NAS and SAN Introduction

-Eli the Computer Guy

1. When Eli says that NAS is 'basically' a shared file server, what does he mean? How does a NAS differ from a conventional file server?

NAS (Network Attached Storage) are essentially file servers because all it does is store data. It is more secure because you're not interacting with the server in any other way.

2. According to Eli, what is the problem with serving files from a conventional Windows File Server?

The problem with conventional Windows File Servers is that they can also be used for other things, which leaves them exposed to risks, e.g. viruses, misuse, etc.

3. How does Eli define a SAN?

A SAN (Storage Area Network) is a network of devices that store data.

4. In a SAN context, what is a cluster? What are the inherent advantages of a cluster?

A cluster is a group of devices set up to store data together. The advantage is that, depending on redundancy and other factors, the SAN and its data are all still accessible if one or more devices fail. Additionally, you can map a drive to the SAN and have that folder on the SAN act like a drive mounted to your machine, allowing you to install software to the SAN and access it from your device.

5. From Eli's perspective, what is the most obnoxious problem with commercial storage?

When you buy a server, you put in a certain size hard drive. Once the hard drive is full, you have to figure out how to add space to your server seamlessly. Without a SAN, data migration can be a very tedious task.

6. From Eli's perspective, what is the advantage of storing a VM instance on a SAN and running the instance on a hypervisor?

If one of the physical servers fails, the instances can instantly be migrated to other machines on the SAN, where all the instances of the OS's are stored.

7. From Eli's perspective, what is the major advantage and disadvantage of Fiber Channel?

The Fiber Channel is the main storage network that is used for the SAN environments.
Major advantage: speed. The connection can be 2-16 Gb/s.
Major disadvantage: price. Fiber optic networks are very expensive.

8. How does Eli describe iSCSI?

He describes it as the "Poor Man's" SAN, with the same basic functionality but slower speed.