Microsoft

Microsoft Cloud Workshop

Modern Cloud Apps

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Abstract and learning objectives

In the whiteboard design session, we will work in groups to design a solution to modernize CSLA's e-commerce and back-end services while maintaining existing PCI compliance. To ensure compliance, we will ensure data privacy and protection across all aspects of the system, in transit and at rest. The goal is to use Azure PaaS services for the public-facing and back-end websites, while providing a way for the on-premises components to securely communicate with these services. You will also design fault-tolerance and a regional failover plan of the Azure components.

By the end of this whiteboard design session, we will have a better understanding of how to modernize a legacy web app by retargeting it for the cloud, taking advantage of the many services Azure provides to enhance functionality and secure our solution's components by following best practices for PCI compliance and security.

Review the customer case study

Customer situation

- Contoso Sports League Association is one of the largest sports franchises
- Run a highly successful e-commerce website
- Backend website supports call center
- Need to be PCI DSS Level 1 compliant

Customer situation

- Looking to augment On-Line Transaction Processing (OLTP) database with a data warehouse for analytics
- Manages order fulfillment process
- Inventory management system used to perform inventory lookup
- Business hours occur during a 12-hour window, spanning East to West coast

Customer needs

- Move infrastructure to PaaS solutions
- Maintain PCI compliance
- Ensure data privacy and protection
- Provide better management of usernames and passwords

Customer needs

- Send SMS notifications
- Scale API independently of website
- Provide failover mechanism
- Data warehouse for analytics

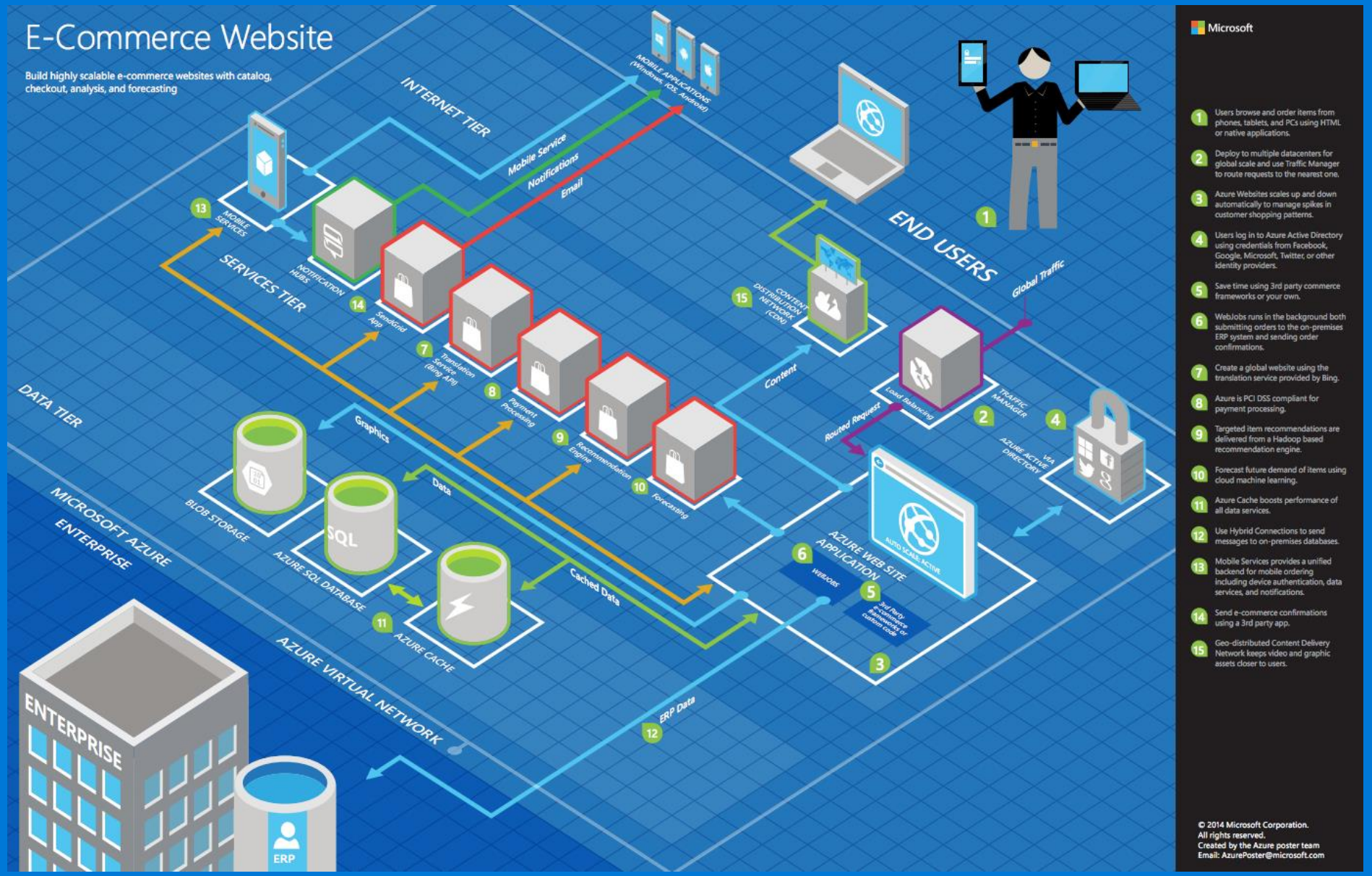
Customer objections

- How can Azure Trust Center help with PCI compliance?
- Can solution scale to meet customer demand, and allow secure access by call center and warehouse?
- Can we conduct penetration testing in Azure?
- Can we audit the Azure data center?

Customer objections

- Can we leverage CloudTest in Azure?
- What options are available for performance monitoring?
- What is the impact of pausing Azure Data Warehouse on our data?
- Can't we use Azure SQL Database for our data warehouse?

Common scenarios



Design the solution

Present the solution

Solution

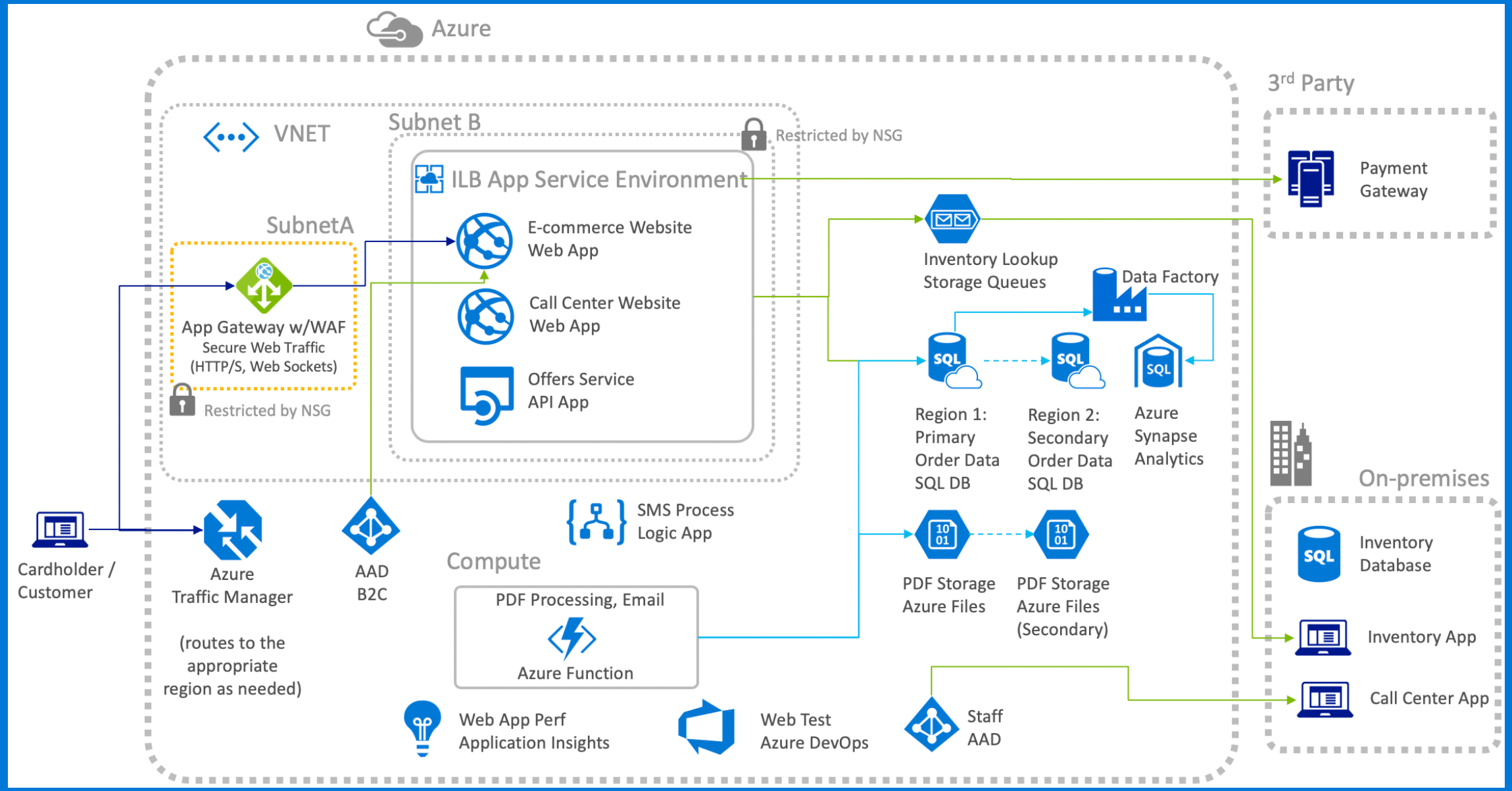
Preferred target audience

- Miles Strom, CEO of Contoso Sports League Association

- Primary audience is business and technology decision makers

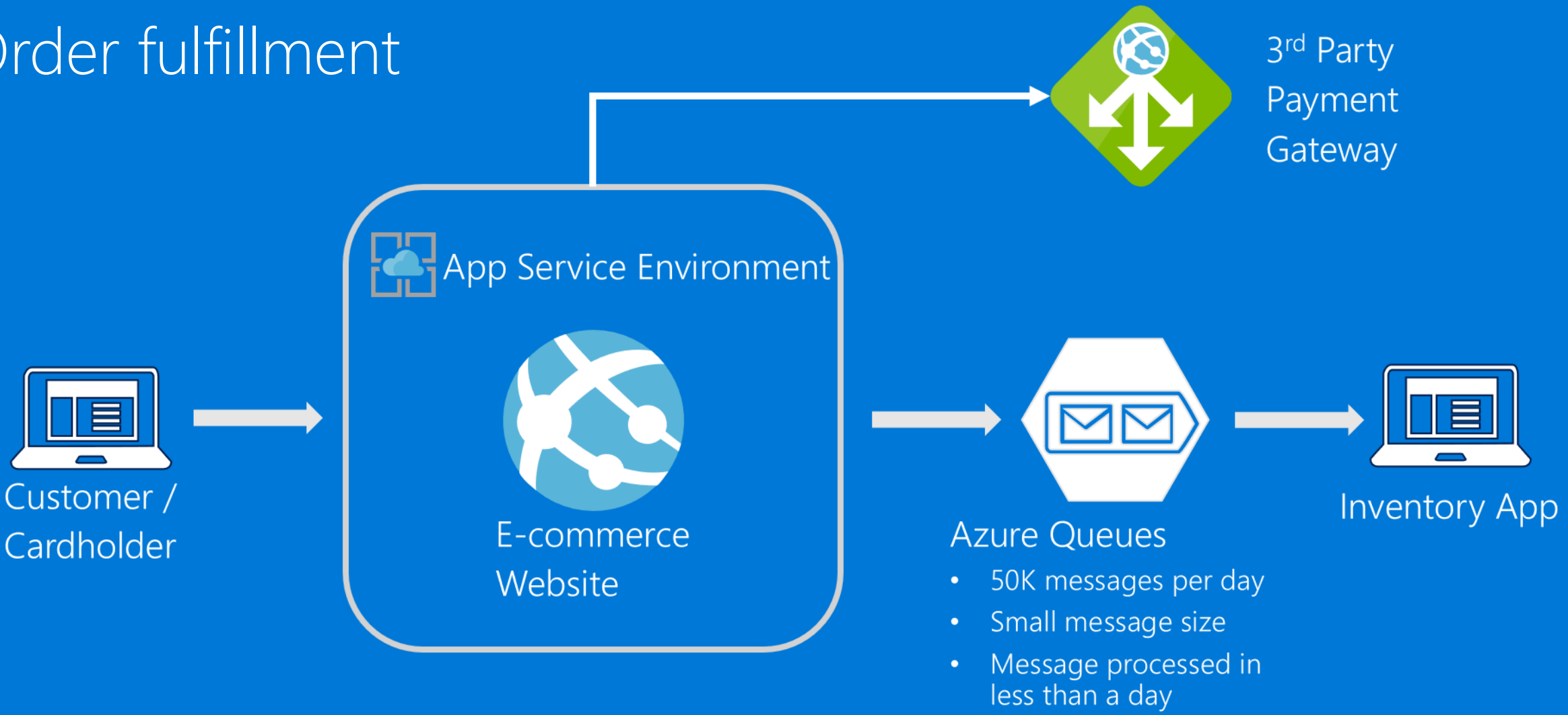
- Usually talk to Infrastructure Managers who report to the CIO, or to application sponsors (like a VP LOB, CMO) or to those that represent the Business Unit IT or developers that report to application sponsors

Preferred solution



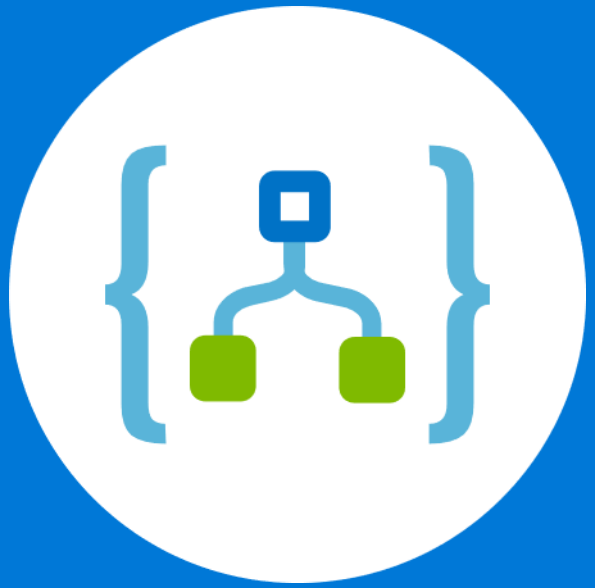
Preferred solution

Order fulfillment



Preferred solution

Notifications

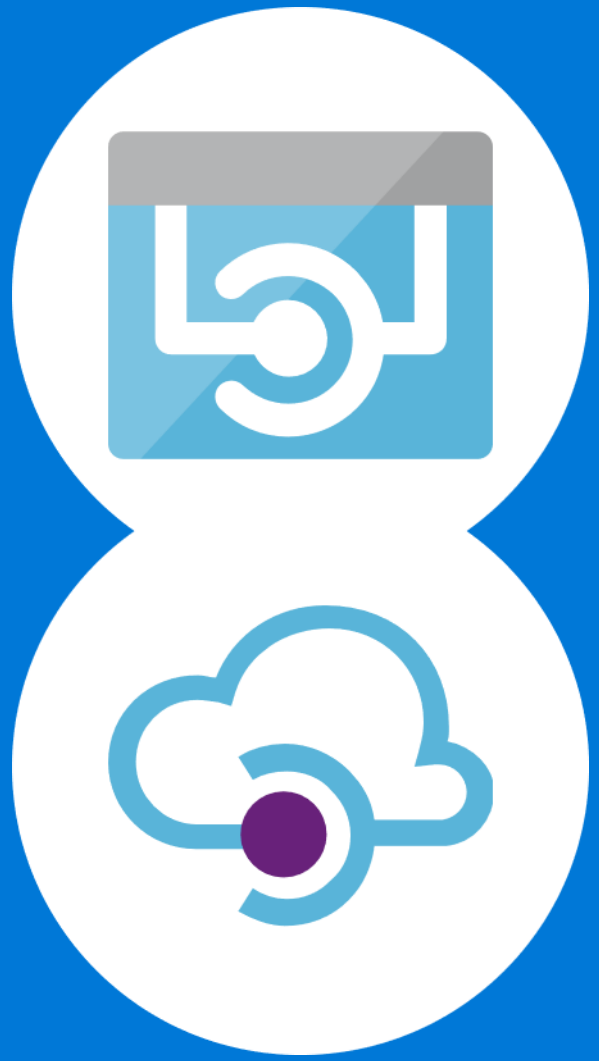


- Use Logic App
- Frequency trigger executes stored procedure
- Twilio connector action to send SMS message

Preferred solution

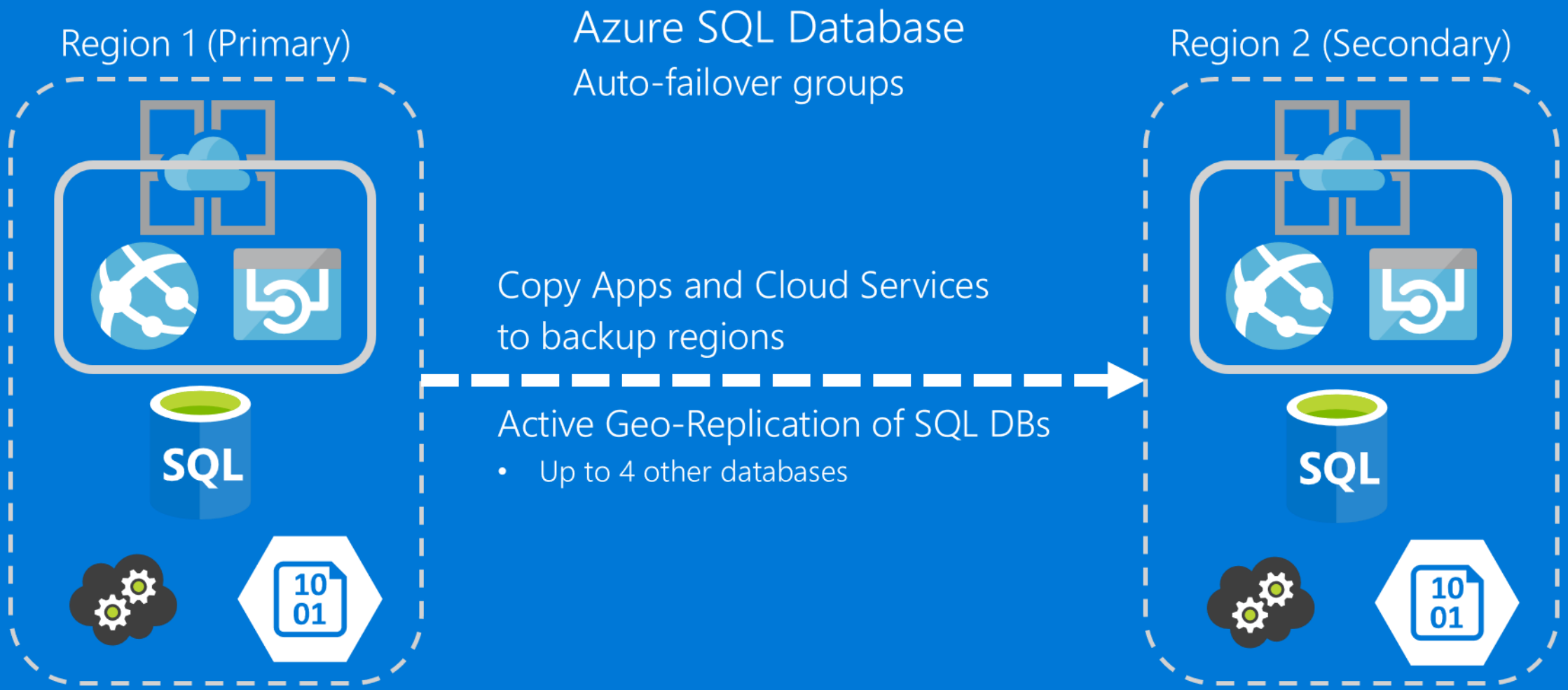
Offers Service

- Migrate to Azure App Service API App
- Enable CORS
- Consider API Management

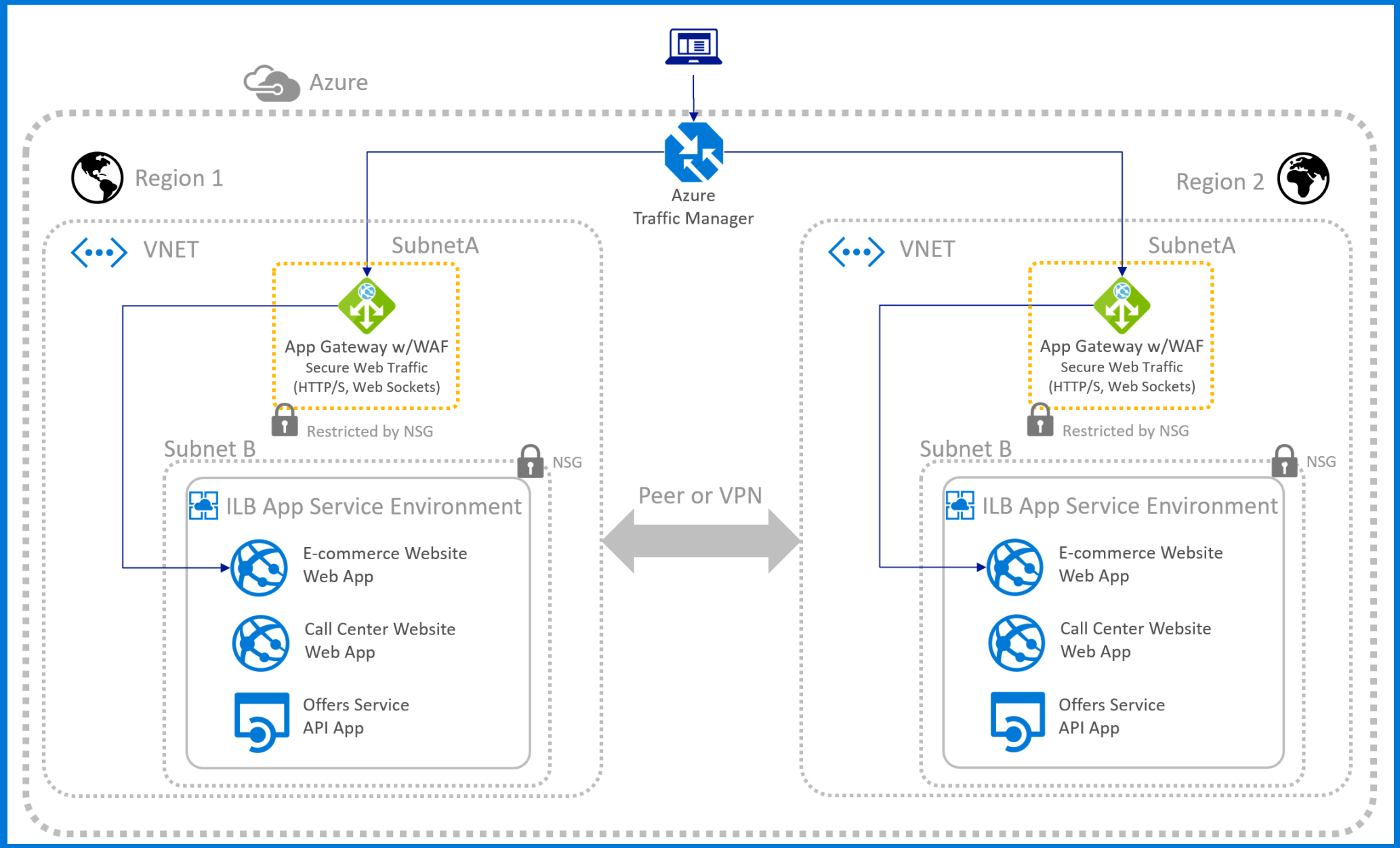


Preferred solution

Geo-resiliency



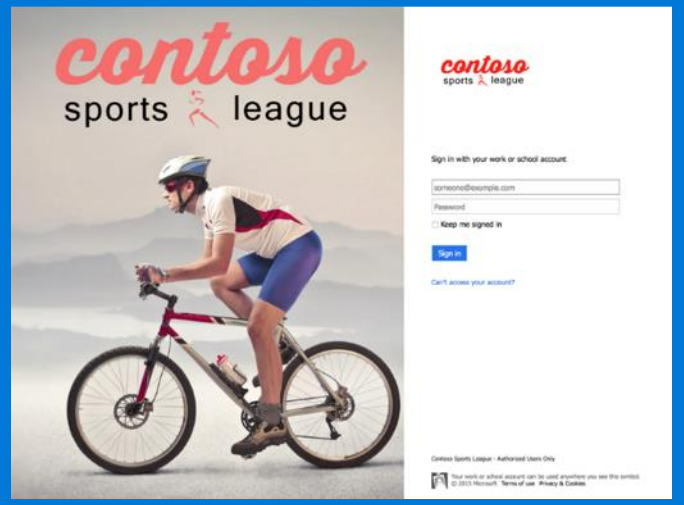
Preferred solution Geo-resiliency for apps



Preferred solution

Access control

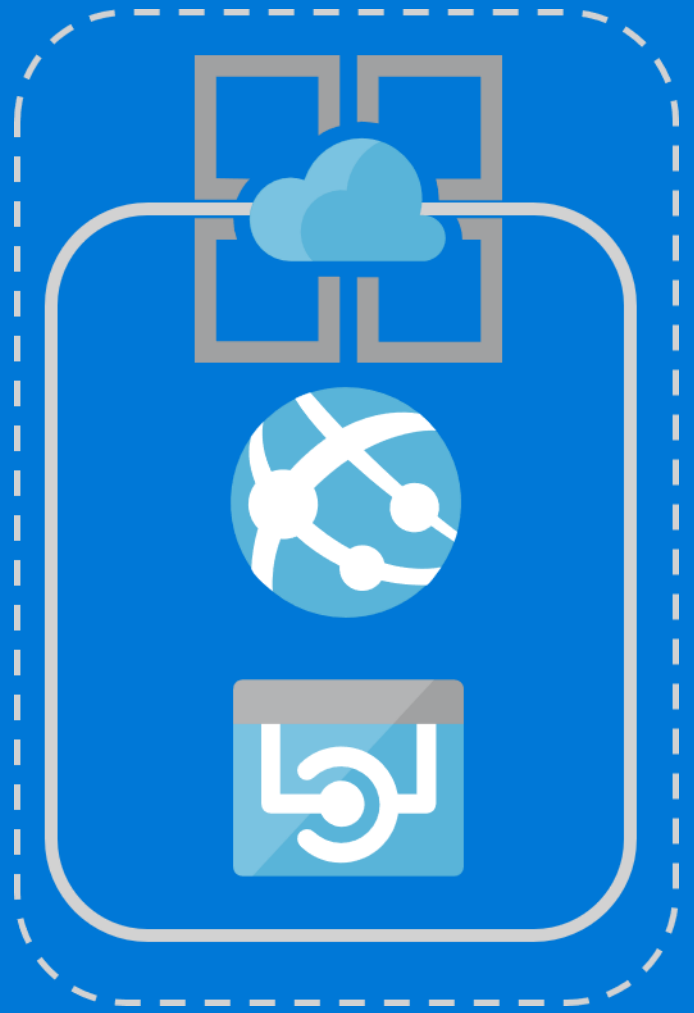
- Use Azure Active Directory
- Customize Branding
- AAD Reports
- Apply to Call Center Website



Preferred solution

Achieving PCI Compliance

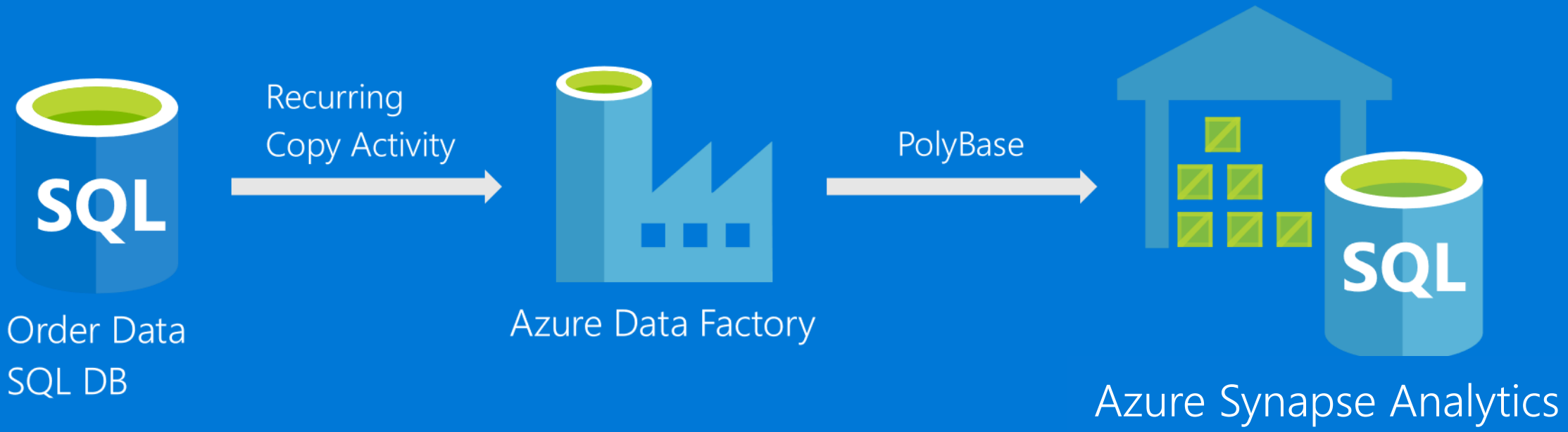
- Web Apps certified for PCI Compliance
- Restrict outbound traffic using Network Security Groups
- Use Application Service Environment
- Antivirus handled by Azure



Subnet
Restricted by NSG

Preferred solution

Data Warehouse



Preferred objections handling

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Hands-on Lab

Requirements

- Microsoft Azure MSDN subscription
  - You will need permissions within the Azure Subscription and Azure Active Directory (Azure AD) to create users and setup Azure AD B2C.

- Local machine or Azure virtual machine configured with:
  - Visual Studio 2019 Community Edition or later
  - Windows Server 2016

Before the hands-on lab

1. Download GitHub resources
   - bit.ly/KBModernCloudApps
2. Deploy Lab VM Resources to Azure
3. Deploy Environment Resources to Azure
4. Explore the Contoso Sports League Sample

Proof of concept deployment

- Deploy the e-commerce website, SQL Database, and storage
- Setup SQL Database Geo-Replication
- Deploying the Call Center admin website
- Deploying the payment Gateway
- Deploying the Offers Web API
- Update and deploy the e-commerce website

Enabling Telemetry with Application Insights

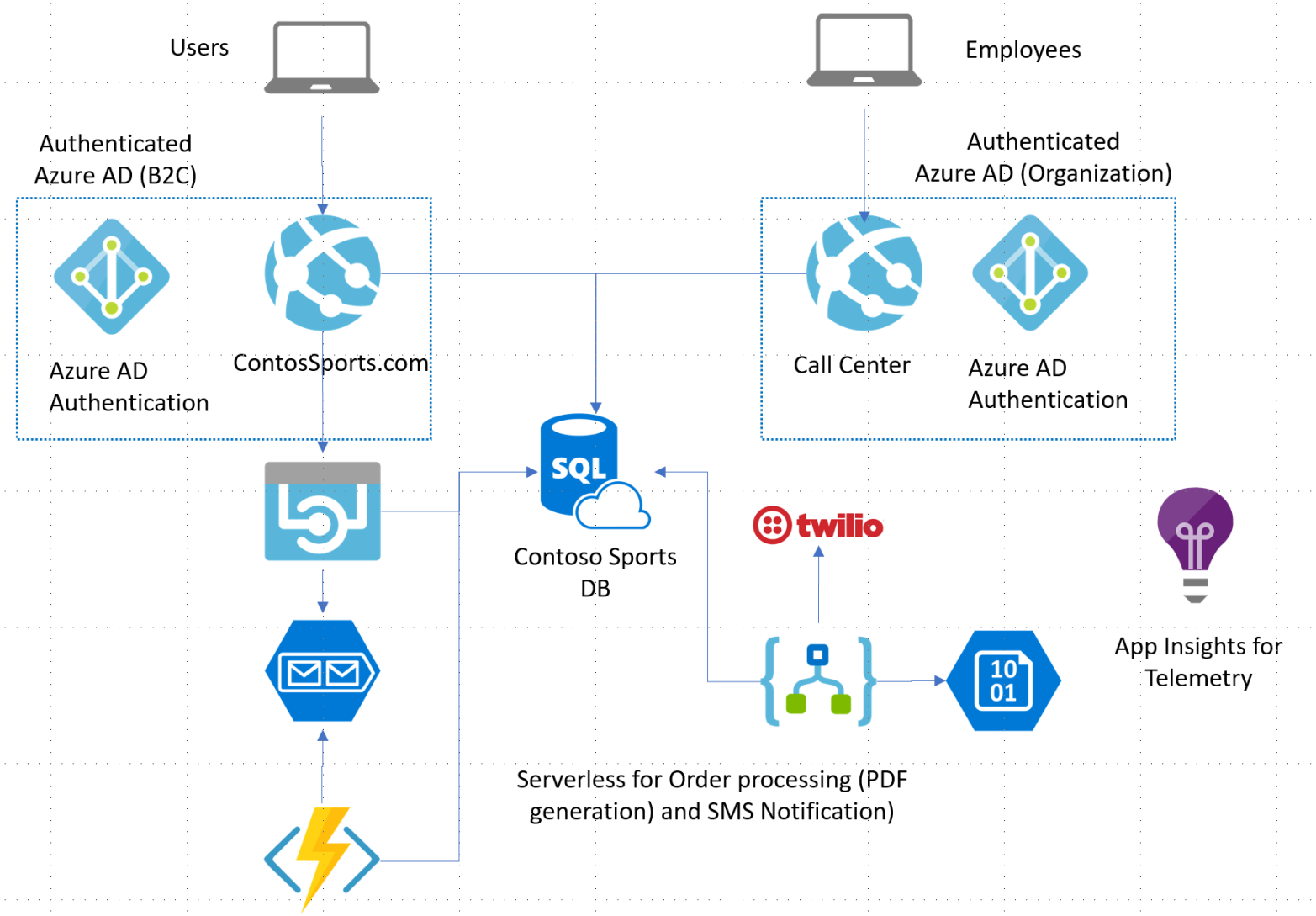
- Configure the application for telemetry
- Creating the web performance test and load test

Automating backend processes with Azure Functions and Logic Apps

- Create an Azure Function to Generate PDF Receipts
- Create an Azure Logic App to Process Orders
- Use Twilio to send SMS Order Notifications

Conclusions

Architecture Diagram



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Thanks

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