kubernetes

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Awesome-Kubernetes

A curated list for awesome kubernetes sources Inspired by @sindresorhus' awesome

> "Talent wins games, but teamwork and intelligence wins championships."
>
> -- Michael Jordan

Without the help from these amazing contributors, building this awesome-repo would never has been possible, Thank You very much guys !!

Thanks to Gitbook.This awesome list can now be downloaded and read in the form of a book.Check it out --> https://www.gitbook.com/book/ramitsurana/awesome-kubernetes/ .Keep Learning Keep Sharing !!

If you see a package or project here that is no longer maintained or is not a good fit, please submit a pull request to improve this file. Thank you!

What is Kubernetes? :ship:

> Kubernetes is an open source orchestration system for Docker containers. It handles scheduling onto nodes in a compute cluster and actively manages workloads to ensure that their state matches the users declared intentions. Using the concepts of "labels" and "pods", it groups the containers which make up an application into logical units for easy management and discovery.

Source: What is Kubernetes

History:

Kubernetes is known to be a descendant of Google's system BORG

> The first unified container-management system developed at Google was the system we internally call Borg. It was built to manage both long-running services and batch jobs, which had previously been handled by two separate systems: Babysitter and the Global Work Queue. The latter's architecture strongly influenced Borg, but was focused on batch jobs; both predated Linux control groups.

Source: Kubernetes Past

Roadmap

The awesome-kubernetes will now soon be available in the form of different releases and package bundles, It means that you can download the awesome kubernetes release upto a certain period of time, The release for awesome kubernetes 2015 bundle is released.Checkout the releases column for more info.Stay tuned for more updates.

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Starting Point

A place that marks the beginning of a journey

- Are you Ready to Manage your Infrastructure like Google?
- Google is years ahead when it comes to the cloud, but it's happy the world is catching up
- An Intro to Google's Kubernetes and How to Use It by Laura Frank
- Getting Started on Kubernetes by Rajdeep Dua
- Kubernetes: The Future of Cloud Hosting by Meteorhacks
- Kubernetes by Google by Gaston Pantana
- Key Concepts by Arun Gupta
- Application Containers: Kubernetes and Docker from Scratch by Keith Tenzer
- Learn the Kubernetes Key Concepts in 10 Minutes by Omer Dawelbeit
- Top Reasons Businesses Should Move to Kubernetes Now by Mike Johnston

Main Resources

Official resources from the Kubernetes team

- Kubernetes Documentation
- Kubernetes Source
- Kubernetes Troubleshooting

Other Useful Articles

A piece of writing included with others in a newspaper, magazine, or other publication

- Kubernetes: Getting Started With a Local Deployment
- Installation on Centos 7
- Packaging Multiple Resources together
- An Introduction to Kubernetes by Justin Ellingwood
- Scaling Docker with Kubernetes by Carlos Sanchez
- Creating a Kubernetes Cluster to Run Docker Formatted Container Images by Chris Negus
- Containerizing Docker on Kubernetes !! by Ramit Surana
- Running Kubernetes Example on CoreOS, Part 1 by Kelsey Hightower
- Play With Kubernetes Quickly Using Docker
- 1 command to Kubernetes with Docker compose by Sebastien Goasguen
- Nginx Server Deployment using Kubernetes by Rajdeep Dua
- What even is a kubelet? by Kamal Marhubi
- Kubernetes from the ground up: the API server by Kamal Marhubi
- Kubernetes 101 – Networking by Jon Langemak
- Dynamic Kubernetes installation/configuration with SaltStack by Jon Langemak
- Deploying Kubernetes with SaltStack by Jon Langemak
- Logging in Kubernetes with Fluentd and Elasticsearch by Jon Langemak
- Corekube: Running Kubernetes on CoreOS via OpenStack by Mike Metral
- Networking Kubernetes Clusters on CoreOS with Weave by Weaveworks
- CoreOS + Kubernetes Step By Step by Coreos
- Deploying to Kubernetes with Panamax by Brian DeHamer
- Deploy Kubernetes with a Single Command Using Atomicapp by Jason Brooks
- Deploying a Bare Metal Kubernetes Cluster by James Kyle
- AWS Advent 2014 - CoreOS and Kubernetes on AWS by Tim Dsyinger
- Kubernetes and AWS VPC Peering by Ben Straub
- Deploy a Kubernetes development cluster with Juju! by Matt Bruzek

- Try Kubernetes with Vagrant by Christoph Hartmann
- Keycloak on Kubernetes with OpenShift 3 by Marko Strukelj
- Kubernetes clusters with Oh-My-Vagrant by James
- Fleet Unit Files for Kubernetes on CoreOS by Michael Hamrah
- Kubernetes on AWS by CoreOS
- Testing Kubernetes on AWS by Alan Will
- Kubernetes: First steps on Amazon AWS by Remco
- Kubernetes Container Orchestration through Java APIs by Keith Tenzer
- Containers at Scale with Kubernetes on OpenStack by Keith Tenzer
- Installing cAdvisor and Heapster on bare metal Kubernetes by Jon Langemak
- Docker Clustering Tools Compared: Kubernetes vs Docker Swarm
- Comparison of Networking Solutions for Kubernetes
- Why Docker and Google Kubernetes Are Like PaaS Done Right
- Kubernetes Authentication plugins and kubeconfig by Jon Langemak
- Kubernetes with SaltStack revisited by Jon Langemak

Related Projects

Kubernetes-related projects that you might find helpful

Related Software

Projects built to make life with Kubernetes even better, more powerful, more scalable

Hypernetes

Hypernetes is a secure, multi-tenant Kubernetes distro. Simply put,

Hypernetes = Bare-metal + Hyper + Kubernetes + KeyStone + Cinder + Neutron.

It envisions a future of "Container-as-a-Service without IaaS". The idea is to combine the orchestration power in Kubernetes and the runtime isolation in Hyper to build the truly secure multi-tenant CaaS platform.

Helm Package Manager

Built by Deis and Inspired by Homebrew, apt, and NPM. Helm is a tool for working with Kubernetes-powered applications. Helm makes it easy run apps and services inside Kubernetes.

Ubernetes

A central design concept in Kubernetes to cluster Kubernetes across several regions.

Fabric8

An integrated open source DevOps and Integration Platform which works out of the box on any Kubernetes or OpenShift environment and provides Continuous Delivery, Management, ChatOps and a Chaos Monkey.

kmachine

kmachine lets you create Docker hosts on your computer, on cloud providers, and inside your own data center. It creates servers, installs Docker on them, then configures the Docker client to talk to them just like docker-machine

spread

spread is a command line tool that builds and deploys a Docker project to a Kubernetes cluster in one command. The project's goals are to:

- Enable rapid iteration with Kubernetes
- Be the fastest, simplest way to deploy Docker to production
- Work well for a single developer or an entire team (no more broken bash scripts!)

Supergiant

Supergiant is open-source and built on Kubernetes. It provisions "cost-based" server resources, load balancers, and block-level storage automatically to support stateful apps at scale with less hardware expense. The goals of the project are to make launching, managing, and scaling Kubernetes as easy as possible.

Kubefuse

Kubernetes as a Filesystem.Its written in Python, because Python is still cool and has a solid FUSE library available for it. The fusepy library has some simple examples showing how to implement loopback and memory file systems.

Monitoring Services

To maintain regular surveillance over kubernetes

- Console: It is a general purpose, web-based UI for Kubernetes clusters. It allows to manage applications running in the cluster, troubleshoot them, as well as, manage the cluster itself.
- Datadog: Datadog is a hosted monitoring and metrics platform, with built in support for Kubernetes and Docker. Their Kubernetes integration pulls in Docker and Kubernetes events, converts labels and pod names into tags, as well as pulls metrics from Docker and CAdvisor. This allows you to build application dashboards and alerts that display data across pods, Nodes, and services.
- Heapster: Heapster enables Container Cluster Monitoring and Performance Analysis. Heapster currently supports Kubernetes and CoreOS natively. It can be extended to support other cluster management solutions easily. Heapster collects and interprets various signals like compute resource usage, lifecycle events, etc, and exports cluster metrics via REST endpoints.
- Kubedash: Performance analytics UI for Kubernetes Clusters. The goal of Kubedash is to allow the user or an administrator of a Kubernetes cluster to easily verify and understand the performance of a cluster and jobs running within it through intuitive visualizations of aggregated metrics, derived stats and event patterns. It is not intended to be a general-purpose Kubernetes UI. Instead, kubedash uses multiple sources of information to summarize and provide high-level analytic information to users and to the cluster administrator.
- Kube-ui: Container Cluster Manager from Google Web UI
- Prometheus: Prometheus is an open-source systems monitoring and alerting toolkit originally built at SoundCloud. Since its inception in 2012, many companies and organizations have adopted Prometheus, and the project has a very active developer and user community. It is now a standalone open source project and maintained independently of any company.
- Sysdig: Sysdig is open source, system-level exploration: capture system state and activity from a running Linux instance, then save, filter and analyze. Sysdig is scriptable in Lua and includes a command line interface and a powerful interactive UI, csysdig, that runs in your terminal.
- Weave Scope: Weave Scope is a visualization, and monitoring tool for Docker and Kubernetes. It provides a top down view into your app as well as your entire infrastructure, and allows you to diagnose any problems with your distributed containerized app, in real time, as it being deployed to a cloud provider.

PaaS Providers

Kubernetes Platform as a Service providers

OpenShift

OpenShift is Red Hat's Platform-as-a-Service (PaaS) that allows developers to quickly develop, host, and scale applications in a cloud environment. With OpenShift you have a choice of offerings, including online, on premise, and open source project options.

Deis

Deis (pronounced DAY-iss) is an open source PaaS that makes it easy to deploy and manage applications on your own servers. Deis builds upon Docker and CoreOS to provide a lightweight PaaS with a Heroku-inspired workflow.

Continous Delivery

Build-test-deploy automated workflow software designed to make production environments more stable and life better for engineers

Fabric8

Fabric8 DevOps provides a completely integrated open source DevOps platform which works out of the box on any Kubernetes or OpenShift environment, The entire platform is modular and based on microservices so you can use as much or as little of Fabric8 DevOps as you wish!

Container Support

A list of linux containers supported by kubernetes.

Docker:

Docker is an open platform for developers and sysadmins to build, ship, and run distributed applications. Consisting of Docker Engine, a portable, lightweight runtime and packaging tool, and Docker Hub, a cloud service for sharing applications and automating workflows, Docker enables apps to be quickly assembled from components and eliminates the friction between development, QA, and production environments. As a result, IT can ship faster and run the same app, unchanged, on laptops, data center VMs, and any cloud.Check out awesome-docker for more info.

Rkt:

rkt is the next-generation container manager for Linux clusters. Designed for security, simplicity, and composability within modern cluster architectures, rkt discovers, verifies, fetches, and executes application containers with pluggable isolation. rkt can run the same container with varying degrees of protection, from lightweight, OS-level namespace and capabilities isolation to heavier, VM-level hardware virtualization.

Books

A written or printed work consisting of pages glued or sewn together along one side and bound in covers that provide us with information

- Kubernetes: Up and Running by Kelsey Hightower
- Docker and Kubernetes Under the Hood (Chinese) by Harry Zhang, Jianbo Sun and ZJU SEL lab
- Kubernetes: Scheduling the Future at Cloud Scale by Dave K. Rensin

Slide Presentations

A slide is a single page of a presentation created with software such as PowerPoint or OpenOffice Impress.

- Architecture Overview by enakai00
- Package your Java EE Application using Docker and Kubernetes by Arun Gupta
- Scaling Jenkins with Docker and Kubernetes by Carlos Sanchez
- An Introduction to Kubernetes by Imesh Gunaratne
- Musings on Mesos: Docker, Kubernetes, and Beyond. by Timothy St. Clair
- Cluster management with Kubernetes by Satnam Singh
- A brief study on Kubernetes and its components by Ramit Surana
- Moving to Kubernetes - Tales from SoundCloud by Tobias Schmidt
- Kubernetes Scaling SIG (K8Scale) by Bob Wise
- Network oriented Kubernetes intro by Salv Orlando
- Zero downtime-java-deployments-with-docker-and-kubernetes by Arjan Schaaf
- Kubernetes and CoreOS @ Athens Docker meetup by Mist.io

Videos

A recording of moving visual images made digitally or on videotape.

Main Account

- Google Developers
- Kubernetes

Other Useful Videos

- Google I/O 2014 - Containerizing the Cloud with Docker on Google Cloud Platform by Google Developers
- Container Orchestration using CoreOS and Kubernetes by Kelsey Hightower
- A Technical Overview of Kubernetes by Bredan Burns
- Docker Containers and Kubernetes with Brian Dorsey by Brian Dorsey
- Alpaca Kubernetes on AWS by Adrien Lemaire
- Arun Gupta: Package your Java applications using Docker and Kubernetes by Arun Gupta
- "Managing Containers at Scale with CoreOS and Kubernetes" by Kelsey Hightower by Kelsey Hightower
- Kubernetes: The Journey So Far - Greg DeMichillie by Greg DeMichillie
- DevNation 2015 - Paul Bakker - Kubernetes: Beyond the basics by Paul Bakker

Interesting Twitter Accounts

Twitter is quick, it's easy to communicate on, and is a very valuable social channel for a brand or business if you use it to its full potential, By following these news aggregators, rolling news channels, and companies, you can get the inside scoop of a story long before it hits the mainstream news outlets.

- Kubernetes
- Google Cloud Platform
- Kube Con
- Kismatic
- Engine Yard
- Apcera
- CoreOS
- DevOps Summit
- KubeWeekly
- KubeFacts
- Skippbox

Amazing People

- Bredan Burns, Senior Staff Software Engineer at Google
- Kelsey Hightower, Staff Developer Advocate at Google
- Arun Gupta, Vice President, Developer Relations at Couchbase
- Carlos Sanchez, Senior Software Engineer, CloudBees
- Satnam Singh, Software Engineer at Facebook
- Joseph Jacks, VP, Technology Strategy at Kismatic, Inc
- Joe Beda, Co-founder and Technical Lead for Kubernetes
- Patrick Reilly, CEO at Kismatic, Inc. / Advisor at Mesosphere, Inc
- Brandon Philips, CTO at CoreOS

Connecting with Kubernetes

- Freenode
- Twitter
- Google +
- Stackoverflow
- Slack
- Mailing List
- Newsletter by Kismatic

Companies

A list of companies supporting Kubernetes

- Google
- Coreos
- Red Hat
- Apprenda

Conferences

Some must to go and attend conferences on kubernetes

- Kubecon
- Container Camp

- GCP Next
- Docker Con
- Devoxx

Contributing

Contributions are most welcome!

This list is just getting started, please contribute to make it super awesome.

Check out the Contributing Guidelines.

License

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