



HP Certified Professional Program

Building ProCurve Resilient, Adaptive Networks, HP0-Y12

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: resiliency and redundancy features of the ProCurve Switch 8212zl, providing redundant links and default gateways with MSTP/VRRP, RIP and OSPF routing, Layer 2 and Layer 3 QoS, IGMP, PIM-Sparse, and PIM-Dense.



Certification Requirements

Building ProCurve Resilient, Adaptive Networks, HP0-Y12 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 (HP0-Y11)
- Attend the Building ProCurve Resilient, Adaptive Networks v7.41 course and/or pass the associated exam (HP0-Y12)
- Attend and/or pass the exam for one of the elective tracks, Secure WAN(HP0-144), Mobility (HP0-758), or Convergence (HP0-791)

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:** 60
- **Item types:** multiple choice
- **Time commitment:** 90
- **Passing Score:** 75% (45 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.

| Objective | |
|------------------|--|
| 1.0 | Introducing the Resilient, Adaptive Network |
| • | Identify the characteristics and business benefits of “Triple Play” networks |
| • | Describe the business and technological forces that are driving the development of converged networks |
| • | Describe the challenges to providing high-quality voice and video on a data |
| • | Describe the ProCurve convergence strategies and solutions |
| 2.0 | Hardware Component Resilience |
| • | Compare features of the ProCurve Switch 5400zl and 8212zl |
| • | Describe the architecture and features of the 8212zl |
| • | Perform initial configuration of an 8212zl |
| • | Describe the operation and functionality of redundant management modules in the ProCurve Switch 8212zl |
| • | Configure and administer redundant management modules on the ProCurve Switch 8212zl |
| • | Describe the operation and functionality of resilient fabric modules in the ProCurve Switch 8212zl |
| • | Provision 8212zl and 5400zl switches to provide power redundancy and PoE |
| 3.0 | Providing Redundant Links and Gateways |
| • | Given a set of customer requirements, design redundancy solutions that combine MSTP and VRRP |

Objective

| | |
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| | <ul style="list-style-type: none"> Describe the support for VRRP provided by the ProCurve 3500yl/5400zl/8212zl switches Describe the support for MSTP provided by the ProCurve 3500yl/5400zl/8212zl switches Given a design and customer requirements, configure MSTP on the ProCurve 3500yl/5400zl and 8212zl switches Given a design and customer requirements, configure VRRP on the ProCurve 3500yl/5400zl/ 8212zl switches Monitor, confirm, and troubleshoot VRRP and MSTP configuration |
| 4.0 | Designing and Configuring IP Networks |
| | <ul style="list-style-type: none"> View and evaluate the contents of an IP routing table Given a set of customer requirements, design an IP network addressing and routing scheme for ProCurve 3500yl/5400zl/8212zl switches Given a set of customer requirements, configure, monitor, and troubleshoot RIP on the 3500yl/5400zl/8212zl Given a set of customer requirements, design and implement a route summarization and redistribution scheme |
| 5.0 | OSPF Routing in the Adaptive Network |
| | <ul style="list-style-type: none"> Given a set of customer requirements, configure and monitor OSPF on the 3500yl/5400zl/8212zl Given a set of customer requirements, design an OSPF routing solution to meet enterprise needs Given a set of customer requirements, define OSPF areas to enable efficient storage and use of routing information Given a set of customer requirements, redistribute, summarize, and modify the metrics for external (non-OSPF) route information with the goal of administratively defining the most efficient paths to remote networks Configure an OSPF virtual link to the network backbone to improve resilience |

Objective

| | |
|-----|--|
| 6.0 | Delivering Quality of Service (QoS) |
| • | Compare and contrast the characteristics of and requirements for data traffic and real-time traffic |
| • | Describe Layer 2 and Layer 3 prioritization standards and their appropriate implementations in contemporary enterprise networks |
| • | Describe the LLDP-MED standard and its relevance to QoS for VoIP and other applications |
| • | Describe the default QoS settings of ProCurve switches |
| • | Given a set of customer requirements, determine if the default QoS features of ProCurve switches will adequately address the real-time traffic needs of a particular network |
| • | Given a set of customer requirements, design, configure, and deploy a QoS solution using ProCurve switches |
| 7.0 | Supporting IP Multicast |
| • | Explain the advantages of using IP multicast technology to deliver multimedia traffic streams |
| • | Explain the role of multicast routing protocols in multicast communications |
| • | Describe the operation of PIM-Dense and PIM-Sparse and their appropriate network deployments |
| • | Given a set of customer requirements, design a multicast solution to enhance the performance of multimedia applications |
| • | Given a set of customer requirements, design, configure, and monitor a multicast solution using ProCurve 3500yl/5400zl/8212zl switches |

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 |
|---|---------------|--|
| IP Routing Foundation – Self-paced Training | 24266 | http://www.hp.com/go/procurvetraining use the regional links to find schedules and registration information |
| Building ProCurve Resilient, Adaptive Networks (v7.41 or later) | 38076 | http://www.hp.com/rnd/network_training.htm (or use your regional HP ProCurve training links) |

Documentation

| Title | Section Title | Source/Order Number |
|--------------------------------|---------------|---|
| ProCurve Switch 8200zl Manuals | All sections | http://www.hp.com/rnd/support/manuals/8200zl.htm |

Other Reference Material

| Title | Order Number | Source |
|---|--------------|---|
| FAQs, Manuals, Configuration Examples, etc. | | http://www.hp.com/rnd/support/ |

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.

1. At a customer site, you upload software version K.12.43 to the primary flash area of a ProCurve Switch 8212zl. When is this file synchronized to the switch's standby management module?
 - A. when the system is next restarted
 - B. within seconds after the upload is complete
 - C. during the next management module switchover
 - D. when you enter the **redundancy synchronize** command

2. When designing a redundancy solution that combines MSTP and VRRP, what is one method for ensuring the Owner and Backup router for all VRIDs can exchange advertisements if the link between them fails?
 - A. Enable BPDU-guard on all edge switches.
 - B. Make all switch-to-switch links tagged members of all VLANs.
 - C. Configure one of the routers to be Root Bridge for all MSTP instances.
 - D. Configure all edge switches to allow VRRP advertisements to be sent and received over blocked links.

3. What is the primary result of the following command entered at the CLI of a ProCurve Switch 5406zl?

```
5406zl(config)#spanning-tree priority 2
```

- A. The switch's CIST priority is set to 8192.
 - B. The switch can never be elected Root Bridge of the CIST.
 - C. The switch will be elected Root Bridge of MST instance 2.
 - D. The switch is configured to be Backup Root of all MST instances defined on the switch.
4. How many interface modules are included with the base system for a ProCurve Switch 8212zl?
- A. 0
 - B. 4
 - C. 8
 - D. 12

5. Click the Task button.

Arrange the steps necessary to enable RIP on the Switch 5406zl and then enable RIP for VLAN 22.

Drag and drop the boxes from right to left.

Arrange the steps in order.

| Order | Steps in Order |
|-------|-------------------------|
| 1 | (place step one here) |
| 2 | (place step two here) |
| 3 | (place step three here) |
| 4 | (place step four here) |

Steps

- vlan 22 ip addr 10.1.22.1/24
- router rip
- ip routing
- vlan 22 ip rip

Done

6. What is the effect of the following command issued at the CLI of a ProCurve Switch 3500yl?

```
3500yl(config)#ip route 0.0.0.0/0 172.16.15.4
```

- A. The switch will not accept any advertised OSPF routes from the neighbor at 172.16.15.4.
- B. The switch will drop all traffic destined for addresses learned from RIP neighbor 172.16.15.4.
- C. The switch will use loopback interface 172.16.15.4 as a black hole for traffic denied by ACLs.
- D. The switch will use 172.16.15.4 as the gateway to networks not specified in other IP route table entries.

7. A ProCurve Switch 8212zl must evaluate two routes to the same destination network. One route was learned through OSPF. The other route is a static route. How will the switch forward traffic toward this network?
- A. using both routes
 - B. using the static route
 - C. using the OSPF route
 - D. using the route it learned first
8. What is the effect of the following command entered at the CLI of a ProCurve Switch 8212zl?

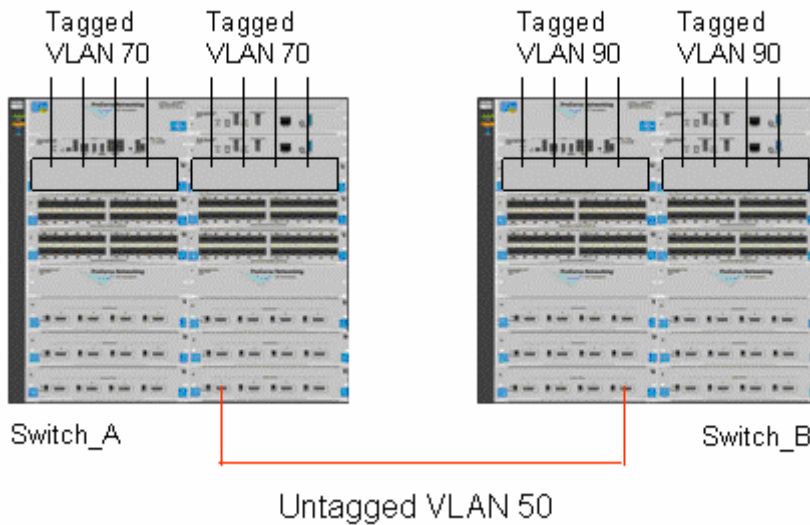
```
8212zl(ospf)#area 4 stub 2
```

- A. The 8212zl will redistribute all RIP routes to area 4 routers.
- B. The 8212zl will include each area 4 network in LSAs distributed to backbone routers.
- C. The 8212zl will summarize all area 4 routes in advertisements to the backbone area.
- D. The 8212zl will summarize all external networks as the default route in advertisements to area 4.

9. Click the Exhibit button.

In this network, all hosts in VLANs 70 and 90 insert IEEE 802.1p priority markers. How can you ensure that priorities are maintained from end-to-end?

- A. Implement identical priority settings on both switches.
- B. Make the link between Switch_A and Switch_B a tagged member of VLAN 50.
- C. Make the link between Switch_A and Switch_B an untagged member of all VLANs.
- D. Define a network-wide QoS VLAN that will include all ports that require prioritization settings.



10. In a PIM-Dense routing domain, which router is the root node of a multicast distribution tree?
- A. Bootstrap Router
 - B. Rendezvous Point
 - C. first router to receive an IGMP join
 - D. router closest to the multicast source
11. You must configure IP multicast on a ProCurve Switch 5406zl. Which feature must be enabled before you enable multicast routing globally?
- A. PIM
 - B. RIP
 - C. DVMRP
 - D. IP routing

Answer Key:

1. B
2. B
3. A
4. A
5. ip routing
router rip
vlan 22 ip addr 10.1.22.1/24
vlan 22 ip rip
6. D
7. B
8. D
9. B
10. D
11. D

Conclusion

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