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Question: 1

Which of the following statements accurately describes the primary function of a Subnet Manager (SM) in an InfiniBand network?

A. To manage TCP/IP traffic over the InfiniBand fabric.
B. To discover, configure, and manage the InfiniBand fabric, including assigning LID (Local Identifier) addresses and setting up routing tables.
C. To provide quality of service (QOS) by prioritizing specific types of traffic.
D. To act as a firewall, securing the InfiniBand network from external threats.
E. To handle remote direct memory access (RDMA) operations between nodes.

Answer: B

Explanation:
The Subnet Manager (SM) is responsible for discovering the topology of the InfiniBand network, assigning LID addresses to nodes, and configuring the forwarding tables in the switches to enable communication between them. It essentially orchestrates the network's functionality.

Question: 2

An InfiniBand network experiences a high packet loss rate during peak hours. Which of the following factors could be contributing to this issue? Select the most likely single answer.

A. Incorrectly configured MTIJ size across the network devices.
B. Excessive TCP traffic overloading the network.
C. A faulty Ethernet cable connecting the Subnet Manager.
D. Insufficient buffer credits on the InfiniBand switches.
E. The absence of a Subnet Manager in the network.

Answer: D

Explanation:
Insufficient buffer credits can lead to congestion and packet loss, especially during periods of high network utilization. InfiniBand relies on a credit-based flow control mechanism to prevent overrunning receiver buffers.

Question: 3

Which InfiniBand transport type guarantees reliable, in-order delivery of messages?

A. Unreliable Datagram (IJD)
B. Reliable Datagram (RD)
C. Connected Mode (CM)
D. Reliable Connected (RC)
E. Extended Transport (XT)

Answer: D

Explanation:
Reliable Connected (RC) provides reliable, in-order delivery with hardware-based acknowledgments and retransmissions. This makes it suitable for applications requiring strong guarantees of data integrity and order.

Question: 4

In an InfiniBand environment, what is the purpose of the Partition Key (P _ Key)?

A. To encrypt the InfiniBand traffic for security purposes.
B. To assign priorities to different types of traffic.
C. To segment the InfiniBand fabric into logical subnets, isolating traffic between different groups of nodes.
D. To uniquely identify each node in the InfiniBand network.
E. To define the maximum transfer unit (MTU) for InfiniBand packets.

Answer: C

Explanation:
The Partition Key (P_Key) is used to logically partition an InfiniBand fabric. Nodes with the same P_Key can communicate with each other, while nodes with different P_Keys are isolated. This allows for creating separate networks within the same physical fabric.

Question: 5

Consider the following *ibstat' output snippet:

```
CA 'mlx5_0'
    Driver Version:                    5.4-2.0.3.0
    Firmware Version:                  16.33.2004
    GUID:                              00:02:c9:03:00:9a:c7:90
    Number of ports:                   2
    Firmware MLNX-OS Version:          3.6.0702
    Base MAC:                          f4:52:14:d8:09:a0
    Board ID:                          MT_2190110001111
    Maximum peer MTU:                  4092
    System image GUID:                 00:02:c9:03:00:9a:c7:90

Port 1:
    State:                             ACTIVE
    Physical state:                    LinkUp
    Rate:                              100 Gb/sec (4X EDR)
    Link layer:                        InfiniBand
    ...
```

Based on this output, which statements are correct? (Select TWO)

A. The InfiniBand card is running at a speed of 40 Gbps.
B. The InfiniBand card is manufactured by Mellanox.
C. The InfiniBand link is down.
D. The InfiniBand card has two active ports.
E. The maximum MTIJ supported by a peer is 9000 bytes.

Answer: B,D

Explanation:
The 'ibstat' output indicates that the CA (Channel Adapter) is 'mlx5_0', which signifies a Mellanox card. It also shows 'Number of ports: 2', and the Port I's State is ACTIVE and Physical state is LinkUp. The speed is 100 Gb/sec (4X EDR), and the Maximum peer MTIJ is 4092. Thus, options B and D are correct.

Question: 6

What is the role of the Global ID (GID) in an InfiniBand network?

A. It serves as a temporary identifier for packets during routing within the subnet.
B. It is a unique, routable address that enables communication between different InfiniBand subnets.
C. It defines the maximum amount of data that can be transmitted in a single packet.
D. It controls the priority of traffic within the network.
E. It is used for internal debugging purposes within the Subnet Manager.

Explanation:
The Global ID (GID) is a 128-bit address used for inter-subnet communication in InfiniBand. It is a unique, routable address similar to an IP address, enabling communication between nodes residing on different subnets.

Question: 7

Which of the following commands is typically used to verify the InfiniBand link status and speed on a Linux system?

A. ifconfig
B. lspci
C. ibstat
D. netstat
E. ip addr

Explanation:
The 'ibstat' command is specifically designed to provide detailed information about the InfiniBand fabric, including the status of links, speeds, and other relevant parameters.

Question: 8

A server application needs to send small, infrequent messages with minimal overhead over InfiniBand. Which transport service would be most suitable?

A. Reliable Connected (RC)
B. Unreliable Datagram (UD)
C. Reliable Datagram (RD)
D. Raw Ethernet (RoCE)
E. Connected Mode (CM)

Explanation:
Unreliable Datagram (IJD) provides the lowest overhead for sending small messages. While it doesn't guarantee delivery, it's suitable for applications where occasional message loss is acceptable and minimal latency is paramount.

Question: 9

Which component is responsible for translating between InfiniBand verbs (1B verbs) and the underlying hardware operations?

A. The Subnet Manager (SM)
B. The Hardware Management Console (HMC)
C. The OpenFabrics Interface (OFI) library
D. The InfiniBand driver
E. The Management Information Base (MIB)

Answer: D

Explanation:
The InfiniBand driver acts as the intermediary between the application-level InfiniBand verbs (1B verbs) and the specific hardware commands required to perform the requested operations on the InfiniBand adapter.

Question: 10

What is the maximum number of hops allowed in an InfiniBand subnet according to the standard?

A. 8
B. 16
C. 32
D. 64
E. 128

Answer: E

Explanation:
The InfiniBand standard limits the maximum number of hops within a single subnet to 128. This limitation is in place to maintain performance and predictable latency within the subnet.

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