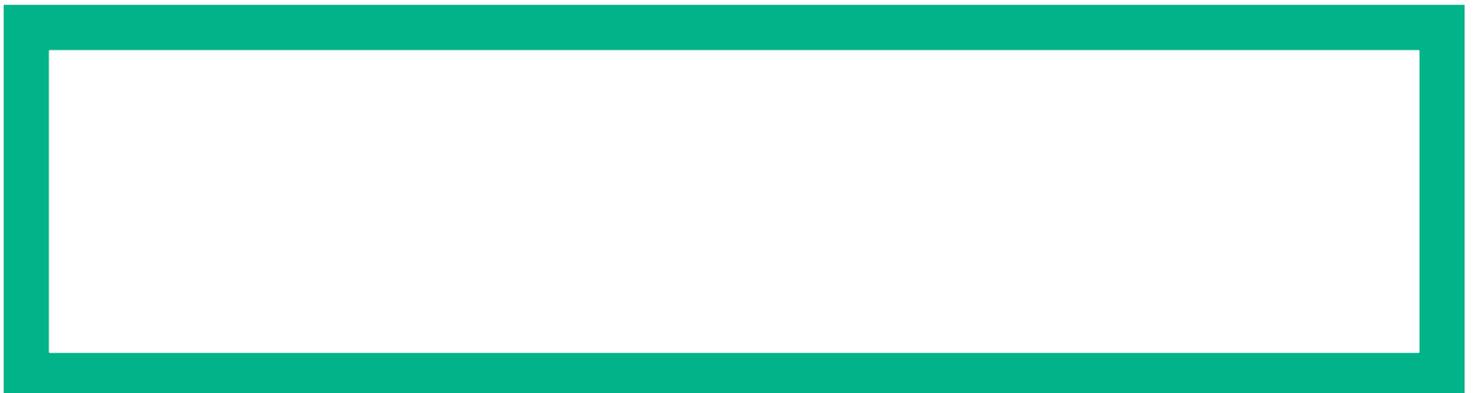




Hewlett Packard
Enterprise

Designing HPE Advanced Hybrid IT Solutions Learner Guide, Volume 1

Rev. 19.41



About this course

Course details

- Duration: Five days
- Delivery method: Instructor-led (face-to-face or virtual)

Target audience

- Anyone who needs to learn how to describe, position, recommend, demonstrate, plan and design HPE server, storage, networking, and management technologies to meet a customer's business and technology requirements

Ideal candidates

- Typical candidates for this course are:
 - Consultants
 - Pre-sales Engineers
 - Sales Engineers
 - Systems Engineers
 - Solutions Architects
- Previous experience:
 - 7 to 10 years of design and implementation experience with infrastructure solutions for specific workloads to achieve customer business outcomes
- Prerequisites
 - HPE ASE – Designing Hybrid IT Solutions V1

Figure 0-1: About this course

This course is a five-day, instructor-led course, which can be taken in a face-to-face or a virtual classroom environment. It is designed for anyone who needs to learn how to describe, position, recommend, demonstrate, plan and design HPE server, storage, networking, and management technologies to meet a customer's business and technology requirements.

Ideal candidates for this course include:

- Consultants
- Pre-sales Engineers
- Sales Engineers
- Systems Engineers
- Solutions Architects

Candidates should have approximately 7 to 10 years of experience designing and implementing infrastructure solutions for specific workloads to achieve customer business outcomes.

The prerequisites for this course is the HPE ASE – Designing Hybrid IT Solutions V1 certification.

HPE Exam Preparation Checklist

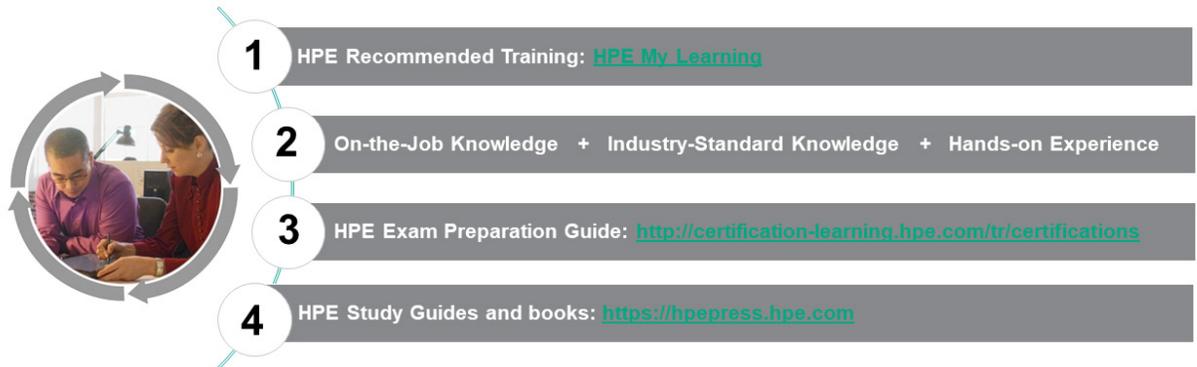


Figure 0-4: HPE Exam Preparation Checklist

To prepare for an exam, different sources are available:

- The best option is to attend the authorized HPE training, which provides comprehensive knowledge for all topics covered during the exam.
- An exam taker's experience can help them with passing the exam.
- The official HPE Exam Preparation Guide covers exam content and provides sample items. For this exam, you should also take the mock exam, which you can do on the last day of class.
- HPE Press study guides and books are great source of the knowledge required for an exam.

NOTE: To access HPE Recommended Trainings, go to:
<https://www.mylearninghpe.com/>

NOTE: To access HPE Exam Preparation Guide, go to:
<http://certification-learning.hpe.com/tr/certifications>

NOTE: To access HPE Study Guides and books, go to:
<https://hpepress.hpe.com>

HPE Pointnext Services



Figure 5-14: HPE Pointnext Services

HPC solutions do not only make high demands on the network infrastructure—they also make high demands on the people who plan, deploy, and manage the solution. While partners such as you can offer their own services in helping customers in these areas, not all partners can be experts in every area. If you or your customers need additional help, you can turn to HPE Pointnext services.

HPE experts have designed and deployed many HPC solutions in industries as varied as manufacturing, healthcare, and finances—as well as many more.

Advisory Services

For customers at the beginning of their journey, HPE Advisory Services create a blueprint of the future HPC environment. High-level design, roadmap, strategy and transformation services all fall within this area.

Professional Services

HPE Pointnext Professional Services include design and migration, implementation, and educational services.

Design and migration services

These services help customers to:

- Design a solution that will meet their business demands
- Migrate existing workloads and applications to the new infrastructure
- Keep their platform and data secure and protected

Implementation services

Implementations services include:

- **Installation and Start Up**—This service includes installation of hardware and tests that the hardware is up and running correctly. The service for a server could also include installation of a supported OS.
- **Factory Express**—Pre-delivery, HPE builds and configures an HPC solution to the customer's exact specifications, including integrating software components. HPE also manages the project up to and including installing the solution.



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Designing HPE Advanced Hybrid IT Solutions Facilitator Guide

Rev. 19.41



Icon legend

These HPE brand-compliant Facilitator Guide icons give quick visual cues throughout the guide.

 Timing	 Timing and materials	 Documentation
 Facilitator lecture	 Storytelling	 Flip chart activity
 Individual activity	 Large group activity	 Small group/ table activity
 Review activity	 Video	 Team presentation
 Triad role-play	 Discussion	 Workbook/directed reading activity
 Computer-based research activity	 Case study/ simulation activity	 Teach back/ bridge activity
 Equipment demonstration	 Hands-on lab	 Additional information

Course Introduction

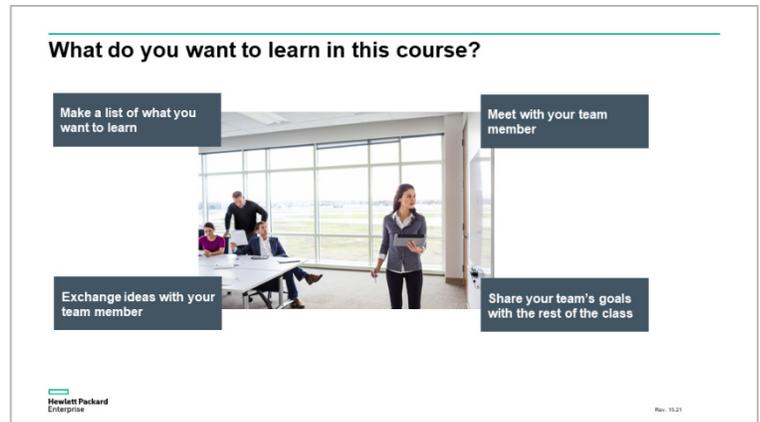
WHY: Engagement activity



Timing: 8-10 min total

Overview

Purpose: Learners start to get to know each other, and they clarify—both to you and to themselves—what they want to achieve in this course.



Prebrief



Timing: 1 min

Prebrief framing

Explain: Introduce the organization of the course and then ask learners to introduce themselves. Then ask them to list two things: What in the course they consider themselves to be an expert on and what in the course they are excited about learning.

Run the activity



Timing: 4-6 min

Instructions: Ask learners to make a list for a minute or so. Then assign learners to partners. They should introduce themselves and share their list.

After 2 or 3 minutes, ask each learner to introduce their partner.

Virtual classroom instructions

Skip the part of the activity in which learners meet with partners. Instead have learners make their list and then share their list with the entire class.

Confirm the end in mind



Timing: 1-2 min

Link: You hope to be able to help learners achieve their goals in this course.

WHAT: Course Overview



Timing: 5-10 minutes

Materials: Module 0 PPT

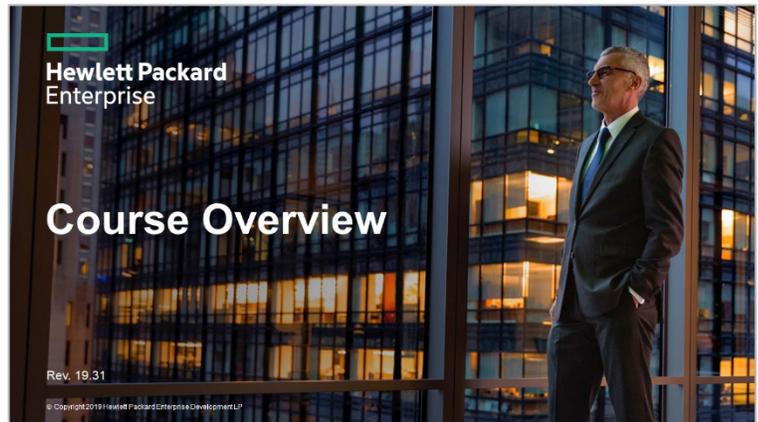
Overview

Purpose: Orient learners to the course.

Instructions



Use the slide deck to introduce the course objectives, show the schedule, and explain this course's role in helping the learners achieve their MASE Hybrid IT certification. Make sure that learners understand that they must pass the exam for this course and at least one elective exam to achieve the certification. Also start emphasizing early that the exam for this course will be different from the exams to which they might be used. It has a significant practical element. The learners must be ready to perform tasks in the lab. (They will practice some tasks during the course, but it is also assumed that will have experience).



Module 1: Collecting Customer Information

WHAT: Introduction to the scenario and design process



Timing: 4-5 minutes

Materials: Module 1 PPT
Slides 1 to 4



Overview

Purpose: Introduce the customer scenario that will be used throughout this course.

Instructions



Explain that learners will follow a scenario about a healthcare company throughout this course. Spend a bit of time introducing the scenario on slide 4. Then show slide 4 and discuss the design process. Explain that learners will see a similar design process in other modules, but customized for different workloads. Adapting to workloads is a major theme for this course.

HOW: Module 1 Activity 1



Timing: 15 min total

Materials: Module 1 PPT

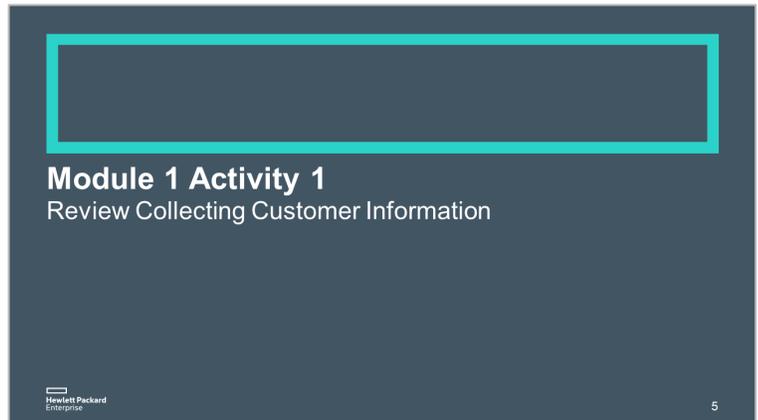
Slides 5-8

Instructions



Direct: Display slide 6 and pose the question. Give

learners about 3-4 minutes to think on their own and make a list of information to collect. Then go around the class and ask volunteers to share their ideas, which you write on the whiteboard. Slides 7 and 8 list some ideas.



WHAT: Review tools you use for architecting solutions



Timing: 4-5 minutes

Materials: Module 1 PPT
Slides 9-17

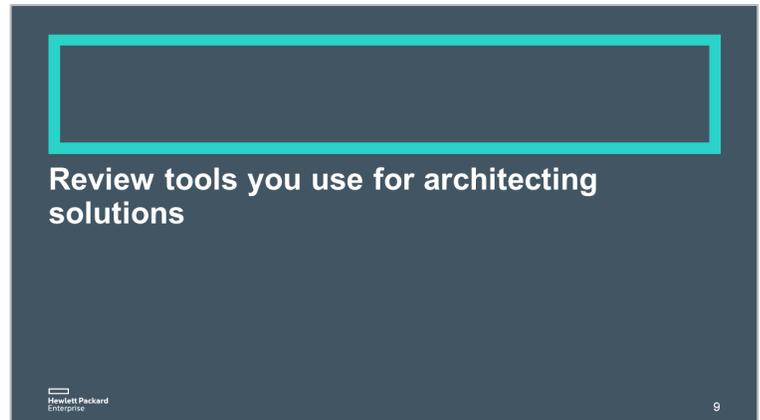
Overview

Purpose: Give learners the tools that they need to succeed in the course.

Instructions



Briefly review the tools that learners will use as they design solutions in this course—and in the real world. Many of the tools can be accessed in multiple ways, so slides might have multiple links. Ask learners to share which portals they use and encourage them to try sources that are new to them.





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Designing HPE Advanced Hybrid IT Solutions Lab Guide

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Activity 2—Review Collecting Information for a Particular Customer

Main scenario

Healthcare X is one of the largest healthcare providers in its region, operating primarily in suburban areas. It consists of 12 hospitals and a total of 80 clinics and urgent care facilities, some of them attached to the hospitals and some in satellite locations. In addition to providing patient care, the hospitals host several medical research groups, including ones that research cancer and depression.

Last year the organization brought in \$US3.85 billion in revenue a year and had a 15 percent profit margin before tax.

Every hospital has its own IT staff while clinics and urgent care facilities mostly rely on remote IT. In the past, more services were localized at each hospital. However, Healthcare X has now consolidated services at a large, centrally located data center, which serves all of the hospitals and medical facilities. The data center has its own extensive IT staff, including operations staff for servers, storage, networking, and security.

This data center has 24 racks with about 500 total servers, most of them HPE ProLiant DL servers.

For networking, the company has FlexFabric 5800 and 7500 switches, which were also last updated several years ago. The data center network currently has a three-tier topology with three aggregation zones and a DMZ. A Metro Ethernet WAN connects the data center to hospitals, clinics, urgent care facilities, and the business office.

The office with non-medical staff also maintains some of its own local services on ProLiant DL servers.

A new CIO has recently taken over at Healthcare X. The CIO wants to modernize and further standardize the IT infrastructure. The organization's broad goals include:

- Updating legacy infrastructure so that the organization can:
 - Offer patients customized services such as a personalized patient portal
 - Help the organization gather new data and analyze it quickly, providing insights to help doctors diagnose and treat patients
 - Reduce the time it takes to analyze data (from days or weeks to minutes or hours), so health professionals can provide better healthcare
 - Lead research into health issues such as depression
 - Ensure critical services are available to patients and doctors
- Decrease the time it takes to deploy services and manage the infrastructure so IT staff can focus on innovation

The company also has several specific projects, which your sales partner is pursuing. Throughout this course, you will act in pre-sales architect role, designing solutions to propose to the customer.

Task: Collect Information

The scenario above is missing some important information. Make a list of questions for the customer. At this point, you are looking for the type of background information that you need for planning most projects. You will get into project specifics in activities throughout the rest of this course.



Designing an In-Memory Database Solution

Module 3—Activity

In this activity, you will design an in-memory database solution.

Scenario

Healthcare X currently has SAP Business Suite applications that it uses for patient scheduling, Enterprise Resource Planning (ERP), and billing systems. The organization now wants to start analyzing data in these systems to increase efficiency, make better scheduling decisions, and build deeper relationships with patients. To accelerate results, IT wants to migrate to S/4HANA.

However, the current server that supports the database is out-of-date. It has two processors and 256GB of RAM.

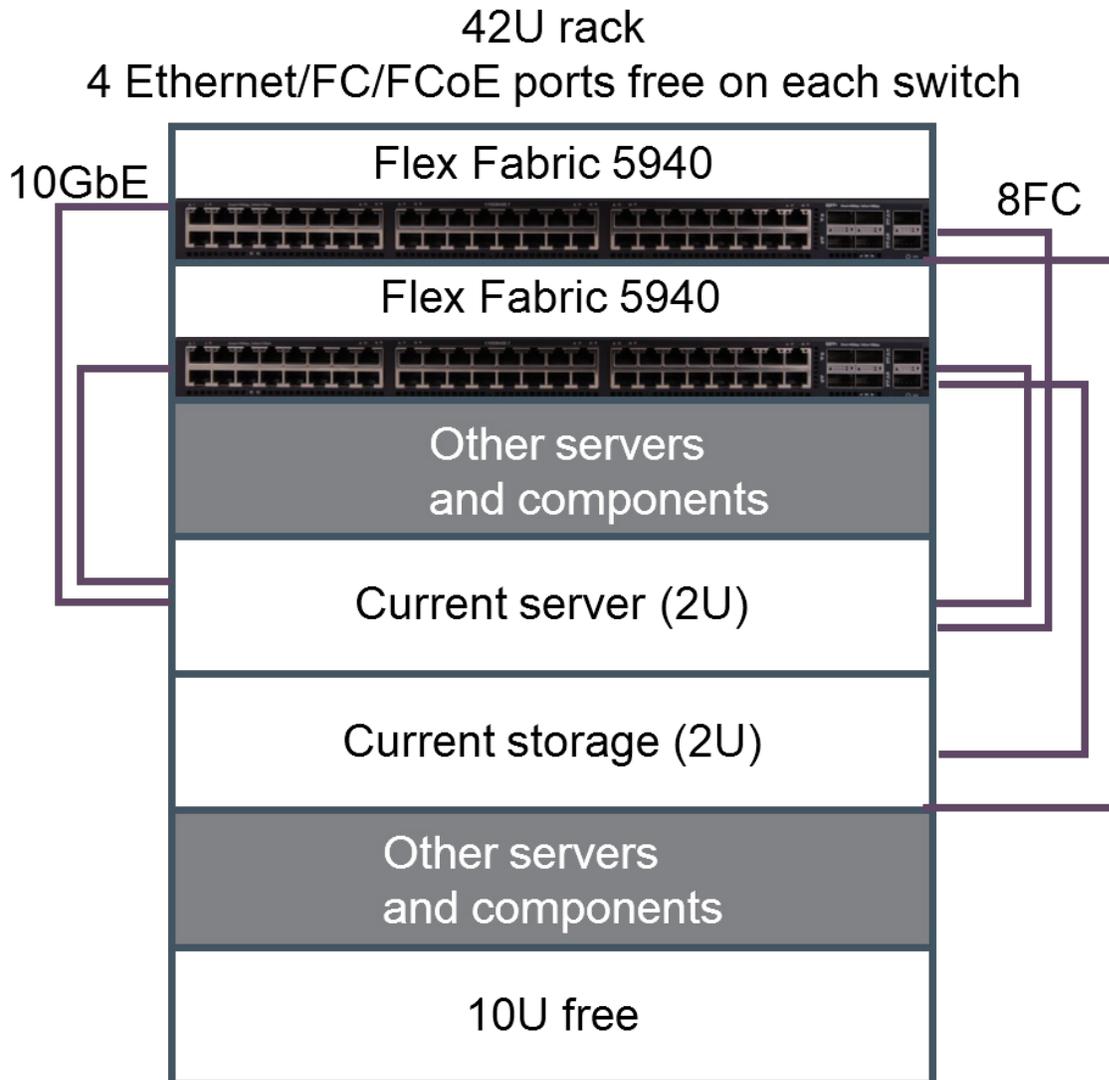
IT needs you to plan a new solution that will better support the database, providing excellent performance for the scheduling, billing, and ERP systems, as well as for the new analytic applications. The database currently uses a backend FC storage solution to store the data (backups are stored elsewhere). It has about 12 120GB SAS HDDs.

The customer ran sizing reports and learned that the total memory requirements for S/4Hana will be 2.7 TB, and the uncompressed net data size on disk is 1.99 TB. IT expects that between 2 and 6 users will run analytic queries simultaneously.

Note that you are planning a solution for the *production* database; supporting a testing and development environment is not part of this project.

The customer plans to use a rack already at the data center for this solution. The rack has 10U space open. The current server for the database connects to two top of rack (ToR) FlexFabric 5940 switches with one 10GbE connection and one 8Gb FC connection to each switch. The connections use multimode fiber optic cable. The customer wants to simply swap in the new server, if possible.

Your sales partner has told you that this customer prefers three-year 24x7 support contracts. As a healthcare organization, the customer values availability highly.



Task 1: Collect more information

You need to collect more information about the customer needs in order to complete the design. List questions to ask the customer. Then pose the questions to your facilitator to collect the information.



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