1Y0-403 Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration

Exam Preparation Guide 3.0

March 24, 2022

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Disclaimer

This exam preparation guide is designed to provide candidates with necessary information about the **1Y0-403** exam, including study resources and ways to interpret the exam objectives to better enable candidates to assess the types of questions that may be asked during the exam. Please be aware that the content of this guide in no way ensures a passing score on the certification exam.

Table of Contents

Exam Overview | Preparation | Marks

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Exam Overview

Number of Items

The **1Y0-403** exam is a **61**-question exam written in English.

Disclaimer: Some of the items on this exam will not be scored and thus will not affect your final result in any way. The unscored items are included in this exam solely for research purposes.

Passing Score

The passing score for this exam is **51%**.

Time Limit

Type of Candidate	Time Limits*	Notes
Native English speakers	120 minutes	
Non-native English speakers that take the exam in countries where English is a foreign language	120 minutes +30 minutes (time extension)	Time extension granted automatically
Non-native English speakers that take the exam in countries where English is NOT a foreign language	120 minutes +30 minutes (time extension)	Must request time extension from Citrix. Submit your request here: Time Extension Request

The total time limit for this exam is 120 minutes. The total seat time is 120 + 25 minutes.
The total seat time includes times allotted for the NDA and surveys.

Intended Audience

The **1Y0-403 exam** was developed for candidates who have successfully performed tasks related to the requisite knowledge and skills required for assessing, designing, and completing advanced configurations for a practical Citrix Virtual Apps and Desktops environment. The tasks tested in this exam will represent those tasks that are deemed integral to the domains that cover assessment and design principles for creating a practical Citrix Virtual Apps and Desktops environment.

The intended audience for the Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration exam is determined to be Architects/Consultants who:

• Possess senior-level expertise with Citrix Virtual Apps and Desktops and supporting technologies
• Analyze and make recommendations for existing environments
• Design and implement Citrix Virtual Apps and Desktops environments

Registration and Administration

This exam is administered at Pearson VUE testing centers worldwide. To learn more about the rules and process of taking an exam, please visit https://training.citrix.com/learning/certification-policies.

Worldwide, visit the Pearson VUE website (http://home.pearsonvue.com/citrix) to locate a testing center in your area and register for an exam OR to take an exam from Home or Office (Online remote proctoring). You may also register in person at any Pearson VUE testing center. If you reside in the United States or Canada, you may also register by calling 1-800-931-4084.

Note: A $7 USD surcharge will be added to phone registrations.

Retake Policy

Exam Overview | Preparation | Marks

Candidates must wait 24 hours from their original appointment time before they can register to retake an exam. After a second attempt, and any attempt thereafter, the candidate must wait 14 calendar days to retake the exam.

Breach of this policy can result in sanctions up to and including a ban from taking Citrix exams and/or decertification.

For more information about our policies, including the Citrix Exam Retake Policy and the Candidate Conduct Policy, please visit https://training.citrix.com/learning/certification-policies.

Prepping for the Exam

Recommended Knowledge and Skills

Specifically, candidates should have the following knowledge and skills prior to taking this exam:

- Network systems -
    - Including security, implementation, and administration
- Citrix methodology and best practices for analysis and design
- Core design principles
- Installing Citrix technologies associated with app and desktop virtualization
- Configuring Citrix technologies associated with app and desktop virtualization
- Administering an app and desktop virtualization environment
- Maintaining an app and desktop virtualization environment
- Backing up components of an app and desktop virtualization environment
- Updating an app and desktop virtualization environment
- Monitoring an app and desktop virtualization environment
- Creating reports for trend analysis in environments that include a Citrix app and desktop virtualization solution
- Troubleshooting environments that include a Citrix app and desktop virtualization solution
- Cloud concepts such as private, public, and hybrid clouds
- Storage concepts

Recommended Product Experience

We recommend that candidates have at least six months of experience with the following Citrix technologies:

- Citrix Virtualization technologies such as:
- Citrix Virtual Apps 7 (Build 1912 LTSR)
- Citrix Virtual Desktops 7 (Build 1912 LTSR)
- Citrix Cloud, including
- Citrix Virtual Apps and Desktops Service
- Citrix Gateway Service
- Citrix Hypervisor 8.0
- Citrix App Layering
- Citrix Workspace Environment Management
- Citrix Provisioning 7 (Build 1912 LTSR)
- Citrix ADC 13 Citrix Profile Management
- Citrix Workspace App

Third-party technologies such as:

- Microsoft Active Directory Services
- Microsoft Windows Server 2019
- Troubleshooting tools
- Microsoft SQL Server 2017
- Microsoft Active Directory Domain Services (ADDS)
- Microsoft Active Directory Certificate Authority (ADCA)
- Microsoft Internet Information Services (IIS)
- Microsoft Distributed File System (DFS)
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)

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Prepping for the Exam

Recommended Training

Citrix Education recommends that candidates have hands-on experience with Citrix Virtual Apps and Desktops 7 prior to taking this exam. One of the best ways to do this is by taking a formal Citrix training course. The following course provides training on the design principles for creating a Citrix Virtual Apps and Desktops virtualization solution.

- [CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration](#)

As with all Citrix exams, it is recommended that candidates get hands-on experience by working directly with products covered on the exam.

Unauthorized Preparation Materials

Citrix Education monitors exam results to ensure that candidates are not using unauthorized materials to prepare for exams. If it is determined that a candidate used unauthorized materials to prepare for an exam, the candidate's score will be invalidated and his or her certification will be revoked.

When looking for materials in addition to authorized Citrix training to prepare for certification, Citrix Education recommends that you visit http://www.certguard.com to ensure that a site is indeed legitimate. This site flags website that is acting as brain dumps, which have unauthorized materials.

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Section Titles and Weights

Section	Weight
Section 1: Methodology and Assessment	7.5%
Section 2: User Layer	7.5%
Section 3: Access Layer	11%
Section 4: Resource Layer – Images	11%
Section 5: Resource Layer - Applications and Personalization	9%
Section 6: Control Layer	9%
Section 7: Hardware/Compute Layer	19%
Section 8: High Availability and Multiple Location Environments	20%
Section 9: Disaster Recovery	6%
TOTAL	**100%**

The section weights included in this guide are intended to help you in understanding how much of the exam is devoted to the topics listed. In fact, the percentages directly map to the number of questions on the exam. For example, if an exam has 60 questions, and Section 1 is weighted at 50%, then 30 of the questions on the exam will relate to Section 1 (60*50% = 30).

Please be warned that section weights are NOT used to calculate your score. Scoring is far more complicated as exam questions may be given different weights based on their overall importance. 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.

For more information on how scoring works in Citrix exams read the blog The Scoring Secrets for Citrix Exams - Divulged.

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Interpretation of Objectives

Candidates should refer to the objectives and examples listed in this guide in order to determine which topics will be on the exam, as well as examples of the topics that could be tested.

For example, if the objective reads, "Assess the printing infrastructure" and one of the examples reads, "Perform printer driver stress testing" candidates could expect to see:

A scenario describing a printing infrastructure:
• **Scenario:** A Citrix Architect is assessing the current printing infrastructure at CGE. As part of the assessment, the architect wants to perform printer driver stress testing.

A question that requires determining how to assess the printer drivers:
• How can the architect assess which printer drivers are in use in the current environment?

Note:

The examples listed in the "Sections, Objectives, Examples and References" section of this guide do NOT encompass all potential topics that could be tested. The examples are only provided as guidance.

The objectives and examples for this exam were developed by Exam Project Managers and Subject Matter Experts (SMEs) based on identified tasks that relate to assessment, design, and advanced configuration of Citrix Virtual Apps and Desktops 7.

The number of questions written for each objective relates directly to the importance of that objective and is proportional to how frequently that task is performed.

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Sections, Objectives and References

- Citrix Product Documentation: https://docs.citrix.com
- Citrix Support: https://www.citrix.com/support
- Citrix Blogs: https://www.citrix.com/blogs/

Objective Number	Objective	Topics	References
Section 1: Methodology and Assessment			
1.01	Determine the design decisions that should be made based on given business drivers.	Identify Business Drivers Prioritize Business Drivers	Module 1 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://www.citrix.com/blogs/2011/06/21/desktop-transformation-assessment-defining-business-priorities https://docs.citrix.com/en-us/tech-zone/design/design-decisions/delivery-model-comparison.html#design-considerations
1.02	Determine how to complete the user segmentation process for a given environment.	Importance of User Segmentation User Segmentation Process -Assess How Much Data Has Already Been Collected -Design a Data Collection Strategy -Perform Data Collection and Analysis Activities	Module 1 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/vdi-model-comparison.html https://www.citrix.com/blogs/2011/06/28/desktop-transformation-assessment-user-segmentation
1.03	Determine how to categorize applications based on a scenario.	Categories of Applications Application Assessment Analysis Options	Module 1 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/vdi-model-comparison.html
1.04	Assess a given environment to determine the capabilities of that environment.	Client Devices and Mobility Requirements Network Architecture Current Virtualization and Storage Solution Risks Windows Server and Active Directory Environment Disaster Recovery Plan and Implementation	Module 1 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://www.citrix.com/blogs/2011/06/30/desktop-transformation-capabilities-assessment

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Objective Number	Objective	Topics	References
Section 2: User Layer			
2.01	Determine the appropriate endpoint type and peripherals required for a given environment.	Endpoint selection Endpoint ownership Endpoint lifecycle Endpoint management Endpoint to User Mapping Which Peripherals can be Included? Peripheral Impact on Workflows Peripheral Scalability Considerations Peripheral Security Considerations	Module 2 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://www.citrix.com/blogs/2020/01/15/four-signs-you-need-a-thin-client-refresh-strategy/ https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/devices.html https://support.citrix.com/article/CTX214040
2.02	Determine how to appropriately deploy Citrix Workspace app based on a list of requirements.	Citrix Workspace app Version Considerations Challenges with Multiple Versions of Citrix Workspace app in an Environment	Module 2 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-workspace-app-for-windows/citrix-workspace-app-for-windows.pdf
2.03	Determine the network connectivity and graphics requirements for a design.	Network Connectivity and the User Experience Throughput and Latency Considerations Estimating User Bandwidth Requirements Graphics Protocols Transport Protocols Media Content Redirection Session Interruption Management	Module 2 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/graphics/hdx-3d-pro/gpu-acceleration-desktop.html

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Objective Number	Objective	Topics	References
		Section 3: Access Layer	
3.01	Determine the appropriate settings and configurations to make when designing an access deployment strategy for Citrix Gateway and StoreFront/Workspace.	Identify the Access Layer On-Premises or Customer Hosted Citrix Gateway and StoreFront Double-Hop Access Architecture Citrix Workspace vs. Customer Hosted StoreFront Citrix Cloud Considerations for Citrix Gateway Service Citrix Cloud Access Layer Design Considerations	Module 3 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/reference-architectures/virtual-apps-and-desktops-service.html https://docs.citrix.com/en-us/citrix-gateway-service/technical-security-overview.html https://docs.citrix.com/en-us/tech-zone/learn/downloads/citrix-virtual-apps-and-desktops-poster.png https://support.citrix.com/article/CTX201290 https://support.citrix.com/article/CTX218743 https://docs.citrix.com/en-us/storefront/1912-ltsr/configure-manage-stores/create-store-unauthenticated.html https://docs.citrix.com/en-us/citrix-adc/13/clustering/cluster-overview.html https://www.citrix.com/content/dam/citrix/en_us/documents/data-sheet/citrix-adc-data-sheet.pdf https://docs.citrix.com/en-us/citrix-virtual-apps-desktops-service/manage-deployment/storefront.html https://docs.citrix.com/en-us/storefront/1912-ltsr/troubleshoot.html

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Objective Number	Objective	Topics	References
3.02	Determine the architectural needs of an environment when designing StoreFront stores.	Use Cases for Multiple Stores Design Store Access Paths -Define Access Paths Per User Group -Determine Number of URLs Required -Determine Configurations and Prerequisites	Module 3 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/storefront/1912-ltsr/advanced-configurations/configure-resource-filtering.html https://www.citrix.com/blogs/2014/03/27/hiding-applications-in-citrix-storefront https://docs.citrix.com/en-us/storefront/1912-ltsr/configure-manage-stores/configure-two-stores-share-datastore.html https://docs.citrix.com/en-us/storefront/1912-ltsr/plan/user-access-options.html https://docs.citrix.com/en-us/storefront/1912-ltsr/configure-manage-stores.html https://docs.citrix.com/en-us/storefront/1912-ltsr/set-up-highly-available-multi-site-stores.html
3.03	Determine access layer scalability for Citrix Gateway and StoreFront in a given environment.	Citrix Gateway -Scalability -High Availability Options StoreFront Server Scalability - Single Server and Server Group StoreFront Component High Availability (Load Balancing StoreFront)	Module 3 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/storefront/1912-ltsr/plan.html#scalability https://www.citrix.com/blogs/2015/06/30/storefront-scalability-update https://docs.citrix.com/en-us/citrix-hardware-platforms/sdx/convert-mpx-to-sdx/convert-mpx24100-sdx24100.html https://docs.citrix.com/en-us/storefront/1912-ltsr/plan.html
Section 4: Resource Layer – Images		
4.01	Determine how to appropriately scale the infrastructure for Virtual Delivery Agent Machines in a given environment.	Virtual Delivery Agent Machine Scalability - On-Premises and in the Cloud Virtual Delivery Agent Machine Sizing with NUMA Server OS VDA Machines Desktop OS VDA Machines Scalability Testing and Monitoring - On-Premises and in the Cloud	Module 4 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/single-server-scalability.html https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html

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Objective Number	Objective	Topics	References
4.02	Determine how to secure the Virtual Delivery Agent Machines based on a scenario.	Securing VDA Machines -Network Traffic -Preventing Breakouts -Implementing Hardening -Antivirus Leading Practices	Module 4 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/workspace-environment-management/current-release.html
4.03	Determine how to design the appropriate image provisioning strategy for a given environment.	Image Management Methods Citrix Provisioning -Target Device Boot Method -Read Cache Method and Sizing -Write Cache Type -vDisk Store Location -Network Design -Scalability Machine Creation Services -Cloning Type -Storage Location -Read and Write Cache Design -Storage Sizing App Layering as an Image Management Solution App Layering - Key Design and Scalability Considerations Compare Image Management Methods	Module 4 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/image-management.html https://docs.citrix.com/en-us/tech-zone/design/reference-architectures/image-management.html https://www.citrix.com/products/citrix-virtual-apps-and-desktops/feature-matrix.html https://support.citrix.com/article/CTX218082 https://docs.citrix.com/en-us/provisioning/1912-ltsr/configure/configure-targets/boot-devices-utility.html https://docs.citrix.com/en-us/provisioning/1912-ltsr/configure/configure-UEFI.html https://docs.citrix.com/en-us/provisioning/1912-ltsr/manage/managing-vdisks/write-cache.html https://www.citrix.com/blogs/2016/06/28/provisioning-services-or-machine-creation-services-2016-edition/ https://docs.citrix.com/en-us/citrix-app-layering/4/layer.html

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Objective Number	Objective	Topics	References
Section 5: Resource Layer - Applications and Personalization			
5.01	Determine the appropriate delivery options for Application deployment based on the analysis of the given environment.	Installed Apps Streamed Apps - App-V Layered Apps Layered Apps with Elastic Layering Layered Apps with User Layers Published Apps Local Apps SaaS / Web-based Determining the Optimal Deployment Method for an App General Application Concerns	Module 5 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/application-delivery-methods.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/install-configure/appv.html https://docs.citrix.com/en-us/citrix-gateway-service/support-saas-apps.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/technical-overview/delivery-methods.html#vm-hosted-apps
5.02	Determine the appropriate profile strategy to use in a given environment.	User Setting Persistence Required User Setting Persistence Not Required or Not Desired Folder Redirection Citrix Profile Management Design Considerations Citrix Profile Management Scaling	Module 5 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/profile-management/current-release/how-it-works.html https://docs.citrix.com/en-us/profile-management/current-release/configure/active-write-back.html https://docs.citrix.com/en-us/profile-management/current-release/policies/descriptions-and-defaults.html https://docs.citrix.com/en-us/profile-management/current-release/configure/stream-profiles.htm https://docs.citrix.com/en-us/profile-management/current-release/how-it-works/about-profiles.html
5.03	Determine the appropriate policies to implement in a given environment.	Deployment Method Policy Integration with Active Directory Policy Permissions and Functionality Considerations Creating a Baseline Policy Optimize Logon Performance for Policies	Module 5 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/policies.html

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Objective Number	Objective	Topics	References
Section 6: Control Layer			
6.01	Determine the appropriate delivery method to recommend when designing a Site for a given environment.	Citrix Virtual Apps and Desktops Site Design Pod Architecture Citrix Virtual Apps and Desktops Service Design Citrix Cloud and Hybrid Environment	Module 6 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/learn/poc-guides/cvads.html https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html
6.02	Determine the appropriate management and administration design based on given requirements.	Citrix Director - Design Considerations Management Console Location Change Control	Module 6 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/director/data-retention.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/director/site-analytics/alerts-notifications.html
6.03	Determine the appropriate site design and baseline specifications to ensure performance and stability in the given environment.	Site Database Scalability Site Database High Availability Delivery Controller Scalability Delivery Controller Component High Availability Citrix License Server Scalability Citrix License Server High Availability Citrix Cloud Scalability and High Availability (Citrix Connector Sizing)	Module 6 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/technical-overview.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/technical-overview/databases.html#high-availability https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/manage-deployment/delivery-controllers.html https://docs.citrix.com/en-us/licensing/current-release/license-server/licensing-technical-overview.html#scalability
6.04	Determine the Control Layer security requirements and features necessary to secure a given environment.	Secure Site Internal Communications: XML, SQL, Licensing Compliance Reporting Options in Citrix Virtual Apps and Desktops Session Recording	Module 6 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/secure/tls.html https://support.citrix.com/article/CTX130213 https://support.citrix.com/article/CTX127945

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Objective Number	Objective	Topics	References
Section 7: Hardware/Compute Layer			
7.01	Determine the appropriate hardware or hypervisor to implement based on a given design.	Hypervisor Host Hardware Considerations Advanced Graphics Hardware Options Key Considerations between the Traditional Big 3 Hypervisors Hyper-Converged Infrastructure Considerations	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://support.citrix.com/article/CTX131385 https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/graphics/hdx-3d-pro.html https://docs.citrix.com/en-us/xenserver/7-1/install/intellicache.html
7.02	Determine the appropriate resource pool strategy for a given environment.	Separating Workloads on Resource Pools Separating Workloads Between Hypervisor Vendors Virtual Machine Motion Considerations When Deploying Different VDA Machine Types High Availability Considerations High Availability in a Public Cloud	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html https://docs.citrix.com/en-us/tech-zone/design/reference-architectures/virtual-apps-and-desktops-azure.html https://docs.microsoft.com/en-us/azure/virtual-machines/windows/manage-availability#configure-multiple-virtual-machines-in-an-availability-set-for-redundancy https://docs.citrix.com/en-us/citrix-hypervisor/hosts-pools.html https://docs.citrix.com/en-us/citrix-hypervisor/hosts-pools/clustered-pools.html https://docs.citrix.com/en-us/citrix-hypervisor/high-availability.html
7.03	Determine the appropriate hardware sizing based on a scenario.	Determining Virtual Machines per Host Determining Hosts per Pool Hypervisor Scalability Citrix Hypervisor Scalability (Sizing with Advanced Graphics Options) Sizing in Azure and Amazon Web Services	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://support.citrix.com/article/CTX117960 https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html

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Objective Number	Objective	Topics	References
7.04	Determine the appropriate storage allocations to ensure optimization in a given environment.	Storage Tier Considerations I/O Characteristics Based on Workload I/O Load Considerations Storage Architecture RAID & Disk Type Storage Sizing - LUNs and storage Bandwidth Public Cloud Storage	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html
7.05	Determine the appropriate Datacenter configurations for network traffic in a given environment.	Teaming, Bonding and LACP Physical vs. Software Defined Network Separation Ports and Firewalls Network High Availability Networking in Public Clouds	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration http://support.citrix.com/article/CTX137599 https://docs.citrix.com/en-us/tech-zone/build/tech-papers/citrix-communication-ports.html
7.06	Determine how to meet the security objectives and best practices for a given environment.	Securing Hypervisor Administrative Access Securing the Physical Network and Hosts Securing Resource Pools/Clusters Protecting Virtualized Storage Isolating the Management Network and Separating Other Networks	Module 7 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://www.citrix.com/content/dam/citrix/en_us/documents/white-paper/security-recommendations-when-deploying-citrix-xenserver.pdf

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Objective Number	Objective	Topics	References
Section 8: High Availability and Multiple Location Environments		
8.01	Determine Multi-location architecture requirements and business considerations in a given environment.	Redundancy vs. Fault Tolerance vs. High Availability Multi-Location Architecture Options in Citrix Virtual Apps and Desktops (Global Site Structure) Multi-Location Architecture Options in Citrix Virtual Apps and Desktops (Regional Site Structure) Multi-Location Architecture Options in Citrix Virtual Apps and Desktops (Functional/Organizational Site Structure) Multi-Site Architecture Considerations (Business Requirements) Multi-Location Architecture (Zones and Geographical Connectivity)	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/storefront/1912-ltsr/set-up-highly-available-multi-site-stores.html https://docs.citrix.com/en-us/tech-zone/design/design-decisions/storefront-multisite-aggregation.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/manage-deployment/zones.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops-service/install-configure/resource-location.html
8.02	Determine the appropriate access configurations to recommend when designing a multi-site environment.	Global Server Load Balancing Optimal Gateway Routing Zone Preference and Failover StoreFront Resource Aggregation StoreFront Subscription Sync	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/storefront/1912-ltsr/set-up-highly-available-multi-site-stores.html https://docs.citrix.com/en-us/tech-zone/toc/by-product/citrix-virtual-apps-and-desktops/design-guidance.html https://docs.citrix.com/en-us/citrix-adc/current-release/global-server-load-balancing/deployment-types/active-active-site-deployment.html https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy

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Objective Number	Objective	Topics	References
8.03	Determine the appropriate Image Management requirements in a given environment.	Citrix Provisioning Architecture Across Sites Citrix Provisioning Networking Across Sites Citrix Provisioning vDisks and Storage Machine Creation Services Architecture Across Sites App Layering Multi-Site	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/provisioning/1912-ltsr/advanced-concepts/managing-high-availability/ha-shared-store-config.html https://www.citrix.com/blogs/2017/04/12/vdisk-replicator-tool/ https://www.citrix.com/blogs/2018/06/08/vdisk-replicator-utility/ https://docs.citrix.com/en-us/citrix-app-layering/4/layer/export-import-layers.html https://support.citrix.com/article/CTX220651 https://docs.citrix.com/en-us/provisioning/1912-ltsr/manage/managing-servers.html#balancing-the-target-device-load-on-provisioning-servers
8.04	Determine the requirements for profiles and data in a multi-location environment.	Managing Roaming Profiles and Citrix Workspace App Configurations Across Devices Profile Management Multi-Site Replication Considerations Folder Redirections and Other User Data in a Multi-Location Environment Application Data Considerations Cloud-Based Storage Replication Options for Microsoft Azure and Amazon Web Services	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/profile-management/current-release/plan/high-availability-disaster-recovery-scenario-2.html https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/manage-deployment/zones.html https://docs.citrix.com/en-us/profile-management/current-release/plan/multiple-file-servers.html https://docs.citrix.com/en-us/profile-management/current-release/policies/descriptions-and-defaults.html
8.05	Determine the appropriate strategy to support printing in a multi-location solution.	Multi-Location Printing Considerations Printing From the Cloud	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/printing/printing-best-practices.html

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Objective Number	Objective	Topics	References
8.06	Determine how to design a site and FMA zones to ensure users have continuous access to resources in a multi-location solution.	Zone Considerations Zone Scalability - Brokering 10K Users with Latency to the Site Database Active Directory - Multiple Domains/Forests Public Cloud Considerations - Azure Active Directory	Module 8 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/citrix-virtual-apps-desktops/1912-ltsr/manage-deployment/zones.html
Section 9: Disaster Recovery		
9.01	Determine the appropriate Disaster Recovery Strategy for a given environment.	Determining Level Required Full Disaster Recovery Capacity Access During a DR Event Data and Apps Citrix Cloud-Based Disaster Recovery Public Cloud Disaster Recovery Options	Module 9 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/design-decisions/cvad-disaster-recovery.html https://docs.citrix.com/en-us/profile-management/current-release/plan/high-availability-disaster-recovery-scenario-2.html
9.02	Determine how to recover a primary datacenter in the disaster recovery datacenter given a scenario.	Business Continuity Planning Failing Over to a Disaster Recovery Environment Disaster Recovery User Onboarding Strategy Returning to Normal Operations Business Continuity Testing Citrix Standard of Business Continuity -Team Structure -Business Continuity Planning -Disaster Recovery and Business Continuity Testing -Crisis Communications -Employee Safety	Module 9 of CWS-415: Citrix Virtual Apps and Desktops 7 Assessment, Design and Advanced Configuration https://docs.citrix.com/en-us/tech-zone/design/reference-architectures/daas-for-business-continuity.html https://docs.citrix.com/en-us/tech-zone/design/reference-architectures/virtual-apps-and-desktops-service.html

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