

What is SINA?

SINA is a tool for creating, building and installing packages on your Kubernetes cluster.

Requirements

Hardware

Minimal required memory

Admin node: 2GB

Master node: 2GB

Worker node: 1GB

Minimal required CPU cores

Admin node: 2 cores

Master node: 2 cores

Worker node: 1 cores

Software

Machine

You need a machine running `CentOS 7 minimal` or `openSUSE`.

Note: It has to be the master node in a cluster.

Yum repository

You need an available connection to a default yum repository when installing SINA.

Helm

You need to have Helm installed on your machine.

Docker

You need to have Docker installed on your machine.

Installation SINA

Note: Install SINA on your master node.

Install with rpm

1. Download the rpm from our website <https://www.kubernative.net/de/produkte/download-area>:

```
curl -O https://www.kubernative.net/images/KubeOps/SINA_1.0.0rc2.zip
```

2. Unzip the downloaded file

3. Install the rpm:

```
yum install <path to rpm>/sina-1.0.0rc2-1.e17.x86_64.rpm
```

4. Check if SINA is running:

```
sina version
```

The output should be:

```
Version: 1.0.0 rc2  
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©Kubernative GmbH, Ziegelei 9, 72336 Balingen - Germany, 2020
```

How to use SINA

'sina' command

The command `sina` gives you an overview of all available commands.

```
sina
```

Create necessary files for packages

The `sina create` command creates the necessary files for building a package. Those files are example files of a package in the current directory which can be used to develop an own package.

```
sina create
```

Created files:

- package.yaml
- docker-registry-1.9.4.tgz
- output.yaml

Note: docker-registry-1.9.4.tgz is a helm chart and must be a `.tgz` file, however you can name it as you want.

package.yaml

This file defines properties of the SINA package. The package.yaml defines a package in a specific version as well as the tasks needed to install it.

```
apiversion: v1
description: A Helm chart for Docker Registry
name: docker-registry
version: 1.9.4
includes:
  files:
    - values: "output.yaml"
    - sinaexample: "docker-registry-1.9.4.tgz"
containers:
  - registry:
      image: registry.kubernetes.net/registry
      tag: 2.7.1
installation:
  tasks:
    - print:
        message: "START SINA-EXAMPLE"
    - template:
        tmpl: output.yaml
        target: helm.yaml
    - helm:
        install:
          tgz: docker-registry-1.9.4.tgz
          values: helm.yaml
    - print:
        message: "END SINA-EXAMPLE"
```

Check packages

The `sina lint` command validates the `package.yaml` and checks the `package.yaml` in the current directory for all created files to be present or reachable. Furthermore it checks if containers are available in the registry and if the files exist. If there is an error, it will be displayed which file/container is not available.

Build packages

The `sina build` command builds a SINA package from the earlier created SINA package.

Created file:

- `package.sina`

`package.sina` contains the other files:

- `output.yaml`
- `docker-registry-1.9.4.tgz`
- `registry_2.7.1.image`
- `_imageslist.yaml`
- `package.yaml`

Log into the Hub

The `sina login` command logs you into `hub.kubernetes.net`.

Note: To push packages into the hub, you need to create a account on `kubernetes.net` first.

After the flag `-u` type your username.

Afterwards you will be asked to enter your password.

```
sina login -u <username>
```

Push packages into the Hub

The `sina push` command uploads packages into the Software hub.

Note: You need to Log in first to push packages into the Software Hub

```
sina push
```

Search for packages

The `sina search` command shows all available packages of the Software hub.

```
sina search
```

With the `--ps` flag you can filter for specific package names.

```
sina search --ps <package name>
```

Install created packages

The `sina install` command installs the created package and runs the plugins with the present commands.

You can copy your package name from the last column of the `sina search` output.

```
[root@admin ~]# sina search --ps demo
[SINA] Trying to access: http://hub.kubernetes.net/index.yaml.
[SINA-SEARCH]:
-----
| User          | Name          | Version | Description          | Entry                               |
-----
| kub00017     | sina-demo    | 1.1.1   | This is a demo.    | kub00017/sina-demo:1.1.1          |
| kub00019     | kubeops-live_demo-package | 0.2.0   | KubeOps Live-Demo Sina Package | kub00019/kubeops-live_demo-package:0.2.0 |
| kub00019     | livedemo_package | 0.2.0   | LiveDemo Test Package 1 | kub00019/livedemo_package:0.2.0    |
| kub00019     | livedemo_test | 0.1.8   | LiveDemo_test      | kub00019/livedemo_test:0.1.8       |
| kub00019     | livedemo_test_package | 0.1.5   | LiveDemo Test Package | kub00019/livedemo_test_package:0.1.5 |
| kub00019     | sina-demo    | 0.1.5   | SINA-Demo          | kub00019/sina-demo:0.1.5          |
| kub00019     | sina-live-demo | 0.1.9   | SINA Live Demo Package | kub00019/sina-live-demo:0.1.9     |
-----
[SINA-SEARCH] Finished SINA Search
[root@admin ~]# ^C
[root@admin ~]# sina install kub00019/sina-live-demo:0.1.9
```

```
sina install <package name>
```