Purpose of the exam prep guide

The intent of this guide is to set your expectations about the content and the context of the exam, and to help you prepare for the exam by providing the following items:

- recommended HP training courses
- outline of the topics covered by the exam
- Sample test questions. These sample questions do not represent a complete practice exam.

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

Audience

System and network administrators, system integrators, support engineers, and technical consultants. These professionals are expected to have advanced level knowledge of HP-UX and at least 2-3 years of HP-UX administration experience.

Certification Requirements

The HP-UX High Availability Using MC ServiceGuard #HP0-093 is one of the elective requirements for Certified Systems Engineer (CSE). The HP0-092 exam plus one of either HP-UX High Availability Using MC ServiceGuard (HP0-093) or HP-UX Networking and Security (HP0-094) fulfill the requirements for HP-UX Certified Systems Engineer. Visit the HP Certified Professional website for additional information, [www.hp.com/go/certification](http://www.hp.com/go/certification)
Prerequisites

The prerequisite for taking this exam is successful achievement of HP-UX Certified System Administrator (CSA). Advanced-level knowledge of and at least 2-3 years of hands-on experience with HP-UX is expected. Attendance at the HP training courses listed in the Recommended Training section below is highly recommended.

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 to accurately profile test results and to improve future exams.

The exam has two sections, one containing multiple choice and drag and drop items and another containing simulations. The simulations require you to go through the process of configuring an MC ServiceGuard cluster.

The following are details about the exam:

- **Number of items:** 56
- **Item types:** multiple choice, multiple response, drag and drop, free response (fill in the blank) in the simulation section
- **Time commitment:** 120 minutes
- **Passing Score:** an overall score of 70% plus a minimum score of 60% on the simulation items is required
- **Reference Material:** No online 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. Comment time is included in the overall time for taking the exam. We suggest you mark the questions you want to comment on, and then when done with the test, revisit the marked items and make comments. This way if time runs out, you will not be compromising your score.

Exam content

The following topics and 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.

1. **HA Concepts and Architecture**
a. Describe the purpose, benefit, and implementation choices provided by HP high availability solutions
b. Describe the various clustering types, including their benefits, strengths and weaknesses, and primary applications

2. MC ServiceGuard Concepts and Architecture
   a. Explain where ServiceGuard fits into a high availability configuration.
   b. Explain how operating system and network security affect your HA configuration.
   c. Explain how operating system and application performance affect your HA configuration.
   d. Explain if and when user access to systems may affect an HA configuration.

3. Install and Configure MC ServiceGuard
   a. Setup a ServiceGuard packageless cluster.
   b. Explain how ServiceGuard affects managing LAN interfaces.
   c. Explain the basic operation of a ServiceGuard cluster.
   d. Configure a basic package to run in a MC/ServiceGuard environment.
   e. Describe and implement rolling upgrades.

4. Manage and Customize MC ServiceGuard
   a. Create application monitoring scripts.
   b. Create a package utilizing application monitoring scripts.
   c. Utilize EMS resources within a package.
   d. Perform package and cluster customization.
   e. Utilize a ServiceGuard toolkit.
   f. Explain and implement additional ServiceGuard cluster technologies to assist in HA designs over extended distances.
   g. Explain the ServiceGuard related technologies to implement concurrent instances of a RDBMS.
   h. Utilize Quorum Server in a cluster.

5. Troubleshooting MC ServiceGuard Clusters
   a. Identify and resolve problems on ServiceGuard clusters.

6. Performance-based items (simulations)
   a. Setup a ServiceGuard packageless cluster.
b. Explain the basic operation of a ServiceGuard cluster.
c. Configure a basic package to run in a ServiceGuard environment.

Recommended Training

It is recommended that you thoroughly review all course material and documents before taking the exam, even if you believe you have sufficient on-the-job experience. Depending on your level of "hands-on" experience with HP-UX, attendance at one or more of the following HP Education training courses will help augment your skills in preparation for the HP0-092 exam.

<table>
<thead>
<tr>
<th>Recommended minimum training</th>
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</thead>
<tbody>
<tr>
<td>HP Serviceguard I</td>
<td>H6487S</td>
<td>5-day ILT</td>
</tr>
<tr>
<td>Additional recommended courses</td>
<td></td>
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<tr>
<td>POSIX Shell Programming</td>
<td>H4322S</td>
<td>5-day ILT</td>
</tr>
<tr>
<td>Disaster tolerant architectures with Serviceguard, Oracle 9i, and Oracle 10g RAC</td>
<td>U8601S</td>
<td>3-day ILT</td>
</tr>
</tbody>
</table>

How to Enroll

Please visit [http://www.hp.com/education/currpath/hp-ux_certification.html](http://www.hp.com/education/currpath/hp-ux_certification.html) for more information or to enroll.

Other Study Resources

- HP-UX manual pages
- HP-UX v11 system administration manuals
  [http://docs.hp.com/hpux/os/11.0/index.html#System%20Administration](http://docs.hp.com/hpux/os/11.0/index.html#System%20Administration)
- HP-UX v11 user guides
  [http://docs.hp.com/hpux/os/11.0/index.html#User%20Guides](http://docs.hp.com/hpux/os/11.0/index.html#User%20Guides)
- HP-UX v11 installation and update documentation
  [http://docs.hp.com/hpux/os/11.0/index.html#Installing%20and%20Updating](http://docs.hp.com/hpux/os/11.0/index.html#Installing%20and%20Updating)
Sample Test Questions

The sample test questions give you a preview of what the actual test will be like. It is important to note that these questions WILL NOT be on the exam. However, they are representative of the actual questions, and they should help you become familiar with the format and complexity of the test. These sample test questions are not a check for readiness.
1. What is the difference between unplanned down time and outage?

A. Unplanned down time and outage are synonymous terms for crashed systems.
B. Unplanned down time means the customer should not plan for any downtime. An outage is when the power goes out.
C. Unplanned down time is a term for extended planned down time. An outage means your application is not available due to a system crash.
D. Unplanned down time is when the application is not available due to an unexpected event. An outage is any unavailability of a system due to hardware, software, user, or environmental problems.

2. A customer has two data centers that are 50 km apart. They are currently connected by fibre technology with existing servers utilizing software mirroring. Using Serviceguard technology to extend a single cluster across both data centers for increased disaster tolerance, you recommend which type of cluster?

A. Simple Cluster
B. Extended Distance Cluster
C. Continental Cluster
D. General Cluster

3. Specialized clusters, that incorporate disaster tolerant architecture to protect against the loss of an entire data center, include which features? Select TWO.

A. Data is protected within a disk array with hardware mirroring.
B. A standby node with exact hardware configuration is used.
C. Data is protected through replication in a second location
D. Alternate power sources are incorporated.

4. Which tasks have an impact on the ServiceGuard cluster's functionality when performed on the system that is part of an existing ServiceGuard cluster? Select TWO.

A. changing the hostname
B. cleaning the /tmp directory
C. changing the file and directory rights
D. expanding the size of the shared logical volumes
E. doing routine system maintenance tasks such as removing empty directories

5. After implementing a highly available NFS cluster using the NFS Toolkit, what should be performed immediately after a failover occurs?

A. The clients will hang so a client reboot is necessary to clear existing file locks.
B. Disable package switching for packages affected by the failover.
C. The clients will hang so NFS services should be restarted on the server.
D. Stop and restart rpc.lockd on the server to clear all file locks.
Answer key:
1. D
2. B
3. C,D
4. C,E
5. B

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