

Is Your Cluster Ready for Jenkins X?

In this lesson, we will discuss the risks of using an existing cluster with jx and how we can use compliance tests to check if the existing cluster is ready for Jenkins X.

We'll cover the following

- Risks involving the usage of an existing cluster
- What is Sonobuoy?
- Running compliance tests
- Checking status of compliance tests
- Logging progress of compliance tests
- Finishing compliance tests
 - All tests PASSED
 - Some tests failed
- Remove compliance tests

If you're reading this, chances are that you do not want to use `jx cluster create` to create a new cluster that will host Jenkins X. That is OK and even welcome. That likely means that you are already experienced with Kubernetes and that you already have applications running in Kubernetes. That's a sign of maturity and your desire to add Jenkins X into the mix of whatever applications you are already running there. After all, it would be silly to create a new cluster for each set of applications.

However, using an existing Kubernetes cluster is risky.

Risks involving the usage of an existing cluster

Many people think they are smart enough to assemble their Kubernetes cluster from scratch. The story goes something like:

“We're so awesome that we don't need tools like Rancher to create a cluster for us.”

...or better yet...

“We’ll do it with `kubeadm`.”

Then, after a lot of sweat, we announce that the cluster is operational, only to discover that there is no `StorageClass` or that networking does not work. If you assembled your own cluster and you want to use Jenkins X inside it, you need to ask yourself whether or not that cluster is set up correctly.

- Does it have everything we need?
- Does it comply with standards, or did you tweak it to meet your corporate restrictions?
- Did you choose to remove `StorageClass` because all your applications are stateless?
- Were you forced by your security department to restrict communication between Namespaces?
- Is the Kubernetes version too old? ...

We can answer those and many other questions by running compliance tests.

Before we proceed, we’ll verify whether the cluster we’re hoping to use meets the requirements. Fortunately, `jx` has a command that can help us. We can run compliance tests and check to see if there is anything suspicious in the results. Among many other things, `jx` has its own implementation of the [Sonobuoy](#) SDK.

What is Sonobuoy?

Sonobuoy is a diagnostic tool that makes it easier to understand the state of a Kubernetes cluster by running a set of Kubernetes conformance tests in an accessible and non-destructive manner.

Sonobuoy supports Kubernetes versions 1.11, 1.12 and 1.13, so keep that in mind before running it in your cluster. In fact, if your Kubernetes cluster is older than 1.11, you likely think that creating a cluster is a one-time deal and that there is nothing to maintain or upgrade.

Given that I do not know whether your cluster complies with Kubernetes specifications and best practices, I cannot guarantee that Jenkins X installation will be successful. Compliance tests should give us that kind of comfort.

Running compliance tests

Before we proceed with the compliance tests, I must warn you that the tests will run for over an hour. Is it worth it? That depends on your cluster. Jenkins X does not need anything special. It assumes that your Kubernetes cluster has the bare minimum and that it complies with Kubernetes standards. If you created it with one of the Cloud providers and you did not stray from the default setup and configuration, you can probably skip running the compliance tests.

On the other hand, if you baked your own Kubernetes cluster, or if you customized it to comply with some corporate restrictions, running compliance tests might be well worth the wait. Even if you're sure that your cluster is ready for Jenkins X, it's still a good idea to run them. You might find something you did not know exists or you might see that you are missing things you want to have.

Anyway, the choice is yours. You can run the compliance tests and wait for over an hour, or you can be brave and skip right into the lesson: [Install Jenkins X in an Existing Kubernetes Cluster](#).

```
jx compliance run
```

Checking status of compliance tests

Once the compliance tests are running, we can check their status to see if they finished executing.

```
jx compliance status
```

The output is as follows.

```
Compliance tests are still running, it can take up to 60 minutes.
```

If you received a `no compliance status found` message, you were too hasty and the tests did not yet start. If that's the case, re-execute the `jx compliance status` command.

Logging progress of compliance tests

We can also follow the progress by watching the logs.

After a while, it'll start churning a lot of logs. If it's stuck, you executed the previous command too soon. Cancel with `ctrl+c` and repeat the `jx compliance logs -f` command.

Once you get bored of looking at endless log entries, stop following logs by pressing `ctrl+c`.

The best thing you can do right now is to find something to watch on Netflix since there's at least an hour left until the tests are finished.

Finishing compliance tests

We'll know whether or not the compliance testing is done when we execute `jx compliance status`. If the output is the same as the one that follows, the execution is finished.

```
Compliance tests completed. Use `jx compliance results` to display the results.
```



Let's see the results.

```
jx compliance results
```



All tests PASSED

If the statuses of all the tests are `PASSED`, you're probably good to go. I used the word "probably" since there is an infinite number of things you might have done to your cluster that are not covered by the compliance tests. Nevertheless, with everything `PASSED`, it is very likely that everything will run smoothly. By "everything", I don't mean only Jenkins X, but whatever else you're planning to deploy to your cluster.

Some tests failed

What happens if one of the tests failed? The obvious answer is that you should fix the issue first. A little less obvious response would be that it may or may not affect Jenkins X and whatever else we'll do in that cluster. Still, no matter whether the issue is going to affect us or not, you should fix it because you want to have a healthy and conformant Kubernetes cluster.

Remove compliance tests

We don't need compliance tests anymore, so let's remove them from the system and free some resources.

```
jx compliance delete
```



Now, let's move on and consider the case when we have to install Jenkins X in an existing cluster.