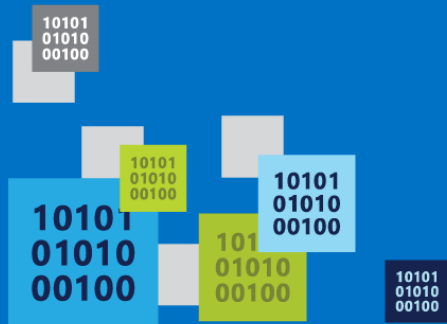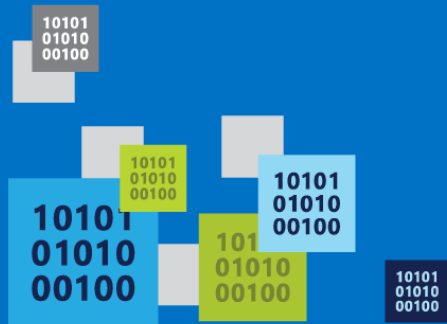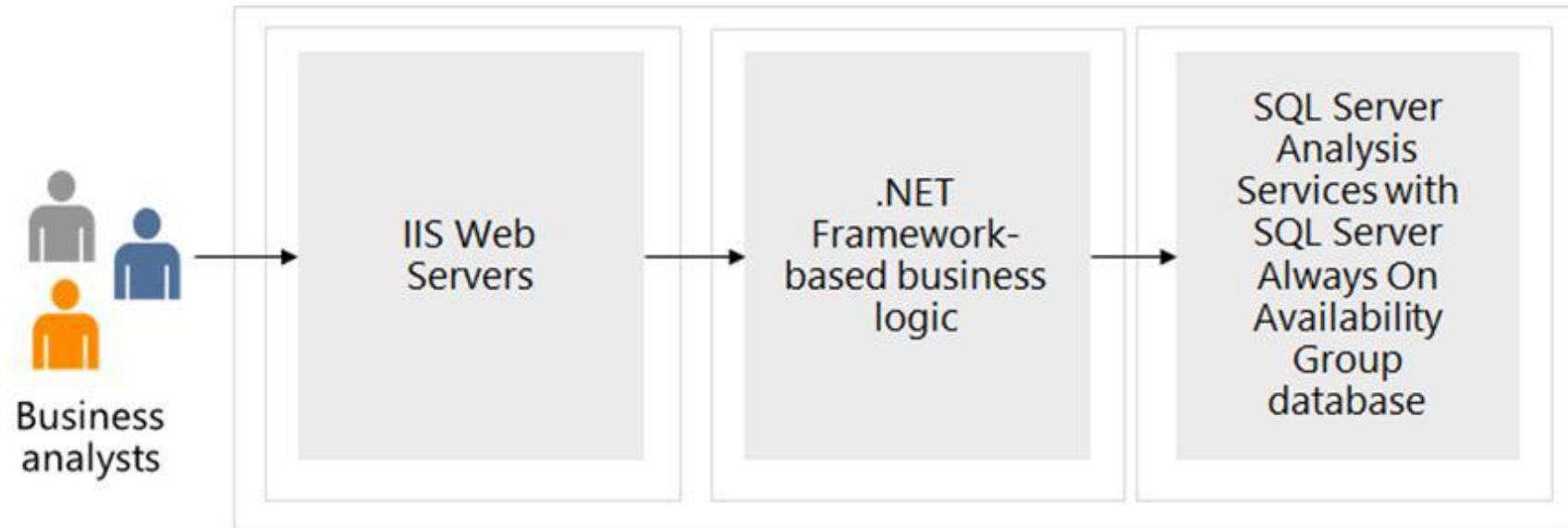# Design a Compute Solution

Requirements

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Tailwind Traders would like to migrate their product catalog application to the cloud. This application has a traditional 3-tier configuration using SQL Server as the data store. The IT team hopes you can help modernize the application. They have provided a diagram and several areas that could be improved.
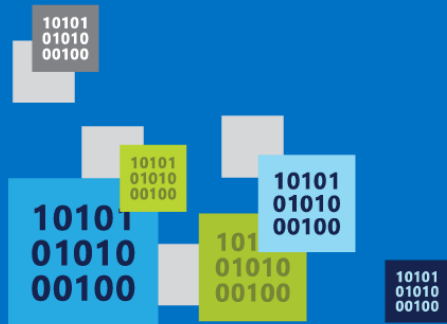
- The front-end application is a .NET core-based web app. During peak periods 1750 customers visit the website each hour.

- The application runs on IIS web servers in a front-end tier. This tier handles all customer requests for purchasing products. During the latest holiday sale, the front-end servers reached their performance limits and page loads were lengthy. The IT team has considered adding more servers, but during off hours the servers are often idle.

- The middle tier hosts the business logic that processes customer requests. These requests are often for help desk support. Support requests are queued and lately the wait times have been exceptionally long. Customers are offered email rather than waiting for a representative. But many customers seem frustrated and are disconnecting rather than waiting. Customer requests are 75-125 per hour.

- The back-end tier uses SQL Server database to store customer orders. Currently, the back-end database servers are performing well.

- While high availability is a concern, due to legal requirements the company must keep all the resources in a single region.

Requirements

Business analysts → IIS Web Servers → .NET Framework-based business logic → SQL Server Analysis Services with SQL Server Always On Availability Group database

- Heavy demand
- Servers reach their performance limits during the day
- Servers sit idle during off hours

- Rest API call from the front-end tier
- Request demand changes from day to day

- Uses all-flash enterprise SAN storage

Tasks

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- **Front-end tier**. Which Azure compute service would you recommend for the front-end tier? Explain why you decided on your solution.

- **Middle tier**. Which Azure compute service would you recommend for the middle tier? Explain why you decided on your solution.

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