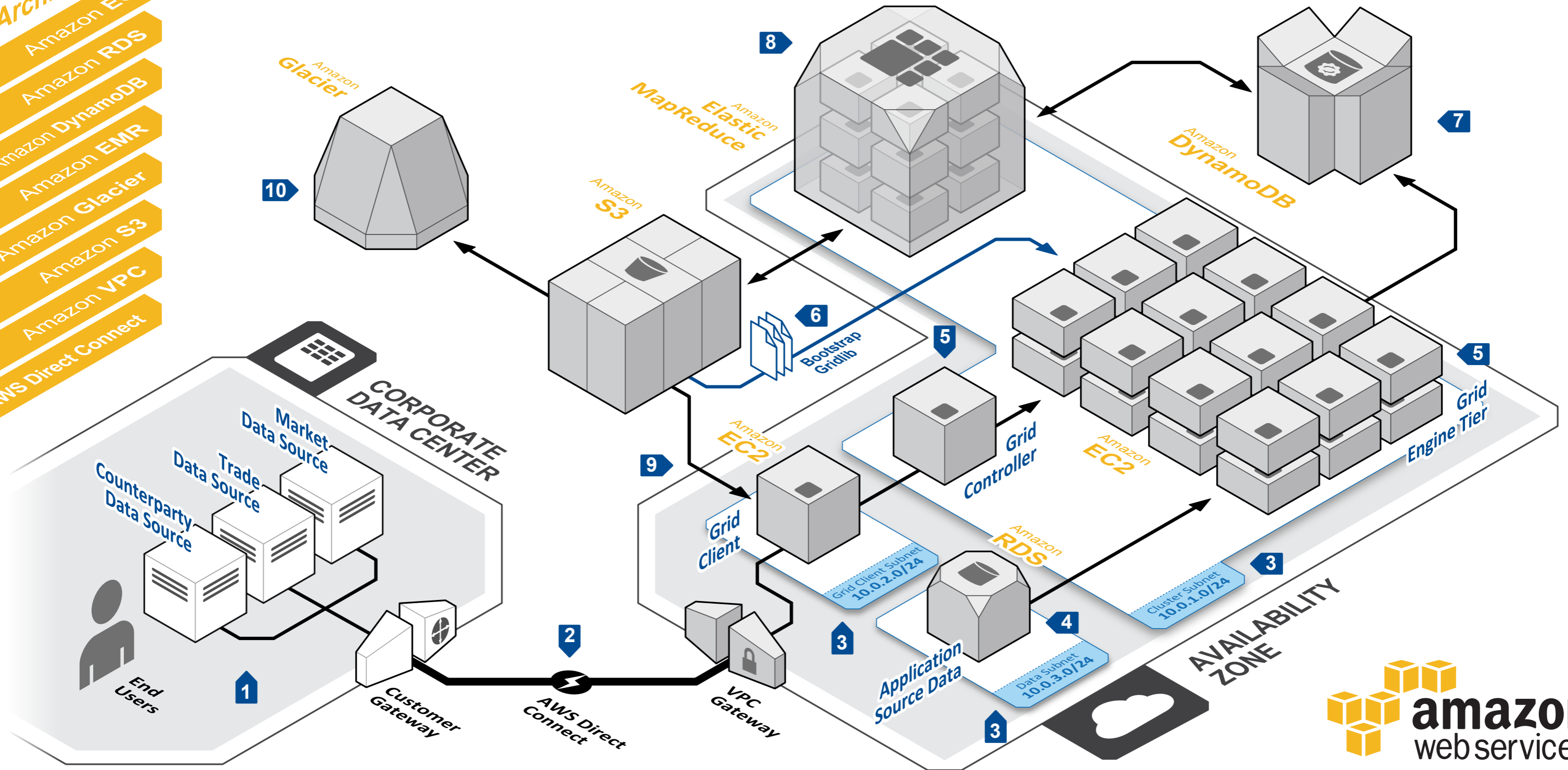


FINANCIAL SERVICES GRID COMPUTING

Financial services grid computing on the cloud provides dynamic scalability and elasticity for operation when compute jobs are required, and utilizing services for aggregation that simplify the development of grid software. On demand provisioning of hardware, and template driven deployment, combined with low latency access to existing on-premise data sources make AWS a powerful platform for high performance grid computing systems.

- AWS Reference Architectures**
- Amazon EC2
 - Amazon RDS
 - Amazon DynamoDB
 - Amazon EMR
 - Amazon Glacier
 - Amazon S3
 - Amazon VPC
 - AWS Direct Connect



System Overview

- 1 Date sources for market, trade, and counterparties are installed on startup from on premise data sources, or from **Amazon Simple Storage Service** (Amazon S3).
- 2 **AWS DirectConnect** can be used to establish a low latency and reliable connection between the corporate data center site and AWS, in 1 to 10Gbit increments. For situations with lower bandwidth requirements, a VPN connection to the **VPC Gateway** can be established.
- 3 Private subnetworks are specifically created for customer source data, compute grid clients, and the grid controller and engines.
- 4 Application and corporate data can be securely stored in the cloud using the **Amazon Relational Database Service** (Amazon RDS).
- 5 Grid controllers and grid engines are running **Amazon Elastic Compute Cloud** (Amazon EC2) instances started on demand from **Amazon Machine Images** (AMIs) that contain the operating system and grid software.
- 6 Static data such as holiday calendars and QA libraries and additional gridlib bootstrapping data can be downloaded on startup by grid engines from **Amazon S3**.
- 7 Grid engine results can be stored in **Amazon DynamoDB**, a fully managed database providing configurable read and write throughput, allowing scalability on demand.
- 8 Results in **Amazon DynamoDB** are aggregated using a map/reduce job in **Amazon Elastic MapReduce** (Amazon EMR) and final output is stored in **Amazon S3**.
- 9 The compute grid client collects aggregate results from **Amazon S3**.
- 10 Aggregate results can be archived using **Amazon Glacier**, a low-cost, secure, and durable storage service.

