OpenShift Enterprise by Red Hat

Quick Install Guide for Partners

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Target Audience

This document was created as a guide for OpenShift Partners to quickly install an OpenShift Enterprise installation on their laptop or server. It presumes that the user already has at least an OpenShift Enterprise subscription in one of the following formats:

- 30 Day Unsupported Evaluation
- 60 Day Premium Support Evaluation
- Not-For-Resale
- Commercial

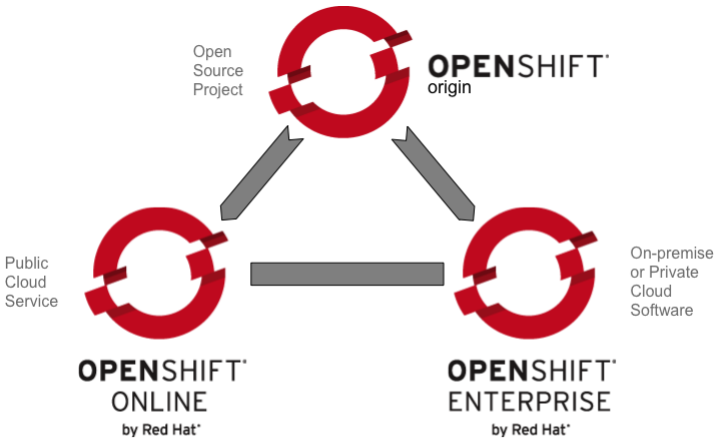
This is an "all-in-one" installation guide, which means that the user should have a standalone working installation of OpenShift Enterprise with all components running on one machine to enable cartridge and application development and additional proof of concept initiatives.

It is not intended to replace the existing enterprise documentation, but rather to supplement that documentation by providing a defined path to get going with OpenShift Enterprise.

Should you still have issues with your installation, it is recommended that the user take advantage of their Red Hat technical contact or utilize the community. If you have a supported/commercial installation, then please take advantage of our award-winning Red Hat Support: https://access.redhat.com/support/cases/new/. This guide does assume some basic understand of Linux and Linux commands.

Types of Offerings and Available Help

OpenShift is Red Hat's Platform as a Service (PaaS) offering. It is characterized by 3 main offerings, two of which are commercial: OpenShift Origin, OpenShift Online, and OpenShift Enterprise.



For users that are looking for assistance with OpenShift Origin, the best available path is to take advantage of our IRC, Message Boards and other community tools outlined here: https://www.openshift.com/open-source. This location is also a great resource for those that are utilizing the free tier of OpenShift Online.

If you are using a commercial version of OpenShift Online, then Red Hat Professional Support is available: https://access.redhat.com/support/offerings/openshift/. For users with a supported OpenShift Enterprise subscription, numerous Red Hat Professional Support options are available to you around the world: https://access.redhat.com/support/contact/technicalSupport.html.

Installation Assumptions

Subscription Requirements

This guide is NOT for use with OpenShift Origin. It is presumed that the reader is utilizing official Red Hat bits – supported or unsupported. To get help with OpenShift Origin, please utilize the documentation found in the Origin Community: http://openshift.github.io

Hardware Requirements

It is presumed that the user has at least glanced at the official OpenShift Enterprise Deployment Guide before beginning (https://access.redhat.com/site/documentation/en-US/OpenShift_Enterprise/1/html-single/Deployment_Guide/index.html) to become familiar with an enterprise installation. From the guide, the hardware requirements outlined include:

- AMD64 or Intel 64 architecture
- Minimum 1 GB of memory
- Minimum 8 GB of hard disk space
- Network connectivity

For the purposes of this guide, it is recommend that the user utilize 2GB of memory and 20GB of hard disk space. Ideally, given the nature of this installation, 4GB of memory is ideal. In all cases, the target machine can be bare metal or virtualized, as long a the virtualization layer is one supported by Red Hat Enterprise Linux (RHEL). This includes: RHEV, KVM on RHEL, VMware, OpenStack (KVM) and Microsoft Hyper-V.

Software Requirements

It should come as no surprise to the reader, that RHEL is the required software platform. From the Deployment Guide:

"This installation relies on a current Red Hat Enterprise Linux 6.4 or greater installation as its base. We recommend installing the "Basic Server" configuration for a base install, although other configurations should also provide everything you need as a starting point."

If you only have a previous RHEL 6 version available, then do not fret. The script utilized with this guide gets you up to the required 6.4 version. Also, if you want a Desktop environment as your default install, then it is recommended to install something other than Basic or Minimal during the RHEL installation.

Setting Up the Repos

For the purposes of this document, we will be utilizing *Red Hat Subscription Manager* to get the environment configured for install. The starting point for this exercise is a fresh UNREGISTERED and UNSUBSCRIBED RHEL installation on your machine. This guide also assumes that you are not using a *Red Hat Proxy*, *Red Hat Satellite* or *Red Hat SAM* – the guide takes you through set up utilizing your *Red Hat Login* with the *Red Hat Customer Portal*. Your *Red Hat Login* is the account that was set up with your evaluation or commercial subscription – it is NOT your *OpenShift Online* login.

Given that we will be connecting with the *Red Hat Customer Portal*, it is important to ensure that you have connection from your machine out to the Internet. Troubleshooting your specific network configuration is beyond the scope of this document.

With our base RHEL installation in place and a good network connection, let's get started:

1. Log into your machine as *root* (or sudo or su to the *root* user).

2. Enter following command:
   ```
   subscription-manager register
   ```

3. When prompted, enter your *Red Hat Login* id and password to complete registration.

4. You should have output similar to the following:
   ```
   [root@ose ~]# subscription-manager register
   Username: cmorgan-rhn
   Password:
   The system has been registered with id: c0516eb3-abb9-465d-9e58-d3ca16a5639d
   [root@ose ~]#
   ```

5. Let's add your RHEL subscription to the newly registered machine:
   ```
   subscription-manager subscribe --auto
   ```

6. If all went well, typing:
   ```
   subscription-manager list --installed
   ```
   Should yield something similar to this:

```
+-------------------------------------------+
    Installed Product Status
+-------------------------------------------+
Product Name:           Red Hat Enterprise Linux Server
Product ID:             69
Version:                6.3
Arch:                   x86_64
Status:                 Subscribed
Starts:                 11/08/2011
Ends:                   01/01/2022
```

7. *You can skip this step if you do not have multiple subscriptions on your account. Skip to step 11 to set up your repolist.* Next, we want to attach your OpenShift subscription:

   `subscription-manager list --available`

8. You will see a list of available subscriptions on your account. Make note of the PoolID with your subscription. You will need it for the next step:

```
Subscription Name:      OpenShift Employee Subscription
SKU:                    SER0421
Pool Id:                8a85f9843b95a97f013b95eb6602085d
Quantity:               244
Service Level:          None
Service Type:           None
Multi-Entitlement:      No
Ends:                   01/01/2022
System Type:            Physical
```

9. To add the subscription, type the following command:

   `subscription-manager subscribe --pool=<PoolID from previous step>`

10. Running the command from Step 6 can validate the success of attaching the subscription.

11. Next, we need to validate that all of the appropriate repos are enabled. This screenshot depicts exactly what should be enabled for success – no more, no less after running `yum repolist`:

```
repo id                                   repo name
jb-eap-6-for-rhel-6-server-rpms           JBoss Enterprise Application Platform 6 (RHEL 6 Server) (RPMs)
jb-ews-2-for-rhel-6-server-rpms           JBoss Enterprise Web Server 2 (RHEL 6 Server) (RPMs)
rhel-6-server-optional-rpms               Red Hat Enterprise Linux 6 Server - Optional (RPMs)
rhel-6-server-rpms                        Red Hat Enterprise Linux 6 Server (RPMs)
rhel-server-ose-1.2-infra-6-rpms          Red Hat OpenShift Enterprise 1.2 Infrastructure (RPMs)
rhel-server-ose-1.2-jbosseap-6-rpms       Red Hat OpenShift Enterprise 1.2 JBoss EAP add-on (RPMs)
rhel-server-ose-1.2-node-6-rpms           Red Hat OpenShift Enterprise 1.2 Application Node (RPMs)
rhel-server-ose-1.2-rhc-6-rpms            Red Hat OpenShift Enterprise 1.2 Client Tools (RPMs)
```

12. If you do not have this list of repos as your list, then the best way to remedy this situation is to edit `/etc/yum.repos.d/redhat.repo` file directly and set `enabled = 1` to the appropriate entries in the file. The file may have A LOT of entries, so utilizing search in your favorite editor is recommended. Rerun the `yum repolist` just to ensure you set everything up appropriately.

13. That's it. We should be ready to kick off our all-in-one install in the next section of this guide. If you have had any issues, then please reach out to Red Hat Support for assistance.

Installing OpenShift Enterprise

The hard work should be complete. However, before kicking off the installation, to make sure you have the best experience possible, it is important to do the following:

- Make sure that your machine will always get the same IP address, even after reboots. You can do this in any number of ways, but make sure it happens.

- Ensure that you set machine to have a Fully Qualified Domain Name (FQDN). It can be something as simple as *ose.example.com*, but avoid *name.localhost* or other simple conventions.

- This FQDN does not need to be registered with your enterprise DNS, but it should be resolvable locally. It is recommended that the user edit `/etc/hosts` and add an entry for the machine at the end of the file using the following format:
  <ip address> <fqdn> <shortname>

- If you needed to make any changes to your installation as outline above, it's best to just perform a reboot before beginning.

To make the installation easier, there is a modified version of the installation script mentioned in the Deployment Guide. Before beginning, download that script from here: https://github.com/munchee13/openshift-partner-tools/blob/master/ose_all_in_one_install.sh

You may need to make the script executable once you copy it to your machine. Do this by running: `chmod +x ose_all_in_one_install.sh` from the directory where you downloaded or copied the script.

To use the script, the user is required to pass in four parameters (see screenshot):

```
[root@ose ~]# ./ose_all_in_one_install.sh -h
usage: ./ose_all_in_one_install.sh options

This script can be used to quickly get going with an OpenShift Enterprise all-in-one installation.
It presumes that the user has already configured Red Hat repos, and has a FQDN as their hostname.
It also presumes that the user is running as root and is on the target installation machine.

OPTIONS:
   -h      Show this message
   -d      This is the domain for your installation, such as "example.com"
   -f      This is the FQDN of the machine, such as "ose.example.com"
   -i      This is the IP address of the machine, such as "192.168.176.12"
   -p      Set the default password for all components
[root@ose ~]#
```

For example, the installation used to create this document had the following:

```
[root@ose ~]# ./ose_all_in_one_install.sh -d rhosepaas.com -f ose.rhosepaas.com -i 192.168.176.24 -p ose11ose
The following components should be installed:
        broker.
        node.
        named.
        activemq.
        datastore.
Configuring with broker with hostname ose.rhosepaas.com.
Configuring node with hostname ose.rhosepaas.com.
Configuring with named with IP address 192.168.176.24.
Configuring with datastore with hostname ose.rhosepaas.com.
Configuring with activemq with hostname ose.rhosepaas.com.
 8 Sep 15:01:33 ntpdate[24590]: the NTP socket is in use, exiting
Loaded plugins: priorities, product-id, refresh-packagekit, security, subscription-manager
This system is receiving updates from Red Hat Subscription Management.
Cleaning repos: jb-eap-6-for-rhel-6-server-rpms jb-ews-2-for-rhel-6-server-rpms rhel-6-server-optional-rpms
              : rhel-6-server-rpms rhel-server-ose-1.2-infra-6-rpms rhel-server-ose-1.2-jbosseap-6-rpms
              : rhel-server-ose-1.2-node-6-rpms rhel-server-ose-1.2-rhc-6-rpms
Cleaning up Everything
Installing yum-plugin-priorities; if something goes wrong here, check your install source.
Loaded plugins: priorities, product-id, refresh-packagekit, security, subscription-manager
This system is receiving updates from Red Hat Subscription Management.
jb-eap-6-for-rhel-6-server-rpms                                                | 3.7 kB     00:00
jb-eap-6-for-rhel-6-server-rpms/primary_db                                     | 254 kB     00:00
jb-ews-2-for-rhel-6-server-rpms                                                | 3.7 kB     00:00
jb-ews-2-for-rhel-6-server-rpms/primary_db                                     |  55 kB     00:00
rhel-6-server-optional-rpms                                                    | 3.5 kB     00:00
rhel-6-server-optional-rpms/primary_db                                         | 2.4 MB     00:01
rhel-6-server-rpms                                                             | 3.7 kB     00:00
rhel-6-server-rpms/primary_db                93% [============================-  ] 1.7 MB/s |  21 MB     00:00 ETA
```

During the installation, you will see LOTS of installation going on with periodic configuration being performed. If you want to learn exactly what is happening, just take a look at the script. You can change it for your future needs. Depending on your hardware, the install may take 20 minutes or longer. Once complete, you should see something similar to this screenshot:

```
Generating RSA private key, 2048 bit long modulus
.................+++
.+++
e is 65537 (0x10001)
writing RSA key
Generating public/private rsa key pair.
Your identification has been saved in /root/.ssh/rsync_id_rsa.
Your public key has been saved in /root/.ssh/rsync_id_rsa.pub.
The key fingerprint is:
43:cb:85:c9:58:57:dd:fb:d4:e5:0f:c1:1b:db:c8:a1 root@ose.rhosepaas.com
The key's randomart image is:
+--[ RSA 2048]----+
|        . ...o . |
|       + +    * o|
|      . = .  o X+|
|       o o  E *.=|
|        S      oo|
|         .      o|
|                 |
|                 |
|                 |
+-----------------+
Adding password for user oseuser
Installation and configuration is complete;
please reboot to start all services properly.
[root@ose ~]#
```

As indicated in the instructions, you MUST REBOOT before trying to use your new installation. After rebooting, you can see if the installation was successful in a couple ways – immediately executing `rhc setup` or running `oo-diagnostics`. If you choose the former, then this is similar to what you would see (note that the default user is *oseuser* and the password is the one you used with the script):

```
[root@ose ~]# rhc setup
OpenShift Client Tools (RHC) Setup Wizard

This wizard will help you upload your SSH keys, set your application namespace, and check that other programs like Git
are properly installed.

The server's certificate is self-signed, which means that a secure connection can't be established to
'ose.rhosepaas.com'.

You may bypass this check, but any data you send to the server could be intercepted by others.

Connect without checking the certificate? (yes|no): yes
Login to ose.rhosepaas.com: oseuser
Password: ********


OpenShift can create and store a token on disk which allows to you to access the server without using your password. The
key is stored in your home directory and should be kept secret.  You can delete the key at any time by running 'rhc
logout'.
Generate a token now? (yes|no) yes
Generating an authorization token for this client ... lasts about 22 hours

Saving configuration to /root/.openshift/express.conf ... done

Checking for git ... found git version 1.7.1

Checking common problems .. done

Checking your namespace ... oseuser
```

If you want to check out `oo-diagnostics`, you may see this warning:

```
[root@ose ~]# oo-diagnostics
WARN: test_node_profiles_districts_from_broker
        No districts are defined. Districts should be used in any production installation.
        Please consult the Administration Guide.
```

It is benign in the case of our all-in-one installation. However, if you have any ERRORS appear, those should be addressed.

Presuming all is well; you can use your OpenShift installation, just as you would OpenShift Online. For details on `rhc` commands please see the OpenShift User Guide: https://access.redhat.com/site/documentation/en-US/OpenShift_Enterprise/1/html-single/User_Guide/index.html