Microsoft Azure Developer: Develop Message-based Solutions

AZURE QUEUE STORAGE

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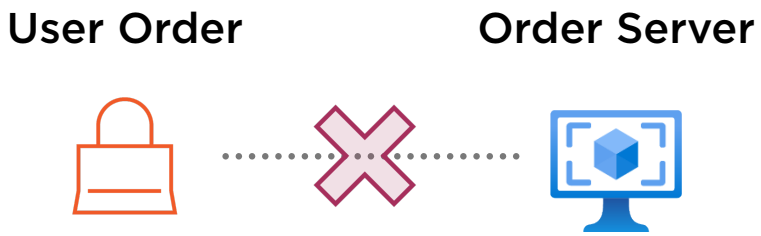
Objectives

Implement solutions that use Azure Queue Storage queues

Implement solutions that use Azure Service Bus

Purpose of Application Messaging

Traditional Architecture



Utilizing a Message-based Architecture

Messaging Benefits

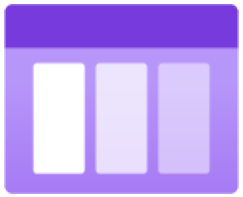
Encourages application logic modularity

Enables fault tolerance between modules

Azure Queue Storage Capabilities

Azure Queue Storage

Fully-managed service that is a part of the Azure Storage suite that enables you to create durable and configurable message queues to enable application modularity and fault tolerance.



Azure Queue Storage

Requires an Azure Storage account (general-purpose v2)

Queues are created within a single storage account

Supports messages up to 64 KiB in size

Messages exist within a single queue

Number of messages limited only by size of the storage account*

Supports a configurable time-to-live per message (with the default at 7 days)

Data Redundancy

Locally Redundant Storage (LRS)	**Zone-redundant Storage** (ZRS)	**Geo-redundant storage** (GRS)
Geo-zone-redundant Storage (GZRS)	**Read-access Geo-redundant Storage** (RA-GRS)	**Read-access Geo-zone-redundant Storage** (RA-GZRS)

Queue URL Structure

https://pluralsight.queue.core.windows.net/pluralsight-queue

storage account

queue name

Queue Security

Data in queues is encrypted by default

Azure Storage stored access policies can work with queues

Interactions with queue data are done via HTTP or HTTPS

Supports the following authorization approaches:

- Shared key
- Shared access signature (SAS)
- Azure AD

Visibility Timeout

Message are delivered to consumers, but are not immediately deleted from the queue. However, messages will not be visible in the queue again until a period of time has passed from the initial delivery. This period of time is the visibility timeout, and it enables fault tolerance for your applications.

Scalability Limits for Queues

A single queue cannot exceed 500 TiB

A single message cannot exceed 64 KiB

A queue supports no more than 5 stored access policies

A storage account can support 20,000 messages per second (1 KiB message)

A single queue can support 2,000 messages per second (1 KiB message)

Creating an Azure Queue Storage Queue

```
# create a queue
az storage queue create --name mysamplequeue

# delete a queue
az storage queue delete --name mysamplequeue

# view messages in a queue (without affecting visibility)
az storage message peek --queue-name mysamplequeue

# delete all messages in a queue
az storage message clear --queue-name mysamplequeue
```

Interacting with Queues using the CLI

Azure CLI

Demo

Creating a storage account for use with Azure Queue Storage

Utilizing the portal to create a queue

Leveraging the portal to send a message to a queue

Utilizing Azure Queue Storage with the SDK

Demo

Utilizing the Azure SDK to interact with a queue in a JavaScript app

Sending messages to a queue via the SDK

Receiving messages from a queue via the SDK