HPE Master ASE–Compute Solutions V1
OFFICIAL CERTIFICATION STUDY GUIDE (EXAM HPE1-H02)

First Edition

Tomasz Lach

HPE Press
660 4th Street, #802
San Francisco, CA 94107

HPE Master ASE–Compute Solutions V1
Official Certification Study Guide (Exam HPE1-H02)
Tomasz Lach

Published by:

Hewlett Packard Enterprise Press
660 4th Street, #802
San Francisco, CA 94107

ISBN: **978-1-7360155-7-5**

WARNING AND DISCLAIMER
This book provides information about the topics covered in the HPE Master ASE–Compute Solutions certification exam (HPE1-H02). Every effort has been made to make this book as complete and as accurate as possible, but no warranty or fitness is implied.

The information is provided on an "as is" basis. The author, and Hewlett Packard Enterprise Press, shall have neither liability nor responsibility to any person or entity with respect to any loss or damages arising from the information contained in this book or from the use of the discs or programs that may accompany it.

The opinions expressed in this book belong to the author and are not necessarily those of Hewlett Packard Enterprise Press.

FEEDBACK INFORMATION

At HPE Press, our goal is to create in-depth reference books of the best quality and value. Each book is crafted with care and precision, undergoing rigorous development that involves the expertise of members from the professional technical community.

Readers' feedback is a continuation of the process. If you have any comments regarding how we could improve the quality of this book, or otherwise alter it to better suit your needs, you can contact us through email at hpepress@epac.com. Please make sure to include the book title and ISBN in your message.

We appreciate your feedback.

Publisher: Hewlett Packard Enterprise Press

HPE Press Program Manager: Michael Bishop

Introduction

This study guide helps you prepare for the HPE Master ASE–Compute Solutions V1 certification exam (HPE1-H02). It describes how to plan, position, and design advanced computing solutions using HPE and industry-standard technologies for specific use cases and workloads. Beyond certification, you will learn how to recommend, implement, and optimize complex solutions to meet customer business outcomes and technical needs. Topics that are covered include SAP HANA, virtualization, database workloads, container workloads, setting up a proof of concept, and more.

About the Author

Tomasz Lach is a certified HPE Master ASE Advanced Server Solutions Architect and HPE Master ASE Hybrid IT Solutions Architect. He also holds multiple HPE ASE and ATP certifications in Data Center and Cloud, Composable Infrastructure, and Storage together with HPE Product Certifications for OneView, Synergy, and Nimble. Tomasz is an HPE and VMware Certified Instructor, and Double VCP Certified Professional. He has developed technical training courses for advanced-, mid-, and entry-level professionals and has authored several HPE Press study guides.

Certification and Learning

Hewlett Packard Enterprise Certification and Learning provides end-to-end continuous learning programs and professional certifications that can help you open doors and accelerate your career.

We provide

- **Professional sales and technical training and certifications** to give you the critical skills needed to design, manage, and implement the most sought-after IT disciplines;
- **Continuous learning activities and job-role based learning plans** to help you keep pace with the demands of the dynamic, fast-paced IT industry; and
- **Advanced training** to help you navigate and seize opportunities within the top IT transformation areas that enable business advantage today.

As a Certification and Learning certified member, your skills, knowledge, and real-world experience are recognized and valued in the marketplace. To continue your professional and career growth, you have access to our large HPE community of world-class IT professionals, trend-makers, and decision-makers. Share ideas, best practices, business insights, and challenges as you gain professional connections globally.

To learn more about HPE Certification and Learning certifications and continuous learning programs, please visit:

http://certification-learning.hpe.com

Audience

This book is designed for presales solution architects involved in supporting the sale of advanced HPE compute solutions based on customer needs and business goals. It is assumed that you have a broad understanding of HPE compute portfolio and an interest in deepening your expertise in designing HPE compute solutions based for key industry standard workloads.

Assumed Knowledge

This guide is designed for experienced presales solution architects involved in recommending solutions for a variety of complex customer environments and key workloads. Typical candidates for this certification are looking to expand and grow their understanding of how to plan, design, implement, and support advanced HPE compute solutions to fulfill a customer's business outcomes and meet their technology needs.

Minimum Qualifications

Prerequisites for preparing for this Master ASE level of certification are any one of the following HPE ASE level certifications:

- HPE ASE–Server Solutions Architect V4
- HPE ASE–Synergy Solutions Integrator V1
- HPE ASE–Hybrid IT Solutions V1
- HPE ASE–Composable Infrastructure Integrator V1

Relevant Certifications

After you pass these exams, your achievement may be applicable toward more than one certification. To determine which certifications can be credited with this achievement, log in to The Learning Center and view the certifications listed on the exam's More Details tab. You might be on your way to achieving additional certifications.

Preparing for Exam HPE1-H02

This self-study guide does not guarantee that you will have all the knowledge you need to achieve certification. This practical exam focuses on hands-on skills and design experience and requires a different preparation approach. In addition to knowledge described in this study guide and acquired from the preceding ASE level of certifications, it is expected that you will also need to draw on real-world experience and would benefit from completing the hands-on lab activities provided in the instructor-led training.

Recommended HPE Training

Recommended training to prepare for each exam is accessible from the exam's page in The Learning Center. See the exam attachment, "Supporting courses," to view and register for the courses.

Obtain Hands-on Experience

You are not required to take the recommended, supported courses, and completion of training does not guarantee that you will pass the exams. Hewlett Packard Enterprise strongly recommends a combination of training, thorough review of courseware and additional study references, and sufficient on-the-job experience prior to taking an exam.

Exam Registration

To register for an exam, go to https://certification-learning.hpe.com/tr/learn_more_about_exams.html

CONTENTS

1 Understanding Customer Needs and Compute Workloads

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- ✓ Evaluate typical advanced computing workloads, including their characteristics and requirements.
- ✓ Compare and classify tools supporting the sizing process and performance management.

Customer Scenario

Health Service Provider (HSP) is an international company providing various medical services for healthcare businesses in more than 30 countries worldwide. They plan to upgrade their infrastructure to improve response times for existing workloads.

They have some new projects that require additional resources and a flexible approach. HSP asked you for help and called a meeting to discuss the challenges they are facing and the expected business outcomes. You will have to prepare a compute solution proposal, and consider interoperability with the existing customer environment.

HSP plans to upgrade their infrastructure to improve response times for existing workloads. Currently, they use mainly ProLiant DL systems (Gen8 to Gen10) managed using HPE OneView. They also adopted HPE BladeSystem technology for most of the virtualization projects. Legacy applications are running on third-party servers. They use a variety of HPE components, including MSA and 3PAR platforms, as well as third-party storage components. They use different networking products and solutions, including HPE, Cisco, and other vendor products. For virtualization projects running on VMware vSphere®, both standard and distributed switches are used.

The company is growing and needs to update their compute platform to support new business objectives and eliminate current pinch points. HSP is facing multiple problems, and they want to improve aspects of their infrastructure. Long-term goals include:

- **Management tools unification and centralization**—Currently, they use multiple tools to support different products from different vendors deployed in each individual location.
- **Improving agility, flexibility, and deployment speed**—Currently, most of the applications are deployed manually or through virtual machine (VM) templates. They find this process not as effective as expected, especially as the scale of the deployment is constantly growing.
- **Improve performance management and optimization processes**—Current performance management processes are mostly reactive and not proactive. Performance issues are not predicted, but rather discovered, when workload and business applications are affected.
- **Automation of as many processes as possible**—HSP adopted some automation tools, but they are looking to fully automate the deployment process, including using reactive scripts in case of failure detection.

HSP is currently using a traditional database deployed on physical machines to support an old medical system and some proprietary applications running on the physical machines and VMs. They have an IT department in each location, managing local equipment. Each of these teams is also responsible for an application that patients can download and use for various medical activities, like scheduling a visit. The customer is looking for an agile development platform, as there are plans to significantly improve functionalities offered by this application.

HSP needs new advanced-compute solutions to support new business projects including:

- A new centralized health system supported by a highly available database with in-memory processing
- Upgrade their virtualization system to support infrastructure workloads and a development environment

- Update database systems for remote offices
- A container solution to speed up development and testing processes

They are considering different consumption models, including on-premises resources and cloud adoption.

Activity: Analyzing Customer Requirements

1. Prepare five questions that will help you to gather the required information from the customer.

2. Consider the fact that, at the moment, you only have a general customer profile, and you will need to get as much information as possible.
3. Read the customer scenario, and answer the following questions:
   a. What are the business challenges that the company is facing right now?

   b. What is the desired outcome from the solution?