My NASA Data

Data Volume Units

Data Volumes:

The volume of data in a single file or file system can be described by a unit called a byte. However, data volumes can become very large when dealing with Earth satellite data. Below is a table to explain data volume units (Credit: Roy Williams, Center for Advanced Computing Research at the California Insittute of Technology).

- Kilo- means 1,000; a Kilobyte is one thousand bytes.
- Mega- means 1,000,000; a Megabyte is a million bytes.
- Giga- means 1,000,000,000; a Gigabyte is a billion bytes.
- Tera- means 1,000,000,000,000; a Terabyte is a trillion bytes.
- Peta- means 1,000,000,000,000,000; a Petabyte is 1,000 Terabytes.
- Exa- means 1,000,000,000,000,000,000; an Exabyte is 1,000 Petabytes.
- Zetta- means 1,000,000,000,000,000,000,000; a Zettabyte is 1,000 Exabytes.
- Yotta- means 1,000,000,000,000,000,000,000,000; a Yottabyte is 1,000 Zettabytes.

Examples of Data Volumes:

Unit	Value	Example
Kilobytes (KB)	1,000 bytes	a paragraph of a text document
Megabytes (MB)	1,000 Kilobytes	a small novel
Gigabytes (GB)	1,000 Megabytes	Beethoven's 5th Symphony
Terabytes (TB)	1,000 Gigabytes	all the X-rays in a large hospital
Petabytes (PB)	1,000 Terabytes	half the contents of all US academic research libraries
Exabytes (EB)	1,000 Petabytes	about one fifth of the words people have ever spoken
Zettabytes (ZB)	1,000 Exabytes	as much information as there are grains of sand on all the world's beaches
Yottabytes (YB)	1,000 Zettabytes	as much information as there are atoms in 7,000 human bodies