

riverbed

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Riverbed Certified Solutions Professional – Application Delivery - AD (RCSP-AD) Blueprint

Exam 399-01

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NetApp Manageability Software Development Kit (NM SDK), including any third-party software available for review with such SDK which can be found at <http://communities.netapp.com/docs/DOC-1152>, and are included in a NOTICES file included within the downloaded files.

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Preface

This Riverbed® Certification Blueprint is intended for anyone who wants to become certified in the Riverbed Application Delivery - AD products and Riverbed Stingray™. The Riverbed Certified Solutions Professional – AD (RCSP-AD) program is designed to validate the skills required of technical professionals who can demonstrate knowledge in the theory, design, configuration, implementation, and troubleshooting of Riverbed Stingray solutions in a complex network environment.

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 Professional – AD certification is granted to individuals who demonstrate advanced knowledge and experience with the Riverbed Stingray™ product suite. The typical RCSP-AD will have taken a Riverbed approved training class such as *the ADC200 Application Delivery Essentials (Stingray Traffic Manager, Aptimizer, Application Firewall)* course in addition to having hands-on experience in performing deployment, troubleshooting, and maintenance of Riverbed Stingray 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 Stingray products have a significantly higher chance of receiving the certification. We would like to emphasize that *solely* taking a training class will not adequately prepare you for the exam.

To obtain the RCSP-AD 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 Stingray products and services.
2. May help to improve your career advancement potential.
3. Entitle you to use the RCSP-AD certification logo on your business card.
4. Entitle you to join the Riverbed RCSP only community group.

Exam Information

Exam Specifications

- **Exam Number:** 399-01
- **Exam Name:** Riverbed Certified Solutions Professional – AD
- **Product Version:** Up to version 8.1 for the Stingray Traffic Manager, version 4.1 for the Stingray Application Firewall, and version v2.5 of the Stingray Aptimizer.
- **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 301-01 – RCSA-AD current exam. If you are a RCSA-AD certified, taking the 399-01 – RCSP-AD exam will re-certify both your RCSA-AD and the RCSP-AD.
- **Wait Between Failed Attempts:** 72 hours
- **Wait Between Passed Exams:** One year.
- **Cost:** \$225.00 (USD)
- **Number of Attempts Allowed:** Unlimited (though statistics are kept)

Certification Checklist

As the RCSP-AD exam is geared towards individuals who have both the theoretical knowledge and hands on experience with the Riverbed Stingray™ 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 Stingray 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 RCSP-AD 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 six (6) to twelve (12) months of experience*** in a production environment would be beneficial.

3. Taking the Exam

The final step in becoming an RCSP-AD 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

- ADC200 Application Delivery Essentials (Stingray Traffic Manager, Aptimizer, Application Firewall)

Additional Information on Riverbed Training can be found at:

<http://www.riverbed.com/services-training/training/>. You can also write to training@riverbed.com.

RIVERBED CERTIFIED SOLUTIONS Professional – AD (RCSP-AD) BLUEPRINT AND STUDY REFERENCES

The Riverbed Certified Solutions Professional exam, and therefore this blueprint, covers the Riverbed Stingray™ products and technologies through version 8.1 for the Stingray Traffic Manager, version 4.1 for the Stingray Application Firewall, and version v2.5 of the Stingray Aptimizer.

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	http://www.ietf.org/rfc.html <ul style="list-style-type: none"> • RFC 793 (Original TCP RFC) • RFC 1323 (TCP extensions for high performance) • RCF 2131 (Dynamic Host Configuration Protocol – DHCP) • RFC 4789 (Simple Network Management Protocol – SNMP) • RFC References for DNS http://www.zoneedit.com/doc/rfc/ • TCP/IP Illustrated, Volume I, The Protocols by W. R. Stevens (Addison-Wesley, 1994)
HTTP and HTTPS	http://www.ietf.org/rfc/rfc2616.txt http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol http://en.wikipedia.org/wiki/HTTP_Secure
SSL	http://en.wikipedia.org/wiki/Secure_Sockets_Layer
Application Security	http://en.wikipedia.org/wiki/Application_security
Firewall	http://en.wikipedia.org/wiki/Firewall_(computing)
Security Topics References	Stingray™ Application Firewall User Guide v4.1 – Chapter 10: Reference

Stingray Traffic Manager

Subject	Reference
<ul style="list-style-type: none"> • Network design, Configuration • Virtual Servers • Pools • Traffic IP Groups • Fault Tolerance • Administration Interface • TrafficScript • Java Extensions • Protocol Support • Session Persistence • SSL Encryption • Health Monitoring • Service Protection • Bandwidth Management • Request Rate Shaping • Service Level Monitoring • Content Caching, Event Handling and Alerts • Virtual and Cloud Environments • System Security • Admin Server Security • Control API • Command Line Interface • Granular Configuration • Multi-site cluster management • Global Load Balancing, • Troubleshooting. 	<ul style="list-style-type: none"> • Stingray™ Traffic Manager User Guide v8.1 • Stingray™ Traffic Manager Software Getting Started Guide v8.1 • Stingray™ Traffic Manager Virtual Appliance Getting Started Guide v8.1 • Stingray™ Traffic Manager for Amazon EC2 Getting Started Guide v8.1 • Stingray™ Traffic Manager Appliance License Acknowledgments v8.1 • Stingray™ Traffic Manager Configuration System Guide v8.1 • Stingray™ Traffic Manager Control API Guide v8.1 • Stingray™ Traffic Manager Java Development Guide v8.1 • Stingray™ Traffic Manager TrafficScript Guide v8.1 • Riverbed® Training Course: ADC200 Application Delivery Essentials (Stingray Traffic Manager, Aptimizer, Application Firewall)

Stingray Optimizer

Subject	Reference
<ul style="list-style-type: none"> • Installation Planning • Installation and Configuration • Advanced Topics • Fine Tuning • Troubleshooting • Configuration File Format • Web Page Speed Rules • Measuring Web Page Performance 	<ul style="list-style-type: none"> • Stingray™ Optimizer for SharePoint Installation and User's Guide v2.6 • Stingray™ Optimizer for Microsoft IIS Installation and User's Guide v2.6 • Riverbed® Training Course: ADC200 Application Delivery Essentials (Stingray Traffic Manager, Aptimizer, Application Firewall)

Stingray Application Firewall

Subject	Reference
<ul style="list-style-type: none"> • Initial Configuration • Creating the Security Configuration • Configuring Alerts • Monitoring Attacks, Statistics, Log Files, Reports • Administrative Tasks • Basics of Web Application Security 	<ul style="list-style-type: none"> • Stingray™ Application Firewall User Guide v4.2 • Riverbed® Training Course: ADC200 Application Delivery Essentials (Stingray Traffic Manager, Aptimizer, Application Firewall)

Exam Questions

Types of Questions

The RCSP-AD 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 Stingray 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. By default, Stingray Traffic Manager (STM) will present an HTTP error page to clients when all nodes in a pool have failed and no “Failure Pool” is specified. The contents of this error page can be set to use a custom error file. Where is this configured?
 - a. In the “Virtual Servers > Connection Management” settings page
 - b. In the “Pool > Connection Management” settings page
 - c. In the “System > Global” settings page
 - d. In the “System > Networking” settings page
 - e. In the “System > Traffic Managers” settings page
2. On a Stingray Traffic Manager (STM), when configuring a Multi-Hosted Traffic IP group, the multicast IP can be modified as necessary. Where is this configured?
 - a. Under the “Services > Traffic IP Groups> Basic Settings “ section of the relevant Traffic IP Group.
 - b. Multi-Hosted mode does not use multicast.
 - c. Under the “System > Networking > Hostname and IP addresses “ section of Stingray Traffic Manager settings.
 - d. The Multicast IP cannot be modified.
 - e. Under the “Services > Traffic IP Groups> IP Distribution Mode “ section of the relevant Traffic IP Group.
3. Which versions of SNMP are supported by Stingray Traffic Manager (STM):
 - a. v1 only
 - b. v1 and v2
 - c. v1, v2, v2c
 - d. v1, v2c, v3
 - e. v1, v2, v2c, v3, v4
4. A Stingray Traffic Manager (STM) cluster contains two STM machines (TM-1 & TM-2) spanning two separate networks. Two Traffic IPs were allocated for a given pool intended for single hosted mode, but both Traffic IPs are raised only on TM-1. What are possible reasons for this occurring? (Select 2)
 - a. Flipper!autofailback is enabled
 - b. Multicast is not supported in the network
 - c. Kepttogether is enabled
 - d. Multihosted mode was mistakenly selected

- e. On TM-2 the flipper!frontend_check_addr has been changed to the gateway TM-1 instead of 127.0.0.1]
5. Which of the following web application and server combinations are able to be accelerated with Stingray Aptimizer for IIS (v2.5) or Stingray Aptimizer for SharePoint (v2.5) (Select 2)
- a. Custom ASP.NET application on Windows IIS 5
 - b. Apache on Windows Server 2008 / IIS7
 - c. SharePoint 2003 on Windows IIS6
 - d. WebSphere on IBM HTTP server
 - e. SharePoint 2010 on Windows Server 2008 / IIS7
6. What happens when Stingray Application Firewall (SAF) blocks a request? (Select 2)
- a. A log file entry is written.
 - b. A statistic counter is increased.
 - c. An email is automatically send to the admin
 - d. The attacker is presented with a specific SAF error page with specific information about the attack.
 - e. The attack is blocked silently without any error page.
7. What is the most common method used by a web server to differentiate between desktop web browsers and mobile device web browsers?
- a. Mobile and desktop browsers connect using different versions of the HTTP protocol.
 - b. The browser sends the information such as browser version, and OS version, in the "Compatibility" HTTP header
 - c. The Web server responds to the web client with an "HTTP 102 Get Browser ID" status code.
 - d. The browser will send the it's browser and OS version information in the HTTP "User-Agent" header.
 - e. The Web server must return a script that, when executed on the Web client, causes the web client to return the needed information.
8. Which of the following cookies is a "session cookie"?
- a. Set-Cookie: SSID=AA; Expires=Wed, 13-Jan-2021 22:23:01 GMT
 - b. Set-Cookie: SSID=AA; Expires=Wed, 13-Jan-2021 22:23:01 GMT; HttpOnly
 - c. Set-Cookie: SSID=AA; Expires=Wed, 13-Jan-2021 22:23:01 GMT; Secure
 - d. Set-Cookie: SSID=AA; Max-Age=15
 - e. Set-Cookie: SSID=AA; Path=/; Secure
9. Within the TCP protocol, which two TCP flags or control state changes would initiate a close of a TCP session? (Select 2)
- a. SYN
 - b. FIN
 - c. NACK
 - d. ACK
 - e. RST

10. Which statement best describes an “HTTP Cookie”?
- a. Information initially sent from the Web server to the browser, and stored in the client’s browser configuration.
 - b. Information stored in the client’s browser configuration and used to inhibit other user’s access to that browser.
 - c. Information relevant to a particular client, stored on the Web server.
 - d. Information shared between the client and Web server, used to control the session connection speed.
 - e. Information sent only from the client to the Web server during a communication session.

Answers

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