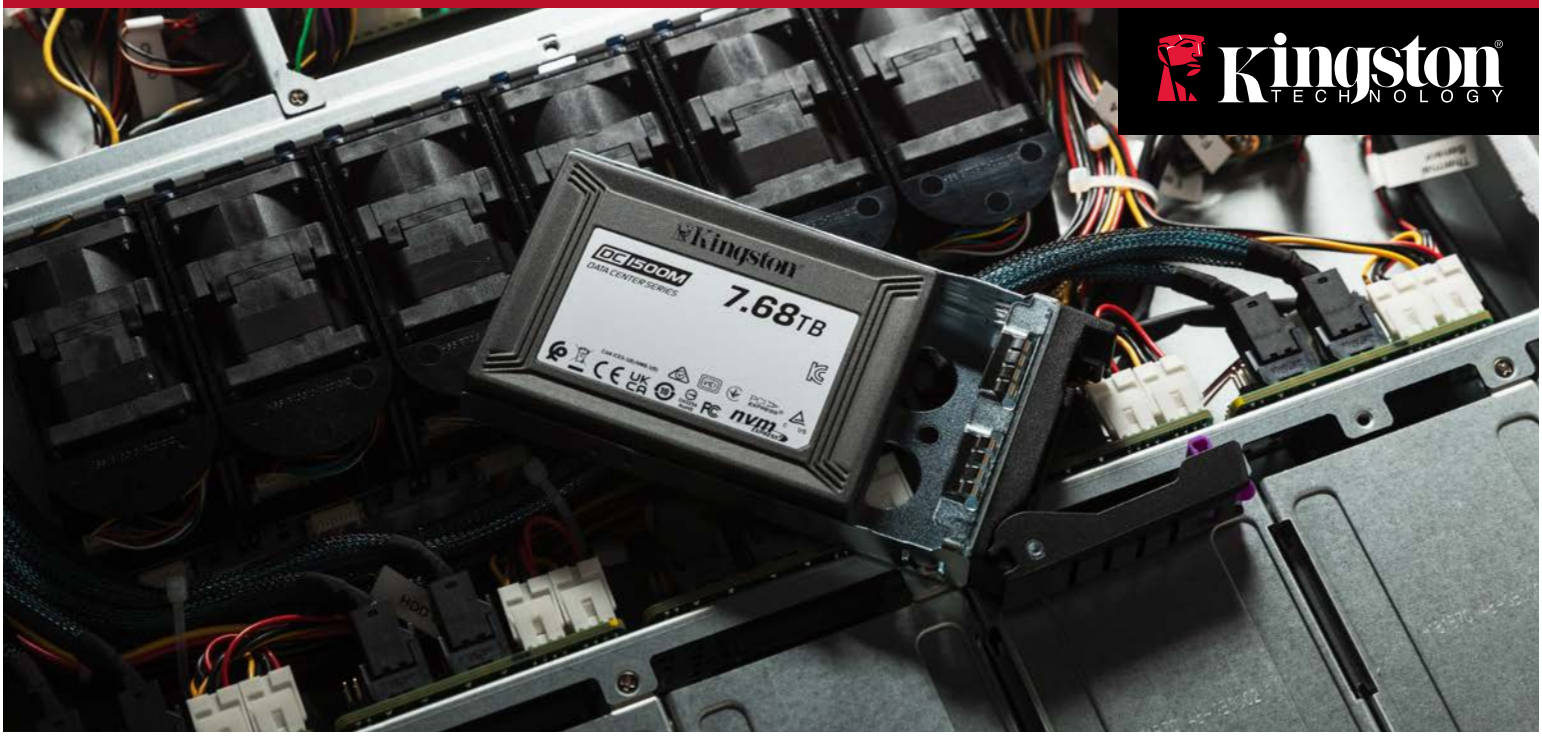

Design-In SSDs

How to Compute Drive Writes Per Day (DWPD)

Drive Writes Per Day (DWPD) calculations allow us to use the TBW specification of a drive to calculate the number of times the user capacity of a drive can be written per day over the warranty period (or a different number of years), based again upon the JEDEC workload used to specify the TBW.[1]

$$\text{Drive Writes Per Day} = \frac{\text{TBW of an SSD in TB} * 1000}{\text{365 Days} * \text{Number of Years} * \text{SSD User Capacity in GB}}$$

For a 1.8TB DC400 SSD with a 5-year limited warranty, the calculation would be

$$\text{Drive Writes Per Day} = \frac{\text{1432 TB} * 1000}{\text{365 Days} * 5 * \text{1800GB}}$$

= 0.43 or 43% of the drive capacity per day (that's 774GB)

#KingstonIsWithYou

1 JESD219A: Solid-State Drive (SSD) Endurance Workloads, JEDEC Committee (https://www.jedec.org/standards-documents/docs/jesd219a). These Client and Enterprise workloads represent a standard for the industry to rate their SSDs and derive the rated TBW supported by their SSDs. Note that your workload could vary and the rated TBW specifications may be above or below your workload's over time, due to the unique WAF from your application.