

Peut-on mettre 1000  
conteneurs dans  
1 cluster ?  
La réponse avec  
Kubernetes



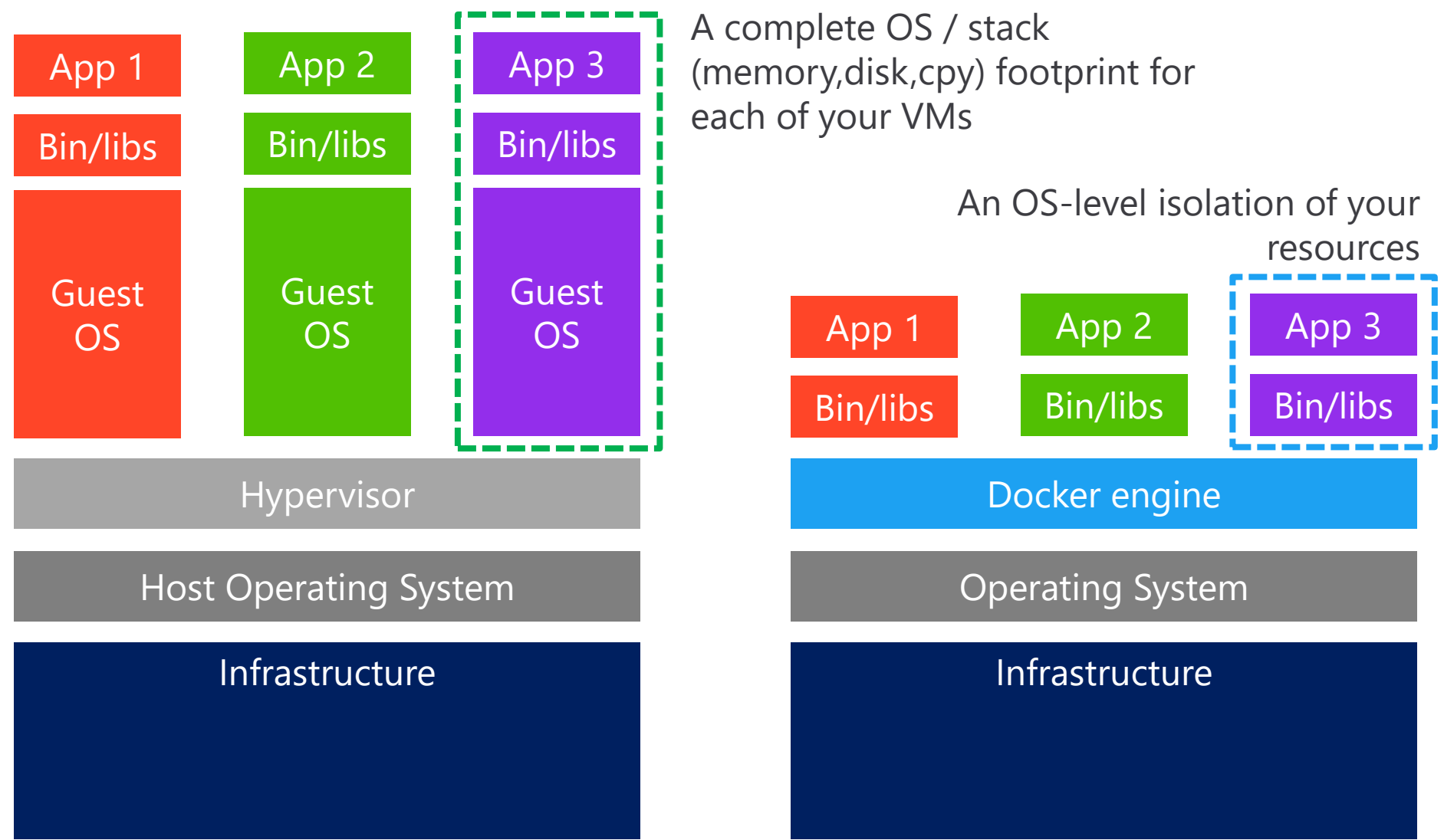
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Microsoft R&D

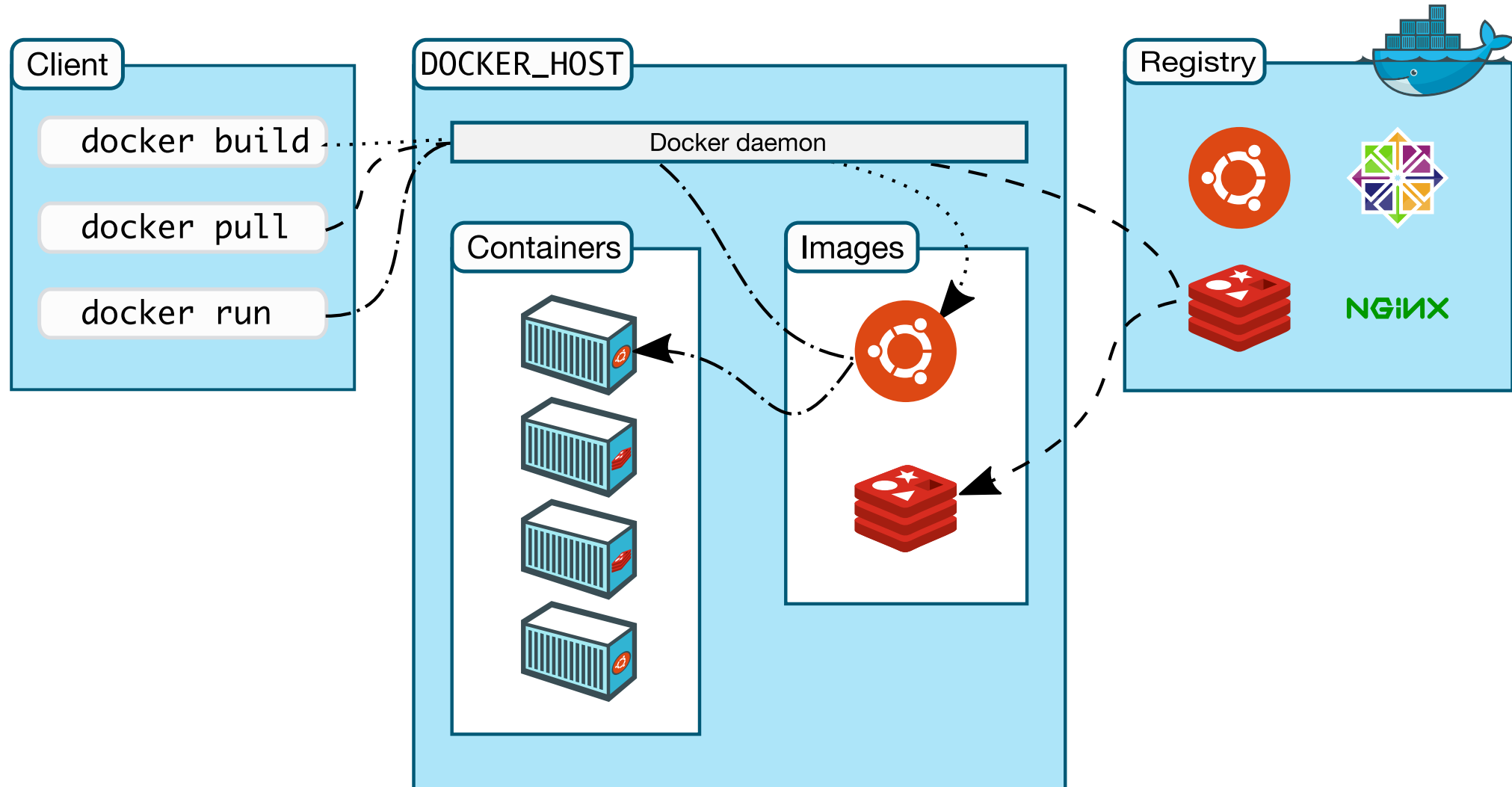
 @cmaneu



# Avant de parler de Kubernetes...c'est quoi un conteneur ?



# Avant de parler de Kubernetes...c'est quoi un conteneur ?



## Est-ce que les conteneurs sont suffisants ?

Comment gérer la persistance des données ?

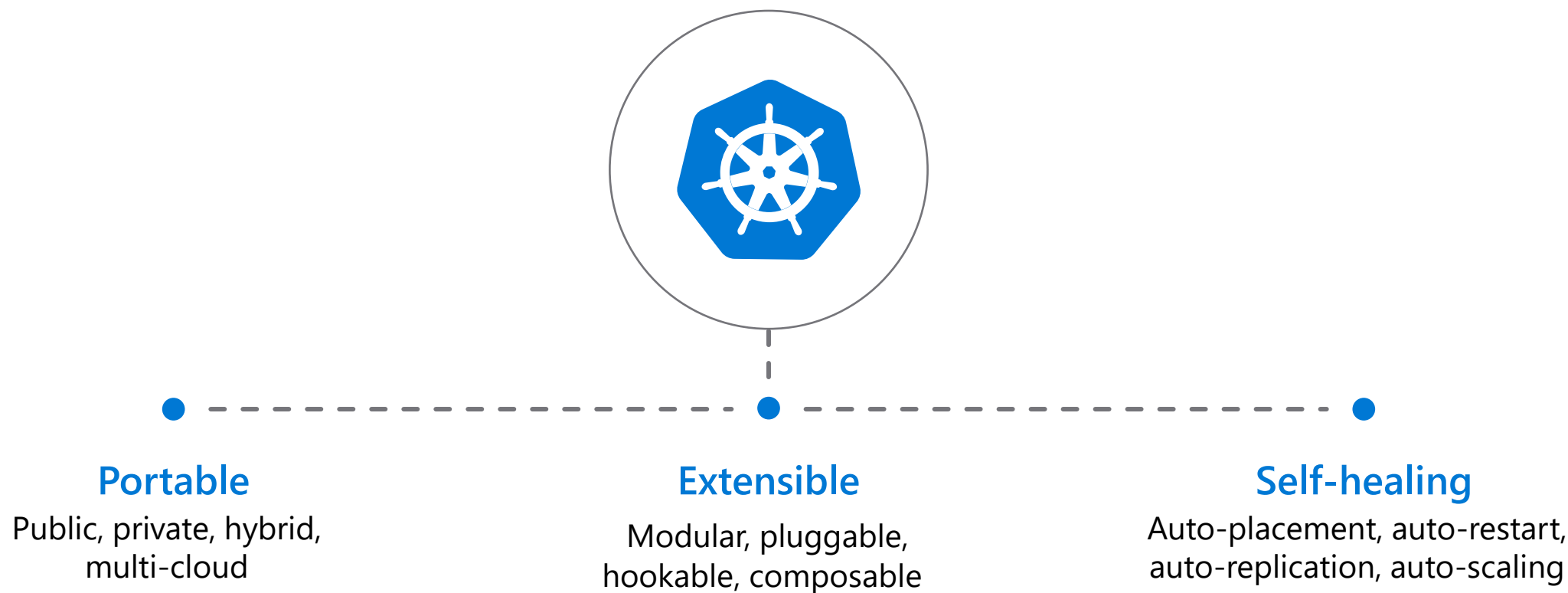
Comment assembler des services utilisant différents conteneurs ?

Comment déployer des conteneurs sur plusieurs nœuds/serveurs ?

Comment implémenter des services "auto-réparants" ? (self-healing)

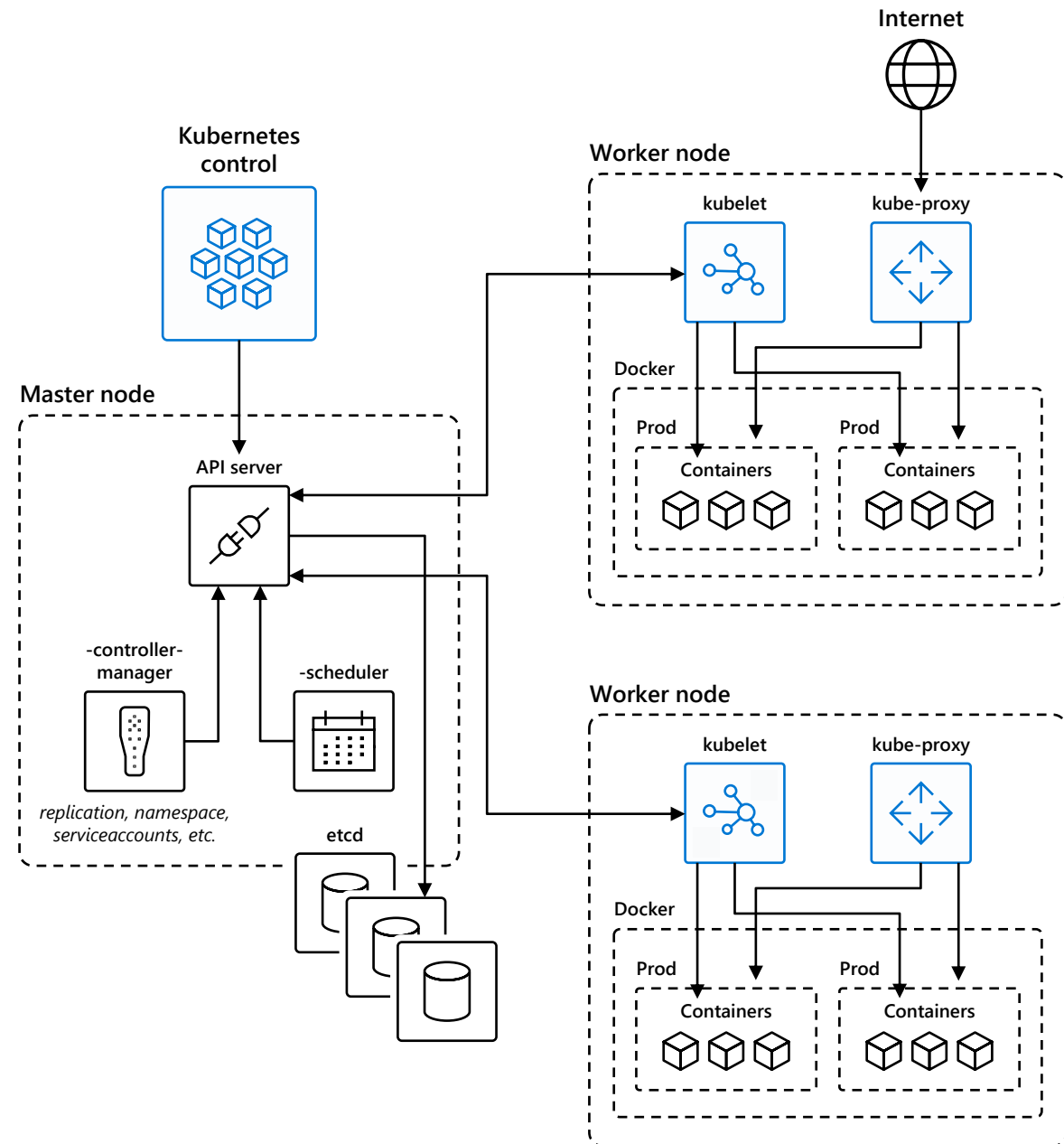
Comment déboguer des services sur des clusters de production ?

# Kubernetes: the industry-leading orchestrator



# Kubernetes 101

1. Kubernetes users communicate with API server and apply desired state
2. Master nodes actively enforce desired state on worker nodes
3. Worker nodes support communication between containers
4. Worker nodes support communication from the Internet



# Microsoft drives community-led innovations for Kubernetes



68% of Kubernetes users\* prefer Helm as their package manager



Visual Studio Code Kubernetes Extensions has 11K monthly active users

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## Microsoft also maintains...

Helm



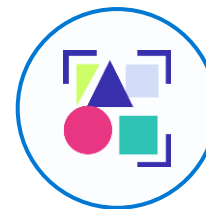
Draft



Brigade



Cloud Native  
Application Bundles  
(CNAB)



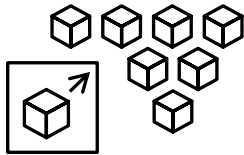
Virtual  
Kubelet



\*August 2018 bi-annual CNCF survey

# Dans quel context on utilise Kubernetes ?

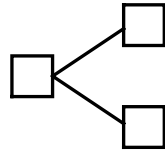
**Lift and shift  
to containers**



**Cost saving**

without refactoring  
your app

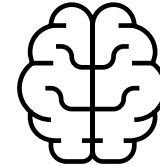
**Microservices**



**Agility**

Faster application  
development

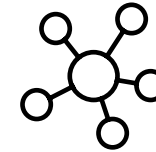
**Machine  
learning**



**Performance**

Low latency  
processing

**IoT**



**Portability**

Build once,  
run anywhere



# Work how you want with opensource tools and APIs

|                                                                  | Development                                                                                                                                                                                                                                                                                                                                                                 | DevOps                                                                                                                                                                                                                                                                                                                                                                     | Monitoring                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Networking                                                                                                                                                                                                   | Storage                                                                                                                                                                                        | Security                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Take advantage of services and tools in the Kubernetes ecosystem | <br><br><br>Virtual kubelet<br><br>CNAB | <br><br><br>HashiCorp<br><br>BRIGADE | <br>Prometheus<br><br>fluentd<br><br>Grafana<br><br>DATADOG<br><br> | <br>CNI<br>Networking<br><br>TIGERA    | <br>MAPR<br><br>portworx | <br>Twistlock<br><br>aqua<br><br>heptio                                     |
| Leverage 100+ turn-key Azure services                            | <br>VS Code                                                                                                                                                                                                                                                                               | <br>DevOps<br><br>ARM                                                                                                                                                                                 | <br>Azure Monitor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <br>Azure VNET<br><br>Azure Policy | <br>Azure Storage                                                                                          | <br>Container Registry<br><br>Azure Active Directory<br><br>Key Vault |

# Tu n'as même pas parlé d'Azure ?

