DAS

**DAS** stands for **Direct Attached Storage**. It is a digital storage device connected directly to the server, workstation, or personal computer via the cable. In Direct Attached Storage, applications use the block-level access protocol for accessing the data.

There is no need for any network to attach the device to the server or workstation. So, DAS (Direct Attached Storage) is not a part of the storage network. Some examples of this storage device are solid-state drive, hard drives, tape libraries, and optical disk drives.

The System of DAS is attached directly to the computer through the **HBA** (Host Bus Adapter. As compared to NAS devices, its device attaches directly to the server without the network. The modern systems of this storage device include the integrated controllers of a disk array with the advanced features.

It is a good choice for those small businesses, workgroups, and departments, which do not want to share the data across the enterprises. It is used in those places which require less number of hosts and servers.

Types of DAS

Following are the two types of Direct Attached Storage (DAS):

1. Internal DAS
2. External DAS

Internal DAS

Internal DAS is a DAS in which the storage device is attached internally to the server or PC by the HBA. In this DAS, HBA is used for high-speed bus connectivity over a short distance.

External DAS

External DAS is a DAS in which the external storage device is directly connected to the server without any device. In this type of DAS, FCP and SCSI are the protocols which act as an interface between server and the storage device.

Difference Between NAS and DAS

The following table describes the differences between the Direct Attached Storage (DAS) and [Network Attached Storage (NAS)](https://www.javatpoint.com/nas):

|  |  |
| --- | --- |
| **NAS** | **DAS** |
| 1. NAS is a short form of Network Attached Storage. | 1. DAS is a short form of Direct Attached Storage. |
| 2. It uses files for backup and recovery. | 2. It uses sectors for backup and recovery. |
| 3. This storage Device is complex than the DAS device. | 3. This storage device is simple, not complex. |
| 4. Network Attached Storage is slightly difficult to set up. | 4. Direct attached Storage is easy to set up and install. |
| 5. The cost of this storage device is higher than the DAS device. | 5. Its cost is low as compared to NAS. |
| 6. The capacity of NAS is 109 to 1012 bytes. | 7. The capacity of DAS is only 109 bytes. |
| 7. This storage device allows users to share the files on different OS. | 7. This storage device does not allow users to share the files on different OS. |
| 8. It uses Ethernet and TCP/IP for transmission of data. | 8. It uses IDE/SCSI for the transmission of data. |

Difference Between DAS and SAN

The following table describes the differences between the Direct Attached Storage (DAS) and [Storage Area Network (SAN)](https://www.javatpoint.com/san):

|  |  |
| --- | --- |
| **DAS** | **SAN** |
| 1. DAS is a short form of Direct Attached Storage. | 1. SAN is a short form of Storage Area Network. |
| 2. It uses sectors for backup and recovery. | 2. It uses block by block copying technique for backup and recovery. |
| 3. This storage device is simple, not complex. | 3. This storage Device is complex than the DAS device. |
| 4. Direct attached Storage is easy to set up and install. | 4. Storage Area Network is slightly difficult to install and set up. |
| 5. Its cost is low as compared to SAN. | 5. The cost of this storage device is higher than the DAS device. |
| 7. The capacity of DAS is only 109 bytes. | 6. The capacity of SAN is more than the 1012 bytes. |
| 7. This storage device does not allow users to share the files on different OS. | 7. This storage device allows users to share the files on different OS. |
| 8. It uses IDE/SCSI for the transmission of data. | 8. It uses Internet Protocol and Fibre Channel for transmission of data |