
CHAPTER 28

Network Management: SNMP

Solutions to Review Questions and Exercises

Review Questions

1. *Network management* is defined as monitoring, testing, configuring, and troubleshooting network components to meet a set of requirements defined by an organization.
2. The functions performed by a network management system can be divided into five broad categories: *configuration management*, *fault management*, *performance management*, *security management*, and *accounting management*.
3. The *configuration management* system updates information about the status of each entity and its relation to other entities.
4. Configuration management can be divided into two subsystems: *reconfiguration* and *documentation*.
5. *Fault management* supervises the operation of the network, which depends on the proper operation of each individual component and its relation to other components.
6. A fault management system has two subsystems: *reactive fault management* and *proactive fault management*.
7. *Performance management* monitors and controls the network to ensure that it is running as efficiently as possible.
8. The four measurable quantities in performance management are *capacity*, *traffic*, *throughput*, and *response time*.
9. *Security management* is responsible for controlling access to the network based on the predefined policy.
10. *Accounting management* is the control of users' access to network resources through charges. Under accounting management, individual users, departments, divisions, or even projects are charged for the services they receive from the network.

Exercises

11.

INTEGER tag: 02

length: 04

value: 00 00 05 B0

Answer: 02 04 00 00 05 B0
12.

OCTET STRING tag:04

length: 0C

value: 48 65 6C 6C 6F 20 57 6F 72 6C 64 2E

H e l l o space W o r l d .

Answer: 04 0C 48 65 6C 6C 6F 20 57 6F 72 6C 64 2E
13.

OCTET STRING tag: 04

length of the length field (2 bytes) (10000010) = 82

length (1000 bytes) = 03 E8

value (1000 character)

Answer: 04 82 03 E8 (Plus 1000 bytes of characters)
14.

30 16

02 04 00 00 09 29

04 08 43 4F 4D 50 55 54 45 52

40 04 B9 20 01 05

sequence, length

INTEGER, length, value (2345)

OCTET STRING, length, value (COMPUTER)

IP address, length, value (185.32.1.5)
15.

30 15

43 04 00 00 2E E0

02 04 00 00 38 E4

06 07 01 03 06 01 02 01 07

sequence, length

TIME TICK, length, value (1200)

INTEGER, length, value (14564)

Object ID, length, value (1.3.6.2.1.7)
16.

30 18

02 04 00 00 09 29

02 04 00 00 04 D4

02 04 00 00 00 7A

02 04 00 00 04 D4

sequence, length

INTEGER, length, value (2345)

INTEGER, length, value (1236)

INTEGER, length, value (122)

INTEGER, length, value (1236)

17.

30 43	sequence, length
30 41	sequence, length
02 04 00 00 09 29	INTEGER, length, value (2345)
04 08 43 4F 4D 50 55 54 45 52	OCTET STRING, length, value (COMPUTER)
41 04 00 00 01 59	counter, length, value (345)
30 29	sequence, length
02 04 00 00 04 63	INTEGER, length, value (1123)
04 04 44 49 53 4B	OCTET STRING, length, value (DISK)
41 04 00 00 05 96	counter, length, value (1430)
30 15	sequence, length
02 04 00 00 0D 80	INTEGER, length, value (3456)
04 07 4D 4F 4E 49 54 4F 52	OCTET STRING, length, value (MONITOR)
41 04 00 00 09 09	counter, length, value (2313)

18.

- a. the integer **16913458**
- b. sequence of 2 integers: **17** and **20**
- c. sequence of the string: “**ACB**” and the integer **5140**
- d. sequence of an IP address **35.81.98.113** and the integer **5138**

