1.Characteristics of Big Data:

VOLUME:

It refers to the size of the data which means large amount of data that needs to be stored.

The size will be peta bytes.

The data stored as records ,tables.

VARIETY:

It refers to the types of data which means variety of different data to be stored.

It has three types

1.structured data that is tables,

2.unstructured data that is social media ,online shopping etc.,

3.semi structured data that is metadata which means the data about data.

VELOCITY:

It refers to the speed of the data.

Near-Time

Real-Time ...

for example, weather forecast.

2. Possible solutions to handle Big data:

Scale Up:

It is nothing but storing and handling the data processing on a single system..

They may be disk capacity, RAM, data transfer speed.

It is very expensive, Complex and more time consuming process.

Scale Out:

It is defined as storing and handling large amount of data on multiple system.

  It is highly Economical and provides a quick way to implement as it works on distribution of load.

For example, Instead of having a single system with 10 TB of storage and 80 GB of RAM, Scale out use 40 machines with 256 GB of storage and 2 GB of RAM

3.  Differences between scaling up and scaling out:

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| --- | --- |
| Scale up | Scale out |
| It is nothing but storing and handling the data processing on a single system.. | It is defined as storing and handling large amount of data on multiple system. The data is distributed among multiple nodes. |
| It takes more cost and time consuming than the scaling out | It takes less cost and less time consuming than the scaling up |
| It is also called as horizontal scaling. It is less  Efficient than the scaling out. | It is also called as vertical scaling. It is more efficient than scaling up. |