



# **Red Hat OpenStack Certification 1.0**

## **Red Hat OpenStack Platform Hardware Bare Metal Certification Workflow Guide**

For Use with Red Hat OpenStack 13 and 14



# Red Hat OpenStack Certification 1.0 Red Hat OpenStack Platform Hardware Bare Metal Certification Workflow Guide

---

For Use with Red Hat OpenStack 13 and 14

## Legal Notice

Copyright © 2019 Red Hat, Inc.

The text of and illustrations in this document are licensed by Red Hat under a Creative Commons Attribution–Share Alike 3.0 Unported license ("CC-BY-SA"). An explanation of CC-BY-SA is available at

<http://creativecommons.org/licenses/by-sa/3.0/>

. In accordance with CC-BY-SA, if you distribute this document or an adaptation of it, you must provide the URL for the original version.

Red Hat, as the licensor of this document, waives the right to enforce, and agrees not to assert, Section 4d of CC-BY-SA to the fullest extent permitted by applicable law.

Red Hat, Red Hat Enterprise Linux, the Shadowman logo, JBoss, OpenShift, Fedora, the Infinity logo, and RHCE are trademarks of Red Hat, Inc., registered in the United States and other countries.

Linux ® is the registered trademark of Linus Torvalds in the United States and other countries.

Java ® is a registered trademark of Oracle and/or its affiliates.

XFS ® is a trademark of Silicon Graphics International Corp. or its subsidiaries in the United States and/or other countries.

MySQL ® is a registered trademark of MySQL AB in the United States, the European Union and other countries.

Node.js ® is an official trademark of Joyent. Red Hat Software Collections is not formally related to or endorsed by the official Joyent Node.js open source or commercial project.

The OpenStack ® Word Mark and OpenStack logo are either registered trademarks/service marks or trademarks/service marks of the OpenStack Foundation, in the United States and other countries and are used with the OpenStack Foundation's permission. We are not affiliated with, endorsed or sponsored by the OpenStack Foundation, or the OpenStack community.

All other trademarks are the property of their respective owners.

## Abstract

The Red Hat OpenStack Platform Hardware Certification Workflow Guide covers the test requirements for achieving a Red Hat Hardware Certification.

---

## Table of Contents

<b>CHAPTER 1. INTRODUCTION</b> .....	<b>3</b>
1.1. AUDIENCE	3
1.2. GETTING HELP AND GIVING FEEDBACK	3
<b>CHAPTER 2. BARE METAL CERTIFICATION PROCESS</b> .....	<b>5</b>
2.1. UNDERSTANDING THE CERTIFICATION PROCESS	5
<b>CHAPTER 3. PREREQUISITES</b> .....	<b>6</b>
3.1. PROGRAM MEMBERSHIP AND ACCOUNTS	6
3.2. BASEBOARD MANAGEMENT CONTROLLER	6
3.3. SERVERS	6
<b>CHAPTER 4. TEST ENVIRONMENT OVERVIEW</b> .....	<b>7</b>
4.1. PREPARING THE TEST SERVER	7
4.2. PREPARING THE UNDERCLOUD FOR TESTING	8
4.3. PROXY SETTINGS FOR TEST SERVER AND TEST CLIENT	9
4.4. CONFIGURING BARE METAL	9
4.5. CONFIRMING BARE METAL CONFIGURATION	9
<b>CHAPTER 5. PERFORMING CERTIFICATION</b> .....	<b>10</b>
5.1. CREATING A BARE METAL CERT FROM AN EXISTING CERTIFICATION	10
5.2. RECEIVING THE TEST PLAN	10
5.3. REGISTERING THE SYSTEM	11
5.4. EXECUTING TESTS	11
5.5. VIEWING THE TEST LOGS	12
<b>CHAPTER 6. REVIEW FEEDBACK</b> .....	<b>13</b>
<b>CHAPTER 7. RECERTIFICATION</b> .....	<b>14</b>



# CHAPTER 1. INTRODUCTION

The Red Hat Certification Program is Red Hat's method of certifying hardware and software to be compatible with Red Hat Enterprise Linux, Red Hat OpenStack Platform, Red Hat Storage Server, Red Hat Enterprise Linux for Real Time, and other Red Hat software products.

The program has three main elements:

- The Test Suite, which tests the hardware or software undergoing certification
- The [Red Hat Certification Ecosystem](#), provides the catalog of a certified solution, and
- A joint support relationship between Red Hat and the vendor whose hardware or software is undergoing certification.

This workflow guide covers all aspects of the Red Hat OpenStack Platform Hardware (Bare Metal) Certification process, from the initial request for certification, to the final approval and posting of the certification.

The policies and other rules of the program are covered in the [Red Hat OpenStack Hardware Bare Metal Certification Policy Guide](#).

## 1.1. AUDIENCE

This guide describes the technical certification requirements for individuals running tests to validate expected hardware component performance.

It is geared towards the engineers who have been tasked with certifying their company's products to run one or more of Red Hat's products. It assumes that you as a tester should have basic knowledge about the software that is being used for certification. It also assumes that you are familiar with concepts like operating system installation, software installation, and hardware installation and removal.



### IMPORTANT

The Red Hat Hardware Certification Program presumes an advanced level of hardware and Red Hat product knowledge and skills. The Red Hat product support is neither offered nor covered in the Red Hat Hardware Certification Program, but is available for purchase separately.

## 1.2. GETTING HELP AND GIVING FEEDBACK

If you experience difficulty with a procedure described in this documentation, [Open a Support Case](#) in the Customer Portal.



### NOTE

Personal emails are not tracked as a support mechanism and do not include a Service Level Agreement.

The Customer Portal offers the following services and information:

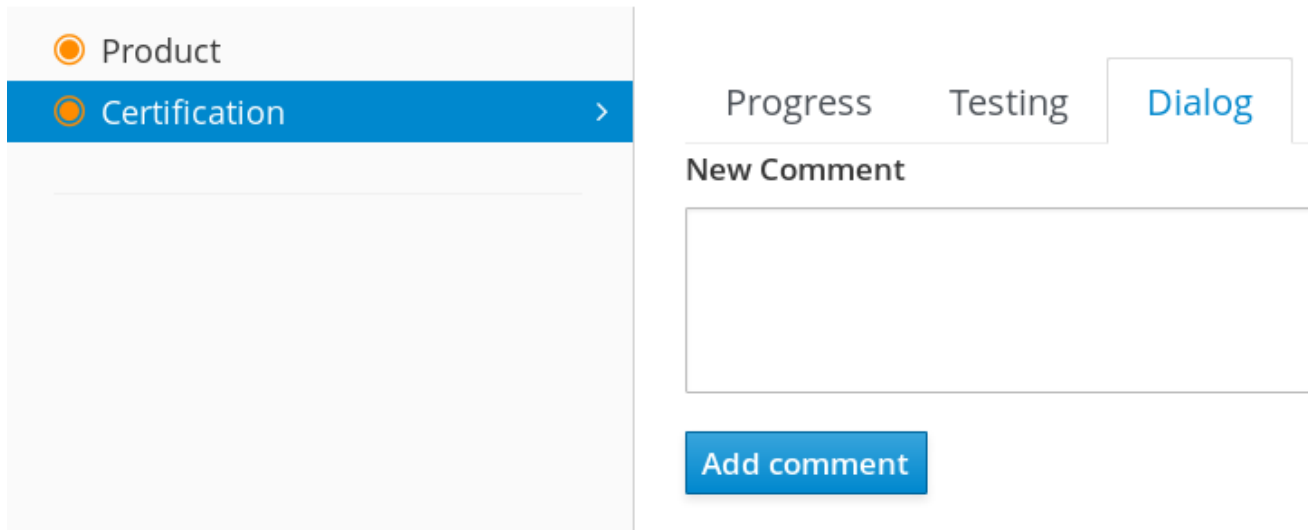
- Search or browse through technical support articles and solutions pertaining to Red Hat products
- Submit a support case to Red Hat Global Support Services (GSS)

- Access product documentation

## Questions During Certification

During the certification process, you may need to ask or reply to a question about topics which affect a specific certification. These questions and responses are recorded in the **Dialog Tab > New Comment** section of the certification entry.

**Figure 1.1. New Comment section**



The screenshot shows a navigation menu on the left with 'Product' and 'Certification' options. The 'Certification' option is selected and highlighted in blue. To the right, there are three tabs: 'Progress', 'Testing', and 'Dialog'. The 'Dialog' tab is active and highlighted in blue. Below the tabs, there is a section titled 'New Comment' with a large text input area and a blue 'Add comment' button.



### WARNING

It is not within the scope of certification testing to resolve issues identified during testing. Some issues can block a certification and might require resolution - including hardware and/or Red Hat Product update(s) - before the certification can proceed.

## We Need Feedback!

If you see a way to make this guide better, or if you think of a way to improve the certification workflow, or program, we would love to hear from you! [Submit a bug in Bugzilla](#). Try to be as specific as possible; include the section number and some of the surrounding text.



## CHAPTER 2. BARE METAL CERTIFICATION PROCESS

Red Hat OpenStack Platform Hardware Bare Metal Certification creates value for customers as the system can be managed and automatically deployed and redeployed with Red Hat OpenStack Platform, without manual intervention, at scale, in a private cloud.

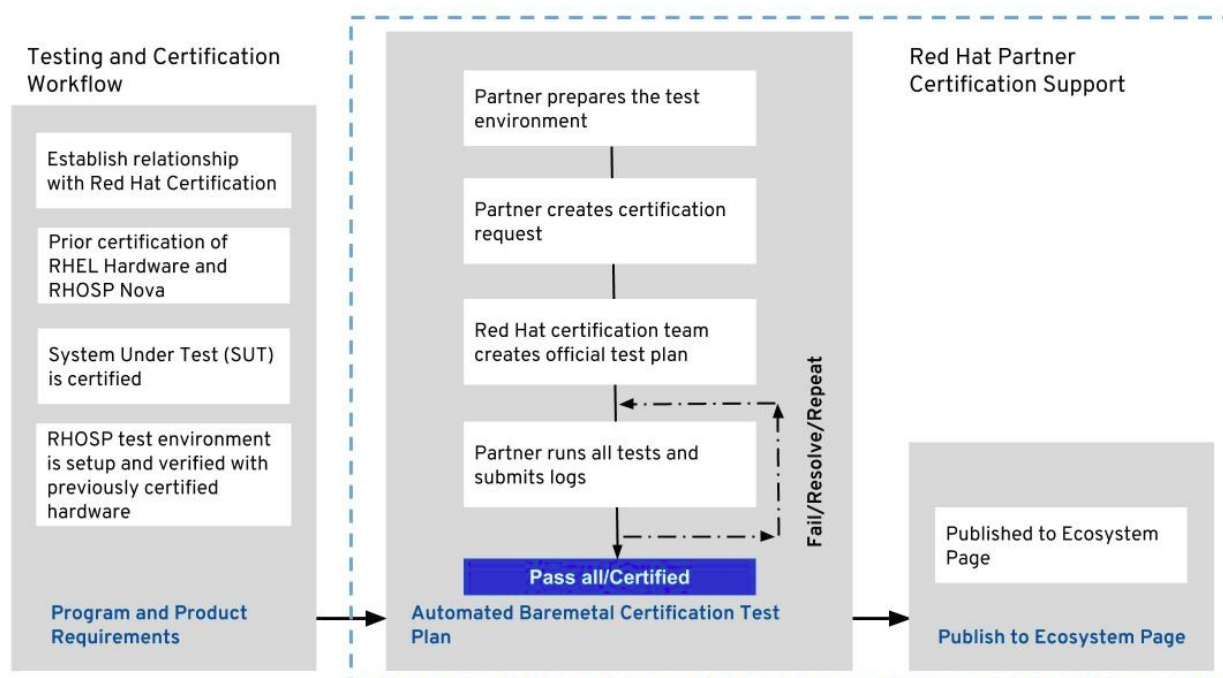
The certification process, through a series of tests, validates that a certified solution meets the requirements of an enterprise cloud and is jointly supported by Red Hat and your organization.

Most of the certification subtests provide an immediate return status (Pass/Fail); however, some subtests may require detailed review by Red Hat to confirm success or failure. Such tests are marked with **REVIEW** status in Red Hat Certification application. Some tests may also identify a potential issue and return a **WARN** status. This status indicates that best practices may not have been followed. Tests marked with the **WARN** status warrant attention or action(s) but do not prevent a certification from publishing. Partners should review the output of such tests and perform appropriate action(s) based on the information contained within the warnings.

### 2.1. UNDERSTANDING THE CERTIFICATION PROCESS

The following diagram illustrates the Red Hat OpenStack Platform Hardware Bare Metal process:

**Figure 2.1. Bare Metal certification process**



Each step is covered in the [Performing Certification](#) section.

## CHAPTER 3. PREREQUISITES

The bare metal prerequisite comprises of the Program Membership, Baseboard Management Controller (BMC), and Servers.

### 3.1. PROGRAM MEMBERSHIP AND ACCOUNTS

To create a Bare Metal certification, the Partner should have a certification for Red Hat Enterprise Linux Hardware and Red Hat Openstack Compute (Nova).

If you have a Red Hat Hardware Certification account, you are ready to test your product.

Creating a certification for Bare Metal requires that the certifying partner has already received certification for **RHEL Hardware** and **RHOSP Compute (Nova)**. Your organization must be registered with the Red Hat Hardware Certification account.

### 3.2. BASEBOARD MANAGEMENT CONTROLLER

For the bare metal certification of BMC, certified RHEL system with a BMC is required. The BMC certification may then be published separately as a component or certified and kept private for leverage in follow-on servers. For more information see the section Leverage from the Bare Metal Policy Guide.

### 3.3. SERVERS

The following certifications are required on servers in order to begin RHOSP Hardware (bare metal) certification:

- Red Hat Enterprise Linux Hardware (Server)
- Red Hat OpenStack Platform Compute (Nova)
- Component Certification for Leveraging (Optional)
- Red Hat OpenStack Platform Hardware (Optional)

For more information about these certifications, see the [RHEL Hardware Test Suite User Guide](#) and the [RHEL Hardware Program Policy Guide](#).

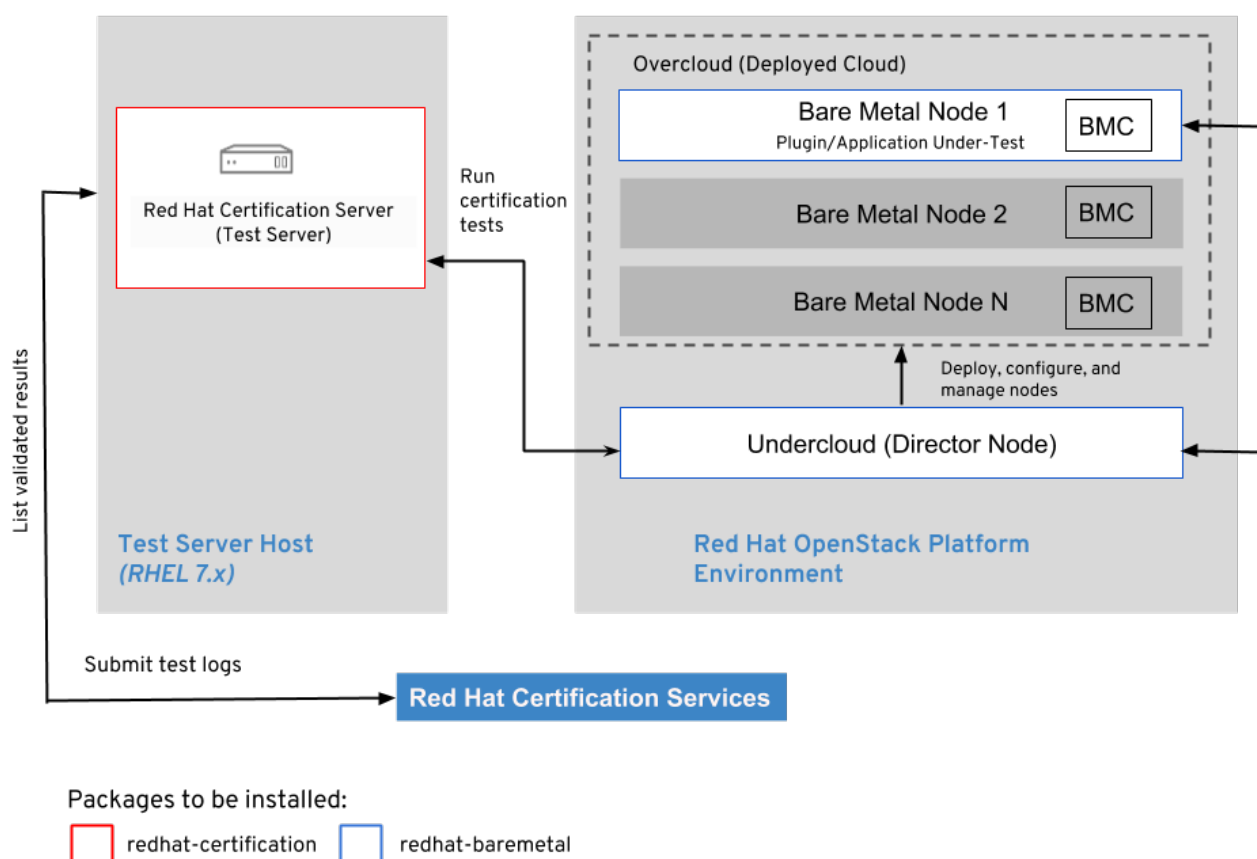
## CHAPTER 4. TEST ENVIRONMENT OVERVIEW

The primary application required in the Red Hat Certification workflow is a client server application. You may launch Red Hat Certification web user interface (UI) on a different host (test server). Also, you may use the web UI to run certification tests on an OpenStack deployment-under-test (test client).

It is recommended to setup a test server to run OpenStack Certification tests on the system-under-test or test client. This allows testing of multiple test clients from a single test server, enables quick validation, and prevents resource constraints.

The following diagram illustrates the environment setup required for testing the OpenStack deployment-under-test. The diagram includes the certification packages that need to be installed on each host (color coded).

**Figure 4.1. Bare Metal Environment Setup**



### 4.1. PREPARING THE TEST SERVER

The software packages required on the test server must be installed by subscribing to the Red Hat Certification channel via CDN. This ensures that the required dependencies are automatically installed.

To install the required software packages on the test server, perform the following steps:

1. Select a persistent RHEL 7 host which can act as the test server. The chosen RHEL 7 host should be able to access Red Hat services including the certification channels and use the same network as the OpenStack deployment-under-test.
2. Run the following command to install the `redhat-certification` package on the host:

```
# yum install redhat-certification -y
```

3. Start Apache by executing the following command:

```
# systemctl start httpd
```

4. Start the Red Hat certification back-end-server and the server listener process by executing the following command:

```
# rhcertd start
```

5. Verify that your test server can reach the redhat certification services by opening the Web UI: `http://IP address of the test server`.

## Result

The test server (RHEL 7.x host) is now prepared. The redhat-certification package provides Red Hat Certification web UI which can be used to run certification tests on the OpenStack deployment-under-test/test client.

## 4.2. PREPARING THE UNDERCLOUD FOR TESTING

Install the relevant version of Red Hat OpenStack Platform (against which the certification is required) using [Red Hat OpenStack Platform Product Documentation](#). After Red Hat OpenStack Platform is installed, see the product documentation to understand its usage and configuration.

It is mandatory to use the Red Hat OpenStack Platform Director for installation as it is the supported toolset for installing and managing a Red Hat OpenStack Platform environment in production.

The software packages required on the OpenStack deployment-under-test machine must be installed by subscribing to Red Hat Certification channel via CDN. This ensures that the required dependencies are automatically installed.



### NOTE

The OpenStack deployment-under-test refers to the node where BMC can be controlled/undercloud node. For more information, see [Test Environment Overview](#) section.

Perform the following steps on the **Undercloud Director** node that is configured for Bare Metal:

1. Run the following command to install the redhat-certification-baremetal package. This automatically installs the required dependencies:

```
# yum install redhat-certification-baremetal
```

2. Start the Red Hat Certification back-end server and the server listener process by executing the following command:

```
# rhcertd start
```

## Result

The OpenStack deployment-under-test which refers to the node from where BMC can be controlled or undercloud node is installed is now prepared for certification testing.

### 4.3. PROXY SETTINGS FOR TEST SERVER AND TEST CLIENT

If your network utilizes a proxy, you may need to manually configure the test server and/or test client for the proxy as outlined below:

In the test server, update the `/etc/rhcert.xml` file as per the following settings:

```
<urls>
<proxy-url protocol="http">PROXY_SERVER:PROXY_PORT</proxy-url>
<proxy-url protocol="https">PROXY_SERVER:PROXY_PORT</proxy-url>
</urls>
```

Replace **PROXY\_SERVER** with the IP or dns-name of your proxy server, and **PROXY\_PORT** with your proxy port number.

For example:

```
<proxy-url protocol="http">http://rhcert-example.redhat.com:3148<proxy-
url>
<proxy-url protocol="https">https://rhcert-example.redhat.com:3148<proxy-
url>
```

To open port 80 and port 8009 on test server and test client, run the **rhcert-cli register** command.

For more information, we recommend you to refer [How can we access to the Hardware Certification \(rhcertd web interface\) via proxy?](#)

### 4.4. CONFIGURING BARE METAL

The [Bare Metal Provisioning for RHOSP13](#) guide provides procedures for installing, configuring, and using the Bare Metal service in the undercloud of a Red Hat OpenStack Platform environment.

### 4.5. CONFIRMING BARE METAL CONFIGURATION

You must validate that Bare Metal is working prior to starting the certification process. To see the registered nodes and their current status, follow the [Bare Metal Provisioning](#) chapter described in the [Director Installation and Usage guide](#).

## CHAPTER 5. PERFORMING CERTIFICATION

Following are the required prerequisites for creating a certification:

- You must select Red Hat OpenStack Platform Bare Metal Cert as the program, and
- Depending which certification you are trying to achieve, select either an already certified server or add a new BMC component.

### 5.1. CREATING A BARE METAL CERT FROM AN EXISTING CERTIFICATION

This process is used while creating a Red Hat OpenStack Platform Bare Metal certification request from an existing RHEL 7 system certification. You are expected to have a corresponding published RHOSP Nova certificate. Perform the following steps to create a bare metal cert from an existing certification:

1. Go to the rhcert web UI and select a certification from the base RHEL certification.
2. Click on the **Certificate**.
3. Click the **Related Certifications** tab.
4. From the **Product** drop down list, select Red Hat OpenStack Platform, and from the **Version** drop down list select RHOSP 13.0. For **Format** drop down list, select Bare Metal.
5. Click **Create**.

**Figure 5.1. Creating a new certification from an existing certification**

New Layered Certification

Choose the Red Hat Certification.

<b>Product</b>	Red Hat Enterprise Linux OpenStack Platform
<b>Version</b>	RHOSP 13.0
<b>Format</b>	Bare Metal

After the request is created, monitor the request for questions from the certification team.



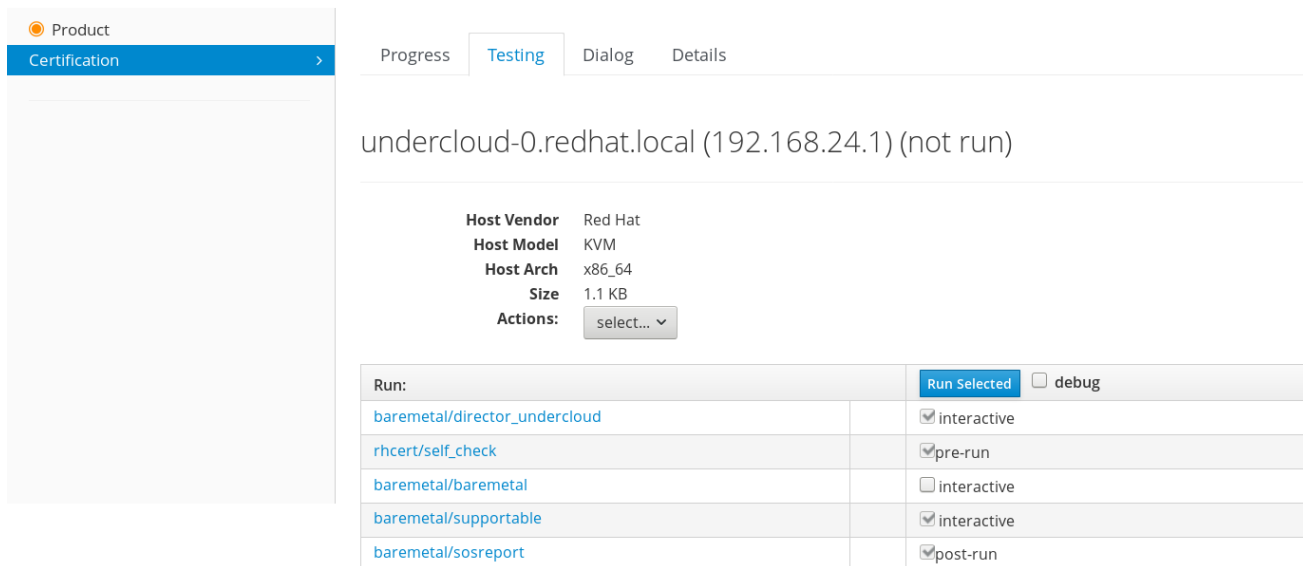
#### IMPORTANT

To create a Bare Metal certificate from a pass-through RHEL cert, Partners should have a Bare Metal cert in the original RHEL cert.

### 5.2. RECEIVING THE TEST PLAN

The test plan is available on the test server. The following screenshot illustrates an example of a test plan and describes the tests required to run Bare Metal.

Figure 5.2. Test Plan



undercloud-0.redhat.local (192.168.24.1) (not run)

Host Vendor: Red Hat  
 Host Model: KVM  
 Host Arch: x86\_64  
 Size: 1.1 KB  
 Actions: select... ▾

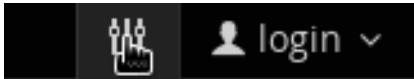
Run:	Run Selected	debug
baremetal/director_undercloud	<input checked="" type="checkbox"/>	interactive
rhcert/self_check	<input checked="" type="checkbox"/>	pre-run
baremetal/baremetal	<input type="checkbox"/>	interactive
baremetal/supportable	<input checked="" type="checkbox"/>	interactive
baremetal/sosreport	<input checked="" type="checkbox"/>	post-run

### 5.3. REGISTERING THE SYSTEM

Perform the following steps to register your system using Red Hat Certification:

1. In your test server launch Red Hat certification web UI in a browser using the `http://machine-ip` link
2. Type Red Hat account credentials enabled for certification in the **Username** and **Password** fields. Click **Login**.
3. On the Red Hat Certification Home Page, click the **Server settings** tab.

Figure 5.3. Server Setting Tab



4. In the **Register a System** field, type the hostname or IP address of the Undercloud node where the plugin-under-test/driver-under-test is installed and then click **Add**.



#### IMPORTANT

For more information on registering a system, refer to [Registering a System using Redhat-Certification](#).

### 5.4. EXECUTING TESTS

1. Click the **Certifications** tab, and select the relevant bare metal certification. If the **Certification** section of the certification entry is highlighted, go to step 3.
2. If the **Certification** section of the certification entry is not highlighted, perform the following steps:
  - i. Click the **Testing** tab > **Certification**.
  - ii. Click **Continue Testing** and go to Step 3.

3. Select the check box corresponding to the test you wish to run and click **Run selected**.



#### NOTE

You can run tests in any order and combination. If the test is interactive, you will be prompted for additional information during the test. For example, insert or remove a USB3 device.

4. After the run is completed, it will appear in the list of runs and the **Continue Testing** button is enabled again. You can then run additional tests or view the logs from the previous run(s) and submit results.

## 5.5. VIEWING THE TEST LOGS

To view the test logs using Red Hat Certification web UI, perform the following steps.

1. Launch Red Hat Certification web UI on the test server.
2. On Red Hat Certification Home Page, click the relevant certification entry.
3. Click the **Testing** link to open the Testing Page.
4. In the Testing Page, click the timestamp under the relevant hostname that corresponds to the results you wish to view.

#### Next Steps:

You may view the results of each test from the Results column on the table. From the **Actions** list, select an appropriate action based on the following details:

- **Submit Test Logs:** To submit the test log file for validation, select **Submit**. To close the test log file, select **Close**
- **Save Test Logs:** To save the test log file on a Red Hat Certification server, select **Save**. The save action transfers the test log file in .xml.gz format to a remote server which has Red Hat Certification application installed
- **Download Test Logs:** To download the test log file in .xml.gz format, select **Download**
- **Delete Test Logs:** To delete the test log file from the server, select **Delete**



## CHAPTER 6. REVIEW FEEDBACK

After you submit your results, the Red Hat certification team will analyze the content and award the credit for each passing test that is part of the test plan. As they verify each passing test, the team sets each test plan item to **Confirmed**, which you can see under the **Results** tab on the catalog.

**Figure 6.1. Certification Test Plan**

Test	Host Device	Save Assignment	Results
baremetal/director_undercloud		DIRECTOR_UNDERCLOUD: DIRECTOR_UNDERCLOUD	> <b>PASS</b> Attachments: os_collect_config.json undercloud_nova_list.log
rhcert/self_check		SELF_CHECK: SELF_CHECK	> <b>PASS</b> Verify Test Suite: <b>PASS</b> Combined: <b>PASS</b>
baremetal/baremetal		BAREMETAL: BAREMETAL	> <b>FAIL</b> Attachments: instackenv.json
baremetal/supportable		SUPPORTABLE: SUPPORTABLE	> <b>FAIL</b>
baremetal/sosreport		SOSREPORT: SOSREPORT	> <b>PASS</b> Attachments: sosreport-undercloud-0.redhat.local-2...

If any problem is found, the Red Hat certification team will update the certification request, which will automatically be emailed to the person who submitted the cert. You can also attempt to debug the results on the testing page:



### NOTE

You can discuss results or problems from the **Dialog** tab in the certification.

## CHAPTER 7. RECERTIFICATION

Incremental product or features may or may not require recertification. This requirement is ultimately up to the Red Hat Partner Certification team. However, Red Hat encourages partners to always retest these changes on their own, regardless of a formal requirement, to ensure the proper function of the product.

*Revised on 2019-02-15 09:27:25 UTC*