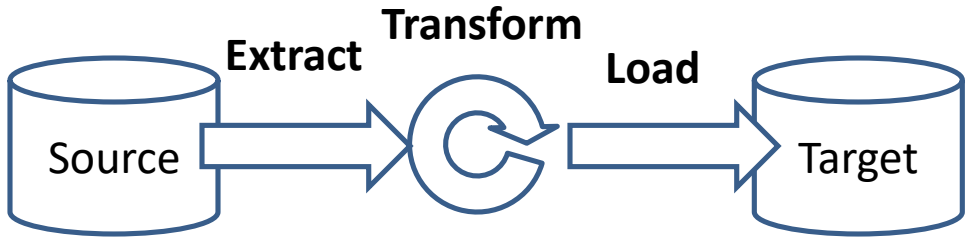
V, F, IMC, IDA

Extract, Transform, Load (ETL) Process



Disk Drive

- Slower
- Less expensive

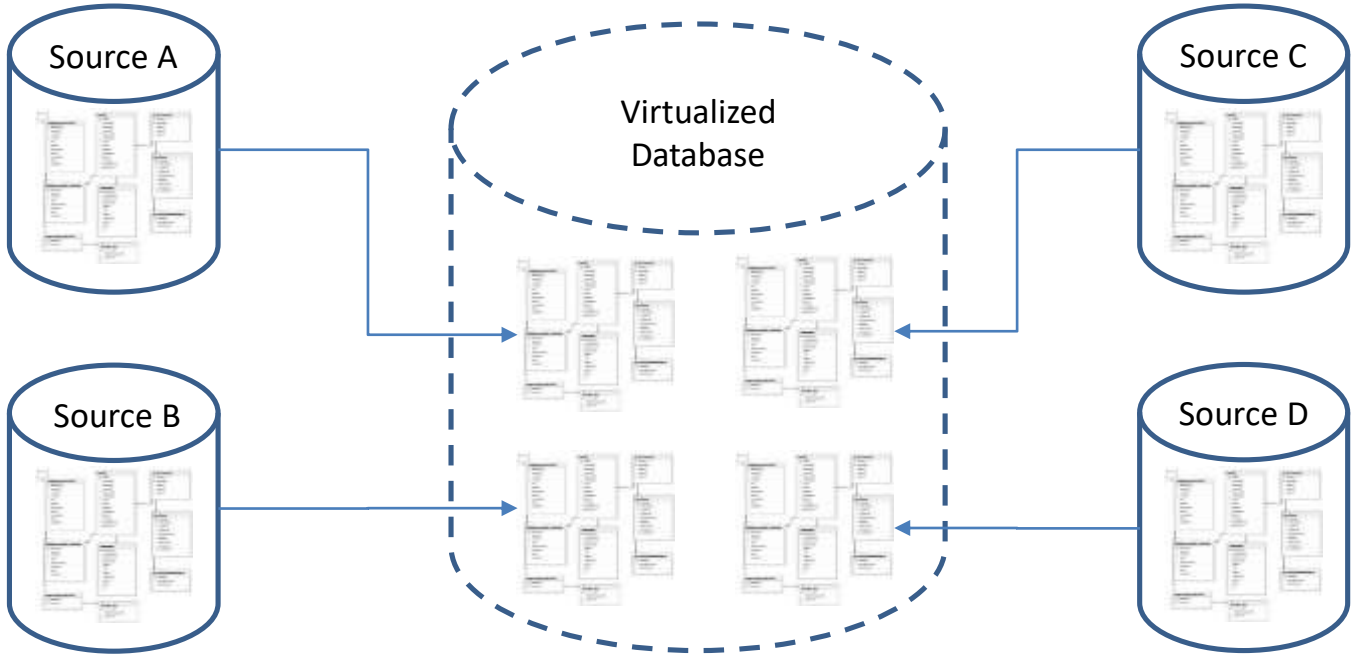
Memory

- Faster
- More expensive

Data Virtualization

Data Virtualization

- Data stored at each source, but looks like it's in one place



Data Virtualization

Data Virtualization: Advantages

- Reduces duplication & storage needs
- Changes reflected immediately
- Assess layer easier to change

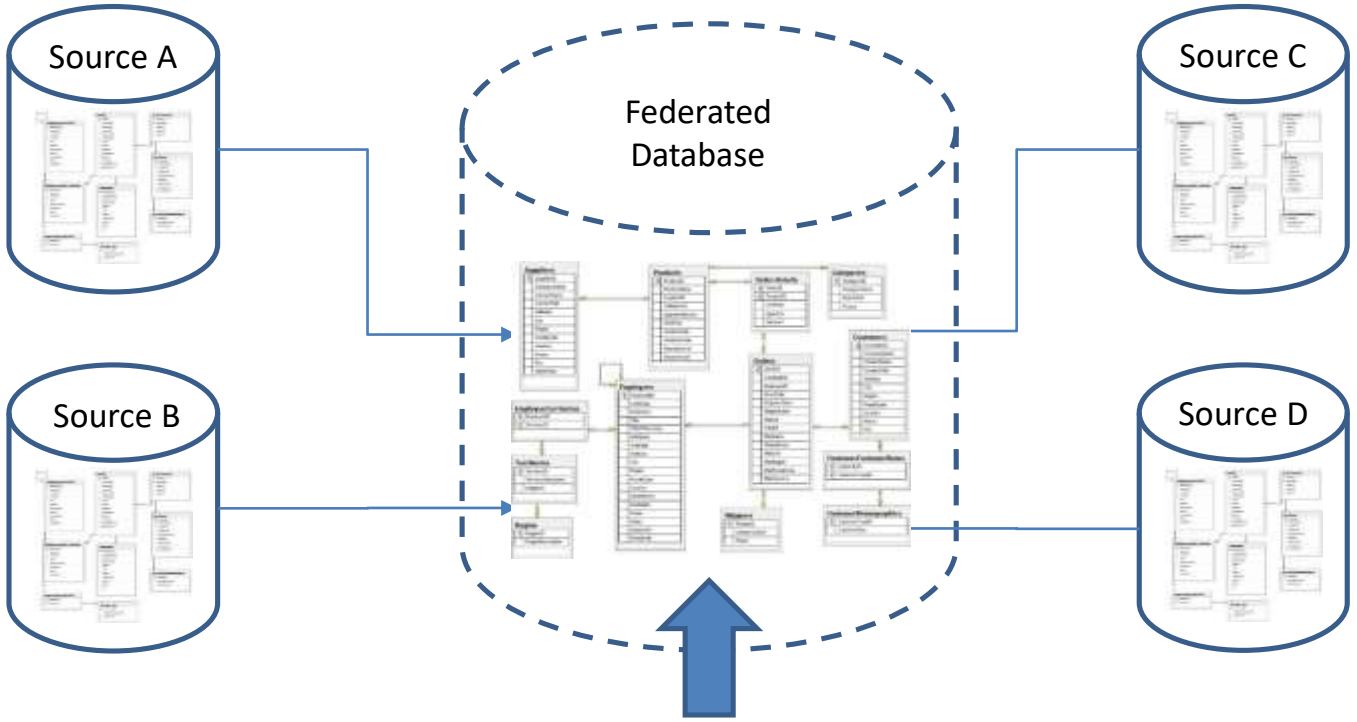
Data Virtualization: Limitations

- Adds a processing layer; can slow down extraction
- Doesn't necessarily make sense of how data is related

Data Federation

Data Federation

- Data stored at each source, but looks like it's in one place
- Also fits data into a common data model
- Additional benefit of a more integrated view, but adds even more processing that can further slow down extraction



Data Virtualization & Federation

More attractive when:

- Resourced limited
- Velocity of change is rapid
- Little transformation or integration required
- Sources of high quality with lots of history

Less attractive when:

- Volume or complexity is high
- Historical data needs to be stored outside of source

In-Memory Computing & In-Database Analytics

In-Memory Computing

- Data loaded into RAM
- Enables faster access and more rapid iteration
- Initial load can take some time

In-Database Analytics

- Moves analytical operations back into the database
- Enables rapid & automated application of analytics
- Ideal in highly time-sensitive environments

Recap

- Data Virtualization
- Data Federation
- In-Memory Computing
- In-Database Analytics