

# k8s / OpenShift / GKE

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# Who am I?

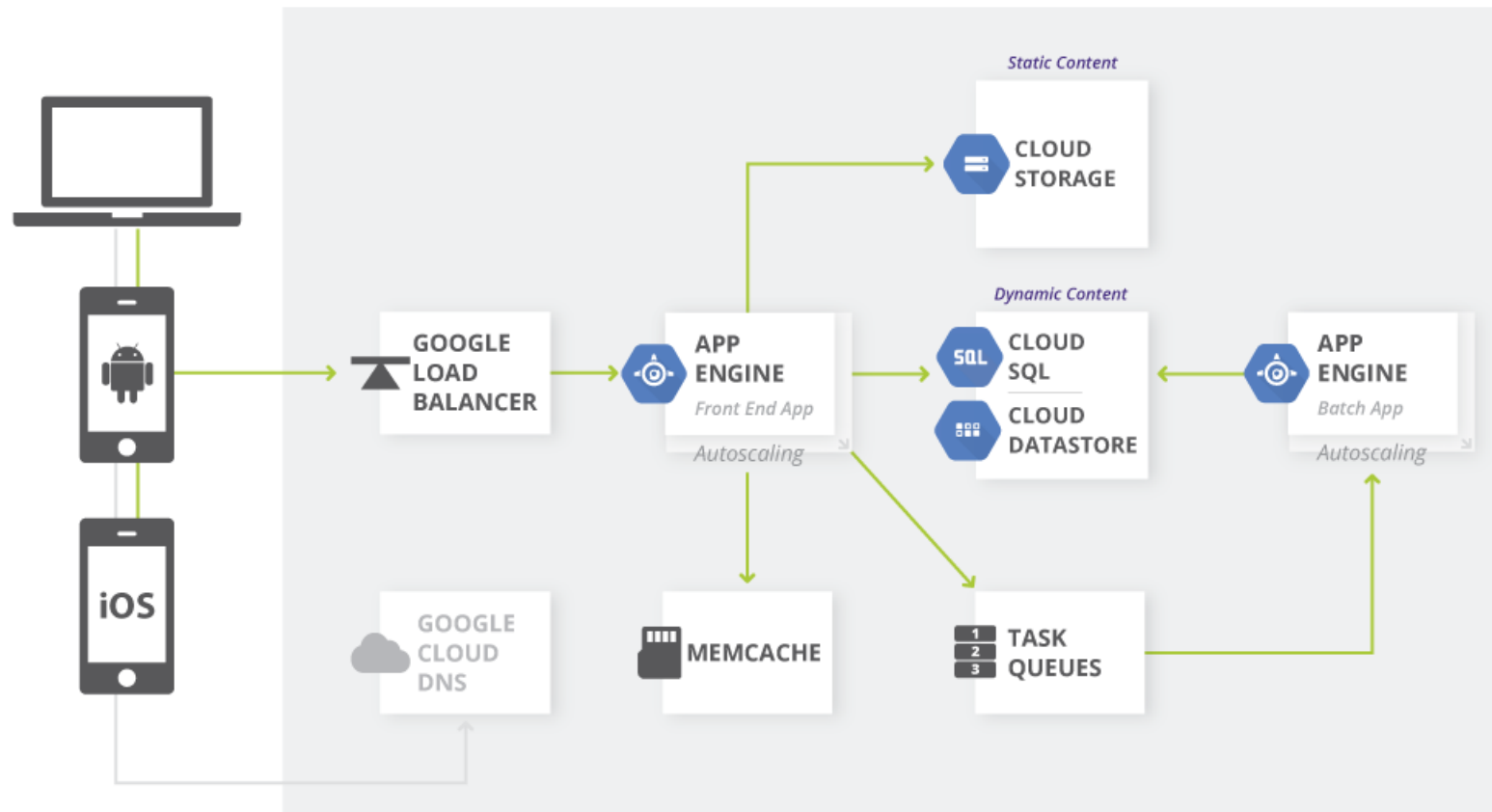
- **Infomation**

- Junho Lee ( 이준호 ) / [jhlee@rockplace.co.kr](mailto:jhlee@rockplace.co.kr)
- Solutions Architect
- Google Cloud Platform Qualified Developer

- **Career**

- UBC/BCIT NASP (2011 ~ 2012)
- Post-secondary Teaching Assistant - University of British Columbia Continuing Studies (UBC CS) (2013 ~ 2014)
- Solutions Architect - Rockplace Inc. (2014 ~ )

# Solutions Architect?



- [1] <http://kubernetes.io/docs/whatisk8s/>
- [2] <https://research.google.com/pubs/pub43438.html>

# What is k8s?

- k8s = Kubernetes
- Open Source [Container Cluster Manager](#)  
originally designed by Google
- Based on Google's production workloads
- public / private ★ /  
hybrid / multi-cloud



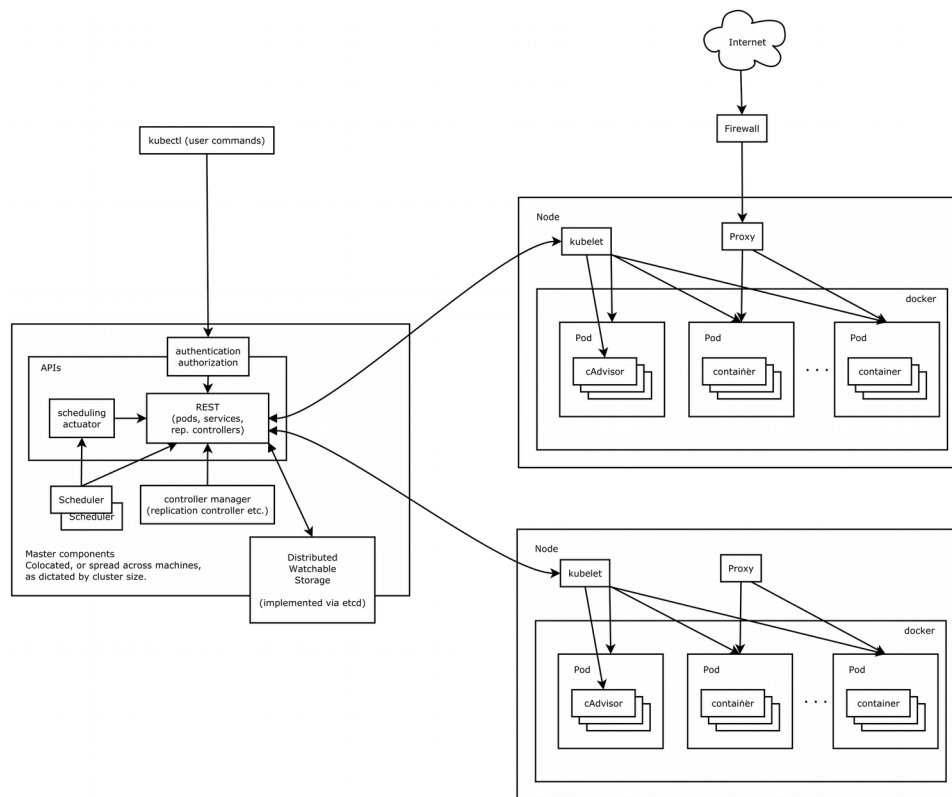
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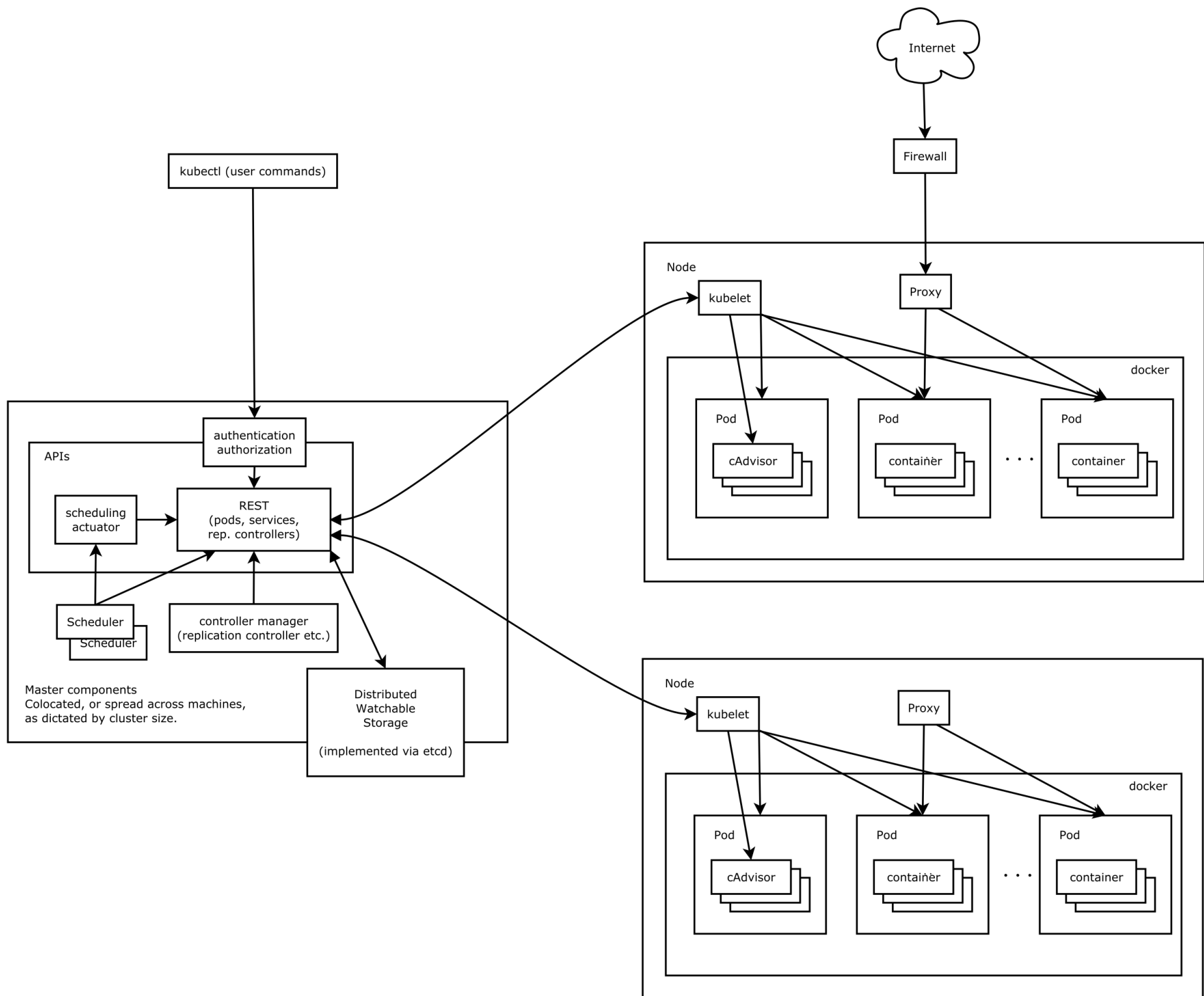
# k8s will help you to..

- Deploy your applications quickly and predictably
- Scale your applications on the fly
- Seamlessly roll out new features
- Optimize use of your hardware by using only the resources you need

# k8s Architecture



- The Kubernetes Node
  - kubelet
  - kube-proxy
- The Kubernetes Control Plane
  - etcd
  - Kubernetes API Server
  - Scheduler
  - Kubernetes Controller Manager Server



# k8s will NOT help you to..

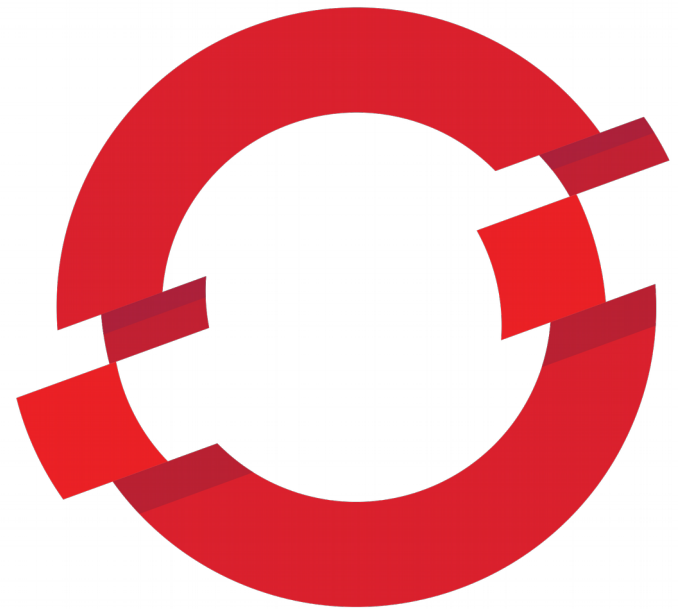
“Kubernetes is not a traditional, all-inclusive PaaS (Platform as a Service) system”

- No click-to-deploy service marketplace
- No source-to-image space
- No logging, monitoring, and alerting systems
- No Technical Support



# What is OpenShift?

- Red Hat PaaS Platform using k8s
- “OpenShift is Enterprise-Ready Kubernetes”
- OpenShift
  - Origin
  - Container Platform ★
  - Online / Dedicated



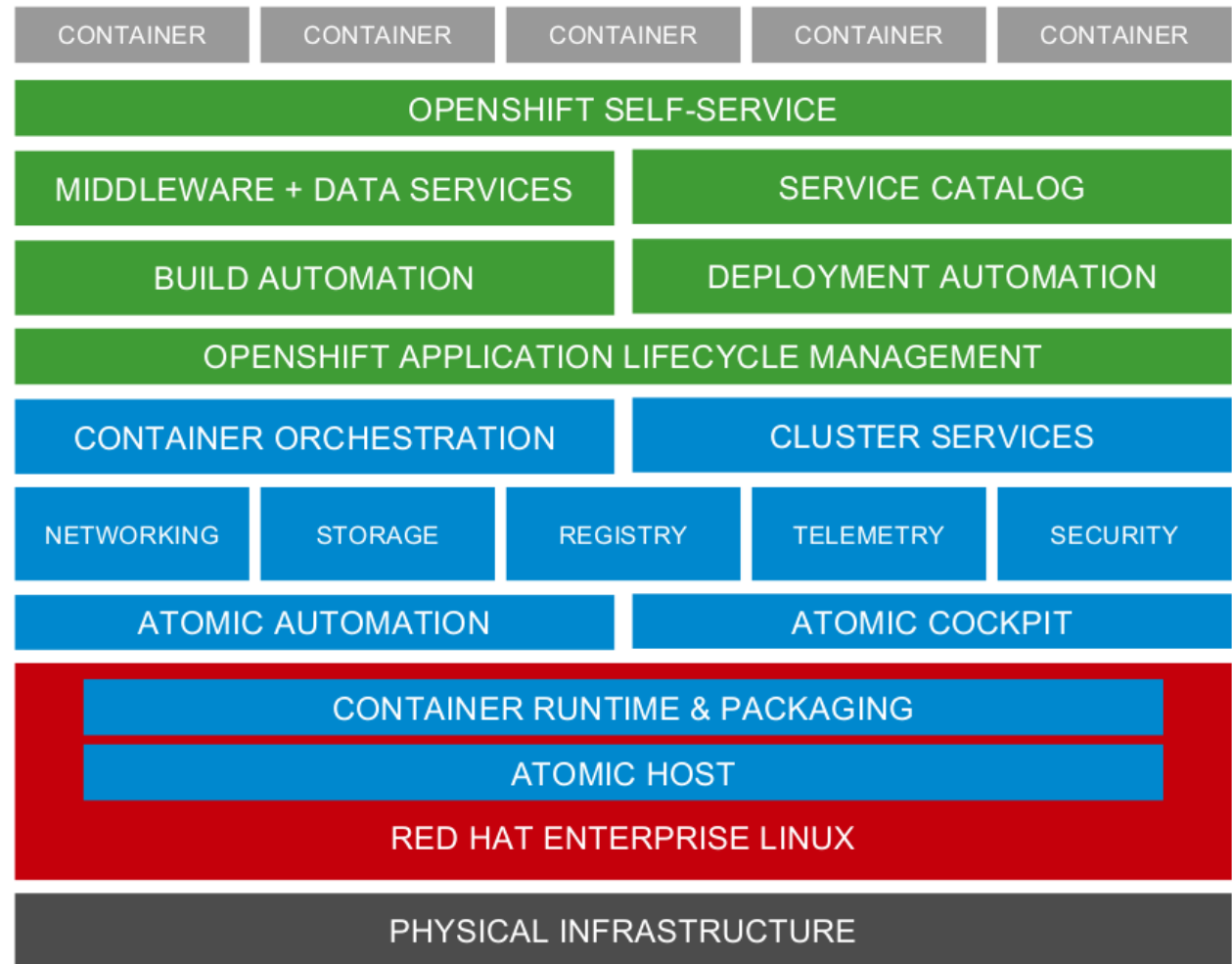
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# OpenShift will help you to..

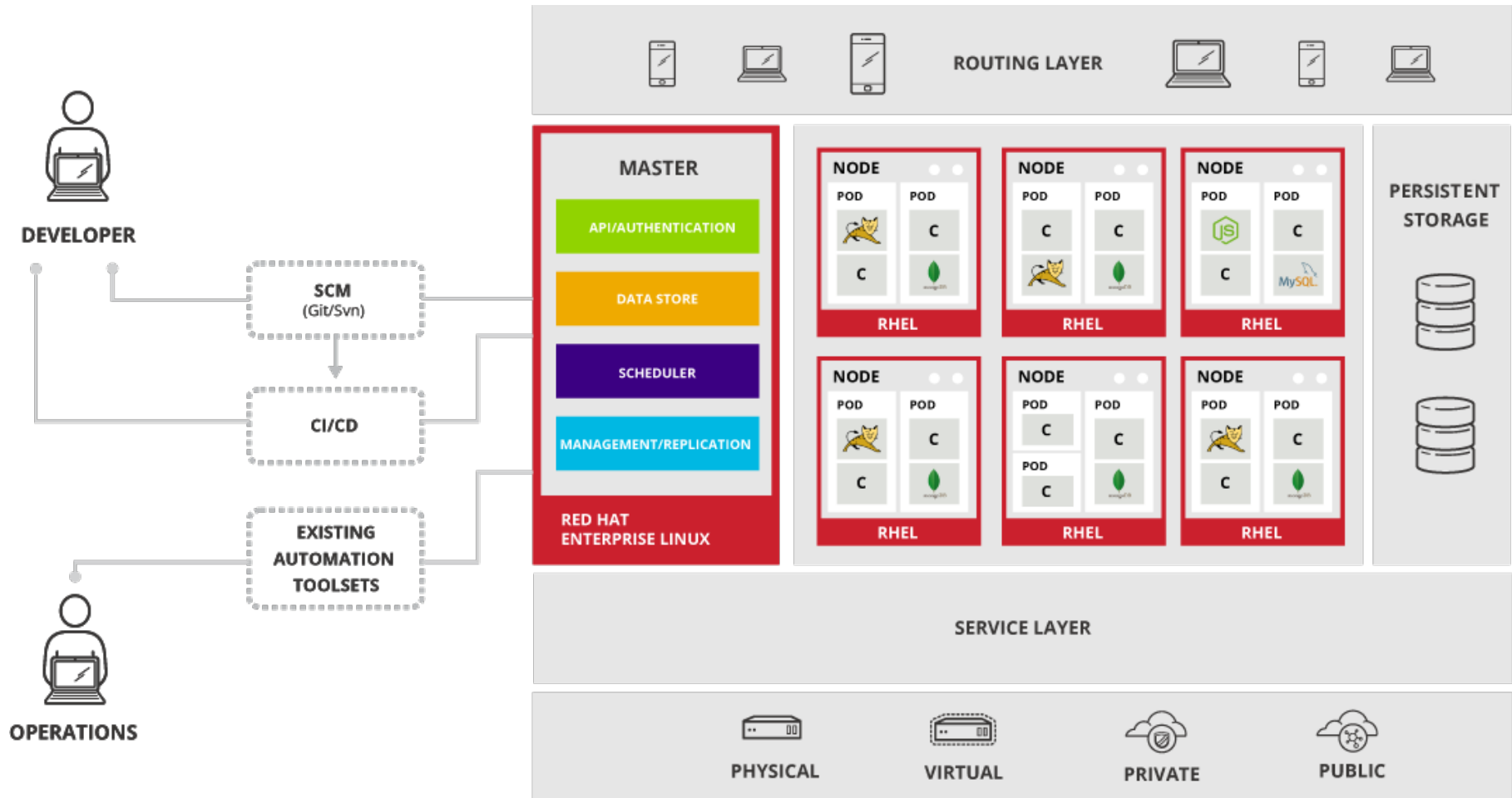
$$\text{OpenShift} = \text{k8s} + \alpha$$

- Source code management, builds, and deployments for developers
- Managing and promoting images at scale as they flow through your system
- Application management at scale
- Team and user tracking for organizing a large developer organization
- Professional Technical Support from Red Hat
  - Security Updates, Certified Docker Image Hub

# OpenShift Components



# OpenShift Architecture



# What is GKE?

- GKE = Google Container Engine
- Google PaaS [Service](#) using k8s on Google Cloud Platform(GCP)
- “One-click Kubernetes clusters, managed by Google”

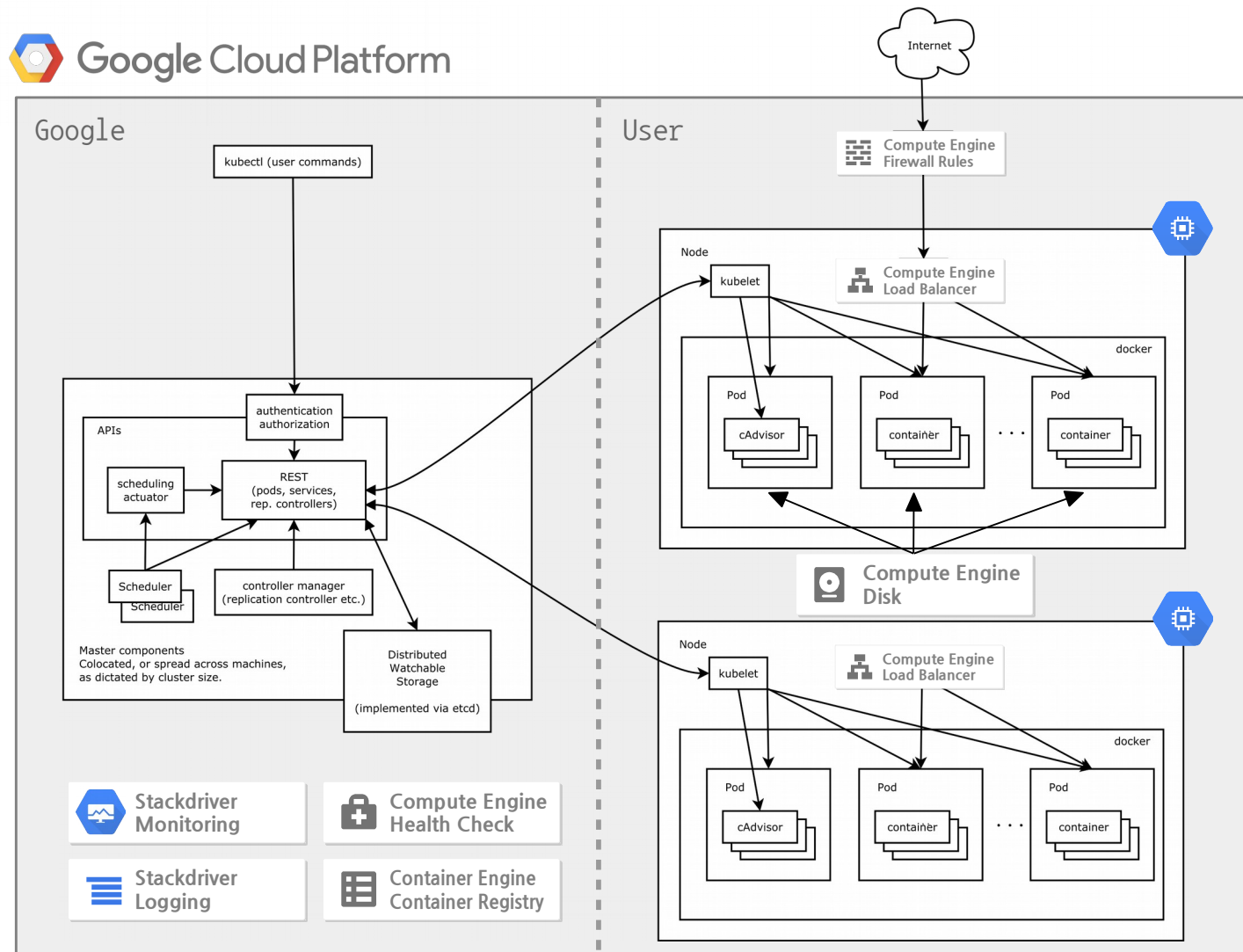


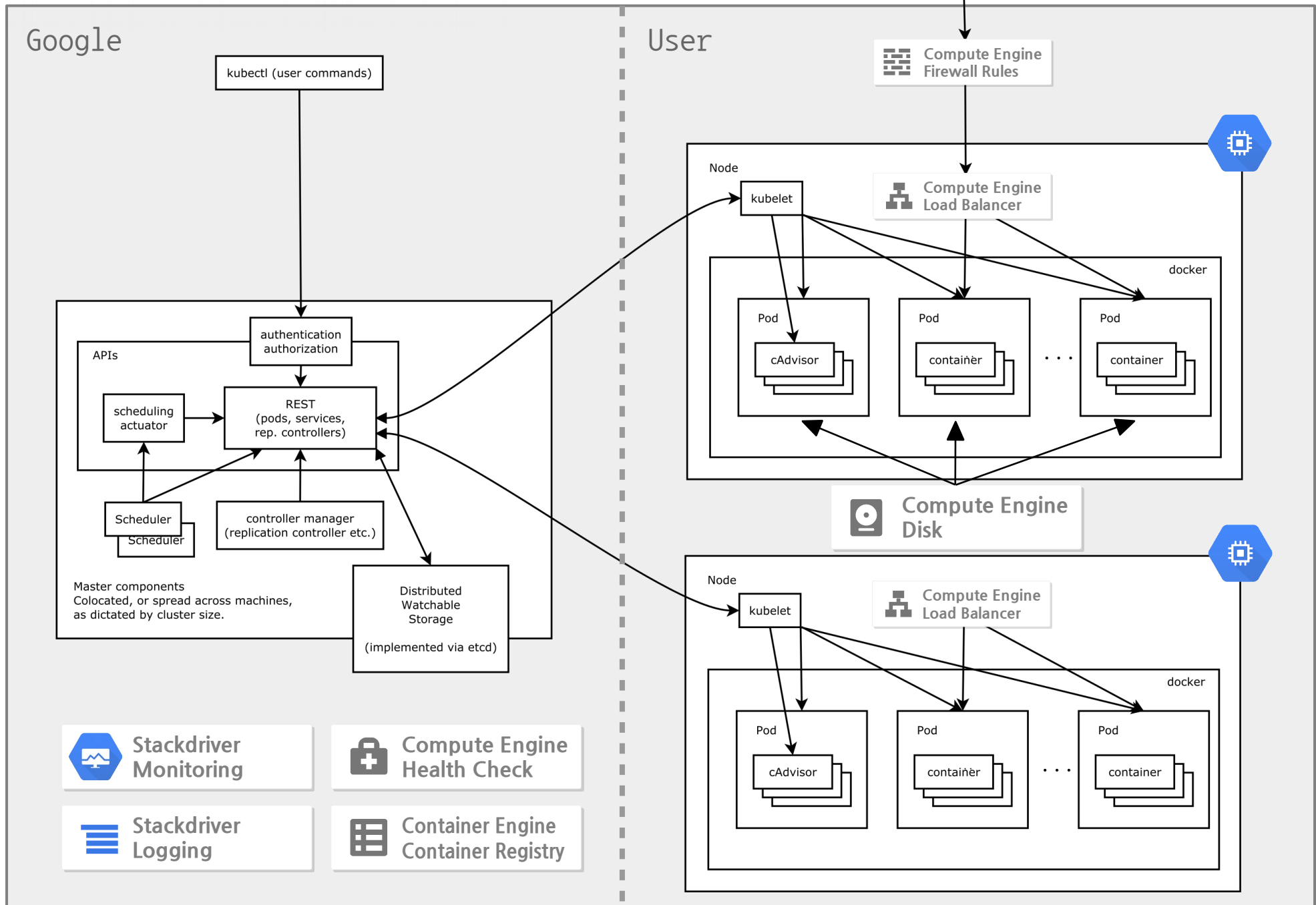
# GKE will help you to..

“Google Container Engine = k8s +  $\alpha$  on Cloud”

- **Automated Container Management**
  - Google Cloud Container Builder (Source to Image)
  - Cloud Source Repositories (Private Git Repositories)
  - Container Registry (Private Docker Image Registry)
- **Set Up a Cluster in Minutes**
  - `gcloud container clusters create NAME --zone ZONE`
- **Declarative Management**
- **Flexible & Interoperable**
  - Public / Hybrid / Multi Cloud
  - Multi-Zone Clusters
- **Professional Technical Support from Google**

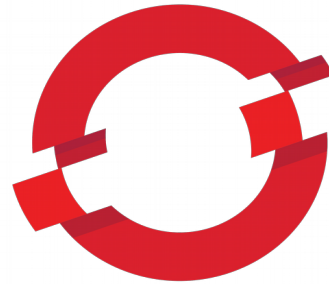
# GKE Architecture






























# k8s / OpenShift / GKE










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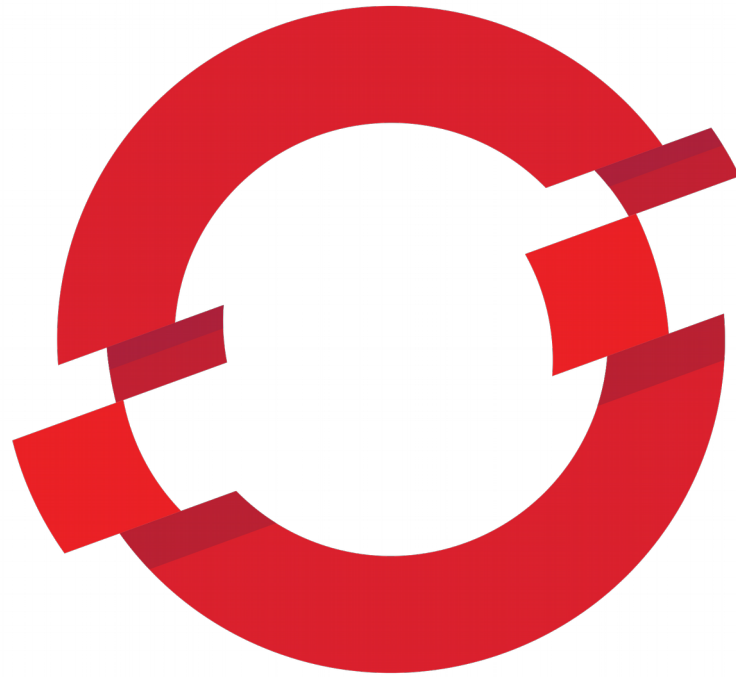
# k8s / OpenShift / GKE Comparison (1)

	Environment	Installation Cost	Operation Cost	Out-of-box experience	App Store	Click to deploy	Source to Image
k8s (on-premise)	public / on-premise / hybrid / multi-cloud	 	  				
OpenShift (on-premise)	public / on-premise / hybrid / multi-cloud	  	 	  	App Gallery	Yes	S2I (Source To Image)
GKE (public)	public / hybrid / multi-cloud			 			Google Cloud Container Builder

# k8s / OpenShift / GKE Comparison (2)

	CI / CD	Image Registry	Version Control Service	Logging	Monitoring	Alerting	Technical Support
<b>k8s</b> (on-premise)							Self / Community
<b>OpenShift</b> (on-premise)	Jenkins Plugin Included	Image Registry		EF(Fluentd)K	Cockpit, Heapster, Hawkular	Cockpit, Heapster, Hawkular	Self / Community Red Hat (* With Subscription)
<b>GKE</b> (public)	Jenkins Plugin Included	Container Registry	Cloud Source Repositories	StackDriver Logging	StackDriver Monitoring	StackDriver Monitoring	Self / Community Google (* With Support Plan)

# OpenShift Demo



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