

# **Citrix XenServer Enterprise Edition 4.1: Administration**

## **A02 Exam**

### **Preparation Guide**

### **Citrix Education**

**4.0**

**24 August 2009**



---

**Notice**

Citrix® Systems, Inc. (Citrix) makes no representations or warranties with respect to the content or use of this publication. Citrix specifically disclaims any expressed or implied warranties, merchantability, or fitness for any particular purpose. Citrix reserves the right to make any changes in specifications and other information contained in this publication without prior notice and without obligation to notify any person or entity of such revisions or changes.

© Copyright 2009 Citrix Systems, Inc. All Rights Reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or information storage and retrieval systems, for any purpose other than the purchaser's personal use, without express written permission of:

Citrix Systems, Inc.  
851 W. Cypress Creek Road  
Ft. Lauderdale, FL 33309  
<http://www.citrix.com>

---

**Marks**

The following marks are service marks, trademarks or registered trademarks of their respective owners in the United States and other countries.

<b>Mark</b>	<b>Owner</b>
Windows <sup>®</sup> , Windows Server <sup>®</sup> , Windows NT <sup>®</sup> , Windows Vista <sup>®</sup> , Windows XP <sup>®</sup>	Microsoft Corporation
Linux <sup>®</sup>	Linus Torvalds
Red Hat <sup>®</sup>	Red Hat, Inc.
Intel <sup>®</sup>	Intel Corporation
AMD <sup>™</sup>	Advanced Micro Devices
Debian	Software in the Public Interest, Inc.
Realtek	Realtek Semiconductor Corporation
UNIX	The Open Group

---

**Disclaimer**

This exam preparation guide is designed to allow you to assess the types of questions that may be asked during the Citrix XenServer Enterprise Edition 4.1: Administration (A02) certification exam. Please be aware that the content of this guide in no way ensures a passing score on the certification exam.

---

**Author** Alejandra Amador, Experienced Exam Developer, Citrix Systems, Inc.

---

**Item Development Team** Alejandra Amador, Experienced Exam Developer, Citrix Systems, Inc.

---

**Subject-Matter Experts** Adam Lotz, XenServer Sales Engineer, Citrix Systems, Inc.  
Joel Stocker, WW Technical Readiness Manager – Server Virtualization,  
Citrix Systems, Inc.  
Olivier Withoff, Principal Technical Readiness Engineer, Citrix Systems, Inc.  
Ewan Mellor, Principal Software Engineer, Citrix Systems, Inc.  
Erin Shatara, Senior Courseware Developer, Citrix Systems, Inc.

# Table of Contents

---

1	The Exam .....	1
	1.1 Purpose of Exam .....	1
	1.2 Number of Questions .....	1
	1.3 Passing Score .....	1
	1.4 Time Limit .....	1
	1.5 Registration and Administration .....	1
	1.6 Registering with Pearson VUE .....	1
	1.7 Certification Tracks .....	1
	1.8 Citrix Exam Retake Policies .....	2
	1.9 Commenting during Live Exam.....	2
2	The Intended Audience .....	3
	2.1 Intended Audience .....	3
3	Preparatory Recommendations for the Exam .....	3
	3.1 Introduction.....	3
	3.2 Recommended Knowledge and Skills .....	3
	3.3 Recommended Product Experience .....	3
	3.4 Recommended Courses.....	3
4	Exam Sections and Weights.....	4
	4.1 Introduction.....	4
	4.2 Section Titles and Weights .....	4
	4.3 How Section Weights Relate to Questions on the Exam.....	4
5	Exam Objectives and Resources for the Exam.....	5
	5.1 Introduction.....	5
	5.2 Resources Used to Develop the Exam .....	5
	5.3 Exam Objectives .....	5
6	Appendix: Practice.....	10

---

# 1 The Exam

---

**1.1 Purpose of Exam** This exam certifies that successful candidates have the knowledge and skills necessary to administer a Citrix XenServer Enterprise Edition 4.1 implementation.

---

**1.2 Number of Questions** The A02 exam is a 41-question exam written in English.

---

**1.3 Passing Score** The passing score for this exam is 60%.  
Citrix Certified Instructors (CCIs) must obtain a score of 72% or higher to teach the associated courses.

---

**1.4 Time Limit** Native English speakers have 90 minutes to complete the exam. Non-native English speakers who take the exam in English have 120 minutes to complete the exam.  
Non-native English speakers must explicitly ask for the time extension when registering for the exam in English. Candidates should verify the specific process with the test provider they choose.

---

**1.5 Registration and Administration** This exam is administered through Pearson VUE. For details on the rules and procedures associated with registering for and taking the exam, please visit the Exams page at [www.CitrixEducation.com](http://www.CitrixEducation.com).

---

**1.6 Registering with Pearson VUE** In the United States and Canada call 1-800-931-4084. Worldwide, visit the Pearson VUE website ([www.VUE.com](http://www.VUE.com)) to locate a testing center in your area and register for an exam with Pearson VUE.

---

**1.7 Certification Tracks** Passing the A02 exam is a requirement for the Citrix Certified Administrator (CCA) for Citrix XenServer Enterprise Edition 4 certification.

---

**1.8 Citrix Exam Retake Policies**

If a candidate fails an exam on a first attempt, he or she must wait 24 hours from their original appointment time before they can register to retake the exam. If a candidate fails on a second attempt, and any attempt thereafter, he or she must wait 14 days after a failed attempt to retake the exam. A beta exam may be taken only once.

Citrix Education monitors retake activity for breaches of this policy. A breach of this policy can result in sanctions, such as a temporary ban from taking Citrix exams or decertification.

---

**1.9 Commenting during Live Exam**

Citrix Education is committed to continually monitoring and updating our exams as needed. As a practice, Citrix Education regularly reviews and refreshes exams and exam questions even after the beta exam period is over. Comments made by candidates during exams are used as anecdotal feedback and considered by the Citrix Exam Development team when making decisions about the exam and specific exam questions.

---

---

## 2 The Intended Audience

---

- 2.1 Intended Audience** The A02 exam is an examination of subjects that are critical to an administrator working with a XenServer Enterprise Edition 4.1 implementation. People in this role include:
- Systems Engineers
  - Citrix partners
- 

## 3 Preparatory Recommendations for the Exam

---

- 3.1 Introduction** It is recommended that candidates have the knowledge, skills, and abilities necessary to install and administer a Citrix XenServer Enterprise Edition 4.1 implementation prior to taking this exam.
- 

- 3.2 Recommended Knowledge and Skills** Candidates should have the following knowledge and skills prior to taking this exam:
- A basic knowledge of the purpose and goals of virtualization technology
  - An understanding of computing architecture, including network and storage devices, device drivers and operating systems
  - Basic experience installing and administering Windows Server 2003
  - Basic experience installing and administering Linux variants
  - Intermediate knowledge of network devices and site architecture, including configuring vLANs
  - Basic knowledge of storage terminology and technologies, including partitions, SANs, LUNs, iSCSI, and NFS and CIFS file shares
- 

- 3.3 Recommended Product Experience** It is recommended that candidates obtain hands-on experience with XenServer 4.1, such as what is provided in the CTX-2401BI Citrix XenServer Enterprise Edition 4.1: Administration instructor-led training course. It is also recommended that candidates obtain at least six (6) months of real world experience using the product.
- 

- 3.4 Recommended Courses** For optimal performance on this exam, Citrix recommends that exam-takers attend or self-study the CTX-2401BI Citrix XenServer Enterprise Edition 4.1: Administration course and obtain six (6) months field experience.
-

---

## 4 Exam Sections and Weights

---

### 4.1 Introduction

The Citrix XenServer Enterprise Edition 4.1: Administration (A02) exam is divided into nine (9) sections. Each section of the exam is weighted as follows, totaling 100%.

---

### 4.2 Section Titles and Weights

Section	Weight
Understanding Virtualization	7%
Pre-Deployment Planning	17%
Installing XenServer Enterprise Edition 4.1	15%
Creating Virtual Machines	17%
Working with Virtual Machines	10%
Determining Storage	12%
Working with Pools	10%
Supporting a XenServer Enterprise Edition 4.1 Implementation	7%
Using the XenServer Command Line Interface	5%
<b>Total</b>	<b>100%</b>

---

### 4.3 How Section Weights Relate to Questions on the Exam

Section weights correlate directly to the number of questions on the exam. For example, if an exam has 60 questions, and section 1 is weighted as 50%, then 30 of the questions on the exam will relate to section 1 ( $60 \times 50\% = 30$ ).

Section weights are **NOT** used to calculate a candidate's score. Section weights are meant to indicate the percentage of the exam that covers certain content. Because some questions may have different point values assigned to them, section weights and exam scores do not always have a one-to-one correlation.

---

---

## 5 Exam Objectives and Resources for the Exam

---

### 5.1 Introduction

The questions for the exam were developed directly from the exam objectives. The exam objectives are used to test the knowledge, skills and abilities related to each section of the exam.

For optimal performance, Citrix recommends that candidates take or self-study the CTX-2401BI Citrix XenServer Enterprise Edition 4.1: Administration course.

---

### 5.2 Resources Used to Develop the Exam

The CTX-2401BI Citrix XenServer Enterprise Edition 4.1: Administration course was used to develop this exam.

This course is available at Citrix Authorized Learning Centers (CALCs) worldwide. To find the CALC nearest you, please visit <http://www.citrixtraining.com/courses/courses/index.cfm>.

For all sections, at least six (6) months hands-on experience administering a Citrix XenServer Enterprise Edition 4.1 implementation is recommended.

---

### 5.3 Exam Objectives

For each exam section, the chart below lists the corresponding objectives.

Section	Objectives	
Understanding Virtualization	<ul style="list-style-type: none"><li>• Given a description of a component, identify the component.</li><li>• Given a list of options, distinguish Xen virtualization from emulation and/or from paravirtualization.</li><li>• Given types of virtualization solutions, identify which solutions have the ability to live migrate virtual machines and/or run a mix of virtual operating systems</li></ul>	<ul style="list-style-type: none"><li>• CTX-2401BI</li><li>• Hands-on Experience</li></ul>

<p>Pre-Deployment Planning</p>	<ul style="list-style-type: none"> <li>• Given a list of options, identify how MAC addresses are assigned to virtual machine (VM) virtual network interfaces.</li> <li>• Given a list of options, identify the maximum virtual network cards, physical network interfaces, or physical CPU cores supported by a XenServer.</li> <li>• Identify for what purpose an internal-only and/or an external virtual network is used.</li> <li>• Given a description of properties or names, identify the properties of XenServer device drivers or the logical Linux network device.</li> <li>• Determine appropriate or inappropriate mechanisms for the configuration of the physical network configuration on a XenServer.</li> <li>• Identify which storage controllers are appropriate for XenServer Enterprise Edition 4.1, according to best practice.</li> <li>• Based on a particular guest operating system, determine the appropriate number of virtual CPUs to assign to a single virtual machine.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>
--------------------------------	---	---

<p>Installing XenServer Enterprise Edition 4.1</p>	<ul style="list-style-type: none"> <li>• Given a list of options, identify system requirements.</li> <li>• Given a plan to install XenServer Enterprise Edition 4.1, select the correct or incorrect step(s) to install it.</li> <li>• Identify storage requirements from a list of options.</li> <li>• Given a list of options, determine how to install XenCenter.</li> <li>• Given a list of options, select what is needed to create an ISO library.</li> <li>• Given a scenario, determine appropriate steps to upgrade to XenServer Enterprise Edition 4.1.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>
<p>Creating Virtual Machines</p>	<ul style="list-style-type: none"> <li>• Given a list of options, determine what can be installed from an ISO image or CD-ROM.</li> <li>• Given a list of options, determine the appropriate methods for creating a VM on the Xen management tools.</li> <li>• Identify what is supported by XenServer Enterprise Edition 4.1 including hardware needs.</li> <li>• Identify the types of Linux distributions that are supported in XenServer Enterprise Edition 4.1 OR the step(s) to create a Linux VM.</li> <li>• Identify the functions of the XenSource tools.</li> <li>• Identify the features of a basic or a full template.</li> <li>• Given a list of options, identify the items that are automatically assigned to a newly built VM.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>

Working with Virtual Machines	<ul style="list-style-type: none"> <li>• Given a list of options, identify which lifecycle operations to use, or the properties of the operation.</li> <li>• Identify properties of network architecture or components.</li> <li>• Given a network management component, identify the correct use.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>
Determining Storage	<ul style="list-style-type: none"> <li>• Given a list of options, identify storage components.</li> <li>• Identify the correct step(s) to create a new repository.</li> <li>• Given a list of options, identify which storage operations can be performed on a virtual disk drive on a VM.</li> <li>• Based on the requirement for storage, determine installation partition sizes and distribution, OR how to perform storage functions.</li> <li>• Given a type of storage, identify the correct option for remote storage set-up.</li> <li>• Given a scenario, determine how to use maintenance mode to update servers.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>
Working with Pools	<ul style="list-style-type: none"> <li>• Given a list of options, identify pool architecture.</li> <li>• Based on the need for a pool, determine how to create the pool.</li> <li>• Given a list of options, identify pool recovery methods.</li> <li>• Given a list of options, identify ways to capture diagnostic information using XenServer.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>

<p>Supporting a XenServer Enterprise Edition 4.1 Implementation</p>	<ul style="list-style-type: none"> <li>• Given a list of options, identify the command or file to support the XenServer Enterprise Edition 4.1 implementation.</li> <li>• Given a list of options, identify the location of a necessary component to support the XenServer Enterprise Edition 4.1 implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>
<p>Using the XenServer Command Line Interface</p>	<ul style="list-style-type: none"> <li>• Given a list of options, identify valid CLI commands.</li> <li>• Given a list of options, identify the purpose or functionality of XenServer CLI.</li> </ul>	<ul style="list-style-type: none"> <li>• CTX-2401BI</li> <li>• Hands-on Experience</li> </ul>

## 6 Appendix: Practice

---

- Question 1** What is a characteristic of paravirtualization?
- A. The complete hardware is simulated.
  - B. The physical server is virtualized at the operating system level.
  - C. The desktop or server applications run locally using local resources.
  - D. The guest operating systems are aware they are running in a virtualized environment.

Correct Answer: D

---

- Question 2** An internal-only virtual network can be used to connect to \_\_\_\_\_. (Choose the correct phrase to complete the sentence.)
- A. A physical NIC
  - B. A physical network
  - C. A physical network
  - D. Other Virtual Machines on the same server

Correct Answer: D

---

- Question 3** An administrator implementing XenServer Enterprise Edition 4.1 in a small environment would like to provide local storage redundancy.

Which local storage mechanism should the administrator implement?

- A. RAID 1
- B. RAID 2
- C. RAID 3
- D. RAID 4

Correct Answer: A

---

- Question 4** XenCenter Client can be installed on a \_\_\_\_\_. (Choose the correct phrase to complete the sentence.)

- A. Linux OS only
- B. Windows OS only
- C. Linux and Windows OS

D. Windows, Linux and Mac OS

Correct Answer: B

---

**Question 5** Which protocol does the XenServer Linux guest installer **NOT** support?

- A. FTP
- B. NFS
- C. CIFS
- D. HTTP

Correct Answer: C

---

**Question 6** Without updating XenServer Tools from 3.X to 4.1, Windows virtual machines (VM) have the ability to \_\_\_\_\_. (Choose the correct option to complete the sentence.)

- A. Resume
- B. Suspend
- C. Shut down
- D. Live Relocate

Correct Answer: C

---

**Question 7** When submitting a problem report to Technical Support, which command should be used to capture diagnostic information from a XenServer Enterprise Edition 4.1?

- A. xm log
- B. xm info
- C. xen-bugtool
- D. cat /proc/xen

Correct Answer: C

---

**Question 8** **Scenario:** An administrator is planning on using pools to consolidate management of server resources for Server1, Server2 and Server3. The administrator wants Server1 to handle distributed locking for shared storage and Server2 and Server3 to keep backups of all configuration data.

How should the administrator accomplish this?

- A. Create a pool for each server
- B. Add Server1 to the pool first
- C. Add all the servers to a pool and promote them all to master
- D. Add all the servers to a pool and keep them all as member servers

Correct Answer: B

---