

Kubernetes K8

Apr 2021

Overview

Containers contain functions for software components, a container can be a web server, a data processor or an data I/O device, anything really that you used to be able to run on a bare metal server or a VM. Containers can run on multiple servers in multiple locations.

Kubernetes provides an open-source API that controls how and where those containers will run, and manages container failure and restarts.

Kubernetes Commands

There are many Kubernetes commands, here we will explore some that will be useful when dealing with MediaKind HeadEnd solutions (IPHE).

get nodes

```
kubectl -n mediakind get nodes
```

In the above example, kubectl is the command, mediakind is the namespace we are dealing with and get nodes is the parameters for the command.

NAME	STATUS	ROLES	AGE	VERSION
172.25.27.17	Ready	master,node	20d	v1.13.12
172.25.27.20	Ready	master,node	20d	v1.13.12
172.25.27.21	Ready	master,node	20d	v1.13.12
172.25.27.26	Ready	node	20d	v1.13.12

`kubectl -n mediakind get nodes` returns the number of 'servers' in the deployment, these nodes can be bare metal or Virtual Machines.

describe node

```
kubectl -n mediakind describe node ipaddress
```

Above the command is describing a particular node in the system, the node IP address was derived by using the `get node` command.

```
kubectl -n mediakind describe node 172.25.27.26
```

Name:	172.25.27.26
Roles:	node
Labels:	beta.kubernetes.io/arch=amd64 beta.kubernetes.io/os=linux encoding-hd-services=enabled encoding-ott-services=enabled encoding-sd-services=enabled kubernetes.io/hostname=172.25.27.26 mux-bckp=enabled node-role.kubernetes.io/node=
Annotations:	flannel.alpha.coreos.com/backend-data: {"VtepMAC":"5a:a7:35:25:88:d4"} flannel.alpha.coreos.com/backend-type: vxlan flannel.alpha.coreos.com/kube-subnet-manager: true

flannel.alpha.coreos.com/public-ip: 172.25.27.26				
node.alpha.kubernetes.io/ttl: 0				
volumes.kubernetes.io/controller-managed-attach-detach: true				
CreationTimestamp:	Tue, 02 Mar 2021 17:47:31 +0000			
Taints:	<none>			
Unschedulable:	false			
Conditions:				
Type	Status	LastHeartbeatTime	LastTransitionTime	Reason
Message				
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MemoryPressure	False	Tue, 23 Mar 2021 14:38:55 +0000	Tue, 02 Mar 2021 17:47:56 +0000	
KubeletHasSufficientMemory		kubelet has sufficient memory available		
DiskPressure	False	Tue, 23 Mar 2021 14:38:55 +0000	Tue, 02 Mar 2021 17:47:56 +0000	
KubeletHasNoDiskPressure		kubelet has no disk pressure		
PIDPressure	False	Tue, 23 Mar 2021 14:38:55 +0000	Tue, 02 Mar 2021 17:47:56 +0000	
KubeletHasSufficientPID		kubelet has sufficient PID available		
Ready	True	Tue, 23 Mar 2021 14:38:55 +0000	Tue, 02 Mar 2021 17:49:07 +0000	
KubeletReady		kubelet is posting ready status		
Addresses:				
InternalIP:	172.25.27.26			
Hostname:	172.25.27.26			
Capacity:				
cpu:	96			
ephemeral-storage:	114356412Ki			
hugepages-1Gi:	0			
hugepages-2Mi:	0			
memory:	196496644Ki			
Pods:	110			
Allocatable:				
cpu:	95900m			
ephemeral-storage:	105390869125			
hugepages-1Gi:	0			
hugepages-2Mi:	0			
memory:	196144244Ki			
Pods:	110			
System Info:				
Machine ID:	2637027352b94bdfbaf1bb6d06401946			
System UUID:	800B863A-10CB-EA11-906E-0017A4403562			
Boot ID:	799bbe1a-8015-4250-beb1-c39958381d58			
Kernel Version:	3.10.0-957.el7.x86_64			
OS Image:	CentOS Linux 7 (Core)			
Operating System:	linux			
Architecture:	amd64			
Container Runtime Version:	docker://18.9.9			
Kubelet Version:	v1.13.12			
Kube-Proxy Version:	v1.13.12			
PodCIDR:	10.234.1.0/24			
Non-terminated Pods:	(17 in total)			
Namespace	Name			CPU
Requests	CPU Limits	Memory	Requests	Memory Limits AGE
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-	-----		-----	
kube-system			kube-flannel-6ntgc	150m (0%)
300m (0%)	64M (0%)		500M (0%)	20d
kube-system			kube-proxy-172.25.27.26	150m (0%)
500m (0%)	64M (0%)		2G (0%)	20d
kube-system			nginx-proxy-172.25.27.26	25m (0%)
300m (0%)	32M (0%)		512M (0%)	20d
mediakind			fluentbit-fluent-bit-8n7vp	0 (0%)
0 (0%)	0 (0%)		0 (0%)	20d
mediakind			logrotate-8d4j7	0 (0%)
0 (0%)	0 (0%)		0 (0%)	20d
mediakind			metrics-prometheus-node-exporter-q7qq	0 (0%)
0 (0%)	30Mi (0%)		150Mi (0%)	20d
mediakind			mux-bckp-1-stream-processor-mux-65c46756b5-sgprz	0 (0%)
0 (0%)	0 (0%)		0 (0%)	20d
mediakind			service-01-enc-hd-encoding-live-worker-6f6c448599-rnx9q	9 (9%)
12 (12%)	1536Mi (0%)		5Gi (2%)	19d
mediakind			service-02-iptv-hd-encoding-live-worker-564fd48c7c-lnpk5	9 (9%)

12 (12%)	1536Mi (0%)	5Gi (2%)	6d2h	
mediakind		service-02-ott-encoding-live-worker-7d74dddc79-d7mn7		4 (4%)
0 (0%)	1G (0%)	0 (0%)	6d17h	
mediakind		service-03-enc-sd-encoding-live-worker-5d56c8b844-6hsl6		2 (2%)
3 (3%)	500Mi (0%)	2Gi (1%)	19d	
mediakind		service-05-enc-hd-encoding-live-worker-7bff86bff-nmx4g		9 (9%)
12 (12%)	1536Mi (0%)	5Gi (2%)	19d	
mediakind		service-08-enc-hd-encoding-live-worker-6cdf78b9c9-r5fbv		9 (9%)
12 (12%)	1536Mi (0%)	5Gi (2%)	8d	
mediakind		service-dtt01-2-enc-hd-encoding-live-worker-5bdfc9dc9-rfbcc		9 (9%)
12 (12%)	1536Mi (0%)	5Gi (2%)	7d17h	
mediakind		service-dtt02-3-enc-hd-encoding-live-worker-65d5fb7455-5slpw		9 (9%)
12 (12%)	1536Mi (0%)	5Gi (2%)	7d4h	
mediakind		service-dtt02-6-enc-sd-encoding-live-worker-7844d9b7d4-2cnz8		2 (2%)
3 (3%)	500Mi (0%)	2Gi (1%)	7d3h	
mediakind		stream-processor-statmux-bckp-75dc49984-lfl7v		0 (0%)
0 (0%)	0 (0%)	0 (0%)	20d	
Allocated resources:				
(Total limits may be over 100 percent, i.e., overcommitted.)				
Resource	Requests	Limits		
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cpu	62325m (64%)	79100m (82%)		
memory	11903709696 (5%)	39676508416 (19%)		
ephemeral-storage	0 (0%)	0 (0%)		
Events:	<none>			

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