

NVIDIA

NCP-AIN

NVIDIA AI Networking Exam

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Latest Version: 6.0

Question: 1

[InfiniBand Security]

You are concerned about potential security threats and unexpected downtime in your InfiniBand data center.

Which UFM platform uses analytics to detect security threats, operational issues, and predict network failures in InfiniBand data centers?

- A. Host Agent
- B. Enterprise Platform
- C. Cyber-AI Platform
- D. Telemetry Platform

Answer: C

Explanation:

The NVIDIA UFM Cyber-AI Platform is specifically designed to enhance security and operational efficiency in InfiniBand data centers. It leverages AI-powered analytics to detect security threats, operational anomalies, and predict potential network failures. By analyzing real-time telemetry data, it identifies abnormal behaviors and performance degradation, enabling proactive maintenance and threat mitigation.

This platform integrates with existing UFM Enterprise and Telemetry services to provide a comprehensive view of the network's health and security posture. It utilizes machine learning algorithms to establish baselines for normal operations and detect deviations that may indicate security breaches or hardware issues.

Reference: NVIDIA UFM Cyber-AI Documentation v2.9.1

Question: 2

[AI Network Architecture]

A financial services company is planning to implement an AI infrastructure to support real-time fraud detection and risk assessment. They need a solution that can handle both training and inference workloads while maintaining data privacy and security.

Which NVIDIA reference architecture component would be most appropriate to address the data privacy and security concerns in this AI networking setup?

- A. NVIDIA CUDA-X AI libraries
- B. NVIDIA Magnum IO
- C. NVIDIA BlueField DPUs
- D. NVIDIA Spectrum switches

Answer: C

Explanation:

NVIDIA BlueField Data Processing Units (DPUs) are integral to securing AI infrastructures, especially in environments requiring stringent data privacy and security measures. BlueField DPUs offload and accelerate critical infrastructure tasks such as encryption, firewall enforcement, and intrusion detection, thereby isolating sensitive data paths from potential threats.

In the context of AI workloads, BlueField DPUs enable secure and efficient data movement between GPUs and storage systems, ensuring that sensitive information, like financial data, is protected during both training and inference processes. Their integration into NVIDIA's reference architectures provides a hardware root of trust, essential for maintaining data integrity and compliance with security standards.

Reference: NVIDIA BlueField Networking Platform

Question: 3

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Reference: NVIDIA UFM Cyber-AI Documentation v2.9.1

Question: 4

[InfiniBand Optimization]

A high-performance InfiniBand fabric requires a routing engine that maximizes throughput and network utilization while reducing congestion. Which option below is the best routing engine for InfiniBand?

- A. Adaptive Routing
- B. Random Routing
- C. Shortest Path Routing
- D. Round Robin Routing

Answer: A

Explanation:

Adaptive Routing in InfiniBand networks dynamically selects the optimal path for data packets based on current network conditions, such as congestion levels and link utilization. This approach ensures that traffic is evenly distributed across the network, preventing bottlenecks and maximizing overall throughput.

By continuously monitoring the network and adjusting routes in real-time, Adaptive Routing enhances performance and reliability, making it the preferred choice for high-performance computing environments where consistent low latency and high bandwidth are critical.

Reference: NVIDIA InfiniBand Adaptive Routing Technology Whitepaper

Question: 5

[Spectrum-X Configuration]

You are deploying a Kubernetes cluster for AI workloads using NVIDIA Spectrum-X switches. You need to automate the deployment and management of networking components in this environment.

Which NVIDIA tool is specifically designed to automate the deployment and management of networking components in a Kubernetes cluster with Spectrum-X switches?

- A. Mellanox OFED
- B. Container Runtime
- C. Network Operator
- D. GPU Operator

Answer: C

Explanation:

The NVIDIA Network Operator is designed to simplify and automate the deployment and management of networking components in Kubernetes clusters, particularly those utilizing NVIDIA Spectrum-X switches. It manages the installation and configuration of necessary drivers, plugins, and other networking resources to enable features like RDMA and GPUDirect RDMA, which are essential for highperformance AI workloads.

By leveraging Kubernetes Custom Resource Definitions (CRDs) and the Operator Framework, the Network Operator ensures that networking components are consistently and correctly configured across the cluster, reducing manual intervention and potential configuration errors.

Reference: NVIDIA Network Operator Documentation

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