The OpenStack Foundation Certification Candidate Handbook

for

OpenStack Foundation Certified OpenStack Administrator (COA)

Version 1.0

Effective April 20, 2016

Email:
cert@OpenStackfoundation.org

Web:
https://openstack.org/coa

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Overview

About The OpenStack Foundation Certification Program

The OpenStack Foundation's Certification Program was created in response to a need in the marketplace for OpenStack certification that is performance-based, available anywhere in the world, and vendor neutral. With these as its guiding principles, The OpenStack Foundation developed exams intended to certify the foundational skills of a Candidate and allow them to build on that foundation with additional credentials for the particular implementations they find themselves using.

Scope of Certification

The OpenStack Foundation offers a performance based certification program that allows users to demonstrate their competence in a hands-on, command-line environment. The purpose of the OpenStack Foundation Certified OpenStack Administrator (COA) Certification is to provide assurance that Certificate holders have the skills, knowledge and competency to perform the responsibilities of OpenStack system administrators.

To achieve Certification, a Candidate will need to pass a performance-based Exam. For exam security, candidates need to verify their identity and are monitored by a proctor during the exam session via streaming audio, video, and screensharing feeds. The screensharing feed allows proctors to view candidates' desktops (including all monitors). The audio, video, and screensharing feeds will be stored for a limited period of time in the event that there is a subsequent need for review. Certification is issued upon a Candidate passing the required Exam.

OpenStack Foundation Certified OpenStack Administrators have the skills required to provide day-to-day operation and management of an OpenStack cloud. Candidates who pursue this Certification are required to be proficient in the content domains and competencies listed at https://openstack.org/coa/requirements.

Candidate Requirements

Testing Equipment: Hardware and Environment

Exams are delivered online and closely monitored by proctors via webcam, audio and remote screen viewing. Candidates must provide their own front-end hardware to take exams, including a computer with:
  * Chrome or Chromium browser
  * reliable internet access
  * webcam
  * microphone

The workstation on which the hardware (i.e. desktop or laptop) is placed must, aside from the required hardware, reveal a clean surface with no obstructions overhead or underneath. Candidates should ensure that their webcam is capable of being moved in case the proctor requests that the Candidate pan their surroundings to check for potential violations of exam policy.

  * If multiple Candidates are taking an exam at the same time in one location, then at least four feet (1.2 meters) of empty space on all sides must be enforced or privacy partitions must be installed.

Hardware Compatibility Check
Candidates should run the compatibility check tool provided by the Exam Provider to verify that their hardware meets the minimum requirements. The tool is located at https://www.examslocal.com/ScheduleExam/Home/CompatibilityCheck. (At this time, only Chrome and Chromium browsers are supported.)

Candidate Identification and Authentication

Candidates are required to provide government-issued photo identification before the Exam can be launched (see section on Exam Experience). Any current, non-expired government ID containing Candidate's photo and full name of Candidate in the Latin alphabet may be used for identity verification. Examples of acceptable forms of government-issued photo ID include, but are not limited to:
  * passport
  * government-issued driver's license/permit
  * national identity card
  * state- or province-issued identity card

If you have questions about whether your photo ID is acceptable please contact: certificationsupport@OpenStackfoundation.org.

Eligibility

Candidates must test as an individual. Certification is only available for natural persons, not corporations or other legal entities.

Age

Candidates must be 18 years of age or older to be eligible for testing or Certification. Candidates under the age of 18 years old are considered underage minors and are not eligible for testing or Certification even with parental consent. The OpenStack Foundation reserves the right to impose additional restrictions to comply with local data protection laws.

Accommodations for Special Needs

If a Candidate has special needs that need to be taken into account during Exam administration, they must notify The OpenStack Foundation at least two weeks in advance so any accommodating measures can be arranged.

Statement of Non-Discrimination

The OpenStack Foundation endorses the principles of equal opportunity. Eligibility criteria for Certification as an OpenStack Foundation Certified OpenStack Administrator (COA) are applied equally to all individuals regardless of age, race, religion, gender, national origin, veteran status, or disability.

Certification and Confidentiality Agreement

Candidates are required to accept the terms of The OpenStack Foundation Certification and Confidentiality Agreement located at http://www.openstack.org/coa/agreement. This is a legally-binding agreement that applies to all Exams. Acceptance and adherence to this agreement is required in order to be exposed to the Exam and to be officially Certified. Candidates must first accept the terms and conditions of The OpenStack Foundation Certification and Confidentiality Agreement **during the registration process** and **again prior to testing**. Failure to accept the terms of this Agreement will result in a terminated Exam and forfeiture of the entire Exam fee.

Exam Registration

To register for an Exam, go to the webpage for the desired Certification Exam –

COA: https://openstack.org/COA

Click the Register for Exam button. Candidates will be prompted to login or create a OpenStack ID account as the first step. Candidates will then be prompted, enter payment information, and read and accept the Terms and Conditions for Exam Registration and The OpenStack Foundation Certification and Confidentiality Agreement.

When registration is successfully completed, Candidates will be redirected to My Portal, where they can view the next steps required to schedule and take their Exam. (Eligibility to schedule and take an Exam expires 12 months from the date of registration.) Candidates will also receive an Order Confirmation email for their Exam Registration purchase and will receive an Exam Instructions email.

Exam Fees

The cost per Exam is $300 USD. Only credit card payment can be used for payment of Exam fees. All major credit cards will be accepted.

Refund Policy

Candidates have up to three (3) business days following payment of Exam registration fees or up to 24 hours prior to a scheduled Exam reservation, whichever comes first, to request a full refund on Exam registration fees.

Refunds will not be given and rescheduling will not be allowed in event of no-shows or if Exam is terminated early or could not be started on time due to Exam misconduct.

Refund Process

Candidates should first check that they are eligible for a refund per the refund policy and then follow the appropriate process below to request a refund:

- **Candidates who have not yet scheduled an Exam reservation**: contact certificationsupport@OpenStackfoundation.org and provide the order number, OpenStack ID, and Exam title on the Exam registration.
- **Candidates who have already scheduled an Exam reservation**: first, cancel the exam reservation at least 24 hours before the scheduled start time of the reservation. Once the reservation is canceled, contact certificationsupport@OpenStackfoundation.org and provide the order number, OpenStack ID, and Exam title on the Exam registration. **The OpenStack Foundation cannot issue a refund if there is an Exam reservation scheduled in the system.**

My Portal

Candidates can access My Portal any time by going to cert.openstack.org

Once a Candidate has logged into My Portal, they will be able to view the status of their Certification efforts under the Certifications tab, as well as to download receipts for Exam registrations. Use the blue Refresh button located to the right of "Certification Status" to pull in recently made changes or if the window has been left open for an extended time. (Certain changes may require several minutes to populate, such as date and time for newly scheduled Exam reservations.)

Status Settings for Certification

The status settings that may appear for Certification include:

Status	Description
Not Certified - Register for Exam	User has not yet registered for a Certification Exam. Use the "Register for Exam" link to register for an Exam and start the process towards getting Certified.
Items Pending	User has registered for a Certification Exam, but still needs to complete items towards getting Certified. When this status is on, an Exam Prep Checklist panel will be presented on the left that guides the user through the remaining items requiring completion. An Exam Info panel will be presented on the right that provides more details on an Exam as the steps in the Exam Prep

	Checklist are completed (e.g. distribution selected, Exam date and time, Exam results, etc.).
Not Passed	User has taken the Exam but their exam score was below the score required to pass. An Exam Info panel containing details on the Exam taken will be presented and a link to "Re-Register" for the Exam is provided.
Active	User has achieved or renewed Certification and expiration of Certification has not yet passed. Certificates and Badges for the specific Certifications in Active status will be available for download.
Expired	User achieved or renewed Certification previously, but the Certification has since expired.
Revoked	User's Certification has been revoked.

Exam Prep Checklist

If the Exam Prep Checklist is displayed, it indicates a Candidate has registered for an Exam, but not yet taken the Exam. Candidates should use the Exam Prep Checklist to review and complete the steps necessary to take the Exam. When items in the checklist have been completed, a green checkmark will appear next to the item. Red crosses indicate items which remain to be completed.

The items on the Exam Prep Checklist include the following:

Register for Exam
Check System Requirements
Schedule Exam
Get Candidate Handbook
Verify Name
Important Tips
Take Exam

Register for Exam
Register for Exam will already be checked as complete when the Exam Prep Checklist is presented.

Check System Requirements
Candidates must check that the system on which they plan to take their Exam meets the minimum requirements for taking the Exam. Clicking on the Check System Requirements link in the Exam Prep Checklist will direct a Candidate to a

Compatibility Check Tool. The Candidate should use that tool to determine if their system meets the minimum requirements or if anything is needed to bring their system up to the required specifications.

The portal cannot determine the results of the Compatibility Check Tool; it can only determine if the Candidate has accessed the tool by clicking on the Check System Requirements link provided in the Exam Prep Checklist.

If the Compatibility Check Tool reveals that a Candidate's system does not meet minimum requirements, it is the Candidate's responsibility to bring their system up to the necessary specifications or to procure a system that does meet the minimum requirements **before** they take their Exam.

Candidates may access the Check System Requirements link even after it has been marked as complete. This allows Candidates to re-check a system after changes have been made or to check new systems.

Schedule Exam

Use the Schedule Exam link to be directed and automatically logged in to the Exam Proctoring Partner's scheduling site. Once authenticated and logged in, Candidates may search for the Exam by Exam title, code (COA) or Sponsor Name (The OpenStack Foundation) and they can then select from available Dates and Times* for an Exam reservation.

Candidates will also be prompted to use the Check Compatibility Tool to confirm that their system meets minimum requirements needed for the Exam, and to read and accept the terms of The OpenStack Foundation Certification and Confidentiality Agreement. Once all steps have been completed successfully, the Exam reservation will be confirmed. Email notification will be sent to the Candidate regarding their confirmed Exam reservation. (Candidates who have setup exclusive email whitelists should add InnovativeExams.com to their list of acceptable domains.)

*Please note that exams require a 24-hour lead time to allow for preparation of the virtual machines, so the earliest possible reservation date will be the following business day. Additionally, the latest date possible in the scheduling calendar is 30 days out. If a later reservation is desired, Candidate will need to wait until their desired date is less than 30 days out to schedule.

Canceling or Rescheduling

Once Candidates have scheduled an Exam reservation, they may cancel or reschedule the reservation up to 24 hours before the start time of the reservation. Reservation changes are not possible when 24 hours or less remain before the start time. No-shows forfeit the money paid for an Exam registration.

Candidates should refer to the Cancel and Reschedule Instructions provided in the Exam reservation confirmation email from the Exam Proctoring Partner, or follow the steps below:

- Go to the Exam Proctoring Partner's site as listed in the Exam Reservation Confirmation email
- Click on "My Exams"
- Click on the scheduled Exam and then click on Cancel or Reschedule button

Get Candidate Handbook

All Candidates are expected to read and familiarize themselves with the Candidate Handbook. Click on Get Candidate Handbook to access the Handbook. Once the link is clicked on, the item is marked as completed. Candidates may access the Download Candidate Handbook link even after it has been marked as completed. This allows Candidates to re-download or review the Candidate Handbook at later dates if needed.

Verify Name

Candidates must click on the Verify Name link to ensure that the First and Last Name listed on their OpenStack ID account matches their government-issued photo ID. Make sure these values do not change before the Exam has been taken.

The First and Last Name attached to a OpenStack ID are provided to the Exam Proctor so that Proctors can verify the identity of the Candidate against the government-issued photo ID presented by Candidate.

Important Tips

Candidates are encouraged to review the list of top tips for a smooth Exam experience.

Take Exam

Once a Candidate has completed the necessary steps in the Exam Prep Checklist, the Take Exam link will be made available in the Checklist. At the time of their scheduled reservation, Candidates may click on this link to be automatically logged in to the Exam Proctoring Partner's site.

Alternatively, Candidates may click on the link provided in the Exam Reservation Confirmation and Reminder emails sent by the Exam Proctoring Partner, or go directly to http://www.examslocal.com/OpenStackfoundation. Login with your OpenStack ID account when prompted.

Once logged in, click on My Exams and select the Exam from the left margin to get started.

Exam Info Panel

The Exam Info panel in My Portal provides the following details on a specific Exam registration, as well as links to perform certain actions for the Exam:

- **Download Receipt**: download receipt for the Exam registration
- **Exam Date**: once a Candidate schedules an Exam reservation, the date and time of that reservation will be displayed here; if Candidate has not yet scheduled an Exam, "Unscheduled" will be displayed
  - o "**Schedule Exam**" link: Candidate may use the Schedule Exam link to access the Exam Proctoring Partner's scheduling site in order to schedule an Exam Date.
  - o "**Take Exam**" link: on the scheduled Exam date and time, the Candidate may use the Take Exam link to login to their Exam session on the Exam Proctoring Partner's site.
- **My Score**: the score that the Candidate earned on the Exam
- **Score Needed to Pass**: the minimum score needed to pass the Exam

Certification Info Panel

When a Candidate has passed an Exam and successfully achieved Certification, a Certification Info panel will be made available to the Candidate in My Portal. The Certification Info panel provides the following details on the Candidate's Certification:

- **Certificate ID Number**: this is the ID number listed on the Candidate's Certificate
- **Achieved/Renewed On**: this is the date that the Candidate achieved or if applicable, renewed their Certification
- **Expires On**: the date on which Candidate's Certification is scheduled to expire
- **My Score**: the score that the Candidate earned on the Exam they passed to achieve Certification
- **Score Needed to Pass**: the minimum score needed to pass the Exam
- Actions Panel
  - o Download **Certificate**
  - o Download **Certification Badges**
  - o Download **Badge Usage Guidelines**
  - o Download **Exam Receipt**

TAKING THE EXAM

Certifications from the OpenStack Foundation require the Candidate to use the command line to demonstrate their competencies across the specified domains.

Exams are delivered entirely online and closely monitored by proctors via webcam, audio, and remote screen viewing. This gives Candidates the freedom to take their exam at the place and time of their choosing (subject to meeting the conditions stipulated in Candidate Requirements section of this document).

Launching Exam

At the time of a Candidate's scheduled Exam reservation, the Candidate can login to My Portal and click on the Take Exam link to be directed to the Exam Proctoring Partner's site. Candidates may also go to the URL provided in the confirmation and reminder emails from the Exam Proctoring Partner, or go directly to https://www.examslocal.com/OpenStackfoundation. The Candidate will be prompted to authenticate via their OpenStack ID login.

Once authenticated and logged in, the Candidate should click on My Exams, select the appropriate Exam listed in the left margin, and click the Launch Exam button (see Reporting Issues with Launching Exam). Clicking the Launch Exam button will open the Exam Console in a new browser tab and the Candidate may then close all other tabs and browsers.

Once in the Exam Console, the Candidate will be prompted to:

- share their screen
- connect their microphone and webcam
- present valid government-issued photo ID that matches the name listed on the Exam reservation (the Proctor will request that Candidate hold up their ID to the webcam)
- read and accept the Exam Rules and the terms and conditions of The OpenStack Foundation Certification and Confidentiality Agreement

Upon completing these items and when the Proctor has verified that the Candidate's workstation environment and surroundings meet the requirements stipulated in Candidate Requirements, the Proctor will release the Exam so that the candidate can begin working. The countdown timer for the Exam does not start until the Proctor releases the Exam.

Reporting Issues with Launching Exam

If the Launch Exam button does not appear or is not accessible within the 5-minute period following the Exam reservation's scheduled start time, the Candidate should contact Innovative Exams Support using one of the following options:

- "Online - Click here to get help" - this opens the chat support function
- Support menu item in the top nav bar - call one of the support phone numbers

The Candidate must contact Support at Innovative Exams within 15 minutes of the scheduled start time for their reservation to report the issue. Otherwise, they will be marked as a "No Show" for the Exam.

Exam Console Format

The Exam Console is composed of three sections:

1. **Help Center Panel** (*left*) – houses a chat box to allow communication with the Proctor and buttons to **Show Testing Rules**, **End Exam**, **Refresh Exam Window,** and **Reset Console**. (See Guidelines and Tips for Use of the Help Center below.)
2. **Content Panel** (*center*) – contains Exam objectives (the exam questions, tasks, etc.); describes the point value of an objective; displays a countdown timer for the Exam at the top; and provides English, Spanish and Portuguese option buttons. (See Guidelines and Tips for Use of the Control Panel below.)
3. **OpenStack Server Terminal** (*right*) – panel that displays the terminal of a OpenStack server. (See Guidelines and Tips for Use of the OpenStack Server Terminal below.)

Candidates will need to perform the Exam objectives listed in the Content Panel by executing command-line tasks on the OpenStack server terminal. Proctors will be able to see the Candidate's desktop and view the Candidate through the webcam.

Guidelines and Tips for Use of the Help Center
- To ask the Proctor a question during the Exam, use the Chat window on the Help Center Panel.
- To review the Rules during the Exam, click on the **Show Testing Rules** button on the Help Center Panel..
- The **Refresh Exam Window** button can be used to refresh the OpenStack Server Terminal (panel furthest to right) without reloading the entire webpage.
    - For example, if the OpenStack Server Terminal is experiencing latency issues that are not affecting the Help Center or Exam Content panels, clicking the Refresh Exam Window button may help
- The **Reset Console** button can be used to reset the HTML terminal application and to flush all firewall settings on the Candidate's server.

- If a Candidate is ready to end the Exam before the allotted time is up, they may do so by using the **End Exam** button in the Help Center Panel.
- The Help Center Panel will collapse after a 5 minutes of inactivity. To expand the Panel, click the "Help Center" text in the top left.

Guidelines and Tips for Use of the Content Panel
- Exam objectives can only be navigated linearly. Use the Next button at the bottom of the Content Panel to move to the next objective, and use the Back button to move back one objective.
- The default language for Exam objectives is English. Click on the Spanish or Portuguese buttons to see objectives presented in the selected language.

Guidelines and Tips for Use of the OpenStack server terminal

1. Root privileges can be obtained by running 'sudo -i'.
2. Rebooting of your server IS permitted at anytime.
3. Do not stop or tamper with the Gate One process as this will END YOUR EXAM SESSION.
4. Do not block incoming ports 8080/tcp, 4505/tcp and 4506/tcp. This includes firewall rules that are found within the distribution's default firewall configuration files as well as interactive firewall commands.
5. Use Ctrl+Alt+W instead of Ctrl+W. Ctrl+W is a keyboard shortcut that will close the current tab in Google Chrome.
6. Ctrl+C & and Ctrl+V are not supported in your exam terminal, nor is copy and pasting large amounts of text. To copy and paste limited amounts of text (1-2 lines) please use;
    - For OpenStack: select text for copy and middle button for paste (or both left and right simultaneously if you have no middle button).
    - For Mac: ⌘+C to copy and ⌘+V to paste.
    - For Windows: Ctrl+Insert to copy and Shift+Insert to paste.
7. Installation of services and applications included in this exam may require modification of system security policies to successfully complete.
8. Only a single terminal console is available during the exam. Terminal multiplexers such as GNU Screen and tmux can be used to create virtual consoles.

Duration of Exam

Candidates have 2 hours to complete an Exam. As Candidates proceed through the Exam, a countdown timer is displayed at the top of the Content panel. The countdown timer does not start until Proctor has released the Exam to Candidate (see Launching Exam). Candidates can always confirm the time remaining with the Proctor directly.

Language

Exam questions are available in English only.

Testing Location Policy
- Room must be quiet, private and well lit
- Bright lights or windows should not be positioned behind the Candidate
- Testing from public spaces such as coffee shops, stores, etc. is not allowed
- No one other than the Candidate can be present in the room unless the exam is being taken at an OpenStack Summit or other OpenStack organized event.
- Desk must be clear of all notes and electronics

Rules During Exam
- Candidate should review the Exam content instructions that are presented in the command line terminal.
- Candidate is not allowed to communicate with anyone other than the Proctor during the Exam
- Candidate is not allowed to leave their desk or step out of view of the webcam, unless they have been granted specific permission by the Proctor
- Candidate is not allowed to eat, drink, or chew gum
- Candidate is not allowed to wear any electronic device in their ears, on their face or on their body*
- Candidate is not allowed to navigate away from the Exam console screen
- Candidate is not allowed to have other applications or browser tabs/windows running except the one on which the Exam is being shown
- Candidate is not allowed to look away from their Exam console screen for extended periods of time
- Candidate must refrain from making excessive and/or repetitive noise
- Candidate is not allowed to write or enter input on anything (whether paper, electronic device, etc.) outside of the Exam console screen.
- Candidates must comply with any requests from the Proctor. If Candidate fails to comply, the Exam will be terminated

    *unless medically necessary

Policy on Warnings and Exam Terminations
Certain kinds of violations will result in a warning from the Proctor, while certain other violations result in IMMEDIATE TERMINATION OF THE EXAM WITHOUT WARNING.

If a warning is issued by the Proctor, the Exam will be paused until the Candidate is able to amend or resolve the observed violation.

If a Candidate is found to be in violation of the same rule more than twice or is found to be in violation more than four times on any combination of rules, the Exam will be terminated immediately.

The following actions will result in IMMEDIATE TERMINATION OF THE EXAM WITHOUT WARNING:

- Candidate refuses to comply with a Proctor request
- Candidate is observed to be copying Exam content, whether with software, external device(s), manual transcription, or other means
- Candidate steps out of view of the webcam for extended amount of time without the Proctor's permission
- Someone other than the Candidate is observed to complete or assist with any part of the Exam
- A discrepancy exists between the input on a Candidate's screen and the Candidate's observed activity

Policy on Tools and Resources during Exams

The following resources are allowed during the Exam as long as they are used by Candidate to work independently on exam objectives (i.e. not used for 3rd party assistance or research) and are accessed from within the OpenStack server terminal on which the Exam is delivered (resources that cannot be accessed from within the terminal are not allowed):
- Documents at docs.openstack.org
- Terminal multi-plexors such as TMUX

The following resources are forbidden during the Exam:
- External web pages
- Text-based email clients
- Browsing the Internet using installed tools such as Vim or Emacs
- Communications with other Candidates or outside resources
- Use of devices other than the Exam desktop
- Notes
- Documentation
- Notepads
- Course manuals
- Devices external to computer on which they are taking the Exam, including but not limited to: mobile phones, PDAs, wearable computers, smart glasses, smart watches

Exam Misconduct

Candidates engaging in Exam Misconduct will not be allowed to complete the Exam or receive an Exam result. Such Candidates may also be barred from taking any other OpenStack Foundation Certification Exam and if applicable, may have their OpenStack Foundation Certification withdrawn. Refunds will not be given and rescheduling will not be allowed if an Exam is terminated early or could not be started on time due to Exam misconduct. Misconduct may, at any time, result in application of sanctions.

Examples of Exam Misconduct include but are not limited to:
- Failing to comply with the Exam Rules and Policies
- Disseminating actual Exam content by any means, including, but not limited to, web postings, formal or informal test preparation or discussion groups, chat rooms, reconstruction through memorization, study guides, or any other method, as well as providing Exam content or information to any person not expressly authorized by OpenStack Foundation to receive such content or information (including but not limited to a OpenStack Foundation employee who is not part of the Certification Program staff).
- Copying or otherwise transferring, modifying, making derivative works of, reverse engineering, decompiling, disassembling, or translating any Exam or any part thereof.
- Seeking and/or obtaining unauthorized access to Examination materials (this includes using recollections of others of materials from previous administrations of any Exam, a.k.a. braindump material, and/or any unauthorized publication of Exam questions with or without answers)
- Using falsified or altered Certificates, score reports, or other documents or electronic media to misrepresent Certification status
- Allowing another person, or an organization in which you are not actively involved, to use your Certification credentials to obtain employment or promotions
- Providing falsified information, documentation or statements as a means of a false identity, false address or solicitation of someone to take a test on another's behalf
- Giving, receiving, or obtaining unauthorized assistance during the Examination or attempting to do so
- Making notes of any kind during the Exam, whether on paper or via digital means
- Possession of non-authorized items during the Exam
- Providing or accepting improper assistance on your Exam or Exams taken by others
- Removing or attempting to remove Exam material (in any format)
- Intentionally or otherwise repeatedly causing a disturbance of any kind during the Exam
- Tampering with the Exam server and its environment or attempting to use it for any function other than taking a OpenStack Foundation Exam

- Modifying and/or altering the results and/or score report for this Exam or any other Exam record
- Violating the Exam retake policy described on the OpenStack website at https://training.OpenStackfoundation.org/certification/certification-information-and-faq/certification-exam-retake-policy
- Using computer scripts to register for Exams
- Misconduct as determined by Data Forensics (see "Exam Scoring and Notification")
- Failing to adhere to any OpenStack Foundation or Exam Provider policy, procedure, rule, or instruction
- Otherwise violating the terms of The OpenStack Foundation Certification and Confidentiality Agreement

Exam Scoring and Notification

Exams are scored automatically, usually within 24 hours of completion. Results will be emailed 72-75 hours from the time the Exam was *completed*. Results will also be made available on My Portal.

Exams are graded for results. There may be more than one way to perform an objective on an Exam and unless otherwise specified, the Candidate can pick any available path to perform the objective as long as it produces the correct result.

The OpenStack Foundation will use statistical analyses of Exam data ("Data Forensics") to identify patterns indicative of test fraud including cheating and piracy. The OpenStack Foundation reserves the right to invalidate an Exam score and Certification result if review of an Exam record reveals scoring inaccuracies (attributable to The OpenStack Foundation or the Exam Proctoring Partner) or response patterns indicative of possible misconduct or measurement error. If The OpenStack Foundation determines that an Exam score is invalid due to issues that are beyond the control of the Candidate, the Candidate will be advised of options to retake the Exam at no charge.

Exam Results - Pass
Upon passing an Exam and if all other requirements for Certification have been met, Candidates will be granted the Certification relevant to the Exam. For Example, passing the COA Exam means a Candidate will be granted COA Certification.

Formal notice of successful Certification from The OpenStack Foundation will be emailed within 3 business days of meeting program requirements. The notice will provide a Certificate ID number and include a pdf copy of the Certificate, in addition to instructions on accessing additional Certification Marks.

Exam Results - No Pass

One (1) free retake per Exam purchase will be granted in the event that a passing score is not achieved and Candidate has not otherwise been deemed ineligible for Certification or retake (see **Retake Policy**). Instructions will be provided in the Exam Results notification on how to redeem the free retake.

After the free retake, Candidates may register and pay to take the Exam again, with no discount given for such additional retakes.

Candidates may also wish to consider taking optional training to help them prepare for the Certification Exam.

Retake Policy

Candidates who have not been deemed ineligible for Certification may retake an Exam as soon as they wish, with or without corresponding training.

One (1) free retake per Exam purchase will be granted in the event that a passing score is not achieved and Candidate has not otherwise been deemed ineligible for Certification or retake. The free retake must be completed within 12 months of the date of the original Exam purchase. After the free retake, Candidates may register and pay to take the exam again, with no discount given for such additional retakes.

Exam Rules and Policies

Candidates MUST start their exam no later than 15 minutes after the scheduled start time. If a candidate does not start their exam within 15 minutes of the scheduled start time, they will be automatically marked as a no-show and no refund or rescheduling will be allowed. (See Reporting Issues with Launching Exam)

Before the Exam can be released, Candidates are presented with rules regarding their testing location and candidate conduct during the Exam, and with the policy on warnings and Exam terminations. The Proctor cannot release the Exam until the Candidate has indicated that they have read, understood and accept these rules.

Certificates and Certification

Certified Candidates ("Certificants") receive a Certificate ID number and a Certificate indicating their successful completion of the requirements necessary to achieve the COA designation. Certifications expire 36 months from the date that a Certificant successfully passes their Certification Exam, unless revoked earlier for cause or Certificant successfully completes Certification renewal requirements. The primary method for confirming the status of a Certification is to use The OpenStack Foundation's **Certification Verification Tool.(need URL)**

While their Certification status is active,
- COA Certificants may use the term OpenStack Foundation Certified OpenStack Administrator to refer to themselves
- Certificants may use the Marks (e.g. badges) applicable to their Certification on their stationery, business card, personal Web site, etc., to indicate their status

Certificate

The COA Certificate lists the following information:
- Name of the Candidate who obtained the Certificate
- Title of Certification
- Certificate ID number
- Date of Completion (i.e. date Exam was passed)

Certification Verification Tool

The OpenStack Foundation provides a verification tool on its website that allows users (e.g. potential employers or clients) to validate the status of an individual's Certification. To submit a query on this verification tool, a user must enter the Certificate ID number and the Last Name listed on the Certificate of a successfully certified individual. (The Last Name must be entered exactly as listed on the Certificate, including any special characters.) The result for a successfully submitted query will include the full name of Certificant, Certification title and status (active/inactive), and the date that the Certification was achieved.

Certification Expiration

Certifications expire 36 months from the date that the Program Certification requirements are met by a Candidate. Certificants must retake the exam prior to the expiration date of their current Certification in order to maintain active Certification. If Certification renewal requirements are not completed before the expiration date, Certification will be revoked.

Certification Revocation

The OpenStack Foundation will revoke Certification if you fail to comply with Certification renewal requirements. In addition, The OpenStack Foundation may, in its sole discretion, revoke any and all Certifications you may have earned, and permanently ban you from earning future Certifications, under any of the following circumstances:
   • Threatens to harm, bully or in any way harass any OpenStack Foundation or Exam Proctoring Partner employee or contractor (whether verbally or in writing, including through electronic communications or external web postings);
   • Breaches the terms and conditions of The OpenStack Foundation Certification and Confidentiality Agreement;
   • Is determined by The OpenStack Foundation to have undertaken or participated in Exam Misconduct or violated the Professional Code of Conduct;
   • Has been convicted of a crime that The OpenStack Foundation deems, in its sole discretion, in any way harms or affects The OpenStack Foundation's or the Program's reputation, goodwill or security; or
   • Has lost or settled a civil case in which The OpenStack Foundation is the plaintiff and the claim arose from any alleged damage to The OpenStack Foundation, its brand, goodwill or reputation.

Certification Renewal

In order to keep your certification current and prevent a lapse in certification you must retake and pass the certification test prior to 36 months from the date your Certificate was awarded. If this does not happen and your certification lapses it will be reinstated upon passing the current version of the exam.

Professional Code of Conduct

Candidates, before and after Certification, shall:

- Perform duties with objectivity, due diligence and professional care.
- Access private information on computer systems only when it is necessary in the course of technical duties. Maintain the privacy and confidentiality of information obtained in the course of your activities unless disclosure is required by legal authority. Such information shall not be used for personal benefit or released to inappropriate parties.
- Provide service in your areas of competence, being honest and forthright about any limitations of their experience and education. Maintain competency in your respective fields and agree to undertake only those activities you can reasonably expect to complete with the necessary skills, knowledge and competence.
- Strive to ensure the necessary integrity, reliability, and availability of the systems for which you are responsible.
- Design and maintain each system in a manner consistent with the purpose of the system to the organization.
- Inform appropriate parties of the results of work performed including the disclosure of all significant facts known to you that, if not disclosed, may distort the reporting of the results.
- Not engage in deceptive financial practices such as bribery, double billing, or other improper financial practices.
- Obey all laws governing your work, unless, in exceptional circumstances, such compliance is inconsistent with the public interest.
- Promote no interest adverse to your employer or client, unless a higher ethical concern is being compromised; in that case, inform the employer or another appropriate authority of the ethical concern.
- Avoid entering into conflicting obligations with one client, such as obligations of confidentiality, availability for work, or otherwise, which conflict with obligations to another client.
- Not unlawfully discriminate or knowingly permit unlawful discrimination on the basis of race, national origin, sex, sexual orientation, religion, age or disability in: (1) hiring, promoting, discharging, or otherwise determining the conditions of employment of any person; or (2) accepting or terminating representation of any client.
- Identify, document, and report significant issues of social concern, of which you are aware, in software or related documents, to the employer or the client.
- Ensure that you have no other professional or contractual obligations that are inconsistent with this Code of Conduct.

Exam Preparation

Studying for the Exam

The OpenStack Foundation's Certification Exams are performance-based, which means the only way to 'study' for them is to practice, practice, practice. The overview of domains and competencies listed for each Certification Exam provides guidance on the topics covered in an Exam. Candidates are encouraged to gain as much hands-on experience as possible in order to build mastery using the command line (since the Exam terminal does not use the Graphical Interface). There are many forums, both online and offline, which prospective Candidates may find useful in building skills on OpenStack.

Some Candidates, especially those who are newer to OpenStack, may also find it valuable to complete a formal training course. Candidates may choose training from 3rd-party training providers from the OpenStack Foundation Training Marketplace at www.openstack.org/marketplace/training.

Appeals

Appeals policy

In the event that sanctions are imposed, e.g. for Exam Misconduct, Candidates will have thirty (30) calendar days from the date of their notification letter to file an appeal. A Certification Appeals Submission Form will also be provided. If the Candidate believes they have valid grounds for an appeal, they may complete the submission requirements for the Certification Appeals Submission Form and submit it as instructed.

Incomplete submissions and submissions received after the thirty (30) calendar period will not be considered. If The OpenStack Foundation determines that a written request for appeal is filed within the allowable time and follows required guidelines for consideration, and the original sanction decision is upheld by The OpenStack Foundation, such appeal and the information submitted by the Candidate will be forwarded to the OpenStack Foundation Certification Appeals Committee for consideration.

Appeals Decisions

You may expect to receive a written response from The OpenStack Foundation within ninety (90) calendar days after the Appeals Committee meets. Decisions rendered by the Appeals Committee are final.

Copyright

All Exam questions are the property of The OpenStack Foundation and are protected by copyright. Most national laws provide severe civil and criminal penalties for the unauthorized reproduction, distribution, or exhibition of copyrighted materials.

Customer Support

For questions regarding The OpenStack Foundation's Certification Program, please visit the support page at www.openstack.org/COA If your question is not answered there, you may submit a support ticket by sending an email to certificationsupport@OpenStackfoundation.org.