



# **Red Hat Container Development Kit 2.2 Release Notes and Known Issues**

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Highlighted features and identified problems in Red Hat Container Development Kit 2.2

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## Abstract

This document lists and briefly describes new and improved features of Red Hat Container Development Kit (prod-ver}. It also contains information about potential problems you may encounter while using the software. Where possible, workarounds are described for identified issues.

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# CHAPTER 1. INTRODUCING RED HAT CONTAINER DEVELOPMENT KIT

Red Hat Container Development Kit is a platform for developing containerized applications — it is a set of tools that enables developers to quickly and easily set up an environment for developing and testing containerized applications on the Red Hat Enterprise Linux platform.

- ✦ Container Development Kit provides a personal Container Development Environment you can install on your own laptop, desktop, or server system. The Container Development Environment is provided in the form of a Red Hat Enterprise Linux virtual machine. The Container Development Environment itself can also be installed in a virtual machine.
- ✦ Container Development Kit includes the same container-development and run-time tools used to create and deploy containers for large data centers.
- ✦ Container Development Kit offers an easy installation method that results in virtual machines created from pre-configured Vagrant boxes and Vagrantfiles running on your local system.
- ✦ Container Development Kit is available for Microsoft Windows, Mac OS X, and Linux operating systems, thus allowing developers to use their favorite platform while producing applications ready to be deployed in the Red Hat Enterprise Linux ecosystem.

Container Development Kit is a part of the [Red Hat Developers](#) program, which provides tools, resources, and support for developers who wish to utilize Red Hat solutions and products to create applications, both locally and in the cloud. For additional information and to register to become a part of the program, visit [developers.redhat.com](https://developers.redhat.com).

## 1.1. UNDERSTANDING CONTAINER DEVELOPMENT KIT DOCUMENTATION

- ✦ The [Red Hat Container Development Kit 2.2 Release Notes and Known Issues](#) contains information about the current release of the product as well as a list of known problems that users may encounter when using it.
- ✦ The [Red Hat Container Development Kit 2.2 Installation Guide](#) guide contains instructions for installing the Container Development Environment provided by Red Hat Container Development Kit on your chosen system.
- ✦ The [Container Development Kit Getting Started Guide](#) contains instructions on how to start using the Container Development Environment to develop Red Hat Enterprise Linux-based containers using tools and services such as **OpenShift Enterprise**, **Docker**, **Eclipse**, and various command-line tools.
- ✦ Report issues with Red Hat Container Development Kit or request new features using the **CDK** project at <https://issues.jboss.org/projects/CDK>.

## CHAPTER 2. RELEASE NOTES

This section documents the most important features and bug fixes in the Red Hat Container Development Kit 2.2 product.

### 2.1. COMPONENT VERSIONS

Red Hat Container Development Kit 2.2 is shipped with the following versions of the main components:

**Table 2.1. Container Development Kit, Component Versions**

Component	Version
Docker	1.10.3
Docker API	1.22
Kubernetes	1.2.0
OpenShift Enterprise	3.2

### 2.2. VIRTUALBOX COMPATIBILITY

Red Hat Container Development Kit 2.2 has been tested with **VirtualBox 5.0.26** and higher, but it is known to not work correctly with **VirtualBox 5.1.x**. If you intend to use **VirtualBox** as your virtualization provider, and you already have **VirtualBox 5.1.x** installed, downgrade your installation to **VirtualBox 5.0.26**.

### 2.3. VAGRANT COMPATIBILITY MATRIX

The Container Development Environment provided by Container Development Kit is delivered in the form of a virtual machine that is administered by **Vagrant**. Not all versions of **Vagrant** work correctly with the Container Development Environment on all supported platforms. The following table shows version requirements for **Vagrant** based on the platform and hypervisor used.

**Table 2.2. Vagrant Compatibility Matrix**

Vagrant version



	1.7.4	1.8.1
<b>Microsoft Windows with VirtualBox</b>	✓	✓
<b>Microsoft Windows with Hyper-V</b>	✗	✓
<b>Mac OS X with VirtualBox</b>	✓	✓
<b>Red Hat Enterprise Linux with libvirt</b>	✓	✓

## 2.4. NEW FEATURES

This section highlights some of the new features offered by Red Hat Container Development Kit 2.2. The new version also contains a number of bug fixes.

### 2.4.1. Proxy Connections Are Supported both for HTTP and HTTPS

The Container Development Environment provided by Red Hat Container Development Kit 2.2 now supports connecting to the Internet through proxy servers — both HTTP and HTTPS configurations. This support is available to all services running within the Container Development Environment, including **OpenShift Enterprise**, **Kubernetes**, and **Docker**.

### 2.4.2. Unified Vagrantfiles for All Hypervisors

Vagrantfiles distributed as a part of the Red Hat Container Tools ZIP file and used for initializing the Container Development Environment Vagrant box have been unified to work with all supported hypervisors. This means that the directory structure now looks as follows:

```

~]$ tree cdk/
cdk/
├── components
│   └── rhel
│       ├── misc
│       │   ├── rhel-k8s-singlenode-setup
│       │   ├── README.rst
│       │   └── Vagrantfile
│       └── rhel-ose
│           ├── README.rst
│           └── Vagrantfile
├── LICENSE
├── plugins
│   ├── vagrant-registration-README.md
│   ├── vagrant-registration-1.2.3.gem
│   ├── vagrant-service-manager-README.adoc
│   └── vagrant-service-manager-1.3.2.gem

```

```
| | | vagrant-sshfs-README.md
| | | vagrant-sshfs-1.2.0.gem
| | | README.md
```

6 directories, 14 files

### 2.4.3. The Vagrant-sshfs Plugin Is Now Used by Default JBoss Developer Studio

Previously, the **Vagrant-sshfs** plugin, which enables seamless synchronization of directories between the user's host system and the Container Development Environment, did not work well with Red Hat JBoss Developer Studio. As a consequence, SSHFS could not be used when launching the Container Development Environment from JBoss Developer Studio, and a special set of Vagrantfiles had to be provided for starting the Container Development Environment with SSHFS support. The problem has been fixed, and it is now possible to use SSHFS with JBoss Developer Studio, and there is no need for separate Vagrantfiles.

### 2.4.4. The Vagrant-service-manager Plugin Can Install Client Binaries for OpenShift, Docker, and Kubernetes

Client binaries for the user's host system, which can be used to interact with services running inside the Container Development Environment, can now be installed using the **Vagrant-service-manager' plugin. Installation is supported for the `oc`, `kubect1`, and `docker` binaries, which can be used to work with the **OpenShift Enterprise**, **Kubernetes**, and **Docker** services respectively.**

### 2.4.5. The Vagrant-registration Plugin Now Asks Again if Wrong Credentials Entered

Previously, it was not possible to resubmit Red Hat Subscription credentials during the **vagrant up** phase of Container Development Kit installation in case a mistake has been made while entering the credentials. The **Vagrant-registration** plugin has been modified to ask for correct credentials three times, thus improving user experience.

## CHAPTER 3. KNOWN ISSUES

This section describes issues that users of Red Hat Container Development Kit 2.2 may encounter, as well as possible workarounds for these issues.

### 3.1. GENERAL ISSUES

Issues affecting all supported platforms.

#### 3.1.1. DNS service provided by xip.io only works with an Internet connection

DNS addressing provided by the external **xip.io** service is unavailable without a working Internet connection.

#### 3.1.2. Red Hat Subscription Delay

After signing up for a Red Hat Developers account, you must wait approximately fifteen minutes to allow the new account information to propagate to the Red Hat Subscription Management system before the Container Development Environment can be registered.

#### 3.1.3. The nodejs-4-rhe17 Container Image Does Not Work Behind Proxy

The **nodejs-4-rhe17** Docker-formatted container image, which is available from the Red Hat Atomic Registry, does not work when the Container Development Environment is connected to the Internet through a proxy server.

#### 3.1.4. Credentials Defined in Global Vagrantfile Ignored by `vagrant-registration`

To enable automatic registration of the Container Development Environment Vagrant box, credentials for Red Hat Subscription must be defined in the Vagrantfiles that are supplied in the Red Hat Container Tools ZIP file. Credentials defined in the user's global Vagrantfile in `/home/<username>/.vagrant.d/` are ignored by the **vagrant-registration** plugin.

#### 3.1.5. Certificate Error upon Log in to OpenShift

An insecure certificate causes an error when using `oc login`. Use the `--insecure-skip-tls-verify=true` option with the `oc login` command to prevent the warning about insecure connection.

#### 3.1.6. Vagrant Reload Does Not Work behind Proxy

When using the Container Development Environment behind a proxy server, the **vagrant reload** command does not work properly, which results in OpenShift applications not loading. To avoid this issue, halt and restart your Container Development Environment Vagrant box using the **vagrant halt** and **vagrant start** commands.

#### 3.1.7. Invalid URL Offered upon Registration Fail

When the registration of the Container Development Environment to Red Hat Subscription fails, the user is shown the following error message:

```
==> default: WARNING: manager, skip, unregister_on_halt, username,
password, serverurl, baseurl, org, environment, name, auto_attach,
activationkey, servicelevel, release, force, type, ca_cert, pools
Information required to complete this request is missing from your
account. Please log into https://www.redhat.com/wapps/login to complete
account creation.
```

The URL suggested by the error message is invalid.

If you encounter this problem, either register from within the Container Development Environment Vagrant box, or destroy the Vagrant box and rerun the **vagrant up** command.

### 3.1.8. Specifying Path for Installation of Client Binaries Does Not Work as Expected

Using the **--path** option when installing the **oc**, **kubectl**, or **docker** binaries with the **install-cli** command of the **vagrant-service-manager** plugin does not work as expected. The following error is shown:

```
The system cannot find the path specified.
```

### 3.1.9. The vagrant-registration Plugin Does Not Work with Proxy and Self-Signed TSL Certificate

When using the Container Development Environment connected to the Internet through a proxy server that only has a self-signed TSL certificate, the registration to Red Hat Subscription fails. To work around this problem, edit the **etc/rhsm.conf** configuration file within the Container Development Environment to contain the following line and try to register again:

```
# Set to 1 to disable certificate validation:
insecure = 1
```

## 3.2. ISSUES ON MICROSOFT WINDOWS

This section describes issues that only affect users using Container Development Kit on a Microsoft Windows host system.

### 3.2.1. vagrant-registration Plugin on Cygwin Bash Does Not Hide Password

When the **vagrant-registration** plugin is used in interactive mode in the Cygwin Bash terminal, the entered password is visible in the standard input. The following warning will be printed:

```
Error! Your console doesn't support hiding input. We'll ask for
input again below, but we WILL NOT be able to hide input. If this
is a problem for you, ctrl-C to exit and fix your stdin.
```

## 3.3. ISSUES ON RED HAT ENTERPRISE LINUX

This section describes issues that only affect users using Container Development Kit on a Red Hat Enterprise Linux host system.

### 3.3.1. The `docker` command Cannot Communicate with Container Development Kit

The `/usr/bin/docker` wrapper on Red Hat Enterprise Linux 7 overwrites the `DOCKER_CERT_PATH` environment variable, which means that the Docker client does not work properly with the Docker service provided by the Container Development Environment. To work around this issue, use directly the `docker-current` command.

### 3.3.2. `libvirt` Fails to Unlink Virtual Machine Image

On Red Hat Enterprise Linux 7.2, the `vagrant destroy` command does not properly delete the virtual machine storage image. To work around this `libvirt` bug, you need to change the ownership of the image file and perform several steps using the `virsh` command.

#### Deleting `libvirt` Images

Substitute `vagrant_box_image.img` with the `libvirt` image file name used on your system in all steps of this procedure. Use the `virsh vol-list default` command to list all images.

1. Change the ownership of the image file:

```
# chown root:root /var/lib/libvirt/images/vagrant_box_image.img
```

2. Output volume information:

```
# virsh vol-dumpxml vagrant_box_image.img --pool default
```

3. Delete the image:

This can be done in two alternative ways. Use the second one if the first one does not work.

- ✦ Use the `vol-delete` command with `virsh`:

```
# virsh vol-delete vagrant_box_image.img --pool default
```

- ✦ Alternatively, delete the file directly and refresh the volume pool:

```
# rm /var/lib/libvirt/images/vagrant_box_image.img
# virsh pool-refresh default
```

4. Restart the `libvirtd` daemon:

```
# systemctl restart libvirtd
```

## CHAPTER 4. ADDITIONAL RESOURCES

- ✦ See the [Red Hat Container Development Kit 2.2 Installation Guide](#) for installation instructions for all supported platforms (Linux, Mac OS X, Windows).
- ✦ See the [Troubleshooting](#) chapter of the Red Hat Container Development Kit 2.2 Installation Guide for additional information about uninstallation issues.
- ✦ See the [Container Development Kit Getting Started Guide](#) for an overview of Container Development Kit features and for an introduction into the use of the **Docker** service and the **OpenShift Enterprise** platform.
- ✦ Report issues with Red Hat Container Development Kit or request new features using the **CDK** project at <https://issues.jboss.org/projects/CDK>.