



Data transfer times

Data transfer to AWS involves moving data from your on-premises data center or other cloud environments into AWS. This process can be critical for cloud migration, data backup, disaster recovery, and large-scale data analytics. AWS offers multiple methods for data transfer, each tailored to different volumes of data, speed requirements, and cost considerations.

(Note: The following task might be hard for some in senior positions to perform)

Consider yourself as an employee has been tasked to transfer 200 TB worth of data to the Cloud with a 100 Mbps Internet connection, while taking into consideration the associated transfer costs and time taken. Now, AWS provides us with a myriad of different methods to tackle such a situation, and though a full explanation of all methods is beyond the scope of this book, some of those solutions are briefly discussed in the subsections below.

Over the Internet / Site-to-Site VPN

A Site-to-Site VPN creates a secure, encrypted connection (i.e. a tunnel) over the public internet between your on-premises network and AWS. Using a Site-to-Site VPN allows you to securely transfer data in an immediate and hassle-free manner using an internet connection already available to you. However, this method can be time-consuming, especially when transferring large volumes of data, such as 200 TB, at 100 Mbps would take approximately 185 days.

TLDR;

- Immediate to setup.
- Will take $200(\text{TB}) * 1000(\text{GB}) * 1000(\text{MB}) * 8(\text{Mb}) / 100 \text{ Mbps} = 16,000,000\text{s}$
⇒ ~185 days.

Over Direct Connect (1 Gbps)

AWS Direct Connect provides a dedicated, high-speed network connection between your data center and AWS, bypassing the public internet for a more reliable and consistent transfer experience. Setting up Direct Connect can take over a month due to the physical installation and configuration required, but once established, it reduces the transfer time for 200 TB of data to around 18.5 days. This method is ideal for organizations needing fast, reliable transfers and ongoing large-scale data replication but comes with higher setup costs and complexity.

TLDR;

- Time taken for initial setup is quite long (Over a month).
- Will take $200(\text{TB}) * 1000(\text{GB}) * 8(\text{Gb}) / 1 \text{ Gbps} = 1,600,000\text{s} \Rightarrow \sim 18.5 \text{ days}$.

Over Snowball

AWS Snowball is a physical data transport solution where AWS ships you storage devices to load your data, which are then returned to AWS for uploading. This method can handle large data volumes quickly, with 200 TB taking about a week using 2 to 3 Snowballs in parallel. Snowball is particularly useful when internet-based transfers are impractical due to bandwidth limitations. Additionally, it can be combined with AWS Database Migration Service (DMS) for seamless database migrations. It's a secure and efficient method for one-time, large-scale data migrations.

TLDR;

- Can perform tasks by utilizing multiple Snowballs in parallel.
- Time taken to complete the end-to-end transfer is about 1 week.
- Can be combined with DMS.