



# HP Certified Professional Program

## ProCurve Security 7.31, HP0-Y11

### Exam Preparation Guide

## Purpose of the Exam Prep Guide

The intent of this guide is to set expectations about the content and the context of the exam and to help candidates prepare for the exam. In this guide, you will find recommended HP training courses, reference and study material to help you achieve a successful passing score.

Studies conducted by HP and Prometric show that a combination of course attendance and self-study maximizes the likelihood of passing the exam on the first attempt.

## Audience

This exam is for systems engineers or networking engineers designing complex networks. Examples of job roles:

Reseller and customer network specialists, System Engineers, Network Engineers, HP Field System Engineers, HP Services Technical Support and Field Services Engineers

General areas of content include: network security overview, securing HP ProCurve devices, HP ProCurve management authentication, securing management communications, and network access security

## Certification Requirements

The HP ProCurve Security 7.31, HP0-Y11 is one of the core requirements to be certified as an Accredited System Engineer (ASE) for ProCurve Networking.

The ASE – ProCurve Networking designation provides certification that an individual has the skills to design complex, scalable ProCurve-based networks and can implement and support complex switched and routing environments.



This certification also has a focus on multi-protocol networks and performance management.

## Prerequisites

The following requirements are prerequisites for the ASE – ProCurve Networking Certification.

- AIS – HP ProCurve Networking
- Attend the ProCurve Security course and/or pass the associated exam (HPO-Y11)
- Attend the Routing Switch Essentials course and/or pass the associated exam (HPO-603)
- Attend and/or pass the exam for one of the elective tracks, Secure WAN(HPO-144), Mobility (HPO-758), or Convergence (HPO-791)

## Exam Details

At the beginning of the exam, you will be asked to answer several survey questions. The survey questions are designed to assist the exam development team in accurately profiling test results and to improve future exams.

The following are details about the exam:

- **Number of items:** 66
- **Item types:** multiple choice
- **Time commitment:** 105
- **Passing Score:** 71% (47 items to pass)
- **Reference Material:** No on-line or hard copy reference material will be allowed at the testing site.

## Comments on the Exam

During the exam, participants can make specific comments about the items (i.e., accuracy, appropriateness to audience, etc). HP welcomes these comments as part of our continuous improvement process.

## Exam Content

The following testing objectives represent the specific areas of content covered in the exam. Use this outline to guide your study and to check your readiness for the exam. The exam measures your understanding of these areas.

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**Objective**


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1.0	ProCurve Security Overview
•	Describe the functional layers of network security
•	Describe capabilities of the ProCurve ProActive Defense
•	Identify differences between ProCurve network user security and ProCurve management access security
2.0	ProCurve Device Management Security
•	Describe local security capabilities of ProCurve switches
•	Describe and implement IP Authorized Managers for switch management access
•	Describe and implement RADIUS for switch management access
•	Describe and implement SNMPv3 for switch management access
•	Describe and implement SSH for switch management access
•	Describe and implement SSL for switch management access
•	Describe and implement a Secure Management VLAN for switch management access
3.0	ProCurve Network Protection
•	Describe and implement ACLs
•	Describe and implement MAC Lockdown and MAC Lockout
•	Describe and implement Port Security
•	Describe and implement the Instrumentation Monitor
•	Describe and implement BPDU Filtering and Protection
•	Describe and implement SNMP Throttling
•	Describe and implement DHCP Snooping
•	Describe and implement Dynamic ARP Protection
•	Describe and implement Connection-rate Filtering
•	Describe and implement Traffic Mirroring
4.0	ProCurve Network Access Control Security

**Objective**

	<ul style="list-style-type: none"> <li>Describe concepts and operation of 802.1X</li> <li>Describe and implement 802.1X user authentication</li> <li>Describe and implement Web authentication</li> <li>Describe and implement MAC authentication</li> <li>Describe the ProCurve Identity Driven Manager features and capabilities</li> <li>Describe the configuration and implementation of ProCurve Identity Driven Manager</li> </ul>
5.0	ProCurve Troubleshooting
	<ul style="list-style-type: none"> <li>Describe the troubleshooting environment and tools</li> <li>Explain troubleshooting scenarios</li> </ul>

## Recommended Training and Study References

This section lists training courses and documents that can help you acquire a majority of the knowledge and skills needed to pass the exam. You must also gain the practical experience outlined in this guide

You are not required to take the courses listed in this section. However, HP **strongly recommends** that you attend the classes, participate in class labs, and thoroughly review all course material and documents before taking the exam, even if you believe you have sufficient on-the-job experience.

## Instructor-Led Training

Use the information in this guide and the practical experience you have gained

Title	Course Number	How to Enroll
HP ProCurve Security (7.31 or later)	37798	<a href="http://www.hp.com/rnd/network_training.htm">http://www.hp.com/rnd/network_training.htm</a> (or use your regional HP ProCurve training links)

## Documentation

Title	Section Title	Source/Order Number
Access Security Guide for the ProCurve Series 3500yl, 6200yl, and 5400zl Switches (February 2007)	All sections	<a href="http://www.hp.com/rnd/support/manuals/5400zl.htm">http://www.hp.com/rnd/support/manuals/5400zl.htm</a>

## Other Reference Material

Title	Order Number	Source
FAQs, Manuals, Configuration Examples, etc.		<a href="http://www.hp.com/rnd/support/">http://www.hp.com/rnd/support/</a>

## Exam Registration

For information about exam registration, [click here](#).

## Sample Test Items

The following examples represent the types of items and question formats that you could see on the exam. These are generic samples and do not reflect the content being tested.

1. You are explaining to a customer the benefits of using local security within their HP ProCurve networking environment. Which are benefits? Select TWO.
  - A. It can be maintained by the network LDAP compliant server
  - B. It is effective for a customer with few switches
  - C. Usernames/passwords can be replicated from one switch to another switch
  - D. It uses an alternative authentication method (like RADIUS)

- E. It is easy to implement because this strategy does not rely on external source(s) for authentication
2. In an HP ProCurve network implementation for a small business environment, what functionality does an administrator with operator level access have access to? Select TWO.
- A. Status and Counters menu
  - B. Download OS menu option
  - C. CLI config level
  - D. event log
  - E. Reboot Switch menu option
3. Which tasks are required for managing HP ProCurve switches using SNMP version 3? Select TWO.
- A. create Authorized IP Managers
  - B. create SNMP version 3 Users
  - C. assign Users to Communities
  - D. assign Users to Groups
  - E. configure SNMP traps

4. A customer wants to use Secure Shell (SSH) to securely connect to their switches. After connecting to the HP ProCurve switch, what methods can be used to authenticate this user? Select THREE.
- A. local security
  - B. LDAP
  - C. RADIUS
  - D. Active Directory
  - E. TACACS+
  - F. web management
  - G. serial console
5. Which statements are true when implementing SSL on HP ProCurve switches? Select TWO.
- A. The switch authenticates to the client's web browser via SSL 3.0 or TLS 1.0.
  - B. The client authenticates to the switch via Certificate.
  - C. SSL traffic is encrypted using 3DES, DES, or RC4.
  - D. The switch authenticates to the client via RADIUS or TACACS+.
  - E. The switch authenticates to the client via RADIUS using SSL 3.0 or TLS 1.0.
6. A customer uses asymmetric encryption to set up the session key and uses symmetric encryption for the conversation of an interoffice application. What encryption scheme best describes this implementation?
- A. International Data Encryption Algorithm (IDEA)
  - B. Rivest Cipher 4 (RC4) encryption
  - C. asymmetric encryption
  - D. Hybrid encryption

7. A customer recently implemented an encryption scheme for a specialized application that uses a public key for encryption and a private key for decryption of data communications. This best describes which encryption method?
- A. symmetric encryption
  - B. asymmetric encryption
  - C. Hybrid encryption
  - D. Rivest Cipher 4 (RC4) encryption
8. A user has configured his network to allow Single Login security access, and wants to grant access to multiple resources without the need of a userid/password request for each resource. Which solution will accomplish this?
- A. RCA with digital certificates
  - B. PKI with digital certificates
  - C. PKI Fingerprint authentication
  - D. Digital Fingerprint authentication
9. An airline wants to provide PCs with Internet access in their airport lounges. The IT manager wants to prevent customers from unplugging a PC and plugging in their own laptop computer into the network port to gain access to the Internet. What is the most secure solution to offer?
- A. IEEE 802.1X with MAC address lockdown
  - B. port security
  - C. IEEE 802.1X
  - D. open/guest VLANs

10. A network administrator is implementing 802.1X authentication on all edge HP ProCurve 2600 and 2800 series switches and configures each switch with the IP addresses of two RADIUS servers. What is the primary benefit of configuring multiple RADIUS servers?
- A. If the primary RADIUS server rejects an authentication request from the switch, the switch sends the request to the second server.
  - B. When using multiple directory servers, authentication requests can be redirected to a RADIUS server based on the authentication method used by 802.1X-aware devices.
  - C. If the primary RADIUS server is unreachable, the switch sends requests to the second server.
  - D. One RADIUS server can be used for authentication and the second server can be used for accounting.
11. Which EAP types are supported by HP ProCurve switches? Select TWO.
- A. EAP-TTLS
  - B. EAP-MD5
  - C. PEAP
  - D. LEAP
  - E. EAP-TLS

12. What is the benefit of the Open VLAN feature on HP ProCurve switches? It enables an administrator to provide \_\_\_\_\_.
- A. limited network access for users that have 802.1X supplicant software but do not have valid user credentials
  - B. unlimited network access for users that have 802.1X supplicant software installed but do not have valid user credentials
  - C. unlimited network access for users that have valid user credentials but do not have 802.1X supplicant software installed
  - D. limited network access for users that do not have 802.1X supplicant software or valid user credentials
13. A large university wants to deploy 802.1X port-based security throughout their network. The network administrator decides to use a combination of MAC and web authentication on the access-layer 5400zl switches. What is the primary benefit of web authentication?
- A. It provides the same benefits of port-level 802.1X authentication but without the need for an external RADIUS server.
  - B. It allows wireless users connected to a single access point (AP) to be dynamically assigned to different VLANs based on the client's credentials.
  - C. It brings many of the security benefits of port-level 802.1X authentication without additional client software.
  - D. It can be configured to provide 'unauthorized' users with limited access to network resources.

14. You are the network administrator for ProCurve University and you are using ProCurve 2600 series switches to provide edge connectivity. Recently, you have implemented a policy that prevents students on academic probation from accessing the network from certain locations on campus. One of the students on probation calls to complain that his laptop can no longer connect to the network from the student lounge. Yet, he still has access from the library. Why was he unable to access the network from the lounge?
- A. MAC Lockdown has been configured on the switch ports which connect to the student lounge denying him access to any port on that switch.
  - B. MAC Lockout has been configured on the switch which connects to the student lounge locking him out of every port on the switch.
  - C. Port security has been enabled on the switch port which connects to the student lounge, locking him out of that port until his MAC address is cleared from the switch's memory.
  - D. MAC Authentication has been enabled on the switch port which connects to the student lounge, locking him out of that port until his MAC address is cleared from the switch's memory.
15. The IT administrator of a large university tells you that there are a number of print servers connected to unsecured network access ports and that she wants to prevent students from connecting their laptops to these ports. Further, given the large number of print servers, she would like to centrally manage the security for these devices. What technology would you recommend for this situation?
- A. MAC Authentication
  - B. Web Authentication
  - C. 802.1X Authentication
  - D. Port Security

16. Which access right is granted to an SNMPv3 user if that user is assigned to the ManagerPriv group?
- A. ManagerEdit
  - B. ManagerAllView
  - C. FullDiscoveryView
  - D. ManagerReadView
  - E. OperatorWriteView
17. Which statements describing SSL operations on the ProCurve Switch 3500yl series are correct? (Select two.)
- A. Unlike a CA-signed certificate, a self-signed certificate has no expiration date.
  - B. The public and private keys used for SSL are separate from those used for SSH.
  - C. If a self-signed certificate is used, a Web browser initiates a challenge to verify the identity of the signer of the certificate.
  - D. With SSL enabled, if you attempt to access the switch using HTTP, the Web browser is automatically redirected.
  - E. As part of the process of generating a self-signed certificate, you specify a common name that can be the switch's IP address or DNS name.
18. Which Port Security learn mode allows some MAC addresses to be predefined, while allowing other MAC addresses to be dynamically learned?
- A. static
  - B. configured
  - C. continuous
  - D. port-access
  - E. limited-continuous

19. What is the role of a NAS in the AAA security framework?
- A. A Network Access Server contacts an AAA server to validate user credentials.
  - B. A Network Accounting Server contains the logs that account for a user's activities.
  - C. A Network Authentication Server stores AAA authorized user names and passwords.
  - D. A Network Authorization Server provides user names and passwords for an AAA-compliant LDAP server.
20. You have just installed two ProCurve 3500yl switches, one on the second floor and one on the third floor of your office. You are using 802.1X for port-access authentication. All users have an 802.1X supplicant installed on their computers and you have configured a RADIUS server with a remote access policy for each floor. Shortly after physically connecting the computers, users on the second floor report that they cannot access any network resources. You can ping the RADIUS server from both switches, but when you check the RADIUS server's log, you see that authentication requests coming from the second floor switch are being denied because they are coming from an unauthorized client.

Why are the second floor users unable to connect to the network?

- A. The second floor switch has not been configured as a client on the RADIUS server.
- B. The second floor computers are using the wrong EAP type for authentication with the RADIUS server.
- C. The shared secret configured on the second floor switch does not match the shared secret configured on the RADIUS server.
- D. IP routing has not been enabled on the second floor switch; therefore no authentication requests can reach the RADIUS server.

ANSWER KEY:

- #1 B. E.
- #2 A. D.
- #3 B. D.
- #4 A. C. E.
- #5 A. C.
- #6 D.
- #7 B.
- #8 B.
- #9 A.
- #10 C.
- #11 B. E.
- #12 D.
- #13 C.
- #14 B.
- #15 A.
- #16 D.
- #17 B. E.
- #18 A.
- #19 A.
- #20 A.

## Conclusion

HP wishes you success in the HP Certified Professional Program and in passing the exam for which you are preparing.