

Network Management Review Q's

- 1) Why would a network manager benefit from having network management tools – describe 5 scenarios?
- 2) What are the 5 areas of network management defined by ISO?
- 3) What is the difference between network management and service management?
- 4) Define the following Terms: managing entity, managed device, management Agent. MIB, network management protocol
- 5) What is the role of SMI in network management?
- 6) What is important difference between a request-response message and a trap message in SNMP?
- 7) What are the seven message types used in SNMP?
- 8) What is meant by SNMP engine?

Network Management Review Questions

- 1) Why would a network manager benefit from having network management tools – describe 5 scenarios?

A network manager would like to have network management capabilities when

- (a) a component of the network fails,
- (b) a component of the network is about to fail, and is acting “flaky”
- (c) a component of the network has been compromised from a security standpoint and is attacking the network, e.g., by launching a DOS attack by flooding the network with packets,
- (d) traffic levels exceed a certain threshold on a link, causing packets to be dropped,
- (e) everything is running smoothly (in order to *know* that everything is running smoothly and there are no problems).

There are many additional reasons as well.

Network Management Review Questions

- 2) What are the 5 areas of network management defined by ISO

Performance management,
fault management,
configuration management,
accounting management,
security management.

Network Management Review Questions

- 3) What is the difference between network management and service management?

Network management is more narrowly defined, as it focuses on the resources in the network – monitoring their functions and controlling their operation. These resources are combined (used) in various ways to implement services. Note that while the network resources may all be functioning as they should, they may not be sufficient to implement a service with a given level of performance; this latter concern is an aspect of service management.

Network Management Review Questions

- 4) Define the following Terms: managing entity, managed device, management Agent. MIB, network management protocol

Managing entity: control the collection, processing, analysis, display of network management information, and is used by the network manager to control the devices in the network.

Managed device: a piece of network equipment that is under the control of the managing entity.

Management agent: a software process running on a managed device that communicated with the managing entity and takes action on the managed device under the control of the managing entity.

MIB: pieces of information associated with all of the managed objects in a device.

Network management protocol: runs between the managing entity of the management agents on the managed devices, allowing the agents to alert the managing entity to potential problems, and allowing the managing entity to send commands to the management agents.

Network Management Review Questions

- 5) What is the role of SMI in network management?

The SMI is a data-definition language used to defined the pieces of information in an SNMP

Network Management Review Questions

6) What is important difference between a request-response message and a trap message in SNMP?

The trap message is sent by the management agent to the managing entity (and requires no response from the managing entity). A request-response message is sent by the managing entity, with the response coming back from the management

Network Management Review Questions

7) What are the seven message types used in SNMP?

GetRequest,
GetNextRequest,
GetBulkRequest,
SetRequest,
InformRequest,
Response,
Trap

Network Management Review Questions

8) What is meant by SNMP engine?

The SNMP engine is the part of an SNMP implementation that handles the dispatching, processing, authentication, access control, and timeliness of he SNMP messages.

Network Management Review Questions

9) What is the purpose of the ASN.1 object identifier tree?

The ASN.1 object identifier tree provides a standard way to name dogs

Network Management Review Questions

10) What is the role of ASN.1 in the ISO reference model's presentation?

The role of the presentation layer is to allow the sending and receiving of data in a machine-independent format (i.e., without regard to the particular storage and architectural conventions of the sender and receiver).

Network Management Problems

1) Consider 2 ways in which communications occurs between a mapping entity and a managed device? Request-response mode and trapping. What are the pros and cons of these two approaches?

Network Management Problems

- A) Request response mode will generally have more overhead (measured in terms of the number of messages exchanged) for several reasons. First, each piece of information received by the manager requires two messages: the poll and the response.

Trapping generates only a single message to the sender. If the manager really only wants to be notified when a condition occurs, polling has more overhead, since many of the polling messages may indicate that the waited-for condition has not yet occurred. Trapping generates a message only when the condition occurs.

Network Management Problems

Trapping will also immediately notify the manager when an event occurs. With polling, the manager needs to wait for half a polling cycle (on average) between when the event occurs and the manager discovers (via its poll message) that the event has occurred.

Network Management Problems

- 2) Why do you think the designers of SNMP chose UDP rather than TCP as the transport protocol of choice

Often, the time when network management is most needed is in times of stress, when the network may be severely congested and packets are being lost. With SNMP running over TCP, TCP's congestion control would cause SNMP to back-off and stop sending messages at precisely the time when the network manager needs to send SNMP messages.

Network Management Problems

- 3) What would be the BER encoding of {weight, 271, lastname, "Jackson"}

4 7 'J' 'a' 'c' 'k' 's' 'o' 'n' 2 2 1 15