

Arista Container Tracer



Linux containers are compartmentalized and isolated application environments that offer extremely efficient deployment of application workloads. Development of Linux containers has been led by the work of the Linux Foundation Open Container Initiative as a collaborative project, and by Docker, Inc.

While containers have been in wide use with cloud-native applications for years – Google has used them for over a decade – they have just recently entered mainstream adoption thanks to advances in the container ecosystem and recognition of the value that they provide in simplicity, efficiency and ease of deployment.

Container Tracer Key Features

Arista Container Tracer provides network visibility into containerized workloads in a containerized environment.

- Displays container workloads and the associated switch port and related information
- Provides current worker node and exposed port information to network administrators
- Currently supports Docker Swarm 1.0 from Docker, Inc. and Kubernetes version 1.4+.

Arista Container Tracer is a software extension for Arista EOS that gives administrators visibility into the containerized workloads attached to the network. This tool combines the extensibility of the Arista EOS software platform with container monitoring to make visibility and troubleshooting of containerized workloads possible.

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Linux Containers are an increasingly important component of public and private clouds as a mechanism for managing application development and deployment. Docker, Inc. and the tools it provides to build, ship, and run Linux containers lead this change.

Containers provide a more efficient use of server hardware, offer faster creation/removal time, and are more portable than traditional virtual machines. However, due to their lightweight nature, they are often created and destroyed more rapidly than traditional virtual machines, making it difficult for network operators to locate where a particular container is running in the data center for troubleshooting.

Arista Container Tracer simplifies the monitoring of containerized workloads by correlating data from Kubernetes, Docker Swarm or other container orchestration services, with network connectivity information - thus allowing an administrator to see on which switch port particular containers are attached and to characterize the workload running in that container.

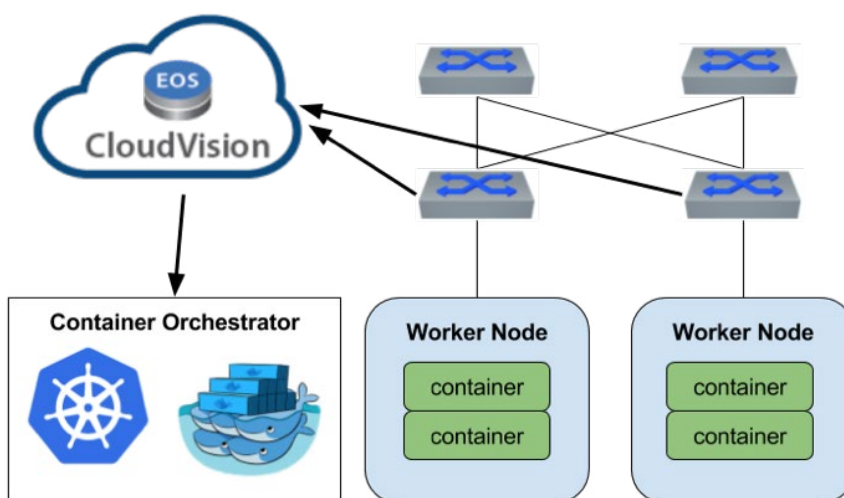


Figure 1: Arista Container Tracer

Arista Container Tracer

Arista Container Tracer uses the API from the orchestrator to determine where containers are located within the data center. Once the container locations have been determined, Arista eAPI is used to gather the local network switch information and the data is displayed to the CLI user. The current output shows the containers, nodes they are running on, exposed ports and the switch port to which they are attached.

By leveraging the extensibility and openness of EOS software, Arista is able to provide a unique monitoring solution for a container deployment to network operators.

CLI Example

```
AristaToR#show containertracer swarm
```

NODE	CONTAINER NAME	PORTS	BRIDGE	PORTS
lnx150	/aristademo1	443/tcp	container0	Ethernet13
lnx151	/aristademo2	80/tcp	container0	Ethernet14

Containers are currently utilized with Red Hat Linux, Ubuntu Linux from Canonical, VMware vSphere, and others. Management platforms for orchestration of containers include Kubernetes from Google, Mesos from the Apache Software Foundation, and Swarm from Docker, Inc. Container Tracer currently supports Docker Swarm and Kubernetes supports Docker Swarm. To find out more about Arista Container Tracer contact your Arista Technical Representative.

Conclusion

As customers begin to scale up their containerized workloads, visibility of the placement of containers in the datacenter will become increasingly important. By leveraging the extensibility and openness of EOS software, Arista is able to provide a unique monitoring solution for a container deployment to network operators.

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