

ETL vs ELT

	ETL	ELT
Definition	Data is extracted from a source system, transformed on a secondary processing server, and loaded into a destination system.	Data is extracted from a source system, loaded into a destination system, and transformed inside the destination system.
Extract	Raw data is extracted using API connectors.	Raw data is extracted using API connectors.
Transform	Raw data is transformed on a processing server.	Raw data is transformed inside the target system.
Load	Transformed data is loaded into a destination system.	Raw data is loaded directly into the target system.
Speed	ETL is a time-intensive process; data is transformed before loading into a destination system.	ELT is faster by comparison; data is loaded directly into a destination system, and transformed in-parallel.
Code-Based Transformations	Performed on secondary server. Best for compute-intensive transformations & pre-cleansing.	Transformations performed in-database; simultaneous load & transform; speed & efficiency.
Maturity	Modern ETL has existed for 20+ years; its practices & protocols are well-known and documented.	ELT is a newer form of data integration; less documentation & experience.
Privacy	Pre-load transformation can eliminate PII (helps for HIPPA).	Direct loading of data requires more privacy safeguards.
Maintenance	Secondary processing server adds to the maintenance burden.	With fewer systems, the maintenance burden is reduced.
Costs	Separate servers can create cost issues.	Simplified data stack costs less.
Requeries	Data is transformed before entering destination system; therefore raw data cannot be queried.	Raw data is loaded directly into destination system and can be queried endlessly.
Data Lake Compatibility	No, ETL does not have data lake compatibility.	Yes, ELT does have data lake compatibility.
Data Output	Structured (typically).	Structured, semi-structured, unstructured.
Data Volume	Ideal for small data sets with complicated transformation requirements.	Ideal for large datasets that require speed & efficiency.