Installing Weave Scope

Weave Scope consists of three parts: the probe, the app and the user interface. Scope can be deployed in either a standalone configuration, where you run everything yourself, or you can use Weave Cloud, in which case only the probes run in your environment, and the app and UI are hosted by Weave Cloud.

* [Installing on any Platform and Orchestrator, via Weave Cloud](https://www.weave.works/docs/scope/latest/installing/" \l "weave-cloud)
* [Installing on Docker](https://www.weave.works/docs/scope/latest/installing/#docker)
  + [Single-node](https://www.weave.works/docs/scope/latest/installing/#docker-single-node)
  + [Cluster](https://www.weave.works/docs/scope/latest/installing/#docker-cluster)
  + [Cluster with Weave Net](https://www.weave.works/docs/scope/latest/installing/#docker-cluster-net)
  + [Using Docker Compose](https://www.weave.works/docs/scope/latest/installing/#docker-compose)
* [Installing on Orchestrators](https://www.weave.works/docs/scope/latest/installing/#orchestrators)
  + [Kubernetes](https://www.weave.works/docs/scope/latest/installing/#k8s)
  + [OpenShift](https://www.weave.works/docs/scope/latest/installing/#ose)
  + [Amazon ECS](https://www.weave.works/docs/scope/latest/installing/#ecs)
  + [minimesos](https://www.weave.works/docs/scope/latest/installing/#minimesos)
  + [Mesosphere DC/OS](https://www.weave.works/docs/scope/latest/installing/#dcos)

**Installing on any Platform and Orchestrator, via Weave Cloud**

Weave Cloud is a SaaS that simplifies deployment, monitoring and management of your containers and microservices. Installing Weave Scope via Weave Cloud is the recommended option if:

* You are new to Weave Scope.
* You are deploying to larger clusters.
* You require secure remote access.
* You want to share access with your coworkers.
* You want to minimize Weave Scope memory and CPU usage.
* You want to benefit from Weave Cloud features beyond Weave Scope.

Weave Cloud provides easy step-by-step instructions for installation on a variety of platforms and orchestrators. To get started with Weave Cloud, [sign up for a free trial](https://cloud.weave.works/).

**Installing on Docker**

**Single-node**

To install Scope on a single node, run the following commands:

sudo curl -L git.io/scope -o /usr/local/bin/scope

sudo chmod a+x /usr/local/bin/scope

scope launch

This script downloads and runs a recent Scope image from Docker Hub. Scope needs to be installed onto every machine that you want to monitor.

After Scope is installed, open your browser to http://localhost:4040.

If you are using docker-machine, you can find the IP by running, docker-machine ip <VM name>.

Where,

* <VM name> is the name you gave to your virtual machine with docker-machine.

**Note:** Scope allows anyone with access to the user interface, control over your containers. As such, the Scope app endpoint (port 4040) should not be made accessible on the Internet. Also traffic between the app and the probe is insecure and should not traverse the Internet. This means that you should either use the private / internal IP addresses of your nodes when setting it up, or route this traffic through Weave Net. Put Scope behind a password, by using an application like [Caddy](https://github.com/mholt/caddy) to protect the endpoint and by making port 4040 available to localhost with Caddy proxying it. Or you can skip these steps, and just use Weave Cloud to manage the security for you.

**Cluster**

This example assumes a local cluster that is not networked with Weave Net, and also has no special hostnames or DNS settings. You will launch Scope with the IP addresses of all of the nodes in the cluster.

Suppose you have the following nodes in a cluster:

192.168.100.16

192.168.100.17

192.168.100.18

192.168.100.19

192.168.100.20

Using the above IP addresses, you will manually peer each node with all of the other nodes during Scope launch:

**1. To begin run the following on each node:**

sudo curl -L git.io/scope -o /usr/local/bin/scope

sudo chmod a+x /usr/local/bin/scope

**2. Then on the first node launch scope with:**

scope launch 192.168.100.18 192.168.100.19 192.168.100.20

**3. And do the same for all of the other nodes in your cluster:**

scope launch 192.168.100.17 192.168.100.20 192.168.100.21

scope launch 192.168.100.17 192.168.100.18 192.168.100.21

scope launch 192.168.100.17 192.198.100.19 192.168.100.20

**Cluster with Weave Net**

If Scope is running on the same machine as the Weave Network, then the probe uses weaveDNS to automatically discover any other apps on the network. Scope does this by registering itself under the address scope.weave.local.

Each probe sends its reports to every app registered at this address. If you have weaveDNS set up and running, no further steps are required.

If you don’t want to use weaveDNS, then Scope can be instructed to cluster with other Scope instances on the command line. Hostnames and IP addresses are acceptable, both with and without ports, for example:

scope launch scope1:4030 192.168.0.12 192.168.0.11:4030

Hostnames will be regularly resolved as A records, and each answer used as a target.

**Using Docker Compose**

To install Scope on your local Docker machine using Docker Compose, copy the contents of one of the two fragments below into a file docker-compose.yml and run

docker-compose up -d

Scope needs to be installed onto every machine that you want to monitor. Once launched, Scope doesn’t require any other configuration and it also doesn’t depend on Weave Net.

After it’s been launched, open your browser to http://localhost:4040.

**Docker Compose Format Version 1:**

scope:

image: weaveworks/scope:1.11.6

net: "host"

pid: "host"

privileged: true

labels:

- "works.weave.role=system"

volumes:

- "/var/run/docker.sock:/var/run/docker.sock:rw"

command:

- "--probe.docker=true"

**Docker Compose Format Version 2:**

version: '2'

services:

scope:

image: weaveworks/scope:1.11.6

network\_mode: "host"

pid: "host"

privileged: true

labels:

- "works.weave.role=system"

volumes:

- "/var/run/docker.sock:/var/run/docker.sock:rw"

command:

- "--probe.docker=true"

Version 2 of this YAML file supports networks and volumes as defined by any plugins you might be using. See [Compose File Reference](https://docs.docker.com/compose/compose-file/) for more information.

**Installing on Orchestrators**

**Kubernetes**

If your cluster is on GKE, first you need to grant permissions for the installation with:

kubectl create clusterrolebinding "cluster-admin-$(whoami)" --clusterrole=cluster-admin --user="$(gcloud config get-value core/account)"

To install Weave Scope on your Kubernetes cluster, run

kubectl apply -f "https://cloud.weave.works/k8s/scope.yaml?k8s-version=$(kubectl version | base64 | tr -d '\n')"

This downloads a recent Scope image from Dockerhub and launches a probe onto every node as well as a single Scope app. Once launched, Scope doesn’t require any other configuration.

Allowable parameters for the launcher URL:

* v - Weave Scope version or tag, e.g. latest current release is the default
* k8s-service-type - Kubernetes service type (for running Scope in Standalone mode), can be either LoadBalancer or NodePort, by default this is unspecified (only internal access)

**Open Scope in Your Browser**

kubectl port-forward -n weave "$(kubectl get -n weave pod --selector=weave-scope-component=app -o jsonpath='{.items..metadata.name}')" 4040

The URL is: http://localhost:4040.

**Note:** Do not expose the Scope service to the Internet, e.g. by changing the type to NodePort or LoadBalancer. Scope allows anyone with access to the user interface control over your hosts and containers.

**Kubernetes (local clone)**

A simple way to get Scope running in a Kubernetes setting is to

1. Spin up a cluster wherever it suits you. [Minikube](https://github.com/kubernetes/minikube) is a simple option.
2. Clone the Scope repo:
3. git clone https://github.com/weaveworks/scope

cd scope

1. Run

kubectl apply -f examples/k8s

to deploy Scope to your cluster.

1. Port-forward to access weave-scope-app:

kubectl port-forward svc/weave-scope-app -n weave 4040:80

1. Point your browser to [http://127.0.0.1:4040.](http://127.0.0.1:4040./)

**OpenShift**

To install Weave Scope on OpenShift, you first need to login as system:admin user with the following command:

oc login -u system:admin

Next, create a dedicated project for Weave Scope then apply policy changes needed to run Weave Scope:

oc new-project weave

# Scope probe pods need full access to Kubernetes API via 'weave-scope' service account

oc adm policy add-cluster-role-to-user cluster-admin -z weave-scope

# Scope probe pods also need to run as priviliaged containers, so grant 'priviliged' Security Context Constrains (SCC) for 'weave-scope' service account

oc adm policy add-scc-to-user privileged -z weave-scope

# Scope app has an init daemon that has to run as UID 0, so grant 'anyuid' SCC for 'default' service account

oc adm policy add-scc-to-user anyuid -z default

The installation method for Scope on OpenShift is very similar to the one described [above](https://www.weave.works/docs/scope/latest/installing/#k8s) for Kubernetes, but instead of kubectl apply ... you need to use oc apply ... and install it into the namespace of the weave project you have just created, and not the weave namespace, i.e.:

oc apply -f 'https://cloud.weave.works/k8s/scope.yaml'

To access the Scope app from the browser, please refer to Kubernetes instructions [above](https://www.weave.works/docs/scope/latest/installing/" \l "k8s).

**Amazon ECS**

There are currently three options for launching Weave Scope in ECS:

* A [CloudFormation template](https://www.weave.works/deploy-weave-aws-cloudformation-template/) to launch and easily evaluate Scope directly from your browser.
* An [Amazon Machine Image (AMI)](https://www.weave.works/docs/scope/latest/AMI) for each ECS region.
* [A simple way to tailor the AMIs to your needs](https://github.com/weaveworks/integrations/tree/master/aws/ecs" \l "creating-your-own-customized-weave-ecs-ami).

The AWS CloudFormation template is the easiest way to get started with Weave Net and Weave Scope. CloudFormation templates provide developers and systems administrators a simple way to create a collection or a stack of related AWS resources, and it provisions and updates them in an orderly and predictable fashion.

Use this specially created Weaveworks CloudFormation template to create an EC2 instance with all of the resources you need, including Weave Net and Weave Scope.

Before launching the stack:

* [Set up an Amazon Account](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/get-set-up-for-amazon-ec2.html)
* [Create the Key Pairs](http://docs.aws.amazon.com/gettingstarted/latest/wah/getting-started-prereq.html). You will need to reference the name of the key pairs when you create the stack.

The link below will launch a sample app using a Cloudformation template, but you can swap out the IdentiOrca app and use your own app instead.

**Ready to launch a stack?  Click here to launch a stack to AWS:**

[https://www.weave.works/docs/scope/latest/images/cloudformation-launch-stack.png](https://console.aws.amazon.com/cloudformation/home#/stacks/new?templateURL=https:%2F%2Fs3.amazonaws.com%2Fweaveworks-cfn-public%2Fintegrations%2Fecs-identiorca.json)

For step by step instructions on how to configure the stack, see: [Install Weave to AWS with One-Click](https://www.weave.works/docs/cloud/latest/install/ecs-no-kubernetes/)

**minimesos**

The [minimesos](https://github.com/ContainerSolutions/minimesos) project enables you to run an Apache Mesos cluster on a single machine, which makes it very easy to develop Mesos frameworks.

By default, Weave Scope is included in the minimesos cluster, and can be accessed at http://172.17.0.1:4040/.

If Weave Scope is removed from your minimesos cluster, you can add it back with the following command:

minimesos install --marathonFile https://raw.githubusercontent.com/weaveworks/scope/master/examples/mesos/minimesos.json

**DC/OS**

Scope can be installed as a DC/OS Package through the open Universe.

DC/OS is short for Datacenter Operating System, a distributed operating system using Apache Mesos as its kernel. The easiest way to get start with DC/OS in the public-cloud is to [deploy it on Amazon Web Services (AWS)](https://mesosphere.com/amazon/).

**See Also**

* [Understanding Weave Scope](https://www.weave.works/docs/scope/latest/how-it-works)
* [Scope’s FAQ](https://www.weave.works/docs/scope/latest/faq)