

**EXAMTOPICS**

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## **CERTIFICATION TEST**

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As the network administrator for a large-scale AI research cluster, you are responsible for ensuring seamless data flow across an InfiniBand east-west fabric that interconnects hundreds of compute nodes.

Which tool would you use to trace and discover the network paths between nodes on this InfiniBand east-west fabric?

- A. tracert
- B. ibpathverify
- C. NetQ
- D. ibnetdiscover

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

You have recently implemented NVIDIA Spectrum-X in your data center to optimize AI workloads. You need to verify the performance improvements and create a baseline for future comparisons.

Which tool would be most appropriate for creating performance baseline results in this Spectrum-X environment?

- A. CloudAI Benchmark
- B. MLNXOS
- C. Ansible
- D. NetQ

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

You are designing a new AI data center for a research institution that requires high-performance computing for large-scale deep learning models. The institution wants to leverage NVIDIA's reference architectures for optimal performance.

Which NVIDIA reference architecture would be most suitable for this high-performance AI research environment?

- A. NVIDIA DGX SuperPOD
- B. NVIDIA Base Command Platform
- C. NVIDIA DGX Cloud
- D. NVIDIA LaunchPad

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

In an AI cluster using NVIDIA GPUs, which configuration parameter in the NicClusterPolicy custom resource is crucial for enabling high-speed GPU-to-GPU communication across nodes?

- A. OFED Driver
- B. RDMA Shared Device Plugin
- C. NV IPAM
- D. Secondary Network

**Suggested Answer: A**

Currently there are no comments in this discussion, be the first to comment!

Which tool would you use to gather telemetry data in a SpectrumX network?

- A. UFM
- B. NetQ
- C. NVIEW
- D. BCM

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!

A leading AI research center is upgrading its infrastructure to support large language model projects. The team is debating whether to implement a dedicated storage fabric for their AI workloads.

Which of the following best explains why a dedicated storage fabric is crucial for this AI network architecture? (Choose two.)

- A. To ensure data security and isolation from other network traffic.
- B. To provide high-bandwidth, low-latency data access that prevents I/O bottlenecks during AI model training.
- C. To enable parallel data access and improve storage performance for distributed AI workloads.
- D. To reduce the overall cost of the storage infrastructure.

**Suggested Answer:** *BC*

Currently there are no comments in this discussion, be the first to comment!

You are tasked with troubleshooting a link flapping issue in an InfiniBand AI fabric. You would like to start troubleshooting from the physical layer. What is the right NVIDIA tool to be used for this task?

- A. tcpdump tool
- B. mixlink utility
- C. nvidia-smi utility

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

How does Spectrum-X achieve network isolation for multiple tenants?

- A. By implementing physical network segmentation.
- B. By implementing a Layer 3 Virtual Network Identifier (L3VNI) per VRF.
- C. Using manual configuration of access control lists (ACLs).
- D. By assigning unique IP address ranges to each tenant.

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

You are using NVIDIA Air to simulate a Spectrum-X network for AI workloads. You want to ensure that your network configurations are optimal before deployment.

Which NVIDIA tool can be integrated with Air to validate network configurations in the digital twin environment?

- A. GPU Cloud
- B. Spectrum-X Manager
- C. DOCA
- D. NetQ

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You're designing a multi-GPU system for AI training using NVIDIA GPUs with NVLink connections. You need to maximize inter-GPU communication bandwidth.

Which feature included in NCCL allows for improved communication between GPUs and NICs?

- A. Graph Search Optimization
- B. Adaptive Routing
- C. SHARP v2
- D. PXN

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You are optimizing a multi-node AI training cluster using InfiniBand networking and NVIDIA GPUs. You need to implement efficient collective communication operations across the nodes.

Which feature of NVIDIA Collective Communications Library (NCCL) allows for optimized performance in multi-subnet InfiniBand environments?

- A. Support for IB Router.
- B. Static plugin linking.
- C. GPU Direct RDMA.
- D. Lazy connection establishment.

**Suggested Answer: A**

Currently there are no comments in this discussion, be the first to comment!

In which mode of the BlueField DPU does the ARM system on the DPU control the NIC data path, but allow access to the DPU OS from the host?

- A. Separated Host mode
- B. NIC mode
- C. Restricted mode
- D. DPU mode

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You are investigating a performance issue in a Spectrum-X network and suspect there might be congestion problems.  
Which component executes the congestion control algorithm in a Spectrum-X environment?

- A. Spectrum-4 switches
- B. NVIDIA NetQ
- C. NVIDIA DOCA software
- D. BlueField-3 SuperNICs

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

When designing a multi-tenancy East/West (E/W) fabric using Unified Fabric Manager (UFM), which method should be used?

- A. RDMA
- B. VXLAN
- C. Partition / Pkey
- D. VLAN

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!

What are two methods for accessing the operating system on a BlueField DPU? (Choose two.)

- A. Via the rshim interface over the PCIe bus.
- B. Via rshim over a USB connection on the host.
- C. Via the Redfish API.
- D. Via SSH to the out-of-band management interface.
- E. Via the networking interfaces (data ports) in NIC mode.

**Suggested Answer:** AD

Currently there are no comments in this discussion, be the first to comment!

Which command should be used to configure RoCE on a Cumulus switch?

- A. nv set qos roce enable on
- B. nv qos roce enable on
- C. nv set roce qos enable on
- D. nv roce qos enable on

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

How is congestion evaluated in an NVIDIA Spectrum-X system?

- A. By assessing the physical distance between network devices.
- B. By analyzing the egress queue loads ensuring all ports are well-balanced.
- C. By monitoring the CPU and power usage of network devices.
- D. By measuring the number of connected devices in the network.

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

You're troubleshooting a Spectrum-X network and notice that the System Status LED on a switch is blinking for more than 5 minutes. What is the most likely cause of this issue?

- A. The switch is overheating.
- B. The Onyx software did not boot properly.
- C. The power supply unit is failing.

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

In Cumulus Linux, which technology enables the ability to provide active-active redundancy to servers, without the need for direct inter-switch links?

- A. EVPN Multi homing
- B. VSS
- C. MLAG

**Suggested Answer: A**

Currently there are no comments in this discussion, be the first to comment!

What is the total throughput of the SN5600 Spectrum-X switch?

- A. 12.8 petabits per second
- B. 102.4 gigabits per second
- C. 51.2 terabits per second
- D. 25.6 terabits per second

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!

A user has requested confirmation that the InfiniBand network is performing optimally and is not limiting the speed of a training run. To verify this, you would like to measure the RDMA throughput rate between two endpoints.

Which tool should be used?

- A. `ib_write_bw`
- B. `ping`
- C. `ibdiagnet`
- D. `iperf`

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

When utilizing the `ib_write_bw` tool for performance testing, what does the `-S` flag define?

- A. The maximum rate of sent packages.
- B. Which service level to use.
- C. The burst size.
- D. The number of QP's.

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

Which of the following scenarios would the Network Traffic Map in UFM be least useful for troubleshooting?

- A. When optimizing job placement and workload distribution across the cluster.
- B. After making changes to network configuration.
- C. When investigating reports of network congestion or latency problems.
- D. When troubleshooting a single node's hardware failure.

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

When upgrading DOCA on a BlueField DPU, what command should first be run on the host?

- A. `sudo apt-get install doca`
- B. `sudo apt-get upgrade doca`
- C. `sudo apt-get autoremove`
- D. `./usr/sbin/ofed_uninstall.sh --force`

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You are implementing a multi-tenant environment on your Spectrum-X switches for different departments in your organization. You need to ensure that each department's network traffic is isolated and secure.

Which Spectrum-X security feature would be most effective in creating isolated network environments for each department?

- A. Set up Port Mirroring
- B. Implement Access Control Lists (ACLs)
- C. Enable Link Layer Discovery Protocol (LLDP)
- D. Configure Virtual Routing and Forwarding (VRF)

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

What are the pre-requisites for performing Flow Analysis with NETQ?

- A. Cumulus 5.x and later / Spectrum-2 and later / LCM enabled
- B. Cumulus 4.x and later / Spectrum-2 and later / LCM enabled
- C. Cumulus 5.x and later / Spectrum-3 and later / On-premises deployment
- D. Cumulus 5.x and later / Spectrum-2 and later / On-premises deployment

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You are troubleshooting an InfiniBand network issue and need to check the status of the InfiniBand interfaces. Which command should you use to display the state, physical state, and link layer of InfiniBand interfaces?

- A. `ibv_devices -c mlx5_0`
- B. `sudo ibnodes -C mlx5_0`
- C. `ibstat -d mlx5_X`
- D. `cat /proc/net/ib/device`

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!

What are the necessary steps to upgrade the MLNX-OS on Infiniband Switches?

- A. Restart the switches, connect to the switches using Telnet, and use the 'update' command to perform the upgrade.
- B. Connect to the switches using SSH, fetch the MLNX-OS software image, and use the 'install' command to perform the upgrade.
- C. Power off the switches, insert the installation media, and power on the switches to start the upgrade process.
- D. Remove the switches from the switch fabric, fetch the MLNX-OS software image, and use the 'upgrade' command to perform the upgrade.

**Suggested Answer:** *B*

Currently there are no comments in this discussion, be the first to comment!

You are optimizing an InfiniBand network for AI workloads that require low-latency and high-throughput data transfers. Which feature of InfiniBand networks minimizes CPU overhead during data transfers?

- A. PKey
- B. TCP/IP Offloading
- C. SHARP
- D. Direct Memory Access (DMA)

**Suggested Answer:** *D*

Currently there are no comments in this discussion, be the first to comment!

You are configuring an InfiniBand network for an AI cluster and need to install the appropriate software stack.

Which NVIDIA software package provides the necessary drivers and tools for InfiniBand configuration in Linux environments?

- A. MLNX\_OFED
- B. NVIDIA Container Runtime
- C. NVIDIA GPU Cloud
- D. CUDA Toolkit

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

Which of the following commands would you use to assign the IP address 20.11.12.13 to the management interface in SONIC?

- A. `nv set interface mgmt ip 20.11.12.13 20.11.12.254`
- B. `interface mgmt0 vrf mgmt ip address 20.11.12.13 20.11.12.254`
- C. `sudo config interface ip add eth0 20.11.12.13/24 20.11.12.254`
- D. `config ip add eth0 20.11.12.13/24 20.11.12.254`

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!

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. Shortest Path Routing
- C. Round Robin Routing
- D. Random Routing

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

Which of the following tools in Cumulus Linux is specifically useful for detecting and differentiating microbursts from regular network congestion? (Choose two.)

- A. ASIC monitoring with millisecond-level granularity.
- B. SNMP polling at 5-minute intervals.
- C. Monthly network utilization reports.
- D. What Just Happened (WJH) feature for packet drop analysis.

**Suggested Answer:** *AD*

Currently there are no comments in this discussion, be the first to comment!

You are troubleshooting InfiniBand connectivity issues in a cluster managed by the NVIDIA Network Operator. You need to verify the status of the InfiniBand interfaces.

Which command should you use to check the state and link layer of InfiniBand interfaces on a node?

- A. `ibstat -d mlx5_X`
- B. `rdma show devices`
- C. `ip link show dev ib0`
- D. `ifconfig ib0`

**Suggested Answer:** A

Currently there are no comments in this discussion, be the first to comment!

What is the purpose of configuring NVUE to ignore Linux files?

- A. Improve Cumulus security by reducing the attack surface.
- B. Reduce NVUE memory utilization to optimize performance.
- C. Enables the persistent manipulation of specific settings using both NVUE and flat-file approaches.
- D. Enable pushing of configuration through Ansible template file.

**Suggested Answer:** *C*

Currently there are no comments in this discussion, be the first to comment!