Purpose of the Exam Preparation Guide

The intent of this guide is to set expectations about the content and the context of the exam and to help you prepare for the exam. In this guide, you will find references to resources that will assist you in preparing for the exam.

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.

Intended Audience for the Exam

The Integrating Oracle9i with Compaq Platforms exam is intended for technical audiences with four or more years of industry experience. Examples of job roles include:

- HP partner presales technical solutions architects and consultants
- HP partner implementation engineers
- Customer IT staff
- Field technical presales
- Customer services personnel
- HP technical instructors

Certification Requirements

The Integrating Oracle9i with Compaq Platforms exam is one of the core requirements to be certified as an Accredited Systems Engineer (ASE) or as Accredited Platform Integrator (API).
Exam Content Overview

General areas of content include:

- Relational Database Fundamentals WBT
- Oracle9i Architecture
- Platform Planning: Processors, Memory, and Network
- Platform Planning: Disk
- Compaq Sizers for Oracle9i
- Operating System Monitoring and Tuning for Windows 2000
- ProLiant Performance Analyzer
- Introduction to Oracle9i Monitoring and Tuning
- Wait Event-Based Tuning Using StatsPack
- Hands-On Labs
Exam Details

- **Number of items on exam:** 77
- **Item types:** Multiple choice and multiple selection
- **Time allowed:** 90 minutes
- **Reference material:** No online or hard copy reference material will be allowed at the testing site
- **Passing score:** 68%

After the exam has been completed, an additional 15 minutes is allotted for you to make specific comments about the test items (such as accuracy and appropriateness to audience). HP welcomes these comments as part of a continuous improvement process.

Exam Registration

This exam is available at [Prometric](#).

This exam is available at [Promissor](#).
Exam Objectives

This section provides the objectives that are represented on the exam. The approximate percentage of exam items dedicated to each major content area is included in parentheses. The higher the percentage, the higher number of related items are on the exam.

Use this information to guide your study and to check your readiness for the exam.

Relational Database Fundamentals WBT (Self-Study Prerequisite) (17%)

- Describe how a relational database management system (RDBMS) stores and retrieves data.
- Discuss how to access data stored in the database.
- Explain the aspects of an RDBMS that enable its high-performance capabilities—indexing, hashing, caching, query optimization, and data clustering.
- Identify various aspects of security and data protection.
- Explain database concurrency and list concurrency control mechanisms.
- List the properties of a database that ensure data integrity.
- Define two primary database environments: OLTP and data warehousing.
- Describe each database environment, and list and explain their:
  - Predominant activities
  - Characteristics
  - Tuning goals

Module 1: Oracle9i Architecture (9%)

- Describe the Oracle9i architecture.
- List the Oracle9i database files and define their purpose.
- Explain the purpose of the system global area and identify its components.
- List background processes and explain their function.
- Compare server process modes used with Oracle9i.
Module 2: Platform Planning: Processors, Memory, and Network (11%)

- Describe processor-planning concepts: different types of transaction execution.
- Describe processor-planning concepts: database environment impact on processor planning.
- Describe processor-planning concepts: processor performance analysis.
- Explain memory-planning competencies: when to size memory.
- Explain memory-planning competencies: initial memory recommendations.
- Explain memory-planning competencies: operating system, third-party applications, and Oracle memory requirements.
- Describe network planning.

Module 3: Platform Planning: Disk (15%)

- Explain how the application I/O workload affects disk subsystem planning.
- Describe RAID and disk caching and their impact on disk performance.
- Provide an overview of storage subsystem performance planning.
- Explain what is involved in individual storage subsystem component performance planning.
- Describe how the different planning and performance monitors are used.
- Describe techniques that improve performance at the logical disk design level.

Module 4a: Compaq Sizers for Oracle9i (4%)

- Define the ProLiant Transaction Processing Sizer for Oracle9i.
- Describe the ProLiant Transaction Processing Sizer for Oracle9i installation and configuration.
- Explain the interview process.
- Describe the sizer output and actions you can take on the result set.

Module 5a: Operating System Monitoring and Tuning for Windows 2000 (10%)

- List and explain the Windows 2000 monitoring tools.
- Describe how to monitor and tune memory, disk subsystem, processor, and network usage.
- Adjust the operating system recovery settings to avoid server recovery delay.
Module 6a: ProLiant Performance Analyzer (7%)
- Explain the function of the ProLiant Performance Analyzer.
- Describe the ProLiant Performance Analyzer architecture.
- List and describe monitored objects: processors, memory, and I/O subsystem.
- Explain how to connect to the ProLiant Performance Analyzer and how to add monitored servers.
- Describe the inventory, status, and graph windows for each monitored subsystem.
- Demonstrate the ProLiant Performance Analyzer functionality using the supplied example.
- List enhancements proposed for the next version.

Module 7: Introduction to Oracle9i Monitoring and Tuning (13%)
- Explain how to monitor and tune Oracle9i memory structures.
- Describe how to monitor and tune Oracle9i instance recovery and I/O.
- List and describe StatsPack and Oracle Enterprise Manager Diagnostics Pack.

Module 8: Wait Event-Based Tuning Using StatsPack (8%)
- Outline and discuss the tuning process.
- Discuss the system performance and the focus of performance tuning.
- Define a bottleneck and explain what system components are likely to become bottlenecks.
- Differentiate between system snapshot tools and time span tools.
- Explain typical observations from collected data.
- Contrast ratio-based tuning with wait event-based tuning.
- Describe Oracle wait events.
- Describe BSTAT/ESTAT and StatsPack.
- Explain StatsPack installation, usage, and reporting.

Miscellaneous: Hands-On Labs (6%)
Demonstrate competencies learned in the hands-on labs.
Recommended Training and Study References

This section lists training courses, resources, 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 the 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.

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**Important**

HP does not guarantee or represent that all items on the exam are taken from the instructor-led course or course materials. Some items require understanding of several interrelated topics to answer correctly. Other items rely on assumed industry experience and prerequisites as identified in this exam preparation guide. Some items are referenced in materials other than course materials, as indicated in this document.

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**Instructor-Led Training**

Use the information in this guide and the practical experience you have gained to determine your need for the instructor-led training.

<table>
<thead>
<tr>
<th>Title</th>
<th>Course #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrating Oracle9/ with Compaq Platforms</td>
<td>445</td>
</tr>
</tbody>
</table>

The following materials included with the instructor-led training course will help you prepare for the exam:

- Student guide
- Lab guide
- Lab scripts (included on the course Companion CD-ROM)
- Related articles (included on the course Companion CD-ROM)
Prerequisites

The following list of prerequisites or equivalent knowledge is highly recommended to complete the course and successfully pass the certification exam.

- Oracle9i Database Administration Fundamentals I – Oracle ILT course ID D13084, duration 5 days, [http://www.oracle.com/education/course_listings/database/index.html?dba_or a9i.html](http://www.oracle.com/education/course_listings/database/index.html?dba_or a9i.html)
- Oracle9i Database Administration Fundamentals II – Oracle ILT course ID D13161, duration 5 days, [http://www.oracle.com/education/course_listings/database/index.html?dba_or a9i.html](http://www.oracle.com/education/course_listings/database/index.html?dba_or a9i.html)

Web-Based Training

The Relational Database Fundamentals WBT or equivalent knowledge is required for this course.

Compaq Documentation

- Articles included on the course Companion CD-ROM
- Documentation available with products, tools and utilities discussed in the course

Other Reference Material

- Articles included on the course Companion CD-ROM
- Oracle9i Enterprise Edition documentation, available from Oracle Corporation
Sample Exam Item Types

The items in this section are intended to help you understand the various types of items you will see during the exams. These items are not intended to be used as a measurement of your ability to pass the exam.

Sample Item 1: Single-Answer Multiple Choice

What is another name for the system catalog?

a. Data dictionary
b. Bitmap index
c. Page header
d. Data cluster

*Answer: a*

Sample Item 2: Multiple-Answer Multiple Choice

Which two instance architecture features are associated with an Oracle instance running in the Linux environment? (Choose two.)

a. Single process per instance
b. Multiple threads per instance
c. Single thread per instance
d. Multiple processes per instance
e. Dedicated memory per instance
f. Shared memory per instance

*Answer: d and f*
Sample Exam Questions

This set of sample exam questions will help you become familiar with the types of questions on the exam. Because the questions do not cover every test objective, they are not intended to test your readiness for the exam.

None of these questions is contained on the actual exam. The actual exam questions could be more or less difficult than this set of questions.

After answering these questions, check your responses by using the answer key provided at the end of this section.

1. What is another name for the system catalog?
   a. Data dictionary
   b. Bitmap index
   c. Page header
   d. Data cluster

2. If one transaction holds a shared lock, what type of lock can other transactions obtain on the same data set?
   a. A shared lock
   b. An exclusive lock
   c. Either a shared or an exclusive lock
   d. Neither a shared nor an exclusive lock

3. Which tool allows you to edit the information stored in the SPFILE.ORA file?
   a. Oracle Database Configuration Utility
   b. Oracle Enterprise Manager
   c. Oracle Net Configuration Assistant
   d. Text editor

4. System scale-up refers to a method of:
   a. Improving database availability by introducing redundant components.
   b. Improving performance by introducing additional hardware resources within the same system.
   c. Improving performance by introducing clustered servers.
   d. Increasing the database capacity by employing storage virtualization.
5. Which parameter determines the size of the redo log buffer?
   a. LOG_BUFFER
   b. LOG_SIZE
   c. REDO_BUFFER
   d. REDO_LOG_SIZE

6. Which database environment has a high ratio of disk drives to disk controllers?
   a. Batch processing
   b. Data warehousing
   c. Decision support
   d. Online transaction processing

7. Which statement is false?
   a. Read caching boosts performance in high-bandwidth application environments.
   b. Database systems typically do not reuse information stored in the read cache of the disk controller.
   c. Read caching can significantly boost the redo log performance.
   d. Write-back caching that is properly protected can significantly boost performance of the redo log writes.

8. Which configuration is the least desirable when configuring a high-performance database server?
   a. Redo log files alternating two physical disks
   b. Redo log files and data files on physically different disks
   c. Redo log files on an ADG volume
   d. Redo log files physically separated from the page file and the operating system files

9. Where can you save the configurations recommended by the ProLiant Transaction Processing Sizer for Oracle9i?
   a. Diskette or local hard disk
   b. NVRAM
   c. Online ActiveAnswers repository
   d. Server Profile Diskette
10. Which network setting provides the most effective memory resource allocation for applications with low network usage and their own data cache?
   a. Maximize data throughput for file sharing
   b. Maximize data throughput for network applications
   c. Minimize memory used
   d. Balance

11. What is the proper sequence of commands used to configure server tasking?
   a. Start → Settings → Control Panel → System → Advanced → Environment Variables
   b. Start → Settings → Control Panel → System → Advanced → Performance Options
   c. Start → Settings → Control Panel → System → Advanced → Startup and Recovery
   d. Start → Settings → Control Panel → System → Advanced → User Profiles → Change Type
   e. Start → Settings → Network and Dial-Up Connections → Advanced → Advanced Settings

12. Which Oracle view should you query to determine the data dictionary cache hit rate?
   a. V$LIBRARYCACHE
   b. V$ROWCACHE
   c. V$SESSTAT
   d. V$SGASTAT

13. You determine that the redo buffer allocation retries are high. What should you do?
   a. Increase the number of the redo log files.
   b. Increase the redo log buffer size using the LOG_BUFFER parameter and restart the instance.
   c. Increase the redo log buffer size using the REDO_BUFFER_SIZE parameter and restart the instance.
   d. Increase the size of the redo log files.
14. You query the DB_CACHE_ADVICE view and retrieve the results listed in the following table.

<table>
<thead>
<tr>
<th>Cache Size (MB)</th>
<th>Buffers</th>
<th>Estimated Physical Read Factor</th>
<th>Estimated Physical Reads</th>
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<tbody>
<tr>
<td>212</td>
<td>26,614</td>
<td>1.74</td>
<td>17,850,847</td>
</tr>
<tr>
<td>243</td>
<td>30,416</td>
<td>1.33</td>
<td>13,720,149</td>
</tr>
<tr>
<td>273</td>
<td>34,218</td>
<td>1.13</td>
<td>11,583,180</td>
</tr>
<tr>
<td>304</td>
<td>38,020</td>
<td>1.00</td>
<td>10,282,475</td>
</tr>
<tr>
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<td>41,822</td>
<td>.93</td>
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<td>8,909,026</td>
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<tr>
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<td>49,426</td>
<td>.83</td>
<td>8,495,039</td>
</tr>
</tbody>
</table>

What is the current size of the database buffer cache?

a. 212MB  
b. 273MB  
c. 304MB  
d. 364MB  
e. 395MB

15. You query the DB_CACHE_ADVICE view and retrieve the results listed in the following table.

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If you decrease the current database buffer cache by 61MB, what would be the increase in database buffer cache misses?

a. 13%  
b. 33%  
c. 74%  
d. 100%  
e. 125%
16. In which section of the Oracle StatsPack report can you find the number of transactions per second?
   a. Instance and cache information
   b. Instance efficiency percentages
   c. Load profile
   d. Top 5 timed events
   e. Wait events

17. According to a recommendation from Oracle, which format should you use for the Global Database Name?
   a. Domain.name
   b. Domain.name.port
   c. Domain.name.port.IP_address
   d. Name.domain
   e. Name.port

18. Which RAID level provides the highest performance and data protection for the Oracle redo log files?
   a. JBOD
   b. RAID 0
   c. RAID 1+0
   d. RAID 5
   e. ADG

19. Which command displays the current status of the diskperf option?
   a. diskperf
   b. diskperf -?
   c. diskperf –show
   d. diskperf –Y

20. Three of the following scenarios will cause the Oracle StatsPack installation to fail. Which scenario will enable the StatsPack installation to succeed?
   a. StatsPack is installed using the SQL*Plus utility.
   b. StatsPack is installed using the Server Manager tool.
   c. The SYSTEM tablespace is specified as the default tablespace for StatsPack.
   d. A blank password is specified for the PERFSTAT user.
21. What percentage of the Oracle9i instance memory should be initially allocated to the aggregate process global area (PGA) size in data warehousing environments?
   a. 20%
   b. 40%
   c. 50%
   d. 60%
   e. 80%
Conclusion

HP wishes you success in the HP Certified Professional Program and in passing the exam for which you are preparing.
## Appendix A: Answers to Sample Exam Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Question</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A</td>
<td>12.</td>
<td>B</td>
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<tr>
<td>4.</td>
<td>B</td>
<td>15.</td>
<td>B</td>
</tr>
<tr>
<td>5.</td>
<td>A</td>
<td>16.</td>
<td>C</td>
</tr>
<tr>
<td>6.</td>
<td>D</td>
<td>17.</td>
<td>D</td>
</tr>
<tr>
<td>7.</td>
<td>C</td>
<td>18.</td>
<td>C</td>
</tr>
<tr>
<td>8.</td>
<td>C</td>
<td>19.</td>
<td>A</td>
</tr>
<tr>
<td>9.</td>
<td>C</td>
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