For designing and developing a small e-commerce application hosted on Azure, here is a breakdown of the services to be used:

1. List of Azure Services:

Azure App Service

Azure SQL Database

Azure Storage Account

Blob Storage

File Storage

Azure Function

Azure Virtual Network

Azure Key Vault

Azure CDN (Content Delivery Network)

Azure Active Directory (AD)

Azure Monitor and Application Insights

2. Roles of Each Service:

Azure App Service:

Role: Host the front-end and back-end of the e-commerce application. It provides a scalable environment for deploying your website using ASP.NET Core, Node.js, PHP, etc. It will act as the main hub for user interactions.

Azure SQL Database:

Role: Store all structured data related to products, orders, customers, and payment information. Azure SQL Database provides scalable relational database support, ensuring data integrity and high availability.

Azure Storage Account:

Blob Storage:

Role: Store large, unstructured content such as product images, user-uploaded photos, and promotional videos.

File Storage:

Role: Provide access to shared files or documents that need to be accessed by multiple instances or services, such as order invoices or logs.

Azure Function:

Role: Handle serverless background processing tasks such as sending order confirmation emails, applying discounts, or executing scheduled clean-up tasks. This helps achieve scalability with event-driven processing.

Azure Virtual Network:

Role: Ensure secure communication between the Azure SQL Database and App Service by creating a private connection using a virtual network. This provides isolation and security.

Azure Key Vault:

Role: Store sensitive data such as database connection strings, API keys, and certificates securely, preventing them from being hard-coded in the application.

Azure CDN (Content Delivery Network):

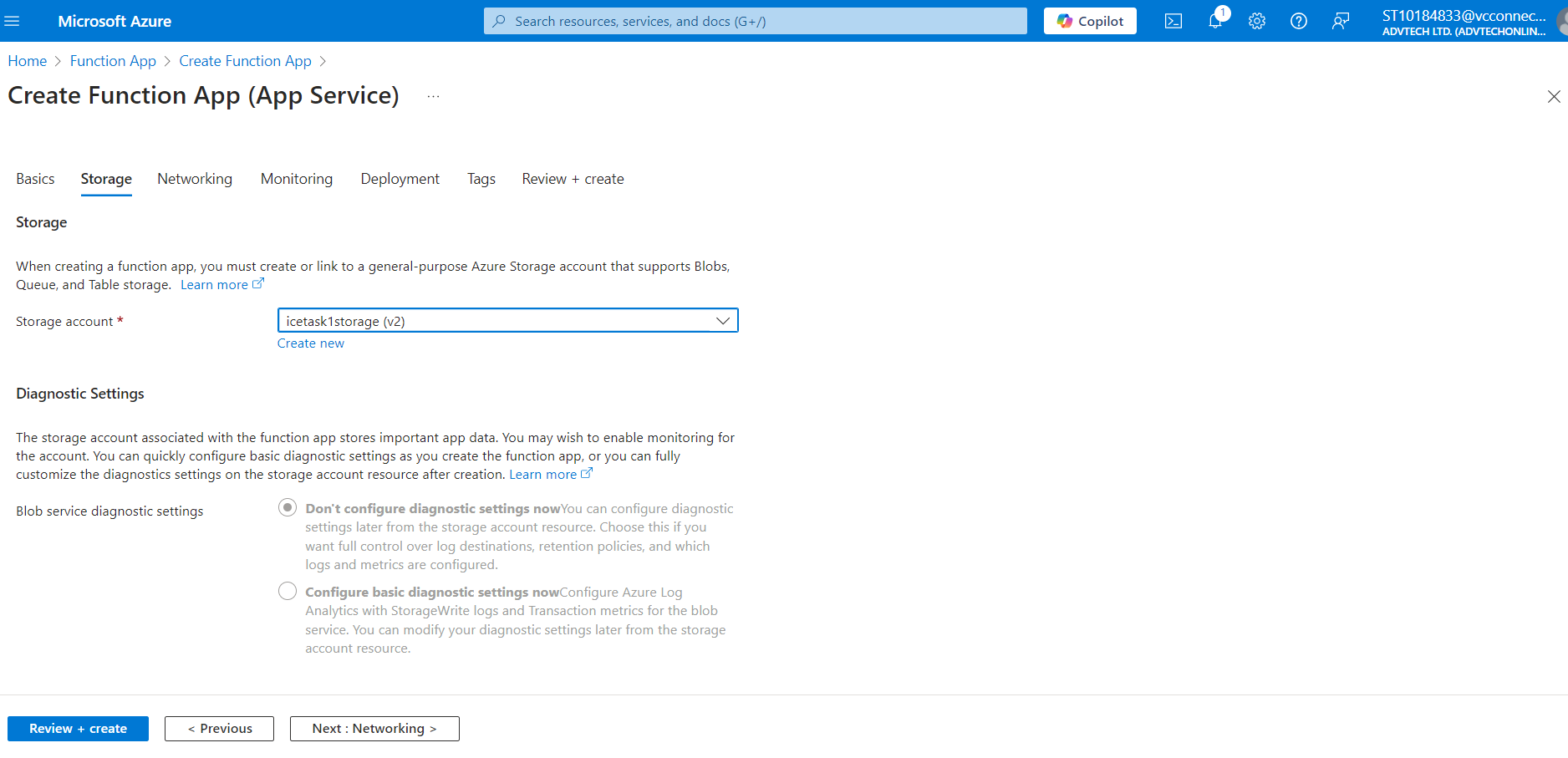
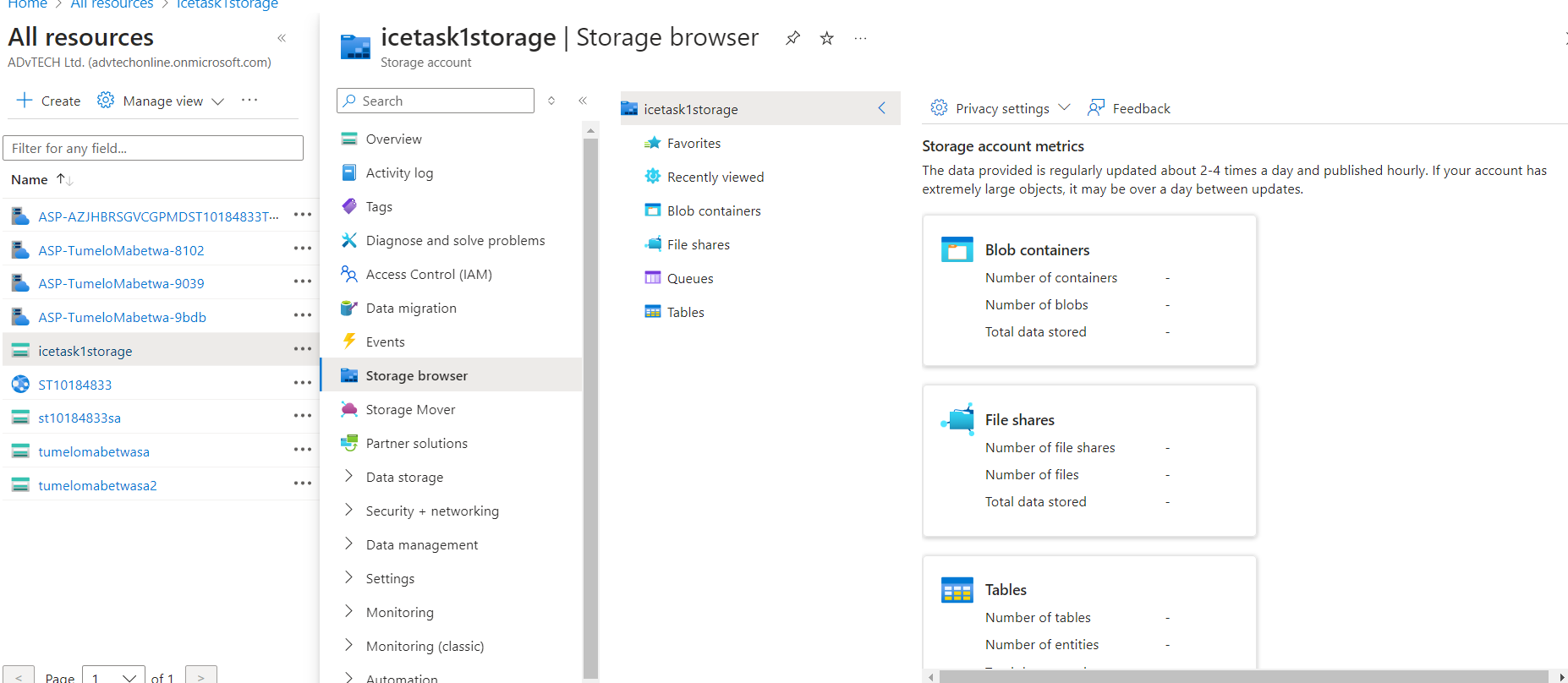
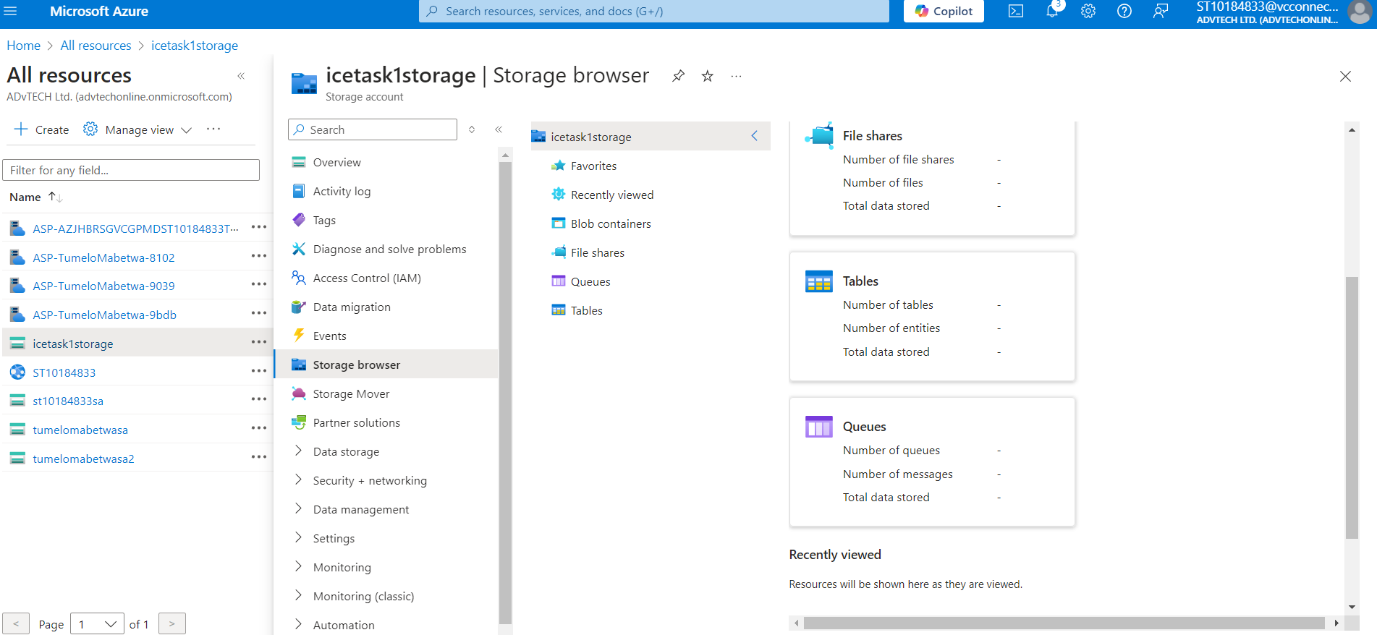
Role: Accelerate the delivery of product images, JavaScript, CSS, and other static files to improve page load speed and global reach.

Azure Active Directory (AD):

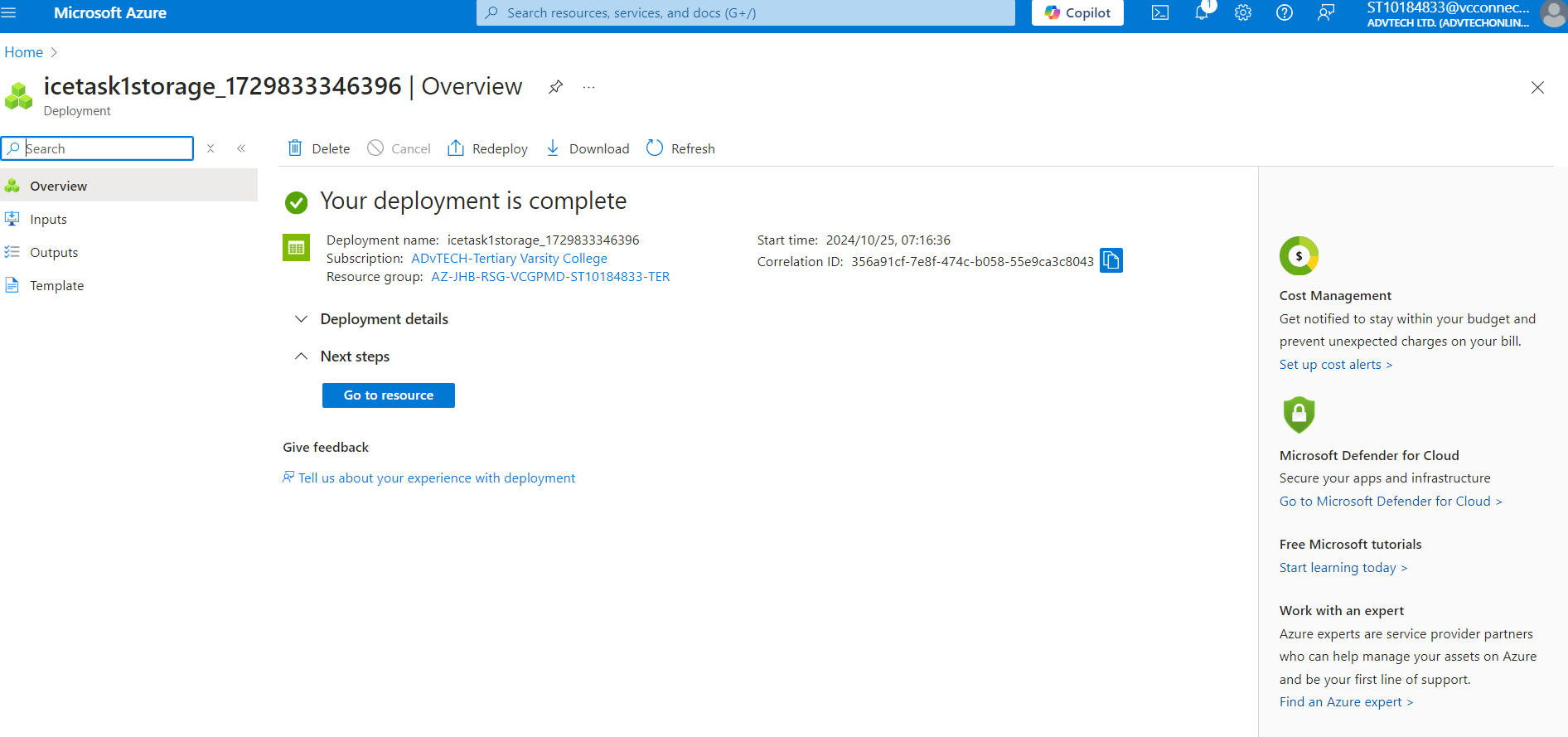
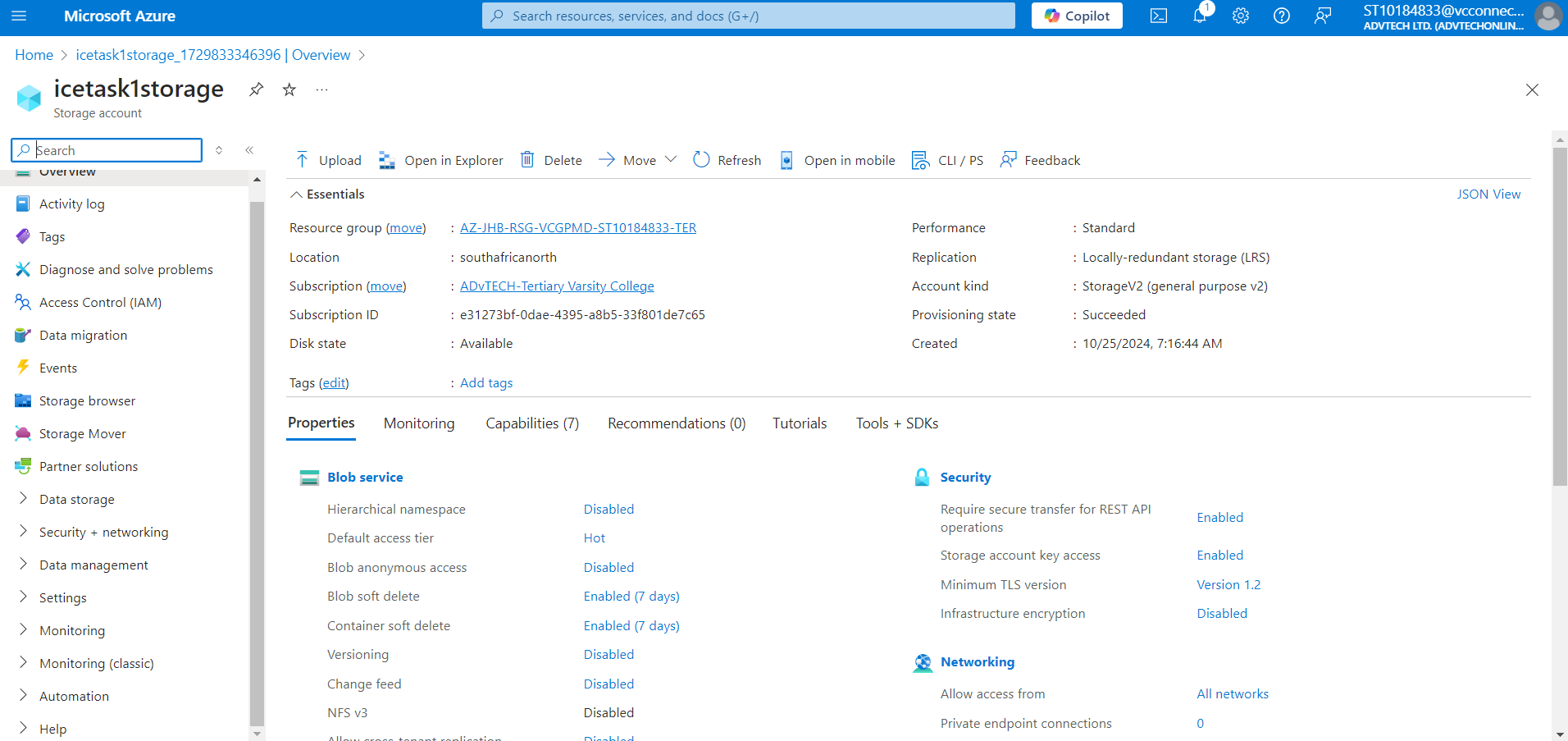
Role: Manage user authentication and authorization for the e-commerce platform. It can be used to authenticate both customers and administrators securely.

Azure Monitor and Application Insights:

Role: Monitor the health, performance, and reliability of the e-commerce application. Application Insights provides detailed telemetry data, logging, and diagnostic information.

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