Network Management

**1.** Explain the term *network management* in one sentence.

Network management are the activities, methods and procedures used to operate Networked systems.

**2.** We used a patient in intensive care as one analogy to explain network management. Can

you think of areas in network management that this analogy does not capture?

The analogy is only referring of thing that can be monitored constantly. Some areas in network such as planning are separated from this analogy, because they are done at an specific time.

**3.** Can you think of other areas in which you would expect analogies to network management

to apply?

Maintenance and provisioning are two areas where these analogies can apply, because of the care like the patient that was mentioned. We have to keep an eye on thing and provide elements for it to work properly.

**4.** Give two examples of how network management can help an enterprise IT department save

money.

One example is that the network issues are solved faster which is beneficial for the company.

Another example is that maintenance is more organized. They can minimize distraction for the enterprise of their core business.

**5.** Give two examples of how network management can help a service provider increase

revenue.

One example is service provisioning system. This enables service providers to reduce the time that elapses from the time a service is ordered to the time the service is actually turned up.

Another example is enabling a service provider augment a service offering with a management-related capabilities to attract more customers.

6. A famous requirement for availability is “five nines.” This refers to the requirement that a

device or a service must be available 99.999 percent of the time. Assume that you have a

device with hardware availability of 99.9995 percent. Now assume that an operational error

is made that causes the device to go offline for 5 minutes until the error is corrected.

Calculated over a period of a month, how much has the operational error just caused

availability to drop?

Availability dropped from five nines to three nines. That means the system would be

considered two orders of magnitude less available than before. (30 × 24 × 60 × 60 = 2,592,000

seconds in a month. The rate of 99.9995 percent means that the system would have been

available for 2,591,987 seconds had the operational error not occurred. With the 5 minutes of

additional downtime, it was available only for 2,591,687 seconds, or 99.988 percent—in

other words, three nines.)

**7.** How does the perspective under which network management is approached often differ for an

enterprise IT department compared to a service provider?.

For service providers the focus is on maximizing profits; for enterprise IT department is generally minimizing cost.

**8.** Name at least two factors that can be important to the business success of a third-party

management application vendor that potentially has to compete with a network management

offering of a network equipment vendor.

A third-party vendor offering can help the equipment vendor’s customer better leverage. Network providers gain advantage that an independent network management can provide.

**9.** What does the term *swivel-chair syndrome* refer to, and why is this undesired?

It refers to an operator who sits in a swivel chair to move between different terminals. It is undesired because of the task of administrating different host to support different applications.

**10.** Name two or more reasons for network management applications to be approached as

distributed systems.

They involve systems that manage and systems that are being managed. Also to meet requirements for scale as well as requirements for reliability and availability, it is often required to allow the managing system to be distributed itself.

**Chapter 2**

**1.** Is running a network only a matter of network management technology, or are there other

considerations?

It also involve procedures and organizations.

**2.** What does Pat’s employer use to track the resolution of problems in the network?

The trouble ticket system can automatically escalate tickets to a ticket owner who has to take responsibility, or it can automatically escalate tickets that take too long to resolve.

**3.** How does the integration of the work order system with the trouble ticket system make Pat’s

job easier?

Work order system help organize and manage the workforce that carries them out. In that way, a work order is assigned and its resolution tracked after.

**4.** Which network provider do you think will be more vulnerable to human failures by

operations personnel, Pat’s or Chris’s?

Chris is working by himself and with too many parts of the network. He is more vulnerable to fail doing his task.

**5.** Which of the following can be used as management tools? A. alarm management system, B.

spreadsheet, C. pencil and piece of paper, D. all of them.

the answer is all of them. in chris’ case for example, he used a spreadsheet and a piece of paper as management tools.

**6.** In how many different places does Chris need to maintain the same phone number, and why

could this be an issue?

**Answer:** In four places (IP PBX, voice-mail system, phone number inventory, company

directory). Chris’s processes are not optimized and could be improved through integration.

Because Chris’s network is small, this might not yet matter much, but it will as its scale

increases.

**7.** When Chris is worried about compromised security of his company’s network, does the threat

come from outside attackers or from within the network?

It comes from within the network. An employee could be using company’s network for personal interest.

**8.** Connectivity between different company sites is provided by an outside MSP. Why is Chris

nevertheless concerned with monitoring traffic statistics across these outside connections?

The entire company’s network can be managed as one network.

**9.** When Sandy wants to implement a security policy for the Internet Data Center, at what

different levels does she take security into account?

**Answer:** At the user/application level for the data and the networking level.

**10.** Why is Sandy interested in “old” performance data and traffic statistics, even though she is

not monitoring actual network operations?

Sandy uses this for network planning. She can handle all the data storing it in a single directory.