



Red Hat Certified Cloud and Service Provider Certification 8.67

Red Hat Certified Cloud and Service Provider Certification for Red Hat Enterprise Linux for SAP Images Workflow Guide

For Red Hat Enterprise Linux for SAP with HA and Update Services Cloud Images

Red Hat Certified Cloud and Service Provider Certification 8.67 Red Hat Certified Cloud and Service Provider Certification for Red Hat Enterprise Linux for SAP Images Workflow Guide

For Red Hat Enterprise Linux for SAP with HA and Update Services Cloud Images

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Abstract

This document describes the technical and operational certification requirements for CCSP Partners who want to offer RHEL for SAP with HA and Update Services. Version 8.67 updated August 29, 2023.

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MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code and documentation. We are beginning with these four terms: master, slave, blacklist, and whitelist. Due to the enormity of this endeavor, these changes will be gradually implemented over upcoming releases. For more details on making our language more inclusive, see our [CTO Chris Wright's message](#).

CHAPTER 1. INTRODUCTION TO RED HAT CERTIFIED CLOUD AND SERVICE PROVIDER CERTIFICATION FOR RED HAT ENTERPRISE LINUX FOR SAP IMAGES PROGRAM

Use this guide to certify images build on Red Hat Enterprise Linux for SAP with High Availability and Update Services.

1.1. THE RED HAT CERTIFICATION PROGRAM OVERVIEW

The Red Hat certification program ensures the compatibility of your hardware, software, and cloud products on the [Cloud Platform](#). The program has three main elements:

- **Test suite:** Comprises tests for hardware or software applications undergoing certification.
- **Red Hat Certification Ecosystem** Helps to explore and find certified products including hardware, software, cloud, and service providers.
- **Support:** A joint support relationship between you and Red Hat.

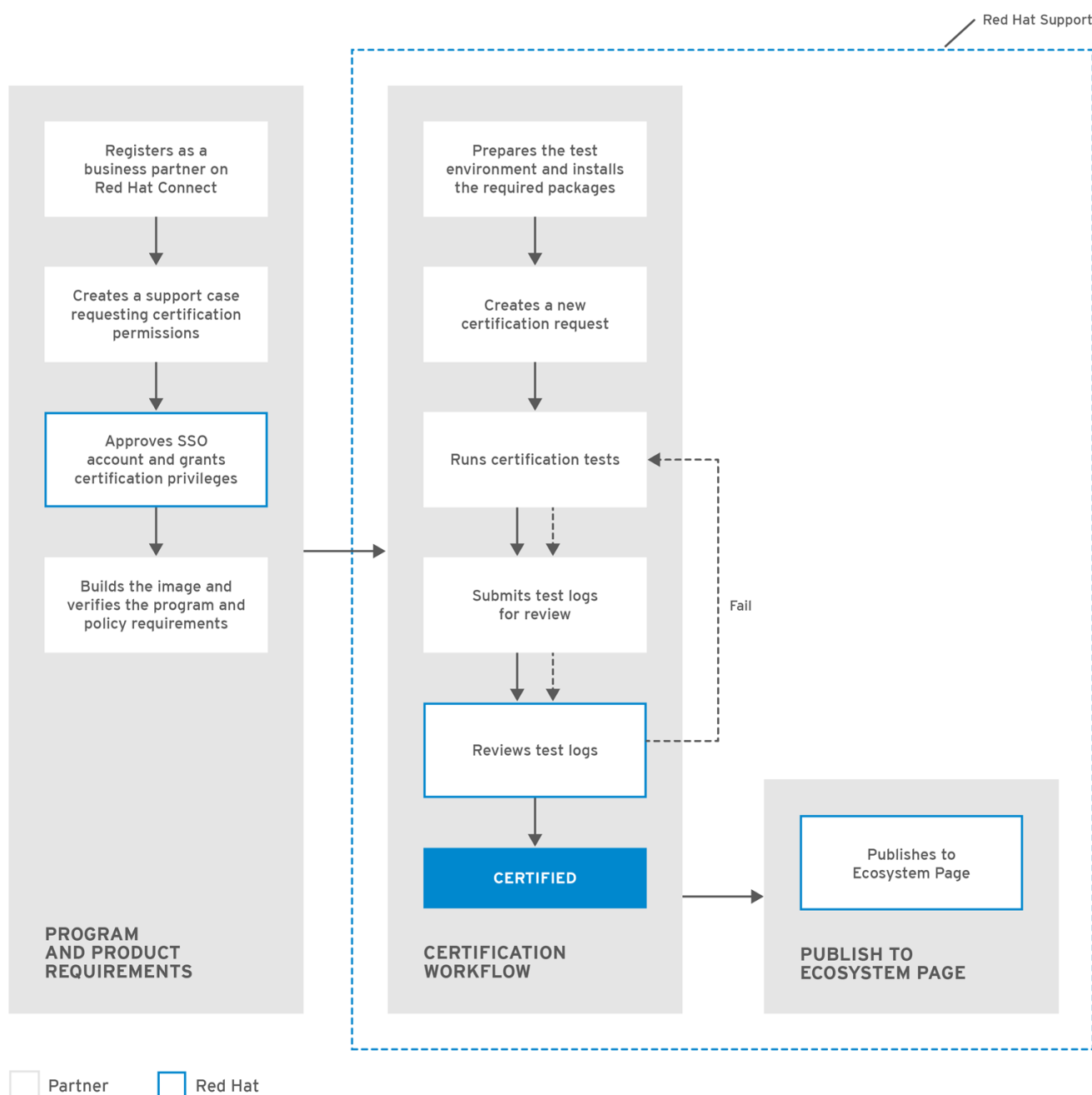
1.2. CERTIFICATION WORKFLOW

Follow these high-level steps to certify your hardware, software, and cloud products:

1. Create a certification request for a specific software or hardware component using the [Red Hat Certification](#) tool.
2. Run the tests specified in the workflow guide, and submit the results by using the [Red Hat Certification](#) tool to the [Red Hat certification team](#) for analysis.
3. The certification team analyzes the test results and communicates any required retesting.
4. When all tests have favorable results, the certification is complete and the certified product is made available on the [Red Hat Ecosystem Catalog](#).

The following diagram gives an overview of the certification workflow.

Figure 1.1. Certification Workflow Overview



RHCS_435803_0117

Additional resources

- For more information about the requirements and policies, see the [Red Hat Certified Cloud and Service Provider SAP Images Policy Guide](#).

1.3. GETTING SUPPORT AND GIVING FEEDBACK

For any questions related to the Red Hat certification toolset, certification process, or procedure described in this documentation, refer to the [KB Articles](#), [Red Hat Customer Portal](#), and [Red Hat Partner Connect](#).



NOTE

To receive Red Hat product assistance, it is necessary to have the required product entitlements or subscriptions, which may be separate from the partner program and certification program memberships.

You can also open a support case to get support or submit feedback.

Opening a Support Case

To open a support case see, [How do I open and manage a support case on the Customer Portal?](#)

Complete the Support Case form with special attention to the following fields:

- From the **Product** field, select **Red Hat Enterprise Linux**
- From the **Product Version** field, select the version of the Red Hat product on which your product or application is being certified.
- In the **Problem Statement** field, type a problem statement/issue or feedback using the following format:

{Partner Certification} (The Issue/Problem or Feedback)

- Replace **(The Issue/Problem or Feedback)** with either the issue or problem faced in the certification process or Red Hat product or feedback on the certification toolset or documentation.

For example: {Partner Certification} Error occurred while submitting certification test results using the Red Hat Certification application.



NOTE

Red Hat recommends that you are a Red Hat Certified Engineer or hold equivalent experience before starting the certification process.

All cases related to Certification use a [Severity 3 SLA](#) which provides for a one business day response time.

CHAPTER 2. ONBOARDING CERTIFICATION PARTNERS

Use the Red Hat Partner Connect Portal to create a new account if you are a new partner, or use your existing Red Hat account if you are a current partner to onboard with Red Hat for certifying your products.

2.1. ONBOARDING EXISTING CERTIFICATION PARTNERS

As an existing partner you could be:

- A member of the one-to-many Ecosystem Partner Management (EPM) program who has some degree of representation on the EPM team, but does not have any assistance with the Red Hat Certified Cloud and Service Provider (CCSP) certification process.
OR
- A member fully managed by the EPM team in the traditional manner with a dedicated EPM team member who is assigned to manage the partner, including questions about the CCSP certification requests.



NOTE

If you think your company has an existing Red Hat account but are not sure who is the Organization Administrator for your company, email connect@redhat.com to add you to your company's existing account.

Prerequisites

You have an existing Red Hat account.

Procedure

1. Access [Red Hat Customer Portal](#) and click **Log in**.
2. If you do not have an active membership for the Certified Cloud and Service Provider (CCSP) Program, visit [Red Hat CCSP program](#) to learn more about it and to join the program. Contact the [connect team](#) for more information.
3. If you already have an active membership for the Certified Cloud and Service Provider (CCSP) Program, from the main menu, click **Log in**.
4. Enter your Red Hat login or email address and click **Next**.
Then, use either of the following options:
 - a. Log in with company single sign-on
 - b. Log in with Red Hat account
5. After you have an active membership in the CCSP program and an SSO account, the account must be entitled with certification privileges. To do this, open a case and include the following information in the **Problem Statement** field:

Problem Statement:

- Partner Certification: CCSP Certification Access for *{Red Hat SSO Username}* at *{Partner Name}*

OPTIONAL Include all of the following information in the **What do you expect to see** field to have a Red Hat associate address your case and create the first certification request for you:

- Name of the Cloud or the Cloud Service Offering
- Public Catalog URL/Public URL of the Cloud or Cloud Service Offering
- Supported Regions (Global/Australia & New Zealand/ASEAN/EMEA/Japan/LATAM/North America/Public Sector):
- Supported Languages
- Any 3rd Party Certifications Acquired (E.g. FedRAMP, Systrust, SAS 70, PCI, Other Non-NA Certs, etc.):
- RHEL Version (7.x, 8.x or 9.x) of the first certification desired to be achieved

Attach File:

Attached Partner Brand Logo (PNG 256x256)

After reviewing your request, a member from the CCSP certification team will contact you and help you to proceed with the certification process.

2.2. ONBOARDING NEW CERTIFICATION PARTNERS

Creating a new Red Hat account is the first step in onboarding new certification partners.

1. Access [Red Hat Customer Portal](#) and click **Register**.
2. Enter the following details to create a new Red Hat account:
 - a. Select Corporate in the **Account Type** field.
If you have created a Corporate type account and require an account number, contact the [Red Hat global customer service team](#).



NOTE

Ensure that you create a company account and not a personal account. The account created during this step is also used to sign in to the Red Hat Ecosystem Catalog when working with certification requests.

- b. Choose a Red Hat login and password.



IMPORTANT

If your login ID is associated with multiple accounts, then do not use your contact email as the login ID as this can cause issues during login. Also, you cannot change your login ID once created.

- c. Enter your **Personal information** and **Company information**.
- d. Click **Create My Account**
A new Red Hat account is created.

3. After you have an active membership in the CCSP program and an SSO account, the account must be entitled with certification privileges. To do this, open a case and include the following information in the **Problem Statement** field:

Problem Statement:

- Partner Certification: CCSP Certification Access for *{Red Hat SSO Username}* at *{Partner Name}*
OPTIONAL Include all of the following information in the **What do you expect to see** field to have a Red Hat associate address your case and create the first certification request for you:
- Name of the Cloud or the Cloud Service Offering
- Public Catalog URL/Public URL of the Cloud or Cloud Service Offering
- Supported Regions (Global/Australia & New Zealand/ASEAN/EMEA/Japan/LATAM/North America/Public Sector):
- Supported Languages
- Any 3rd Party Certifications Acquired (E.g. FedRAMP, Systrust, SAS 70, PCI, Other Non-NA Certs, etc.):
- RHEL Version (7.x, 8.x or 9.x) of the first certification desired to be achieved

Attach File:

Attached Partner Brand Logo (PNG 256x256)

After reviewing your request, a member from the CCSP certification team will contact you and help you to proceed with the certification process.

2.3. CLOUD CERTIFICATION TYPES

Cloud certifications are basically classified into two main categories:

- Cloud Instance Type Certification
- Cloud Image Certification



NOTE

Certify your product by following the Red Hat Hardware certification process before obtaining Cloud Instance Type certification. For more information about Red Hat Hardware Certification see [Red Hat Hardware Certification Test Suite User Guide](#).

2.3.1. Cloud Instance Type certification

Cloud Instance Type Certification is required for CCSP partners offering multiple, distinct types of hardware to run Red Hat products. This certification type is an acknowledgement of Red Hat product validation and provides visibility for end-customers. This visibility is an indication of support for various cloud provider hardware and/or virtual machine types. It provides end-customers with the knowledge that they will have a fully supported and exceptional experience when running their Red Hat workloads on the cloud hardware and/or virtual machine.

2.3.2. Cloud Image Certification

Cloud Image certification builds upon Cloud Instance Type Certification and Hardware Certification. This certification is performed by CCSP partners to run their Red Hat workloads on certified infrastructure. It also gives the peace of mind that they are using a standard, supported configuration of Red Hat images across multiple different environments.

CCSP partners who want to make Red Hat images available through a cloud marketplace or similar catalog are required to certify the images with Red Hat before making them available to end-customers.

Both certification methods utilize the Red Hat certification tools and run a series of tests that look at either the hardware compatibility with Red Hat Enterprise Linux against provided hardware specifications or configuration of the image to ensure end-customers will have a common, consistent experience across cloud providers. This results in the best end-customer experience across support, security practices, and underlying feature support.

2.4. CLOUD CERTIFICATION REQUIREMENTS

Review and ensure to comply with the following cloud certification requirements before proceeding with cloud certifications.



NOTE

Certify your product by following the Red Hat Hardware certification process before obtaining Cloud Instance Type certification. For more information about Red Hat Hardware Certification see [Red Hat Hardware Certification Test Suite User Guide](#).

2.4.1. Cloud Instance Type certification requirements

For Cloud Instance Type Certification, you must perform certification for each Red Hat product major release, which could be running on the cloud hardware or virtual machine.

2.4.2. Cloud Image Certification requirements

- For Cloud Image Certification, you must perform certification for any image built by the partner, which will be presented to end-customers. The certification process provides your Red Hat customers with the assurance that they will have a consistent experience across cloud providers, the customer's experience comes with the highest level of support, and good security practices are available to the customers.
- Your image needs to meet the complete list of image requirement policies outlined in the [CCSP Program Guide](#) and the [Technical and Operations requirements Guide](#) available in Red Hat Connect for Business Partners.

If multiple versions of hardware and/or hypervisors are utilized, separate certifications are required for each hardware platform and/or hypervisor version.

It is also recommended the certification process be repeated in each isolated data center or region in the provider's cloud to ensure against inconsistencies.

Additional resources

- To know about the benefits of being a Red Hat partner, see [Red Hat partner benefits](#).

- For more information about certification specific policies and requirements, see [Red Hat Certified Cloud and Service Provider Certification Policy Guide](#).

CHAPTER 3. OPENING A NEW CERTIFICATION CASE BY USING THE RED HAT CERTIFICATION PORTAL

Prerequisites

- You have established a certification relationship with Red Hat.
- You have the user login credentials.
- You have the vendor and products linked to your user login.

Procedure

1. Log in to [Red Hat Certification Portal](#).
2. On the homepage, click **Open Certification**.
A new window will display.
 - a. Click **Next**.
 - b. Select the **Partner** from the drop-down list.
 - c. On the **Product** drop-down list, select your product name.
If your product does not appear, create it by entering its name in the **Product** field. Then, select it.
 - d. In the **What kind of product is this?** section, select the checkbox applicable to your product.
Your product might qualify for more than one ecosystem.
 - e. Click **Next**.
 - f. Enter the **Make**.
The **Model** appears automatically based on the previous inputs.
 - g. Select the applicable checkbox under **Which category best describes your product?**
 - h. Optional: Enter the **Product URL**.
 - i. Optional: Enter the **Support URL**.
 - j. Optional: Enter the **Specification URL**.
 - k. Click **Next**.
A new product gets created based on the inputs you provided in the previous steps.
 - l. The **Partner Product** appears by default based on the inputs in the previous steps.
 - m. Select **Red Hat Certification** from the drop-down list, and click **Next**.
 - n. Review the information you provided and click **Open**.

Verification

A message displays that a new certification case for your product is created.

Next steps

Red Hat will prepare your test plan based on the product specification you provided.

In the meantime, see [Chapter 4, *Setting up the test environment*](#) to prepare the systems for running tests.

CHAPTER 4. SETTING UP THE TEST ENVIRONMENT

The first step towards certifying your product is setting up the environment where you can run the tests.

The test environment consists of one system:

- System 1: [Acts as a host under test \(HUT\)](#)

4.1. SETTING UP A SYSTEM THAT ACTS AS A HOST UNDER TEST

A system on which the product that needs certification is installed or configured is referred to as the host under test (HUT).

Prerequisites

- The HUT has RHEL version 8 or 9 installed. For convenience, Red Hat provides [kickstart files](#) to install the HUT's operating system. Follow the instructions in the file that is appropriate for your system before launching the installation process.

Procedure

1. Configure the *Red Hat Certification* repository:
 - a. Use your RHN credentials to register your system using Red Hat Subscription Management:

```
# subscription-manager register
```

- b. Display the list of available subscriptions for your system:

```
# subscription-manager list --available*
```

- c. Search for the subscription which provides the Red Hat Certification (for RHEL Server) repository and make a note of the subscription and its Pool ID.
- d. Attach the subscription to your system:

```
# subscription-manager attach --pool=<pool_ID>
```

Replace the `pool_ID` with the Pool ID of the subscription.



NOTE

You don't have to attach the subscription to your system, if you enable the option **Simple content access for Red Hat Subscription Management**. For more details, see [How do I enable Simple Content Access for Red Hat Subscription Management?](#)

- e. Subscribe to the Red Hat Certification channel:

- On RHEL 8:

```
# subscription-manager repos --enable=cert-1-for-rhel-8-<HOSTTYPE>-rpms
```

Replace `HOSTTYPE` with the system architecture. To find out the system architecture, run

```
uname -m
```

Example:

```
# subscription-manager repos --enable=cert-1-for-rhel-8-x86_64-rpms
```

- On RHEL 9:

```
# subscription-manager repos --enable=cert-1-for-rhel-9-<HOSTTYPE>-rpms
```

Replace HOSTTYPE with the system architecture. To find out the system architecture, run

```
uname -m
```

Example:

```
# subscription-manager repos --enable=cert-1-for-rhel-9-x86_64-rpms
```

- f. Install cloud test suite package:

```
# yum install redhat-certification-cloud
```

Next steps

See [Chapter 5, Downloading the test plan from Red Hat Certification Portal](#)

CHAPTER 5. DOWNLOADING THE TEST PLAN FROM RED HAT CERTIFICATION PORTAL

Procedure

1. Log in to [Red Hat Certification portal](#).
2. Search for the case number related to your product certification, and copy it. For example, 02887238.
3. Click **Cases** → enter the product case number.
4. Optional: Click **Test Plans**.
The test plan displays a list of components that will be tested during the test run.
5. Click **Download Test Plan**.

Next steps

- If you plan to use Cockpit to run the tests, see [Chapter 6, Configuring the system and running tests by using Cockpit](#).
- If you plan to use CLI to run the tests, see [Chapter 7, Configuring the system and running tests by using CLI](#).

CHAPTER 6. CONFIGURING THE SYSTEM AND RUNNING TESTS BY USING COCKPIT

To run the certification tests by using Cockpit you need to upload the test plan to the HUT first. After running the tests, download the results and review them.

This chapter contains the following topics:

- [Section 6.1, “Setting up the Cockpit server”](#)
- [Section 6.2, “Adding the host under test to Cockpit”](#)
- [Section 6.3, “Using the test plan to prepare the host under test for testing”](#)
- [Section 6.4, “Running the certification tests using Cockpit”](#)
- [Section 6.5, “Reviewing and downloading the results file of the executed test plan”](#)

6.1. SETTING UP THE COCKPIT SERVER

[Cockpit](#) is a RHEL tool that lets you change the configuration of your systems as well as monitor their resources from a user-friendly web-based interface.



NOTE

- You must set up Cockpit on a new system, which is separate from the host under test and test server.
- Ensure that the Cockpit has access to both the host under test and the test server.

For more information on installing and configuring Cockpit, see [Getting Started using the RHEL web console](#) on RHEL 8, [Getting Started using the RHEL web console](#) on RHEL 9 and [Introducing Cockpit](#).

Prerequisites

- The Cockpit server has RHEL version 8 or 9 installed.
- You have installed the Cockpit plugin on your system.
- You have enabled the Cockpit service.

Procedure

1. Log in to the system where you installed Cockpit.
2. Install the Cockpit RPM provided by the Red Hat Certification team.

```
# yum install redhat-certification-cockpit
```

You must run Cockpit on port 9090.

6.2. ADDING THE HOST UNDER TEST TO COCKPIT

Adding the host under test (HUT) to Cockpit lets the two systems communicate by using passwordless SSH.

Prerequisites

- You have the IP address or hostname of the HUT.

Procedure

1. Enter **http://<Cockpit_system_IP>:9090/** in your browser to launch the Cockpit web application.
2. Enter the username and password, and then click **Login**.
3. Click the down-arrow on the logged-in cockpit user name→**Add new host**.
The dialog box displays.
4. In the **Host** field, enter the IP address or hostname of the system.
5. In the **User name** field, enter the name you want to assign to this system.
6. Optional: Select the predefined color or select a new color of your choice for the host added.
7. Click **Add**.
8. Click **Accept key and connect** to let Cockpit communicate with the system through passwordless SSH.
9. Enter the **Password**.
10. Select the **Authorize SSH Key** checkbox.
11. Click **Log in**.

Verification

On the left panel, click **Tools →Red Hat Certification**.

Verify that the system you just added displays under the Hosts section on the right.

6.3. USING THE TEST PLAN TO PREPARE THE HOST UNDER TEST FOR TESTING

Provisioning the host under test performs a number of operations, such as setting up passwordless SSH communication with the cockpit, installing the required packages on your system based on the certification type, and creating a final test plan to run, which is a list of common tests taken from both the test plan provided by Red Hat and tests generated on discovering the system requirements.

For instance, required hardware packages will be installed if the test plan is designed for certifying a hardware product.

Prerequisites

- [You have downloaded the test plan provided by Red Hat](#) .

Procedure

1. Enter **http://<Cockpit_system_IP>:9090/** in your browser address bar to launch the Cockpit web application.
2. Enter the username and password, and then click **Login**.
3. Select **Tools → Red Hat Certification** in the left panel.
4. Click the **Hosts** tab, and then click the host under test on which you want to run the tests.
5. Click **Provision**.
A dialog box appears.
 - a. Click **Upload**, and then select the new test plan .xml file. Then, click **Next**. A successful upload message is displayed.
Optionally, if you want to reuse the previously uploaded test plan, then select it again to reupload.



NOTE

During the certification process, if you receive a redesigned test plan for the ongoing product certification, then you can upload it following the previous step. However, you must run **rhcert-clean all** in the Terminal tab before proceeding.

- b. In the **Role** field, select **Host under test** and click **Submit**. By default, the file is uploaded to path: ``/var/rhcert/plans/<testplanfile.xml>``

6.4. RUNNING THE CERTIFICATION TESTS USING COCKPIT

Prerequisites

- [You have prepared the host under test](#) .

Procedure

1. Enter **http://<Cockpit_system_IP>:9090/** in your browser address bar to launch the Cockpit web application.
2. Enter the username and password, and click **Login**.
3. Select **Tools → Red Hat Certification** in the left panel.
4. Click the **Hosts** tab and click on the host on which you want to run the tests.
5. Click the **Terminal** tab and select **Run**.
A list of recommended tests based on the test plan uploaded displays. The final test plan to run is a list of common tests taken from both the test plan provided by Red Hat and tests generated on discovering the system requirements.
6. When prompted, choose whether to run each test by typing **yes** or **no**.
You can also run particular tests from the list by typing **select**.

6.5. REVIEWING AND DOWNLOADING THE RESULTS FILE OF THE EXECUTED TEST PLAN

Procedure

1. Enter **http://<Cockpit_system_IP>:9090/** in your browser address bar to launch the Cockpit web application.
2. Enter the username and password, and then click **Login**.
3. Select **Tools → Red Hat Certification** in the left panel.
4. Click the **Result Files** tab to view the test results generated.
 - a. Optional: Click **Preview** to view the results of each test.
 - b. Click **Download** beside the result files. By default, the result file is saved as **/var/rhcert/save/hostname-date-time.xml**.

Next steps

See [Chapter 8, Uploading the results file of the executed test plan to Red Hat Certification portal](#)

CHAPTER 7. CONFIGURING THE SYSTEM AND RUNNING TESTS BY USING CLI

To run the certification tests by using CLI you need to upload the test plan to the HUT first. After running the tests, download the results and review them.

This chapter contains the following topics:

- [Section 7.1, “Using the test plan to prepare the host under test for testing”](#)
- [Section 7.2, “Running the certification tests using CLI”](#)
- [Section 7.3, “Reviewing and downloading the results file of the executed test plan”](#)

7.1. USING THE TEST PLAN TO PREPARE THE HOST UNDER TEST FOR TESTING

Running the provision command performs a number of operations, such as setting up passwordless SSH communication with the test server, installing the required packages on your system based on the certification type, and creating a final test plan to run, which is a list of common tests taken from both the test plan provided by Red Hat and tests generated on discovering the system requirements.

For instance, required hardware packages will be installed if the test plan is designed for certifying a hardware product.

Prerequisites

- You have the hostname or the IP address of the test server.
- [You have downloaded the test plan provided by Red Hat to the host under test](#) .

Procedure

1. Run the provision command:

```
# rhcert-provision
```

2. When prompted, enter the path of the test plan saved on your system.
3. When prompted, provide the hostname or the IP address of the test server to set up passwordless SSH. You will be prompted only the first time you add a new system.

7.2. RUNNING THE CERTIFICATION TESTS USING CLI

Procedure

1. Download the test plan to the SUT.
2. Direct the certification package to use the test plan by running the command:

```
# rhcert-provision <test-plan-doc>
```

3. Run the following command:

```
# rhcert-run
```

4. When prompted, choose whether to run each test by typing **yes** or **no**.
You can also run particular tests from the list by typing **select**.

7.3. REVIEWING AND DOWNLOADING THE RESULTS FILE OF THE EXECUTED TEST PLAN

Procedure

1. Run the following command:

```
# rhcert-save
```

2. Download the results file by using the **rhcert-save** command to your local system.

Next steps

See [Chapter 8, *Uploading the results file of the executed test plan to Red Hat Certification portal*](#)

CHAPTER 8. UPLOADING THE RESULTS FILE OF THE EXECUTED TEST PLAN TO RED HAT CERTIFICATION PORTAL

Prerequisites

- You have downloaded the test results file from either Cockpit or the HUT directly.

Procedure

1. Log in to [Red Hat Certification portal](#).
2. On the homepage, enter the product case number in the search bar.
Select the case number from the list that is displayed.
3. On the **Summary** tab, under the Files section, click **Upload**.

Next steps

Red Hat will review the results file you submitted and suggest the next steps. For more information, visit [Red Hat Certification portal](#).

CHAPTER 9. RECERTIFICATION WORKFLOW

You must recertify their cloud application image on every major release of the Red Hat Enterprise Linux included in the image and are recommended to also recertify their image on each minor release.

To recertify an image, it is mandatory to create a new certification request for recertification. Run the certification tests and proceed with the rest of the workflow as documented.