

Dual-stack Kubernetes

Duncan Rand



pre-GDB - kubernetes many faces

Tuesday 10 Dec 2019, 10:30 → 19:00 Europe/Zurich

31/S-028 (CERN)

Description Monthly meeting of the WLCG Grid Deployment Board See also Twiki [GDB area](#) for actions and summaries

If you plan to attend in person and require a visitor pass, please contact *lcg.office AT cern.ch* in advance of without having arranged your pass in advance).

Minutes

Videoconference
Rooms

pre-GDB

There is interest in Kubernetes in the WLCG and there was a pre-GDB on it at the end of last year

<https://indico.cern.ch/event/739899/>

10:30 → 10:45 **Introduction**

Speaker: Alessandra Forti (University of Manchester (GB))

20191210_pre-gdb...

10:45 → 11:00 **k8s at PIC**

Speaker: Vanessa Acin Portella (Institut de Física d'Altes Energies)

K8s at PIC.pdf

11:00 → 11:15 **CERN deployment with HELM**

Speaker: Ricardo Brito Da Rocha (CERN)

Helm and GitOps at...

“ATLAS has partnered with CERN IT and the University of Victoria to explore and demonstrate the feasibility of running an ATLAS computing site directly on Kubernetes, replacing all grid computing services.”



24th International Conference on Computing in High Energy & Nuclear Physics

4-8 November 2019 Adelaide Convention Centre

Using Kubernetes as an ATLAS computing site



5 Nov 2019, 16:30

15m


Riverbank R7 (Adelaide Convention Centre)

Oral

Track 7 – Facilities, Cl...

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Speaker

 Fernando Harald Barreiro Megino (University of Texas at...)

- Overview
- Venue
- Map
- Scientific Programme
- Call for Abstracts
- Timetable
- Contribution List
- Instructions to speakers

- Support for IPv6-only clusters was added in Kubernetes 1.9 as an alpha feature, and with version 1.13 the Kubernetes default DNS server changed to CoreDNS which has full IPv6 support.
- The version of Kubernetes that is able to run dual-stack, v1.16, is in alpha
- <https://kubernetes.io/docs/concepts/services-networking/dual-stack/>



Concepts

Concepts

- ▶ Overview
- ▶ Cluster Architecture
- ▶ Containers
- ▶ Workloads
- ▼ Services, Load Balancing, and Networking
 - Service
 - Service Topology

IPv4/IPv6 dual-stack

FEATURE STATE: Kubernetes v1.16 [alpha]

IPv4/IPv6 dual-stack enables the allocation of both IPv4 and IPv6 addresses to Pods and Services.

If you enable IPv4/IPv6 dual-stack networking for your Kubernetes cluster, the cluster will support the simultaneous assignment of both IPv4 and IPv6 addresses.

- The latest version of Kubernetes (v1.17.2) on the Openstack cluster at CERN does indeed seem to support IPv6

- \$ kubectl get node

```
NAME                                STATUS  ROLES  AGE  VERSION
ipv6-test-3spph3mxfwlc-master-0    Ready  master 67m  v1.17.2
ipv6-test-3spph3mxfwlc-node-0      Ready  <none> 63m  v1.17.2
[root@ipv6-test-3spph3mxfwlc-node-0 /]# nc -v www.google.com 80
Ncat: Version 7.50 ( https://nmap.org/ncat )
Ncat: Connected to 2a00:1450:400a:803::2004:80.
^C
```

- The Kubernetes ATLAS cluster at CERN is currently running v1.15 and will let me know when they upgrade