Exam Overview

Preparation

Contributors & Marks

CÏTRIX®

1Y0-440 Architecting a Citrix Networking Solution

Exam Preparation Guide 3.0

December 13, 2021

Disclaimer

This exam preparation guide is designed to provide candidates with necessary information about the 1Y0-440 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.

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Exam Overview

Number of Items

The 1Y0-440 exam is a 64-question exam written in English. 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 65%.

Time Limit

Type of Candidate	Time Limits*	Notes
Native English speakers	150 minutes	
Non-native English speakers that take the exam in countries where English is a foreign language	150 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	150 minutes +30 minutes (time extension)	Must request time extension from Citrix. Submit your request here: Time Extension Request

The time limit for this exam is 150 minutes. The total seat time is 150 + 25 minutes.
The total seat time includes times allotted for the NDA and surveys.

Intended Audience

The 1Y0-440 exam is focused on those topics that are most important for IT Professionals with extensive networking and Citrix ADC experience. This exam certifies that exam takers have the requisite knowledge and skills required for defining the overall structure or architecture of a Citrix networking environment. This exam covers advanced Citrix networking configurations and leading Citrix design principles.

Those who assess and design complex network architecture of a Citrix network environment may hold various job titles such as:

- Citrix Architects
- Citrix Consultants

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://www.citrix.com/training-and-certifications.html

Worldwide, visit the Pearson VUE website (http://www.pearsonvue.com/citrix) to locate a testing center in your area and register for an exam. 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

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://www.citrix.com/training-and-certifications.html
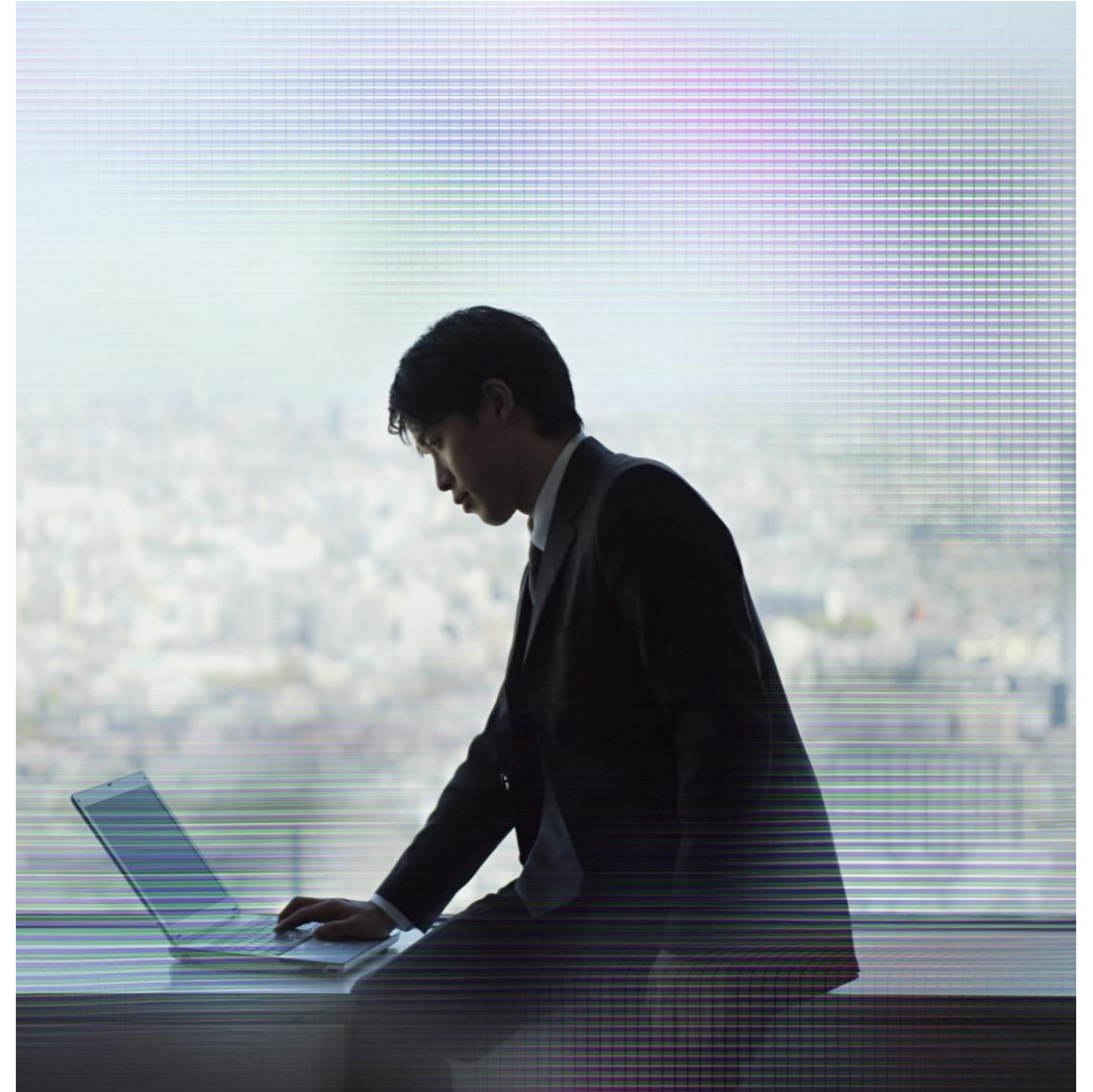
Preparing for the Exam

Recommended Knowledge and Skills

Candidates should have knowledge of the following prior to taking this exam:

- Identify and prioritize business drivers, constraints, and requirements using the Citrix Consulting methodology.
- Assess environment requirements and learn to apply leading design principles to address them in a multi-site Citrix ADC deployment.
- Apply advanced authentication and load balancing principles.
- Utilize Citrix ADC Application Delivery Management for monitoring Automation and Orchestration.
- Identify steps to take in advanced troubleshooting scenarios.
- Ability to evaluate environment documentation and assess necessary adjustments to meet required environment specifications.
- Assess the environment's current security configuration and make necessary adjustments to bring in line with leading security practices.
- Configure different methods of client connection including Citrix Gateway, VPN, Split Tunneling and other proxy configuration options.

Recommended Product Experience

Citrix Networking technologies and concepts such as:
- Citrix Methodology and Assessment
- Citrix ADC Deployment
- Citrix Application Delivery Management v12.x
- Citrix Gateway
- Citrix ADC Security
- Traffic Management
- AppExpert
- Application Firewall
- TCP/HTTP/SSL
- Authentication, Authorization and Accounting (AAA)
- GSLB (Global Server Load Balancing)
- Application Delivery Management Automation and Orchestration
- Nitro API

Recommended Training

Citrix Education recommends that candidates have hands-on experience with 'Architecting a Citrix Networking Solution' 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 assessment, design and advanced configuration of a Advanced Citrix Networking environment.

CNS-420: Architecting a Citrix Networking Solution (instructor-led training course or self-study)

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 websites that are acting as brain dumps, which have unauthorized materials.

Section Titles and Weights

Section	Weight
Networking Methodology and Assessment	11%
Citrix ADC Deployment Architecture and Topology	14%
Advanced Authentication and Authorization	21%
Citrix ADC Security	12%
VPN Configuration	12%
Advanced Traffic Management	11%
Citrix Application Delivery Management Automation and Orchestration	19%
TOTAL	**100%**
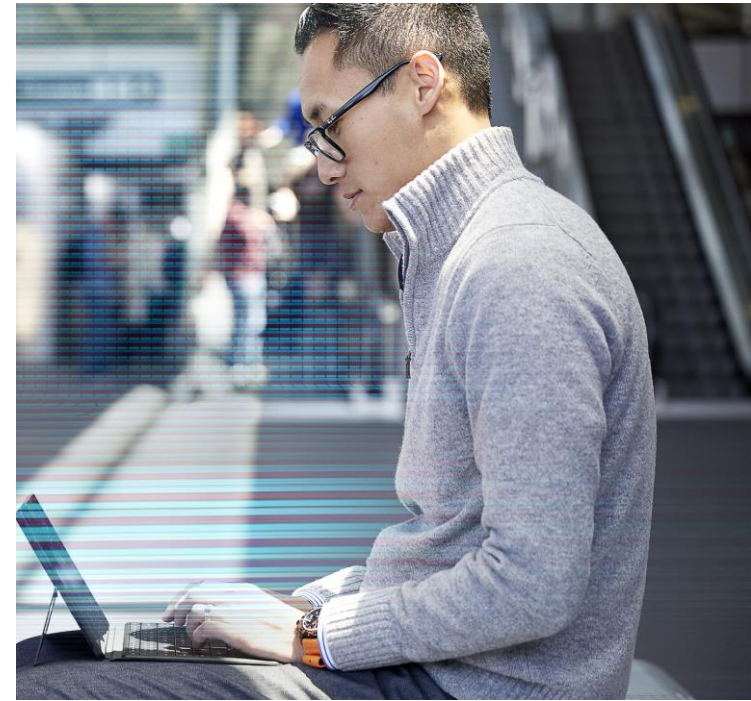
The section weights included in this guide are intended to help you in understanding how much of the exam is devoted to the topics listed. In fact, the percentages directly map to the number of questions on the exam. For example, if an exam has 60 questions, and Section 1 is weighted at 50%, then 30 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.

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 managing and supporting Citrix Networking solutions.

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.

Sections, Objectives, Examples and References

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

Objective Number	Objective	Examples	References
Section 1: Networking Methodology and Assessment			
1.1	Use the Citrix Methodology to plan projects.	Citrix Methodology	Module-1 of CNS-420 Architecting a Citrix Networking Solution
1.2	Identify/Prioritize Business Drivers and Requirements.	Process success criteria, Identify critical business driver.	Module-1 of CNS-420 Architecting a Citrix Networking Solution
1.3	Determine how to Segment users into defined use cases.	Discuss existing user filters.	https://www.citrix.com/blogs/2011/06/30/desktop-transformation-capabilities-assessment/ Module-1 of CNS-420 Architecting a Citrix Networking Solution
1.4	Determine key Application Assessment and Categorization.	Evaluate business critical and business optional resources.	Module-1 of CNS-420 Architecting a Citrix Networking Solution
1.5	Determine how to perform Capabilities Assessment.	Gain an understanding of current environment configurations and identify risk.	Module-1 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
Section 2: Citrix ADC Deployment Architecture and Topology			
2.1	Determine the appropriate Multi-Site Deployments design.	• Citrix Gateway double hop training scenario • Secure web gateway scenarios • How to use Citrix ADC across DMZ, PCI, and Internal • Multi-tiered architecture (Citrix ADC in DMZ pointing to NS to Internal) • Design across datacenters	https://support.citrix.com/article/CTX111081 Module-2 of CNS-420 Architecting a Citrix Networking Solution
2.2	Determine how to design Multi Tennant Infrastructure.	SDX Topology and Networking	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf Module-2 of CNS-420 Architecting a Citrix Networking Solution
2.3	Determine how to analyze Citrix Cloud design.	Citrix ADC on Azure, AWS, Citrix cloud.	https://www.citrix.com/blogs/2017/05/09/netscaler-gslb-microsoft-azure-what-a-combination/ https://docs.citrix.com/en-us/netscaler/12/deploying-vpx.html https://docs.citrix.com/en-us/xenapp-and-xendesktop/service/netscaler.html https://docs.microsoft.com/en-us/azure/virtual-machines/windows/multiple-nics https://docs.citrix.com/en-us/citrix-cloud/ Module-2 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
Section 3: Advanced Authentication and Authorization			
3.1	Determine how to review Configuration components for AAA	Evaluate current AAA design and infrastructure.	https://developer-docs.citrix.com/projects/netscaler-command-reference/en/12.0/aaa/aaa-parameter/aaa-parameter/ https://support.citrix.com/article/CTX218050 Module-3 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
3.2	Determine how to evaluate the Authentication Process and options	• Determine clientless access through the Gateway to allow access to Published Applications or SAAS Applications. • Evaluate authentication and authorization policies.	https://support.citrix.com/article/CTX200323 https://support.citrix.com/article/CTX220024 https://support.citrix.com/article/CTX135875 https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf Module-3 of CNS-420 Architecting a Citrix Networking Solution
3.3	Determine Session Management with AAA	Determine how to evaluate the Authentication Process and options	https://www.citrix.com/blogs/2017/12/22/multi-domain-considerations-with-netscaler-gateway-and-storefront-part-2/ https://www.citrix.com/content/dam/citrix/en_us/citrix-developer/documents/Netscaler/how-do-i-ica-session-timeout-with-aaa.pdf https://support.citrix.com/article/CTX202900 https://support.citrix.com/article/CTX200589 https://support.citrix.com/article/CTX138055 https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf Module-3 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
3.4	Determine how to utilize and implement Multi-Factor (nFactor) Authentication	nFactor credential Evaluation nFactor Use Cases	https://support.citrix.com/article/CTX219545 https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf https://www.citrix.com/blogs/2016/05/31/its-here-the-federated-authentication-service-for-xenapp-xendesktop/ Module-3 of CNS-420 Architecting a Citrix Networking Solution
	Section-4 Citrix ADC Security		
4.1	Determine how to evaluate the Authorization configuration options	Command policies, Access policies	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf https://support.citrix.com/article/CTX215810 https://support.citrix.com/article/CTX138835 https://docs.citrix.com/en-us/netscaler/12/aaa-tm/authorization.html Module-4 of CNS-420 Architecting a Citrix Networking Solution
4.2	Determine the End Point Analysis Considerations	Pre-authentication, post-authentication, advanced end point analysis (opswat), quarantine groups.	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-gateway-12-0.pdf Module-4 of CNS-420 Architecting a Citrix Networking Solution

| 4.3 | Define the correct protection against specific Layer 4-7 attacks | Access Control List , HTTP DOS Protection, Rate Limiting ,HTTP Profile SYN Cookies, AppQoE, Application Firewall ,IP Reputation | https://support.citrix.com/article/CTX131681

https://docs.citrix.com/en-us/netscaler/12/application-firewall/configuring-application-firewall.html

https://docs.citrix.com/en-us/netscaler/12/appexpert/rate-limiting.html

Module-4 of CNS-420 Architecting a Citrix Networking Solution |

Objective Number	Objective	Examples	References
Section-5 VPN Configuration
5.1	Determine how to evaluate VPN Access Scenarios and Configuration.	VPN Networking: Split Tunnel, Intranet IPs, Intranet Applications, Authorization Policies, clientless, PCoIP Proxy, RDP Proxy	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-gateway-12-0.pdf Module-5 of CNS-420 Architecting a Citrix Networking Solution
5.2	Determine how to Configure split tunneling and Authorization.	Configure split tunneling and Authorization. Global override settings and policy configuration to separate the traffic as needed.	https://support.citrix.com/article/CTX207149 https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-gateway-12-0.pdf https://support.citrix.com/article/CTX205285 Module-5 of CNS-420 Architecting a Citrix Networking Solution
5.3	Determine RDP Proxy Configuration	Stateless Gateway solutions, Single Gateway solutions, Deployment through CVPN and deployment through ICA Proxy.	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-gateway-12-0.pdf Module-5 of CNS-420 Architecting a Citrix Networking Solution
5.4	Determine ICA Proxy Considerations	Publish application launch process, Application enumeration, Storefront considerations.	https://support.citrix.com/article/CTX139963 Module-5 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
		Section 6: Advanced Traffic Management	
6.1	Determine how to implement Advanced Load Balancing setup	• Load Balancing: Load Balancing Profile Creation. Exchange and OWA. • Link Load Balancing and Data Stream configuration. • MBF PBR forwarding Tables. • How to configure load balancing across DMZ, PCI, and Internal multi-tiered architecture. • Advanced LB – Traffic settings/Spill over/binding tcp/http/Netprofiles / Advanced Load Balancing Settings. • LB of Exchange and active sync servers / Data streams / Link Load balancing, Firewall Load balancing and different deployment methods.	https://support.citrix.com/article/CTX205406 https://support.citrix.com/article/CTX120664 https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf https://docs.citrix.com/ko-kr/netscaler/11/traffic-management/netscaler-cache-redirection-gen-wrapper-10-con.html Module-6 of CNS-420 Architecting a Citrix Networking Solution
6.2	Determine how to Implement Advanced Global Server Load Balancing setup	• GSLB: Storefront load balancing across Data Centers. • Multi Data Center Monitoring. • Citrix ADC MultiData Center Architecture. • GSLB for SF LB across DC's, Site persistence/ Proximity methods	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf Module-6 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
		Section-7: Citrix Application Delivery Management Automation and Orchestration	
7.1	Determine how to use Citrix Application Delivery Management for Citrix ADC Automation	Evaluate configuration jobs, certificate management, monitor device and application status, automated firmware update.	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-mas-12.0.pdf Module-7 of CNS-420 Architecting a Citrix Networking Solution
7.2	Determine how to assess the Orchestration ability	Integration of Citrix ADC products with open stack cloud orchestration.	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-mas-12.0.pdf Module-7 of CNS-420 Architecting a Citrix Networking Solution

Objective Number	Objective	Examples	References
7.3	Determine how to utilize NITRO	NITRO API	https://www.citrix.com/blogs/2014/02/04/using-curl-with-the-netscaler-nitro-rest-api/ https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-12-0.pdf https://support.citrix.com/article/CTX219929 Module-7 of CNS-420 Architecting a Citrix Networking Solution
7.4	Determine how to create Stylebooks	Stylebooks formats, Components, Use Stylebooks in a given scenario.	https://docs.citrix.com/en-us/legacy-archive/downloads/netscaler-mas-12.0.pdf Module-7 of CNS-420 Architecting a Citrix Networking Solution

Appendix: Practice

Introduction

Exam-takers should refer to the objectives listed in the "Sections, Objectives, Examples and References" section of this guide in order to determine which topics will be on the exam and examples of topics for each objective.

For example, if the **objective** reads, "*Identify the appropriate plug-in to use*," exam-takers should expect to see:

- **A "scenario describing the need to install a specific XenApp Plug-in"**
  Scenario: *XenDesktop was recently implemented in an environment. A Citrix Administrator in the environment needs to tell the end users which Citrix Receiver type to install in order to access their XenDesktop resources. The end users in the environment will need to access hosted applications through Receiver for Web.*

- **A question that requires you to "determine which Citrix Receiver type to install" based on the scenario**
  Which Citrix Receiver type should the administrator instruct the end users to install?

Which HTTP request method can a Citrix Architect utilize to send the API NITRO call to modify the attributes of an entity in the Citrix ADC configuration?

A. GET
B. POST
C. PUT
D. HEAD

Correct Answer: C

Objective: Determine how to utilize NITRO

Source: CNS-420 Module 7

Appendix: Practice

[Sample Question 2]

Scenario: A Citrix Architect needs to deploy a Citrix ADC for Workspacelab, which will provide application load balancing services to Partnerlab and Vendorlab.

The setup requirements are as follows:
- A pair of Citrix ADC MPX appliances will be deployed in the DMZ network.
- High Availability will be accessible on the Citrix ADC MPX in the DMZ Network.
- Load Balancing should be performed for the mail servers for Partnerlab and Vendorlab.
- Separate Management accounts must be available for each client.
- VLAN 120 must be used for data traffic of Vendorlab, and VLAN 150 must be used for the data traffic of Partnerlab.
- VLAN 160 must be used for the client-side traffic and must be shared between the partitions.

Which set of commands meets this requirement?

A. add vlan 160 sharing ENABLED
   bind partition Vendorlab vlan 160
   bind partition Partnerlab vlan 160
B. add vlan 160
   bind partition Vendorlab vlan 160
   set vlan 160 sharing ENABLED
   bind partition Partnerlab vlan 160 Hosted VDI
C. add vlan 160
   bind partition Vendorlab vlan 160
   set vlan 160 sharing ENABLED
   bind partition Partnerlab vlan 160
D. add vlan 160 sharing ENABLED
   switch partition Vendorlab
   bind partition Vendorlab vlan 160
   switch partition Partnerlab
   bind partition Partnerlab vlan 160

Sample Question 2 Cont.

Answer: A

Objective: Determine how to design Multi Tenant Infrastructure

Source: CNS-420 Module 2

Scenario: A Citrix Architect has implemented two high availability pairs of Citrix 5500 MPX and MPX 11500 respectively with 12.0.53.13 nc version. The Citrix ADC devices are set up to handle Citrix ADC Gateway, Load Balancing, Application Firewall, and Content Switching. The Workspacelab infrastructure is set up to be monitored with Citrix Application Delivery Management version 12.0.53.13 nc by the Workspacelab administrators. The Workspacelab team wants to implement one more pair of Citrix ADC MPX devices 7500 with version 12.0.53.13 nc. The Citrix consulting team has assigned the task to implement these Citrix ADC devices in the infrastructure and set them up to be monitored and managed by Citrix Application Delivery Management.

The following are the requirements that were discussed during the project initiation call:
- Citrix Application Delivery Management should be configured to get the infrastructure information under sections such as HDX Insight, WEB Insight, and Security Insight.
- Configuration on the new MPX devices should be identical to that of MPX 11500 devices.
- Configuration changes after the deployment and initial setup should be optimized using Citrix Application Delivery Management.
- Citrix Application Delivery Management should be utilized to configure templates that can be utilized by Workspacelab team in future deployments.
- As per the requirement from Workspacelab team, Citrix Application Delivery Management should store the audited data for only 15 days.

Which configuration setting should the consultant configure to ensure that the audited data is NOT stored for more than 15 days?

A. System Prune settings
B. Syslog Prune settings
C. mps afdecoder logs to prune data after 15 days
D. mps analytics logs to prune data after 15 days

Sample Question 3 Cont.

Correct Answer: A

Objective: Determine how to use Citrix Application Delivery Management for Citrix ADC Automation

Source: CNS-420 Module 7

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