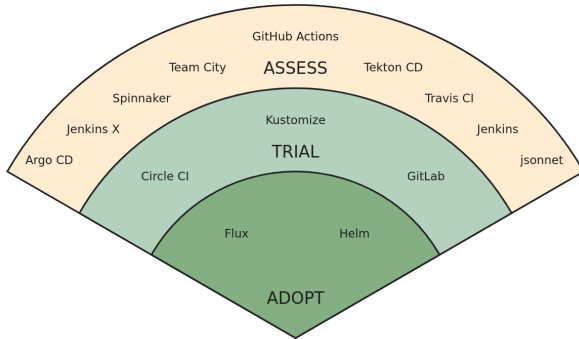
This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

l.cncf.io

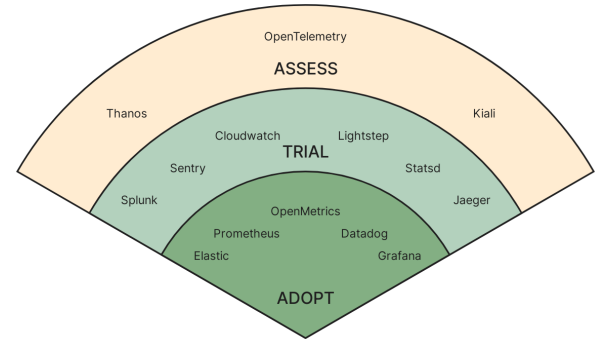
■ CNCF End User Tech Radar

- Technology Radar 는 새로 부상하는 기술에 대한 가이드로 CNCF End User 가 사용하고 권고하는 클라우드 네이티브 기술 안내서로, DevSecOps, 멀티클러스터 관리, Secret 관리, Database Storage 외 다양한 분야에 대한 보고서 참조 가능

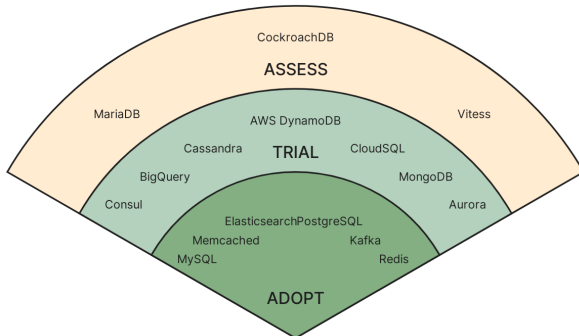
CNCF Technology Radar Continuous Delivery, June 2020



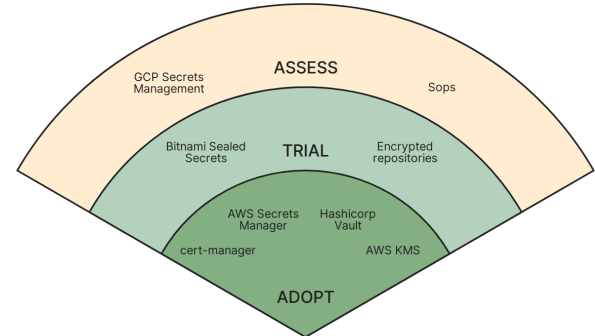
CNCF Technology Radar Observability, September 2020



CNCF Technology Radar Database Storage, November 2020



CNCF Technology Radar Secret Management, February 2021

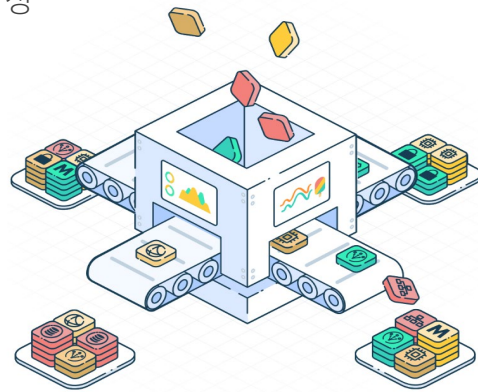


Cloud Native Control Planes

- 2021년 9월 Sandbox → Incubating 프로젝트 승격
- 애플리케이션에서 필요한 인프라를 K8s에서 직접 관리 가능한 클라우드 네이티브 컨트롤 플레인
- Crossplane 을 사용하여 플랫폼 팀이 코드 작성 없이 자체 클라우드 API 구성 가능
- 운영팀은 해당 클라우드 API를 애플리케이션 팀에 셀프 서비스 쿠버네티스를 위한 선언적 API 제공
- 프로덕션 환경에 적용되어 사용중인 기업 : [BMW Group](#), [Accenture](#), [BBD](#), [CloudCheckr](#), [Deutsche Bahn](#), [DFDS](#), [Mothership](#), [Plotly](#), [PTC](#), [RipCord](#), [Squiz](#), [VSHN](#), [Zego](#)
- <https://crossplane.io/>
- Latest Version: 1.8.1

Crossplane 장점

- 선언적 환경설정 지원
- 어플리케이션, 인프라 환경설정 및 배포를 일원화
- 인프라 환경설정 및 셋업을 하나의 소스에서 진행
- 조정 컨트롤러(reconciling controller) 사용을 통한 운영 업무 자동화
- 높은 확장성



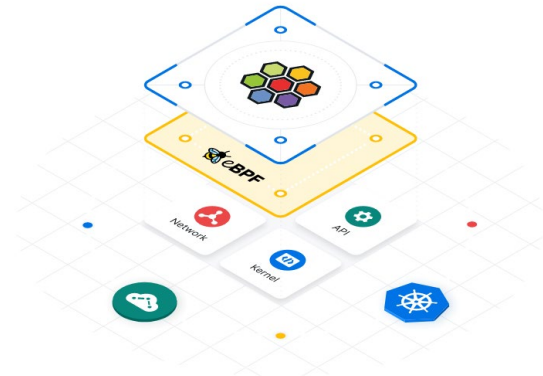


eBPF-based Networking, Security, Observability

- 2021년 10월 Sandbox → Incubating 프로젝트 승격
- Cilium은 eBPF를 이용하여 쿠버네티스의 네트워크 레이어를 강화하며 CNI 역할을 통해 클라우드 네이티브 환경을 위한 네트워킹, 보안 및 관측가능성을 제공
- K8s환경에 적용하여 사용중인 기업 : Adobe, Capital One, Cognite, Datadog, GitLab, Palantir, SAP Concur, Telenor, Trip.com, Wildlife Studios, Yahoo
- Alibaba, AWS, DigitalOcean, GCP 등의 클라우드 벤더 역시 Cilium 을 CNI 플러그인으로 사용하고 있음
- <https://cilium.io/get-started>
- Latest Version: 1.11.6

Cilium 주요 마일스톤

- 9K GitHub Stars
- 12K pull requests
- 342 GitHub contributors
- 365+ Releases
- 8.3K Slack members





OpenID Connect(OIDC) identity and OAuth 2.0 provider with pluggable connectors

- Sandbox 프로젝트 승격
- Dex 는 OpenID Connect 를 사용하는 아이덴티티 서비스이며, '커넥터' 를 이용하여 다른 아이덴티티 제공업체들의 포탈 역할을 함. 클라이언트가 Dex와 소통을 위한 authentication 로직을 작성하고 dex가 백엔드 프로토콜을 관리
- <https://dexidp.io/>
- Latest Version: 2.32.0
- 관련 웨비나 : <https://youtu.be/g3ZOCY8L9rl>
- 7.1K GitHub Stars
- 220+ GitHub contributors
- 70+ Releases



- 오픈소스 참여는 어떻게 하는가?

■ 커뮤니티 참여방법

- › [앰배서더 프로그램](#)
 - 각 지역의 클라우드 네이티브 인플루언서
- › [멘토십 프로그램](#)
 - 오픈소스를 배우고 함께 성장
- › [클라우드 네이티브 커뮤니티 그룹](#)
 - 각 지역의 밋업 행사
- › [Kubernetes Community Days](#)
 - 각 지역별로 진행되는 커뮤니티 행사
- › [KubeCon + CloudNativeCon](#)
 - 글로벌 프리미어 클라우드 네이티브 행사
 - 후원사가 주관하는 코로케이트 행사도 동시 진행



- 주요 링크

- › 웹사이트 : <https://www.cncf.io/>

- › GitHub: <https://github.com/cncf>

- › Slack : <https://communityinviter.com/apps/cloud-native/cncf>

- › Mailing list : <https://lists.cncf.io/g/main/subgroups>

- › Contribute : <https://contribute.cncf.io/>



- 공헌하는 방법 - code & cloud native evangelism

CODE - 기술자문 위원회

(Technical Oversight Committee)

- Special Interest Groups
 - [App Delivery](#)
 - [Contributor Strategy](#)
 - [Network](#)
 - [Runtime](#)
 - [Security](#)
 - [Storage](#)
 - [Observability](#)
- Working Groups
 - [Continuous Integration \(CI\)](#)
 - [Serverless](#)
- 80+ 개 이상 프로젝트
- [CNF Test Suite](#)
- [CNF WG](#)

NON CODE – 클라우드 네이티브 에반젤리즘

- Cartografos WG - 준비중!
- CNCF.io blog (프로젝트 및 멤버)
- Kubernetes.io blog (일반 공개)
- 마케팅 위원회(회원사만 참여가능)
 - [Business Value Subcommittee](#)
 - [Cloud Native Glossary](#) (일반 공개)
- Online Programs (회원사만 제공)



■ 교육 및 전문 기술 자격증

- › 쿠버네티스 MOOC 통한 교육 등록자수 : 242,000 건
- › Certified Kubernetes Administrator (CKA) 시험 등록자수 : 84,000 명
- › Certified Kubernetes Application Developer (CKAD) 시험 등록자수 : 39,000
- › Certified Kubernetes Security Specialist (CKS) 시험 등록자수 : 15,000
- › Kubernetes and Cloud Native Associate Exam (KCNA) 시험 등록자수 : 1,900

› 추가 교육과정 :

- Service Mesh Fundamentals
- Manager Kubernetes Applications with Helm
- Cloud Native Logging with Fluentd
- Intro to Service Mesh with Linkerd
- Intro to Serverless on Kubernetes
- Intro to WebAssembly



■ Certified Kubernetes Conformance

- › 소프트웨어 적합성은 모든 벤더의 쿠버네티스 버전이 오픈소스 커뮤니티 버전과 마찬가지로 필수 API를 지원하도록 합니다.
- › 쿠버네티스를 사용하는 조직의 경우, 적합성은 하나의 쿠버네티스 설치에서 다음 설치로의 상호운용성을 가능하게 합니다. 이는 조직이 유연하게 벤더를 선택할 수 있게 합니다.
- › CNCF는 Certified Kubernetes Conformance Program을 운영을 합니다. 세계 최고의 엔터프라이즈 소프트웨어 벤더와 클라우드 컴퓨팅 사업자들이 Certified Kubernetes 서비스를 제공하고 있습니다.



▪ Kubernetes Certified Service Provider (KCSP)

- › KCSP 는 쿠버네티스를 성공적으로 도입하도록 지원한 경험이 풍부한 검증된 서비스 제공업체에게 제공하는 자격증입니다. KCSP인증 기업은 쿠버네티스 지원, 컨설팅, 프로페셔널 서비스와 교육을 제공할 수 있는 역량을 갖추고 있습니다.
- › 취득 조건
 - CKA 시험을 통과한 엔지니어 3명 이상 보유
 - 엔터프라이즈 최종사용자를 지원할 수 있는 비즈니스 모델
 - 교육, 컨설팅, 구축 및 서포트 서비스 등의 쿠버네티스 프로페셔널 서비스에 대한 자세한 설명이 갖춰진 랜딩 페이지
 - CNCF 멤버 가입



Thank you
<https://www.cncf.io>

For more information, please contact
Sue Chang (장수영이사), CNCF, schang@cncf.io

