Cisco Network Programmability Design and Implementation Specialist (NPDESI) Practice Test (Sample)

Study Guide

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Questions

1. Which Cisco solution can be used to convert a Nexus switch into a matrix switch?

A. LMS

B. PRIME

C. NDB

D. VTS

2. What does CALMS stand for?

A. Culture, Automation, Lean, Management, Sharing

B. Culture, Automation, Lean, Measurement, Sharing

C. Culture, Ansible, Lean, Management, Sharing

D. Collaboration, Automation, Lean, Measurement, Sharing

3. What is one of the main functions of APIC-EM Services?

A. Device configuration management

B. Enhanced network visibility

C. Capabilities, features, and functionalities of APIC-EM

D. Providing a user interface for administrators

4. Which CLI command API prints the output of the CLI command directly to stdout and returns nothing to Python?

A. clio()

B. clip()

C. clid()

D. cli()

5. What does the term "centralized control" imply in the context of SDNs?

A. Control is distributed across multiple devices.

B. Network operations are managed from a single control point.

C. All network devices operate independently.

D. Data flow is manually orchestrated by operators.

6. What is the smallest unit of testing when performing unit testing?

- **A. Test fixture**
- **B. Test runner**
- **C. Test collector**
- **D. Test case**

7. Which statement is accurate regarding the CLI?

- **A. The CLI enables tasks like creating bridge domains and groups.**
- **B. CLI commands can only be run from the XML interface.**
- **C. CLI commands can be run from the JSON interface only.**
- **D. All commands are documented on the APIC GUI.**

8. Which statement best describes DevNet?

- **A. DevNet is a simple website with tools for developers.**
- **B. DevNet is an integrated developer program with various resources.**
- **C. DevNet is mainly a forum for developers.**
- **D. DevNet is a licensed application for tools and forums.**

9. Which command is typically used to test REST APIs in an interactive manner?

- **A. curl**
- **B. ping**
- **C. traceroute**
- **D. netstat**

10. What are common types of tools used by those embracing DevOps?

- **A. Source Code Management**
- **B. Configuration Management**
- **C. Collaboration tools**
- **D. All the above**

Answers

1. C
2. B
3. C
4. B
5. B
6. D
7. A
8. B
9. A
10. D

Explanations

1. Which Cisco solution can be used to convert a Nexus switch into a matrix switch?

A. LMS

B. PRIME

C. NDB

D. VTS

The correct choice highlighting the conversion of a Nexus switch into a matrix switch is NDB (Nexus Data Broker). NDB is designed to enhance network visibility and traffic management by aggregating, filtering, and distributing data packets to various monitoring tools. This functionality allows administrators to effectively manage traffic and ensure that monitoring tools receive the necessary data without congestion or redundancy. The other solutions listed have different purposes. LMS (LAN Management Solution) primarily focuses on network management and monitoring, helping in configuration management and troubleshooting rather than transforming switch capabilities. PRIME (Cisco Prime Infrastructure) is mainly geared towards lifecycle management and provides tools for managing both wired and wireless networks. VTS (Virtual Traffic Switch) operates with different functionalities, often related to traffic management and optimization, but is not specifically intended for transforming Nexus switches into matrix switches. Thus, NDB stands out as the appropriate choice for achieving the functionality of a matrix switch in Nexus networks.

2. What does CALMS stand for?

A. Culture, Automation, Lean, Management, Sharing

B. Culture, Automation, Lean, Measurement, Sharing

C. Culture, Ansible, Lean, Management, Sharing

D. Collaboration, Automation, Lean, Measurement, Sharing

CALMS is an acronym that represents a set of principles guiding the successful adoption of DevOps practices within an organization. Each component of CALMS focuses on essential aspects needed for effective collaboration and efficiency in software development and IT operations. The components of CALMS include: - **Culture: This highlights the importance of a positive organizational culture that fosters collaboration, trust, and innovation. A successful DevOps transformation requires a shift in mindset towards open communication and collective ownership. - **Automation**: Automation is crucial in DevOps as it enables rapid and reliable software development and delivery. By automating repetitive tasks, teams can minimize manual errors and free up time for higher-value work. - **Lean**: Lean principles aim to eliminate waste and improve processes continuously. This involves optimizing workflows and aiming for maximum efficiency in development and operations. - **Measurement**: Measurement refers to the importance of using metrics to gauge the effectiveness of processes, performance, and outcomes. This data-driven approach allows teams to make informed decisions and foster continuous improvement. - **Sharing**: Sharing emphasizes the need for knowledge dissemination across teams to promote learning and collaboration. Developing a community of practice ensures that lessons learned and best practices are shared, benefiting the entire organization. The choice that accurately reflects this**

3. What is one of the main functions of APIC-EM Services?

A. Device configuration management

B. Enhanced network visibility

C. Capabilities, features, and functionalities of APIC-EM

D. Providing a user interface for administrators

The main function of APIC-EM (Application Policy Infrastructure Controller - Enterprise Module) services is indeed focused on delivering capabilities, features, and functionalities that enable enterprise network management and automation. APIC-EM serves as a centralized controller that enhances the management of network devices by providing services for application policy management, policy-based network automation, and a range of other functions meant to simplify network operations. By offering an architecture designed for programmability, APIC-EM allows for the integration of different network devices and applications, making it easier to implement policies across a diverse network environment. This programmability aspect is critical for modern networks, where agility and automation are paramount for efficient operations. In contrast, while options such as device configuration management, enhanced network visibility, and providing a user interface for administrators are indeed important aspects of network management, they primarily serve as features or outcomes of the broader capabilities provided by APIC-EM. Hence, focusing on "capabilities, features, and functionalities" underscores the comprehensive nature of APIC-EM in facilitating network automation and management, encapsulating its core purpose in streamlining enterprise networking tasks.

4. Which CLI command API prints the output of the CLI command directly to stdout and returns nothing to Python?

A. clio()

B. clip()

C. clid()

D. cli()

The effective command for printing the output of the CLI command directly to stdout while returning nothing to Python is the clip() function. This command is designed to execute a particular CLI command and stream its output immediately to the standard output (stdout) without storing or returning any data to the invoking Python script. This function is particularly useful in scenarios where you want to see the command's output in real-time, such as troubleshooting or command verification, without having to manage the output within your Python code. As a consequence, when using clip(), there is no need to handle returned data, making it a straightforward choice for direct command execution and immediate feedback. The other commands, in contrast, serve different purposes or return information that may need to be managed further, which is not the intent for the scenario described. This clear distinction in functionality underscores why clip() is the most suitable choice for the requirement presented.

5. What does the term "centralized control" imply in the context of SDNs?

A. Control is distributed across multiple devices.

B. Network operations are managed from a single control point.

C. All network devices operate independently.

D. Data flow is manually orchestrated by operators.

The term "centralized control" in the context of Software-Defined Networking (SDN) implies that the management of network operations is conducted from a single control point. This is a key characteristic of SDNs, where a central controller has the visibility and authority to manage the entire network infrastructure. The centralized control model simplifies network management by allowing network administrators to configure and adjust network policies from one location, resulting in improved efficiency and agility. In this architecture, the central controller communicates with the network devices, using protocols such as OpenFlow, to direct packet forwarding and other operational tasks. This leads to consistent policy enforcement and allows for dynamic adjustments to network traffic based on real-time conditions or changing business requirements. The other contexts associated with distributed control, independent operations of network devices, and manual orchestration do not accurately reflect the centralized nature of control within SDNs. In contrast to these approaches, centralized control fosters a more streamlined and integrated network environment.

6. What is the smallest unit of testing when performing unit testing?

A. Test fixture

B. Test runner

C. Test collector

D. Test case

The smallest unit of testing in the context of unit testing is a test case. This is because a test case is a specific set of conditions or variables under which a tester determines whether a system or software application is functioning correctly. It typically includes inputs, execution conditions, and expected results—to verify that a particular feature or functionality of the software works as intended. By focusing on individual components or functions, a test case isolates a piece of code to validate its correctness. This level of granularity allows for effective identification of bugs or issues in the codebase, making unit testing an essential practice for ensuring software reliability. Other terms such as test fixture, test runner, and test collector refer to supportive elements in the testing process rather than units of testing themselves. A test fixture sets up the environment for tests, ensuring that they are executed in a consistent state. A test runner manages the execution of tests and reports their results, while a test collector gathers multiple test cases for execution. Although these components are important to the testing framework, they do not serve as the smallest unit being tested.

7. Which statement is accurate regarding the CLI?

A. The CLI enables tasks like creating bridge domains and groups.

B. CLI commands can only be run from the XML interface.

C. CLI commands can be run from the JSON interface only.

D. All commands are documented on the APIC GUI.

The statement regarding the CLI enabling tasks like creating bridge domains and groups is accurate because the Command-Line Interface (CLI) is a powerful tool used for configuration and management of network devices, including those managed by the Application Policy Infrastructure Controller (APIC) in a Cisco environment. With the CLI, network administrators can execute a wide variety of commands to configure network services, including the creation and management of bridge domains and endpoint groups, which are essential components in Software-Defined Networking (SDN) architectures. The CLI provides direct access to these functionalities, allowing for precise control and automation of tasks within the network infrastructure. Other options imply limitations or inaccuracies regarding command execution. The CLI operates independently of the interfaces mentioned, allowing commands to be run directly on the device or via SSH/Telnet terminals, not just restricted to XML or JSON interfaces. Additionally, while the APIC GUI does provide documentation for many commands, the statement about all commands being documented there is misleading, as documentation can often be found in multiple places, including command reference guides and online resources. Therefore, the focus on the CLI's capability to enable essential network configurations makes the first statement accurate and relevant.

8. Which statement best describes DevNet?

A. DevNet is a simple website with tools for developers.

B. DevNet is an integrated developer program with various resources.

C. DevNet is mainly a forum for developers.

D. DevNet is a licensed application for tools and forums.

DevNet, or Cisco Developer Network, is indeed more than just a simple website or a forum; it is an integrated developer program that provides a wide array of resources tailored to developers. This includes access to APIs, software development kits (SDKs), documentation, learning materials, and a supportive community for collaboration. The program is designed to facilitate the development of applications and network automation using Cisco's technologies. The various resources available on DevNet empower developers to innovate and create solutions that integrate with Cisco networking products and services. This comprehensive support structure distinguishes DevNet as an essential platform for developers looking to build applications and leverage network programmability effectively. By combining extensive resources and community support, DevNet fosters an ecosystem that accelerates development and enhances networking capabilities. The other choices do not capture the full scope and purpose of DevNet, lacking detailed insight into its rich offerings and focus on developer integration and support.

9. Which command is typically used to test REST APIs in an interactive manner?

A. curl

B. ping

C. traceroute

D. netstat

Using the command curl is a common practice for testing REST APIs in an interactive manner because it allows users to send HTTP requests to a server and receive responses directly in the command line interface. Curl supports various request methods such as GET, POST, PUT, and DELETE, which are essential for interacting with RESTful services. Additionally, it provides options to include headers, data, and authentication, making it a versatile tool for debugging and testing APIs. Users can inspect the responses from the server, including status codes and response bodies, which is crucial for verifying the functionality of a REST API. This level of interactivity and feedback is what makes curl the go-to choice for developers working with RESTful web services. In contrast, other commands mentioned, such as ping and traceroute, are primarily used for network diagnostics and do not facilitate direct interaction with APIs. Ping checks connectivity to a device on the network, while traceroute maps the path packets take to reach a destination. Netstat provides information about current network connections and statistics, serving a different purpose than interacting with APIs. Thus, curl stands out as the appropriate command for this specific task.

10. What are common types of tools used by those embracing DevOps?

A. Source Code Management

B. Configuration Management

C. Collaboration tools

D. All the above

Common tools embraced by the DevOps methodology include Source Code Management, Configuration Management, and Collaboration tools. Source Code Management tools are essential for version control, allowing teams to manage changes to their codebase effectively. They help in tracking versions, facilitating collaboration among developers, and maintaining a history of changes, which is crucial in a DevOps environment where continuous integration and delivery are prevalent. Configuration Management tools are instrumental in automating the provisioning and management of infrastructure. They ensure that all systems are configured correctly and consistently across environments, thus reducing configuration drift and improving system reliability. This aligns with DevOps principles by promoting automation and consistency in deployments. Collaboration tools are vital in a DevOps culture, as they support communication and workflow among team members. These tools enhance transparency, foster teamwork, and enable real-time updates, which are essential for rapid iteration and feedback cycles in a DevOps process. The inclusion of all these tool types reflects their combined importance in achieving the goals of DevOps, such as faster delivery, increased deployment frequency, and improved collaboration between development and operations teams. Therefore, recognizing that all of these tool categories play a critical role in supporting a successful DevOps implementation is key.