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# **Riverbed Certified Solutions Associate – Network Performance Management - NPM (RCSA-NPM)**

Exam 201-01

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## Preface

This Riverbed® Certification Blueprint is intended for anyone who wants to become certified in the Riverbed Network Performance Management - NPM products and Riverbed Cascade®. The Riverbed Certified Solutions Associate – NPM (RCSA-NPM) program is designed to validate the skills required of technical professionals who can demonstrate knowledge in the theory and configuration of Riverbed Cascade solutions, and to be able to conduct demos and proof of concepts (POCs) in a customer network.

This blueprint provides a combination of theory and practical experience needed for a general understanding of the subject matter. It also provides sample questions that will help in the evaluation of personal progress and provide familiarity with the types of questions that will be encountered in the exam.

***This publication does not replace practical experience, nor is it designed to be a stand-alone guide for any subject. Instead, it is an effective tool that, when combined with education activities and experience, can be a very useful preparation guide for the exam.***

## Certification Overview

The Riverbed Certified Solutions Associate – NPM certification is granted to individuals who demonstrate advanced knowledge and experience with the Riverbed Cascade product suite. The typical RCSA-NPM will have taken a Riverbed approved training class such as the *NPM200 Performance Monitoring Essentials* course in addition to having hands-on experience in performing deployment, troubleshooting, and maintenance of Riverbed Cascade products in small, medium, and large organizations. While there are no set requirements prior to taking the exam, candidates who have taken a Riverbed authorized training class and have at least three months of hands-on experience with Cascade products have a significantly higher chance of receiving the certification. We would like to emphasize that *solely* taking the class will not adequately prepare you for the exam.

To obtain the RCSA-NPM certification, you are required to pass a computerized exam available at any Pearson VUE testing center worldwide.

## Benefits of Certification

1. Establishes your credibility as a knowledgeable and capable individual in regard to Riverbed Cascade products and services.
2. May help to improve your career advancement potential.
3. Entitles you to use the RCSA-NPM certification logo on your business card.

## Exam Information

### Exam Specifications

- **Exam Number:** 201-01
- **Exam Name:** Riverbed Certified Solutions Associate – NPM
- **Cascade Version:** Up to version 10.0 for the Cascade Profiler, Express, Sensor and Gateway; version 10.0 for Cascade Pilot; version 10.0 for Cascade Shark and vShark, and version 10.0 for Cascade Express 460.
- **Number of Questions:** 65
- **Total Time:** 75 minutes for exam, 15 minutes for Survey and Tutorial (90 minutes total)
- **Exam Provider:** Pearson VUE
- **Exam Language:** English and Japanese only. Riverbed allows a 30-minute time extension for English exams taken in non-English speaking countries for students that request it. English speaking countries are Australia, Bermuda, Canada, Ireland, New Zealand, United Kingdom, South Africa, and the United States. A form will need to be completed by the candidate and submitted to Pearson VUE. There will be no time extension for candidates taking the exam in Japanese.
- **Special Accommodations:** Yes (must submit written request to Pearson VUE for ESL or ADA accommodations; includes time extensions and/or a reader)
- **Offered Locations:** Worldwide (over 4000 test centers in 165 countries)
- **Prerequisites:** None (although taking a Riverbed training class is highly recommended)
- **Available to:** Everyone (partners, customers, and employees)
- **Passing Score:** 700 out of 1000 (70%)
- **Certification Expires:** Every two years (must recertify every two years, with six month grace period)
- **Recertification Criteria:** Retake the 201-01 – RCSA-NPM current exam. . If you are a RCSA-NPM certified, taking the 299-01 – RCSP-NPM exam will re-certify both your RCSA-NPM and the RCSP-NPM.
- **Wait Between Failed Attempts:** 72 hours
- **Wait Between Passed Exams:** One year.
- **Cost:** \$150.00 (USD)
- **Number of Attempts Allowed:** Unlimited (though statistics are kept)

### Certification Checklist

As the RCSA-NPM exam is geared towards individuals who have both the theoretical knowledge and hands on experience with the Riverbed Cascade product suite, ensuring proficiency in both areas is crucial towards passing the exam. For individuals starting out with the process, we recommend the following steps to guide you along the way:

#### 1. Building Theoretical Knowledge

The easiest way to become knowledgeable in deploying, maintaining, and troubleshooting the Riverbed Cascade product suite is to take a Riverbed authorized training class. To ensure the greatest possibility of passing the exam, it is recommended that you review the RCSA-NPM Blueprint and Study Reference and ensure your familiarity with all topics listed, prior to any examination attempts.

#### 2. Gaining Hands-on Experience

While the theoretical knowledge will get you partway there, it is the hands-on knowledge

that can get you over the top and enable you to pass the exam. Since all deployments are different, providing an exact amount of experience required is difficult. Generally, we recommend that resellers and partners perform at least five deployments in a variety of technologies prior to attempting the exam. For customers, and alternatively for resellers and partners, starting from the design and deployment phase and having *at least three months of experience* in a production environment would be beneficial.

### 3. Taking the Exam

The final step in becoming an RCSA-NPM is to take the exam at a Pearson VUE authorized testing center. To register for any Riverbed Certification exam, please visit <http://www.pearsonvue.com/riverbed>.

## Recommended Resources for Study

### Riverbed Training Course

- NPM200 Performance Monitoring Essentials

Additional Information on Riverbed Training can be found at: <http://riverbeduniversity.com> or <http://www.riverbed.com/services-training/training/>. You can also write to [training@riverbed.com](mailto:training@riverbed.com) or [university@riverbed.com](mailto:university@riverbed.com).

## RIVERBED CERTIFIED SOLUTIONS ASSOCIATE – NPM (RCSA-NPM) BLUEPRINT AND STUDY REFERENCES

The Riverbed Certified Solutions Associate exam, and therefore this blueprint, covers the Riverbed products and technologies through version 10.0 for the Cascade Profiler, Express, Sensor and Gateway; version 10.0 for Cascade Pilot; version 10.0 for Cascade Shark and vShark, and version 10.0 for Cascade Express 460.

***This publication does not replace practical experience, nor is it designed to be a stand-alone guide for any subject. Instead, it is an effective tool that, when combined with education activities and experience, can be a very useful preparation guide for the exam.***

Riverbed authorized training courses and Riverbed Certification are mutually exclusive programs. This means that certification is not directly mapped to specific training courses and vice versa. We recommend certain courses but in no way does that automatically qualify or prepare you for the exam.

To access Riverbed technical documentation and publications please visit the Riverbed Support webpage at <https://support.riverbed.com/index.htm>.

### General Knowledge

Subject	Reference
TCP	<a href="http://www.ietf.org/rfc.html">http://www.ietf.org/rfc.html</a> <ul style="list-style-type: none"> <li>• RFC 793 (Original TCP RFC)</li> <li>• RFC 1323 (TCP extensions for high performance)</li> <li>• RCF 2131 (Dynamic Host Configuration Protocol – DHCP)</li> <li>• RFC 4789 (Simple Network Management Protocol – SNMP)</li> <li>• RFC References for DNS <a href="http://www.zoneedit.com/doc/rfc/">http://www.zoneedit.com/doc/rfc/</a></li> <li>• TCP/IP Illustrated, Volume I, The Protocols by W. R. Stevens (Addison-Wesley, 1994)</li> </ul>
Spanning Tree Protocol	<ul style="list-style-type: none"> <li>• <a href="http://en.wikipedia.org/wiki/Spanning_Tree_Protocol">http://en.wikipedia.org/wiki/Spanning_Tree_Protocol</a></li> </ul> Interconnections: Bridges, Routers, Switches and Internetworking Protocols, Second Edition, by Radia Perlman (Addison-Wesley Professional, 1999)
NetFlow	<a href="http://www.caida.org/tools/utilities/flowscan/arch.xml">http://www.caida.org/tools/utilities/flowscan/arch.xml</a>

## Cascade Profiler

Subject	Reference
Cascade Profiler, Sensor, Gateway, Express, Installation, Deployment, Sizing	<ul style="list-style-type: none"> <li>• Riverbed® Cascade® Product Suite Deployment Guide v10.0.7</li> <li>• Cascade Profiler, Express, Sensor and Gateway Installation Guide v10.0.7</li> <li>• Cascade Gateway-VE Installation Guide v10.0.7</li> <li>• Cascade Profiler-VE Installation Guide v10.0.7</li> <li>• Cascade Sensor-VE Installation Guide v10.0.7</li> <li>• Cascade Profiler and Cascade Express User's Guide v10.0.7</li> <li>• Cascade Sensor and Cascade Gateway User's Guide v10.0.7</li> <li>• Riverbed® Training Course: NPM200 Performance Monitoring Essentials</li> </ul>

## Cascade Pilot

Subject	Reference
Installation, Configuration, Operation, Reporting, Analytics, Network Evaluation, Deployment, Sizing	<ul style="list-style-type: none"> <li>• Riverbed® Cascade® Product Suite Deployment Guide v10.0.7</li> <li>• Cascade Pilot Personal Edition Reference Manual v10.0.7</li> <li>• Cascade Pilot Reference Manual v10.0.7</li> <li>• Riverbed® Training Course: NPM200 Performance Monitoring Essentials</li> </ul>

## Cascade Shark

Subject	Reference
Installation, Configuration, Operation, Sizing, Analytics, Monitoring, Deployment	<ul style="list-style-type: none"> <li>• Riverbed® Cascade® Product Suite Deployment Guide v10.0.7</li> <li>• Cascade Shark Quick Start Guide v10.0.7</li> <li>• Cascade Shark Appliance Maintenance Guide v10.0.7</li> <li>• Cascade Shark Filters Guide v10.0.7</li> <li>• Cascade Shark REST API Documentation v10.0.7</li> <li>• Cascade Shark User's Guide v10.0.7</li> <li>• Cascade Virtual Shark Quick Start Guide v10.0.7</li> <li>• Riverbed Cascade Shark Common REST API Documentation v10.0.7</li> <li>• Riverbed® Training Course: NPM200 Performance Monitoring Essentials</li> </ul>

## Exam Questions

### Types of Questions

The RCSA-NPM exam includes a variety of question types, including single-answer multiple choice, multiple-answer multiple choice, and fill in the blank. The question distribution is heavily targeted toward the multiple-choice variety, however, fill in the blank questions are used in situations where the command is believed to be important part of everyday Cascade appliance operation. Regardless of the type of question, selecting the best answer(s) in response the questions will yield the best score.

### Sample Questions

1. What is the purpose of interface grouping?
  - a. There is no way to configure a grouping of interfaces.
  - b. Interface groups represent a logical association of interfaces that can be leveraged for reporting and analytics.
  - c. Interface groups are used to correlate alerts.
  - d. Interface groups make the configuration of interface polling using SNMP easier to configure.
  
2. How many external Sharks, Sensors and Gateways can report to a Cascade Express 460?
  - a. None, the Express 460 is a self-contained unit.
  - b. No more than one Shark can report to the Express 460.
  - c. No more than one Gateway can report to the Express 460.
  - d. This is unlimited but the Express 460 licensed flow limit will apply.
  - e. One Sensor can report to Express 460.
  
3. In the context of Cascade Profiler, what is the RESTful API?
  - a. An API for reliably shutting down the Cascade Profiler.
  - b. An API for integrating Cascade into programmable workflows.
  - c. An API for invoking external vulnerability scanners.
  - d. An API for interrogating switches to discover switch port associations for IP
  
4. Where does Cascade Profiler obtain user identity information to associate user names with traffic flows?
  - a. DNS
  - b. RADIUS integration
  - c. LDAP integration
  - d. Local database
  - e. Active Directory integration

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5. In Cascade Pilot, when using a filter to analyze packets on a Shark, where is the filter applied?
    - a. Locally in Pilot.
    - b. Remotely on the Shark.
    - c. Locally if it is a Wireshark Display filter or BPF filter, remotely if it is a Shark filter.
    - d. This can be controlled with an option.
  
  6. With respect to Reporting in Cascade Pilot, which of the following are valid customization options? (Select 2)
    - a. Destination printer
    - b. Front page logo
    - c. Page orientation: portrait or landscape
    - d. Report layout
  
  7. In Cascade Shark appliance, what is true about flow exporting flow? (Select 2)
    - a. Flow is exported to the Gateway and then to the Profiler.
    - b. Flow is exported per capture port.
    - c. Flow can be exported to any standard flow collector.
    - d. Flow can be filtered before export using BFP filtering.
    - e. Flow is sent in standard netflow format.
    - f. The flow exported includes packet payload samples.
  
  8. What are the default credentials to log into the Cascade Shark appliance Web Interface?
    - a. admin/admin
    - b. root/sharkappliance
    - c. root/root
    - d. root/riverbed
    - e. admin/cacetech
  
  9. When TAPing a network link the speed of the monitor port should be:
    - a. The same as the network link in all situations.
    - b. Anything as long as the proper TAP is used to cache/distribute the packets.
    - c. Faster than the network link in all situations.
    - d. Connected via an additional switch to properly distribute the packets.

10. What value does NetFlow provide? (Select 2)

- a. It is a cost-effective way of collecting IP conversation details from existing routers in the network.
- b. It is a packet-capture technology that allows remote monitoring of packets in the network.
- c. It is a logging protocol for security events.
- d. It provides information about the number of bits and packets per protocol between each pair of IP Addresses across a device.
- e. It provides details such as response time and application level transactions across the network.

**Answers**

1: b; 2: d; 3: b; 4: e; 5: b; 6: b and c; 7: b and d; 8: a; 9: b; 10: a and d.