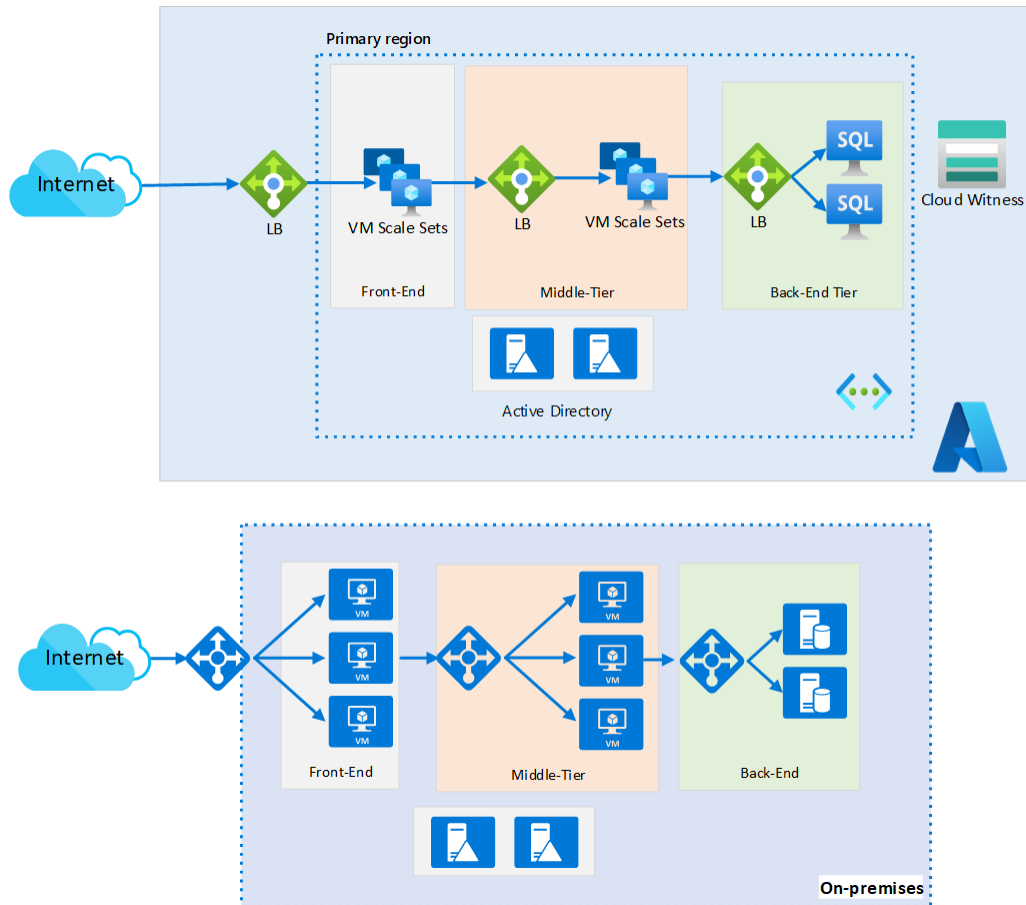


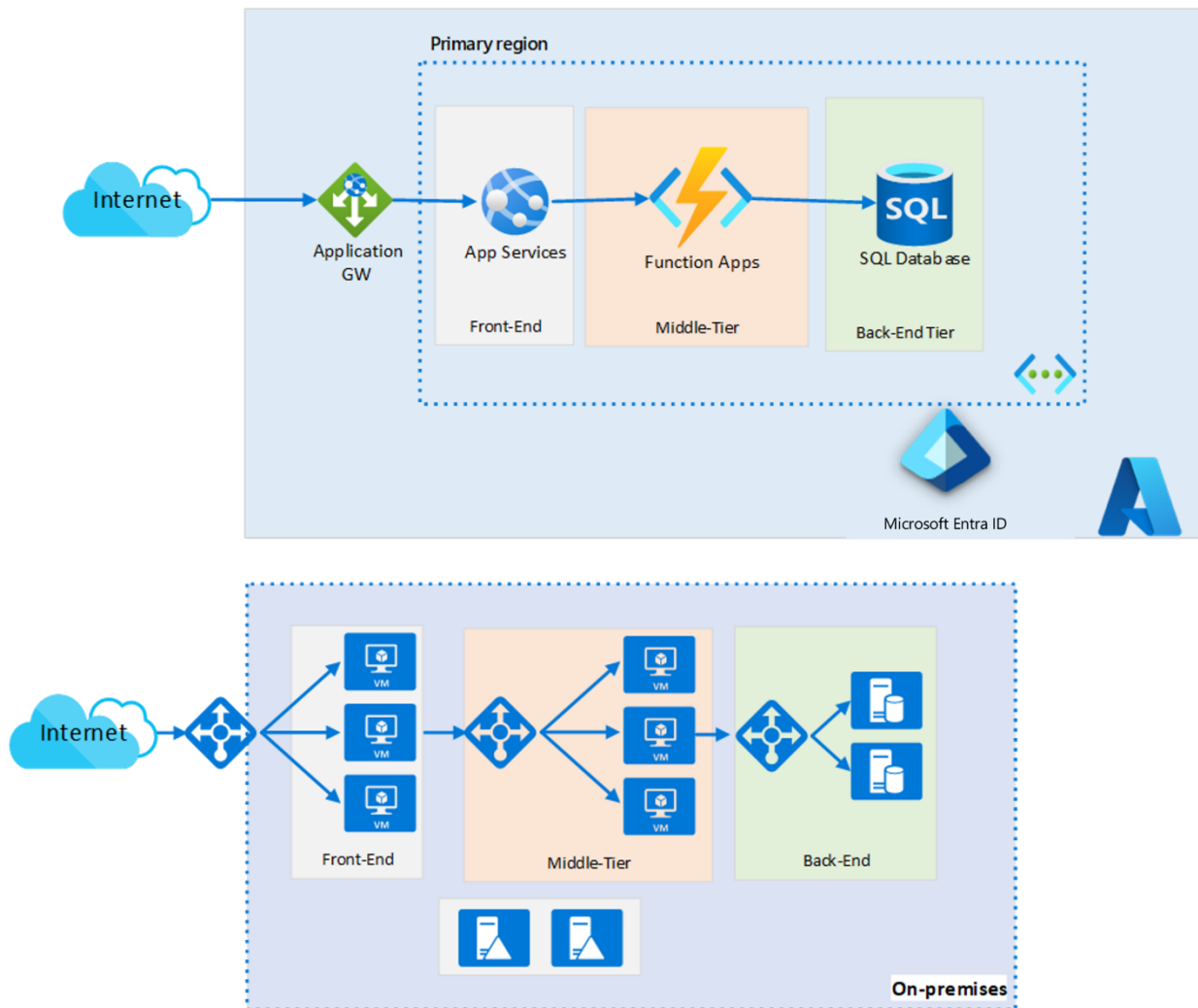
This document provides suggested solutions for case studies. Other architectures may also work.

## Design Compute Case Study

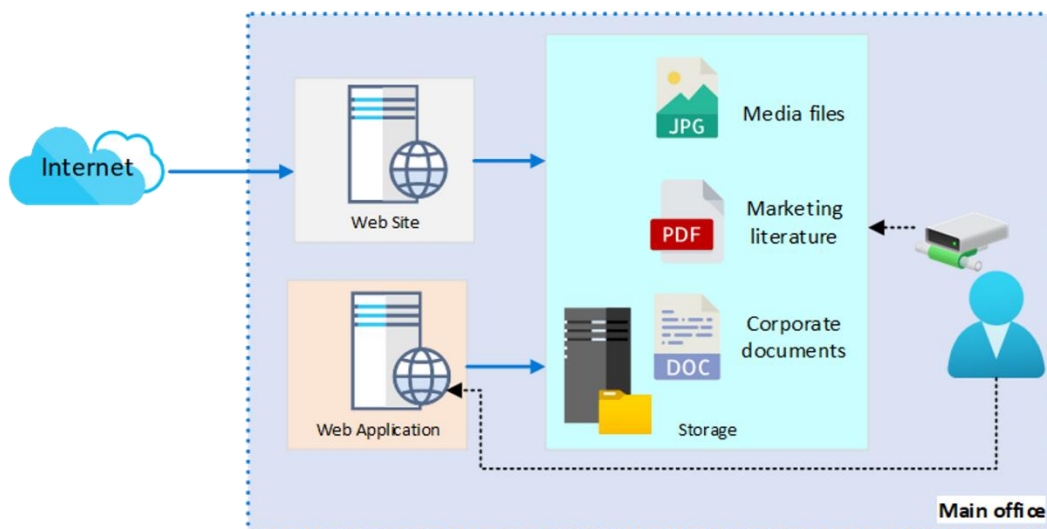
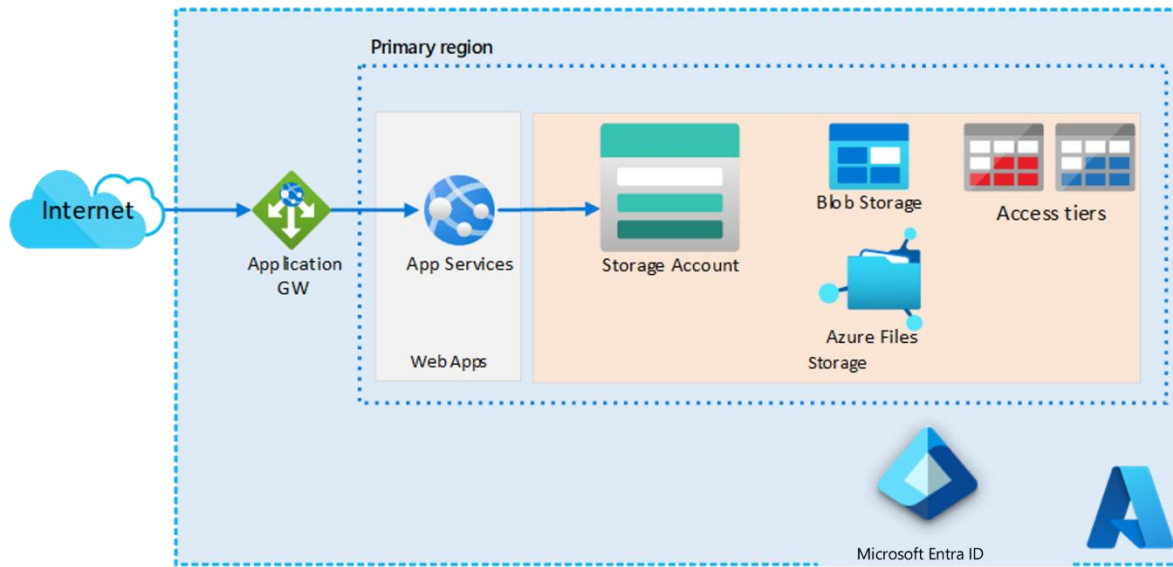
Here is an IaaS solution.



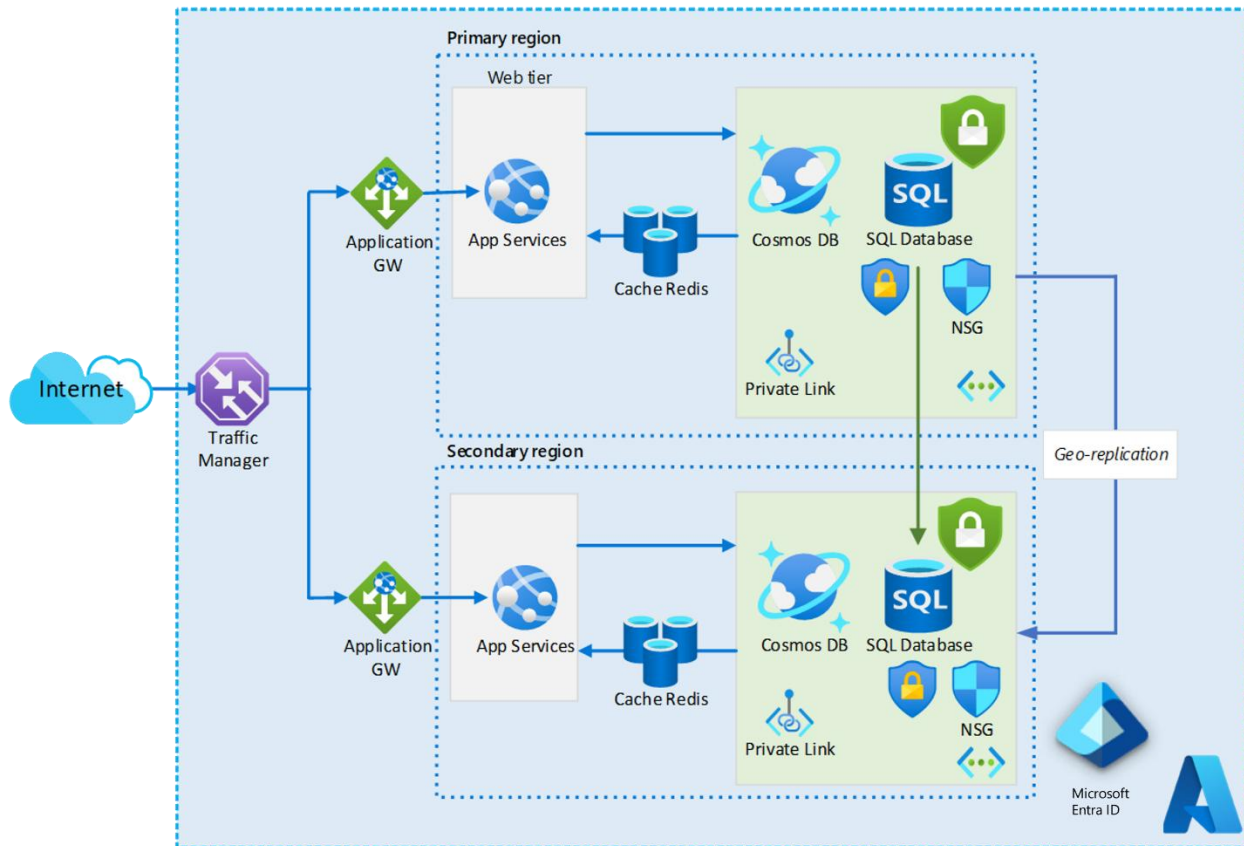
Here is PaaS solution.



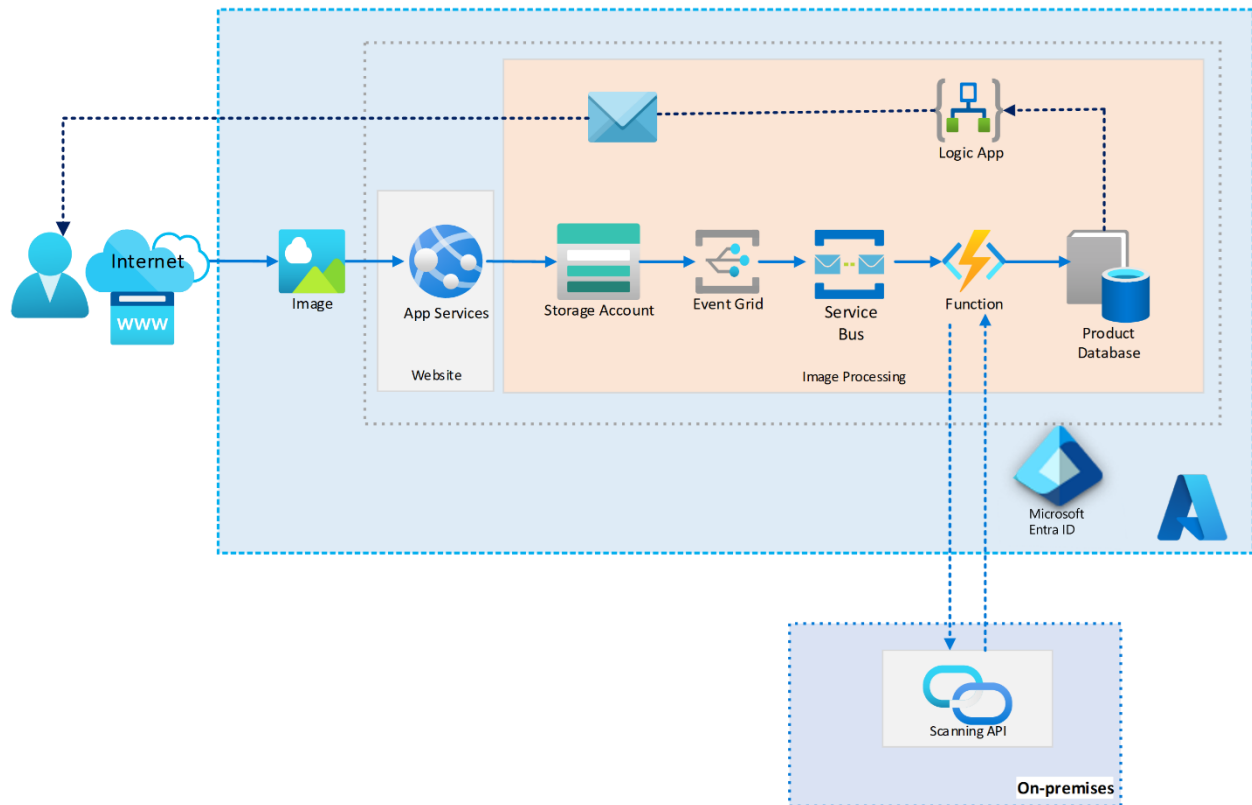
## Design Non-relational Storage Case Study



## Design Relational Storage Case Study

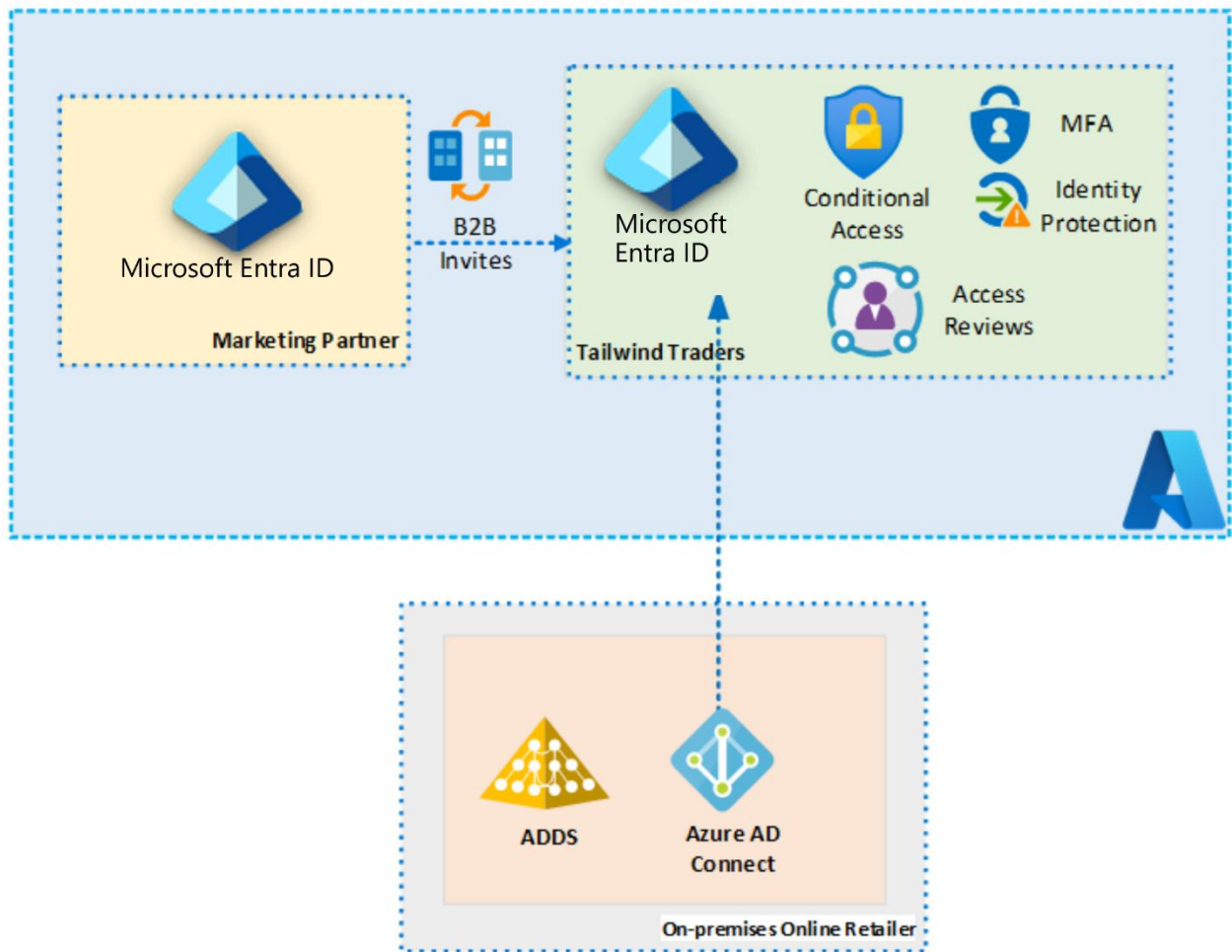


## Design Application Architecture Case Study

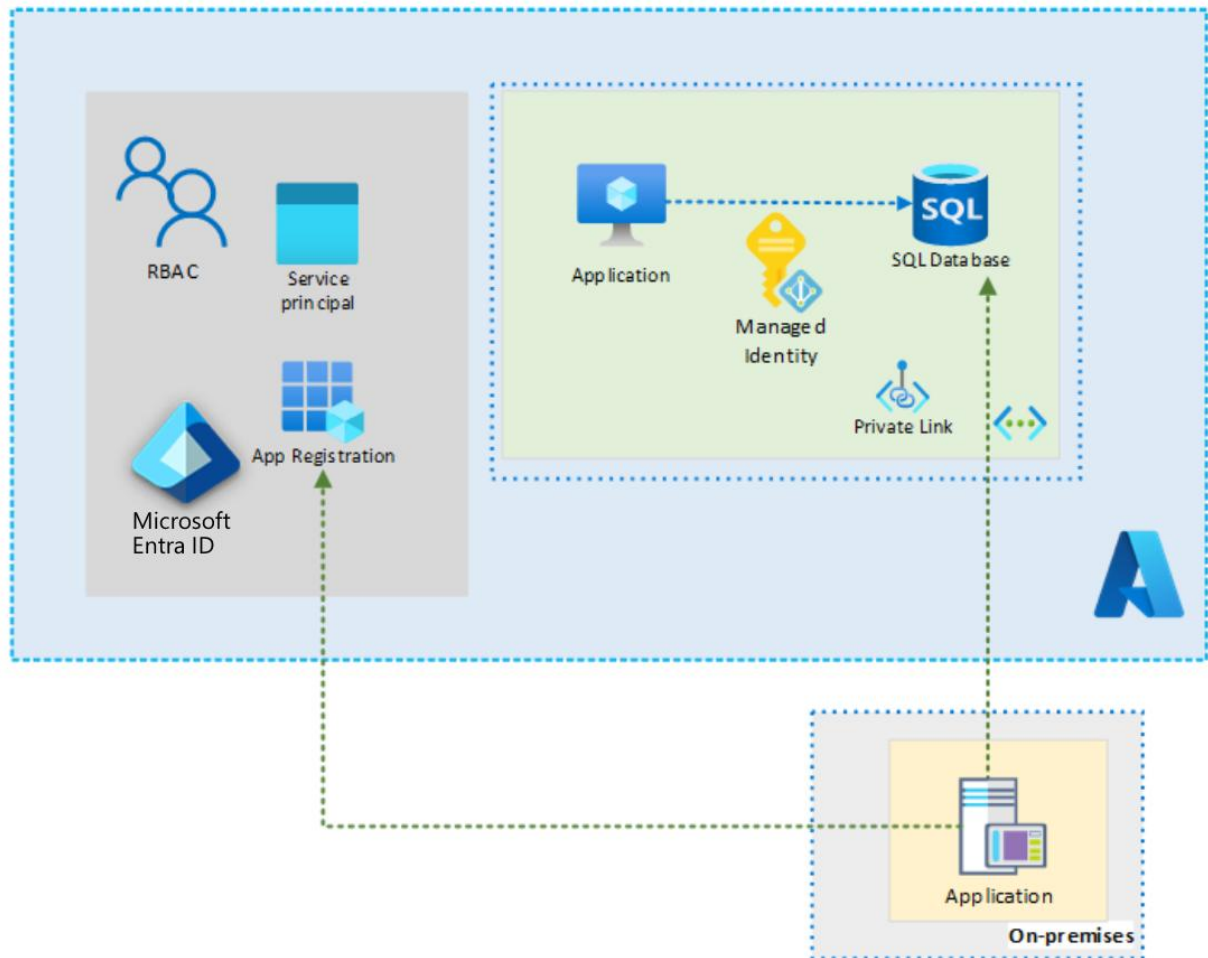


## Design Authentication and Authorization Case Study

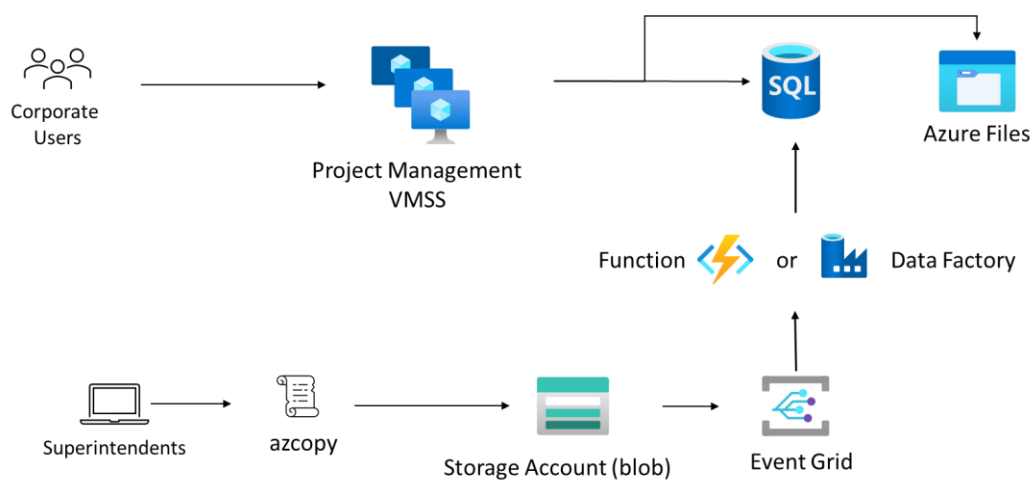
## 1. New employee user accounts.



2. **New identity solution features.** Here are some recommendations to discuss and review. Discuss the order of importance.



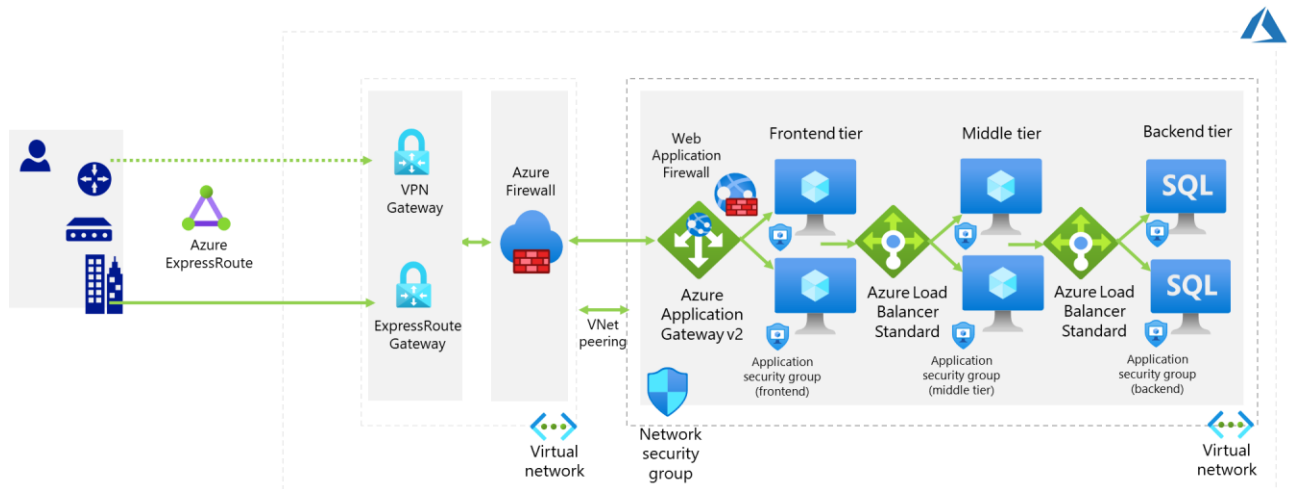
### Fabrikam Residences Case Study







## Design Networking - BI Enterprise application



## Glossary

Terminology	Module	Description
Governance	Module 1: Design governance and compute solutions	Mechanisms and processes to maintain control over applications and resources in Azure.
Compute	Module 1: Design governance and compute solutions	The resources and services used to run applications and workloads.
Management groups	Module 1: Design governance and compute solutions	Containers that help manage access, policy, and compliance for multiple subscriptions.
Subscriptions	Module 1: Design governance and compute solutions	Logical containers that serve as units of management and scale, also billing boundaries.
Resource groups	Module 1: Design governance and compute solutions	Logical containers into which Azure resources are deployed and managed.
Resource tagging	Module 1: Design governance and compute solutions	Labels that help organize resources for management and billing purposes.
Azure Policy	Module 1: Design governance and compute solutions	A service that enforces organizational standards and assesses compliance at scale.
Azure RBAC	Module 1: Design governance and compute solutions	Role-based access control to grant access to Azure resources.
Azure Blueprints	Module 1: Design governance and compute solutions	A service that defines a repeatable set of governance tools and standard Azure resources.

Terminology	Module	Description
Cost	Module 1: Design governance and compute solutions	The expenses associated with using Azure services and resources.
Landing zones	Module 1: Design governance and compute solutions	Pre-configured environments for hosting workloads in Azure.
Compute service	Module 2: Design a compute solution	Services that provide computing resources for running applications.
Virtual machine solutions	Module 2: Design a compute solution	Virtualized computing environments that run on Azure.
Azure Batch solutions	Module 2: Design a compute solution	A service for running large-scale parallel and high-performance computing batch jobs.
Azure App Services solutions	Module 2: Design a compute solution	A platform for building and hosting web apps, mobile backends, and RESTful APIs.
Azure Container Instances solutions	Module 2: Design a compute solution	A service for running containers without managing virtual machines.
Azure Kubernetes Service solutions	Module 2: Design a compute solution	A managed Kubernetes service for running containerized applications.
Azure Function solutions	Module 2: Design a compute solution	A serverless compute service for running event-driven code.
Non-relational data storage	Module 3: Design a non-relational data storage solution	Storage for semi-structured and unstructured data, such as JSON and XML.

Terminology	Module	Description
Azure storage accounts	Module 3: Design a non-relational data storage solution	Containers that hold all Azure Storage data objects, including blobs, files, queues, and tables.
Data redundancy	Module 3: Design a non-relational data storage solution	Strategies to ensure data is replicated and available in case of failures.
Azure blob storage	Module 3: Design a non-relational data storage solution	A service for storing large amounts of unstructured data.
Azure files	Module 3: Design a non-relational data storage solution	A service for fully managed file shares in the cloud.
Azure disk solutions	Module 3: Design a non-relational data storage solution	Block-level storage volumes used with Azure virtual machines.
Storage security	Module 3: Design a non-relational data storage solution	Measures to protect data stored in Azure from unauthorized access.
Relational data storage	Module 4: Design a data storage solution for relational data	Storage for structured data that follows a schema, such as SQL databases.
Azure SQL databases	Module 4: Design a data storage solution for relational data	Managed relational database services for SQL Server.
Database scalability	Module 4: Design a data storage solution for relational data	Techniques to handle increasing database workloads.
Database availability	Module 4: Design a data storage solution for relational data	Strategies to ensure databases remain accessible and operational.
Data security	Module 4: Design a data storage solution for relational data	Measures to protect data in databases from unauthorized access and breaches.
Azure SQL Edge	Module 4: Design a data storage solution for relational data	A small-footprint, edge-optimized data engine for IoT and edge devices.

Terminology	Module	Description
Azure Cosmos DB	Module 4: Design a data storage solution for relational data	A globally distributed, multi-model database service.
Data integration	Module 5: Design a data integration solution	The process of combining data from different sources into a unified view.
Azure Data Factory	Module 5: Design a data integration solution	A cloud-based data integration service for creating data-driven workflows.
Azure Data Lake	Module 5: Design a data integration solution	A scalable data storage and analytics service for big data workloads.
Azure Databricks	Module 5: Design a data integration solution	An analytics platform for big data and machine learning.
Azure Synapse Analytics	Module 5: Design a data integration solution	An integrated analytics service for big data and data warehousing.
Azure Stream Analytics	Module 5: Design a data integration solution	A real-time analytics service for processing fast-moving streams of data.
Hot/warm/cold data path	Module 5: Design a data integration solution	Strategies for managing data based on its access frequency and storage requirements.
Messaging solution	Module 6: Design an application architecture solution	Solutions for sending and receiving messages between distributed applications.
Event solution	Module 6: Design an application architecture solution	Solutions for handling events and event-driven architectures.
Application optimization	Module 6: Design an application architecture solution	Techniques for improving application performance and efficiency.
Application lifecycle	Module 6: Design an application architecture solution	The stages through which an application progresses, from development to deployment and maintenance.
Identity and access management	Module 7: Design authentication and authorization solutions	Processes and technologies for managing user identities and controlling access to resources.

Terminology	Module	Description
Microsoft Entra ID	Module 7: Design authentication and authorization solutions	A cloud-based solution for identity and access management.
Microsoft Entra B2B	Module 7: Design authentication and authorization solutions	A service for securely collaborating with external partners.
Azure Active Directory B2C	Module 7: Design authentication and authorization solutions	A tenant to manage customer identities and their application access.
Conditional access	Module 7: Design authentication and authorization solutions	Policies that control access to resources based on conditions such as user location and device compliance.
Identity protection	Module 7: Design authentication and authorization solutions	Tools and policies for detecting and mitigating identity-based risks.
Access reviews	Module 7: Design authentication and authorization solutions	Processes for reviewing and validating user access to resources.
Service principals	Module 7: Design authentication and authorization solutions	Local representations of applications in a single tenant or directory.
Azure Key Vault	Module 7: Design authentication and authorization solutions	A service for securely storing and managing application secrets, keys, and certificates.
Logging solution	Module 8: Design a solution to log and monitor Azure resources	Solutions for collecting and analyzing log data from various sources.
Monitoring solution	Module 8: Design a solution to log and monitor Azure resources	Solutions for tracking the performance and health of applications and resources.
Azure Monitor	Module 8: Design a solution to log and monitor Azure resources	A service for collecting, analyzing, and acting on telemetry data from Azure resources.

Terminology	Module	Description
Log Analytics	Module 8: Design a solution to log and monitor Azure resources	A service for collecting and analyzing log data from Azure resources.
Azure workbooks	Module 8: Design a solution to log and monitor Azure resources	Flexible canvases for data analysis and creating visual reports.
Application Insights	Module 8: Design a solution to log and monitor Azure resources	A service for monitoring the performance and usage of web applications.
Azure Data Explorer	Module 8: Design a solution to log and monitor Azure resources	A service for analyzing large volumes of diverse data from various sources.
Network architecture	Module 9: Design a network infrastructure solution	The design and organization of network components and connections.
Virtual networks	Module 9: Design a network infrastructure solution	Isolated portions of the Azure public network for communication between resources.
Network security groups	Module 9: Design a network infrastructure solution	Lists of rules that allow or deny network traffic to subnets or network interfaces.
Azure Firewall	Module 9: Design a network infrastructure solution	A cloud-native network security service offering high availability and scalability.
Load balancer	Module 9: Design a network infrastructure solution	A service for distributing incoming network traffic across multiple resources.
Application Gateway	Module 9: Design a network infrastructure solution	A web traffic load balancer for managing traffic to web applications.
Traffic Manager	Module 9: Design a network infrastructure solution	A DNS-based traffic load balancer for distributing traffic across global Azure regions.
Azure Front Door	Module 9: Design a network infrastructure solution	A service for optimizing global routing of web traffic and ensuring high availability.
Content Delivery Network (CDN)	Module 9: Design a network infrastructure solution	A global solution for delivering high-bandwidth content to users by caching it at strategic locations.

Terminology	Module	Description
Service endpoints	Module 9: Design a network infrastructure solution	Secure and direct connectivity to Azure services over an optimized route.
Private Link	Module 9: Design a network infrastructure solution	A service for accessing Azure PaaS services over a private endpoint in a virtual network.
DDoS Protection	Module 9: Design a network infrastructure solution	A service for protecting applications and resources from distributed denial-of-service attacks.
Azure Bastion	Module 9: Design a network infrastructure solution	A service for secure and seamless RDP/SSH connectivity to virtual machines.
Just in Time (JIT) Network Access	Module 9: Design a network infrastructure solution	A feature for locking down inbound traffic to virtual machines and reducing exposure to attacks.
Backup and recovery	Module 10: Design a business continuity solution	Solutions for creating and managing backups and restoring data in case of failure.
Azure Backup	Module 10: Design a business continuity solution	A full-service backup and recovery solution for Azure resources.
Blob backup and recovery	Module 10: Design a business continuity solution	Solutions for backing up and restoring Azure Blob storage data.
Azure Files backup and recovery	Module 10: Design a business continuity solution	Solutions for backing up and restoring Azure Files data.
Virtual machine backup and recovery	Module 10: Design a business continuity solution	Solutions for backing up and restoring Azure virtual machines.
Azure SQL backup and recovery	Module 10: Design a business continuity solution	Solutions for backing up and restoring Azure SQL databases.
Azure Site Recovery	Module 10: Design a business continuity solution	A service for disaster recovery and failover for Azure, on-premises, and other cloud provider resources.
Cloud Adoption Framework	Module 11: Design a migration solution	A set of guidelines and best practices for migrating to the cloud.



Terminology	Module	Description
Azure Migration Framework	Module 11: Design a migration solution	A structured approach for planning and executing cloud migrations.
Migration strategy	Module 11: Design a migration solution	The approach taken to move workloads to the cloud, such as rehost, refactor, rearchitect, or rebuild.
Workload assessment	Module 11: Design a migration solution	The process of evaluating on-premises workloads for migration to the cloud.
Migration tools	Module 11: Design a migration solution	Tools used to facilitate the migration of workloads to the cloud, such as Azure Migrate.
Database migration	Module 11: Design a migration solution	The process of moving databases from on-premises to the cloud.
Online migration	Module 11: Design a migration solution	A migration approach that minimizes downtime by continuously synchronizing data during the migration.
Offline migration	Module 11: Design a migration solution	A migration approach that requires shutting down the server during the migration process.
Azure File Sync	Module 11: Design a migration solution	A service for synchronizing files between on-premises and Azure.
Storage Migration Service	Module 11: Design a migration solution	A service for migrating storage to Windows Server or Azure.

Terminology	Module	Description
Azure Import/Export	Module 11: Design a migration solution	A service for transferring large amounts of data to and from Azure using physical storage devices.
Azure Data Box	Module 11: Design a migration solution	A service for transferring large amounts of data to and from Azure using physical storage devices.