Azure Service Bus

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Context

| Relay	Event Hub	Messaging
Bi-directional communication	Big data	One-way communication

Azure Relay

"The Azure Relay service facilitates hybrid applications by enabling you to securely expose services that reside within a corporate enterprise network to the public cloud, without having to open a firewall connection, or require intrusive changes to a corporate network infrastructure."

Azure Relay

Expose on-premise services
No firewall ports need to be opened

Relay
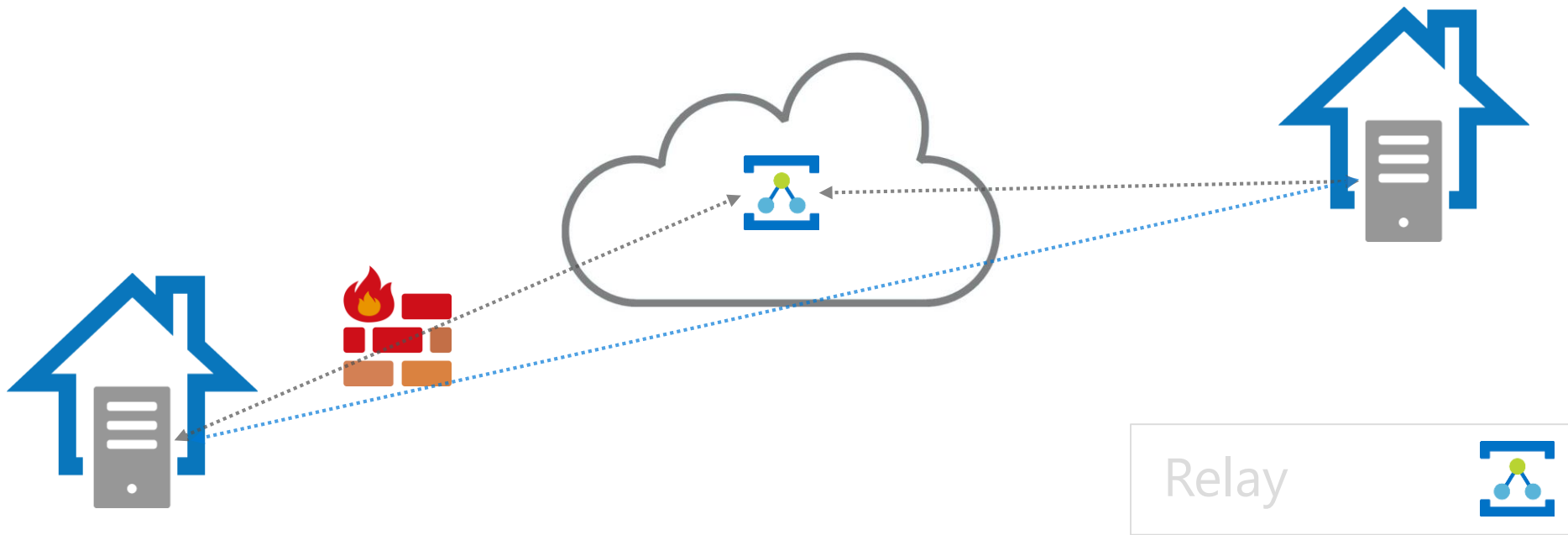
Azure Event Hub

"Azure Event Hubs is a Big Data streaming platform and event ingestion service, capable of receiving and processing millions of events per second. Event Hubs can process and store events, data, or telemetry produced by distributed software and devices. Data sent to an event hub can be transformed and stored using any real-time analytics provider or batching/storage adapters."

Azure Event Hub

Scalable event processing service
Large amounts of events and data
Event streams

Event Hub

| Partition 1 |
| Partition 2 |
| Partition 3 |
| Partition N |

Event Hub

Azure Service Bus (Messaging)

"Microsoft Azure Service Bus is a fully managed enterprise integration message broker. Service Bus is most commonly used to decouple applications and services from each other, and is a reliable and secure platform for asynchronous data and state transfer. Data is transferred between different applications and services using messages. A message is in binary format, which can contain JSON, XML, or just text."

Entities
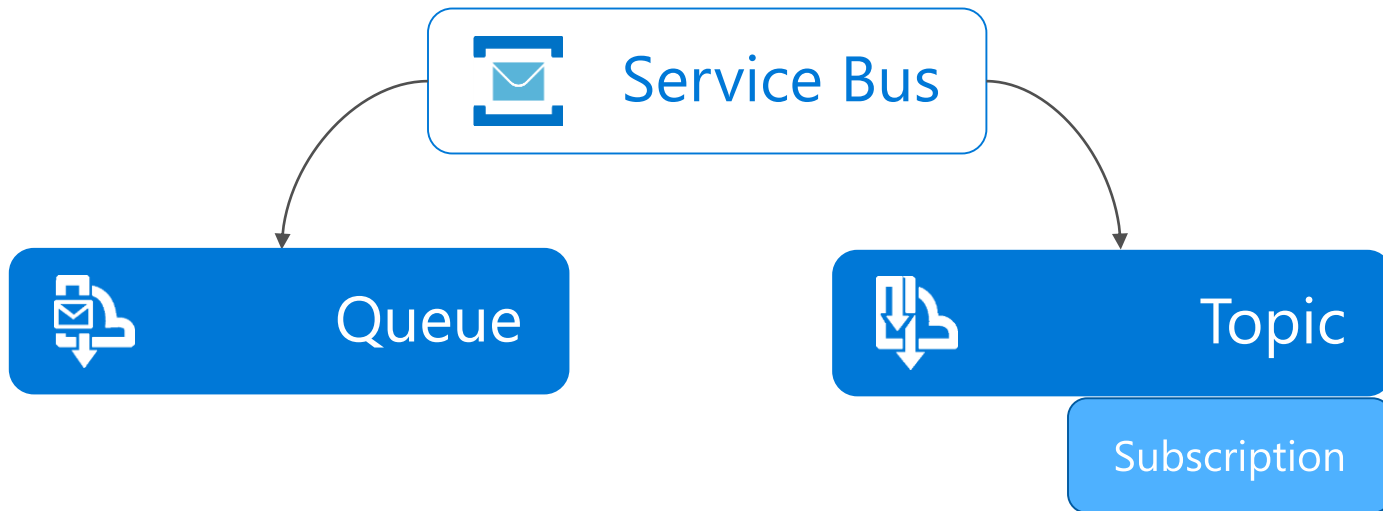
Topic and Subscription
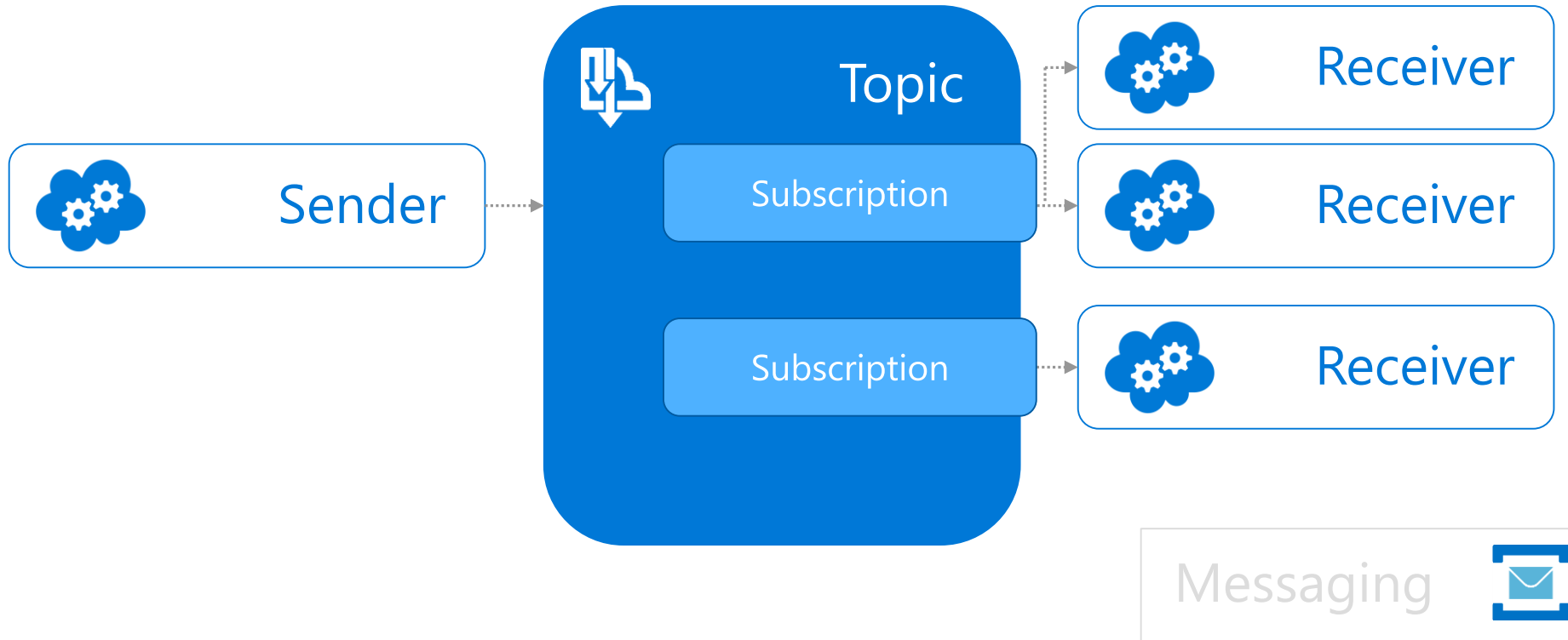
Messaging

Advantages

Decoupling sender(s) and receiver(s)

Load leveling

Load balancing

Sender

Queue

Receiver

Receiver

Receiver

Messaging

Management

ARM templates

Azure Portal

REST interface

      Service Bus Client SDK

      PowerShell

      HTTP/REST

      External tools
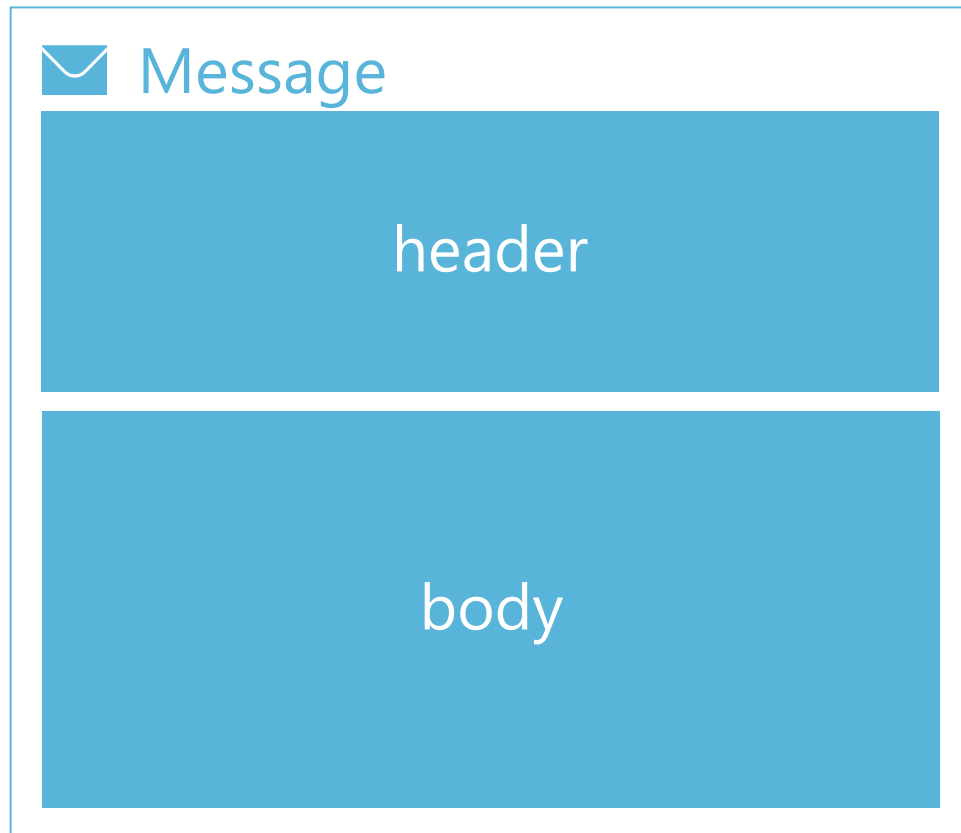
Messaging

Demo

Service Bus Management

Properties

	Queue	Topic	Subscription
Path	✅	✅	
Name			✅
DefaultMessageTimeToLive	✅	✅	✅
DuplicateDetectionHistoryTimeWindow	✅	✅	
RequiresDuplicateDetection	✅	✅	
EnableDeadLetteringOnMessageExpiration	✅		✅
LockDuration	✅		✅
MaxDeliveryCount	✅		✅
RequiresSession	✅		✅
EnableDeadLetteringOnFilterEvaluationExceptions			✅
MaxSizeInMegaBytes	✅	✅	

Messaging

Message

✉ Message

header

body

Messaging ✉

Message

Body
- Content
- Serialized object
- Data stream
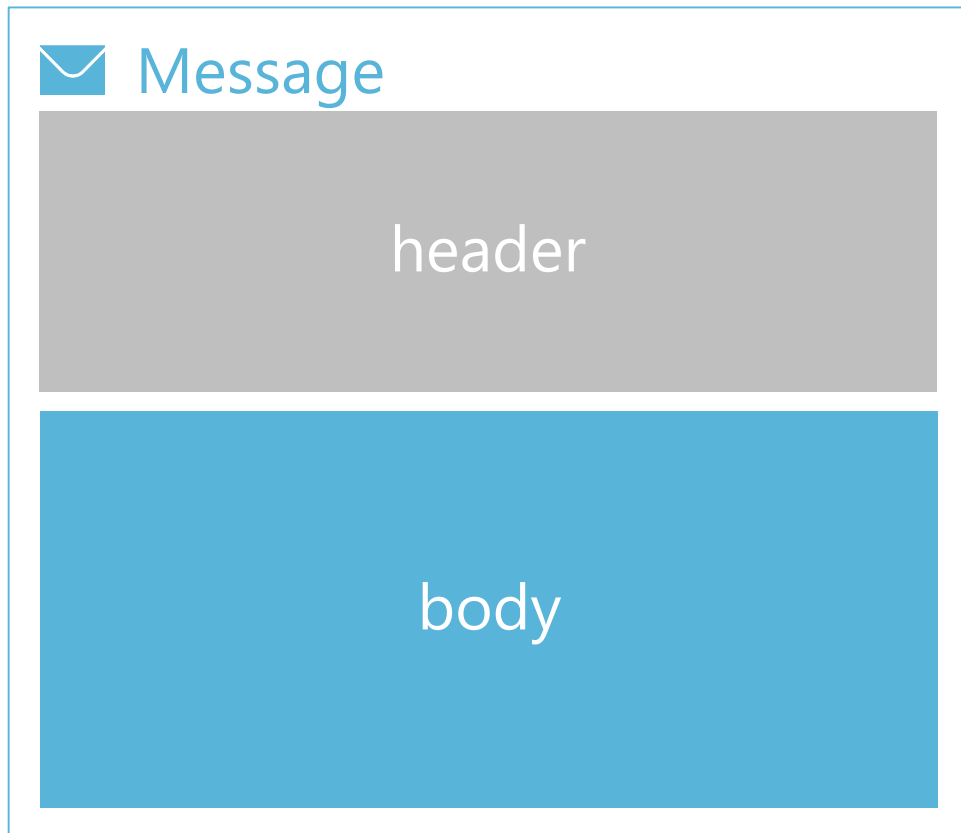
✉ **Message**
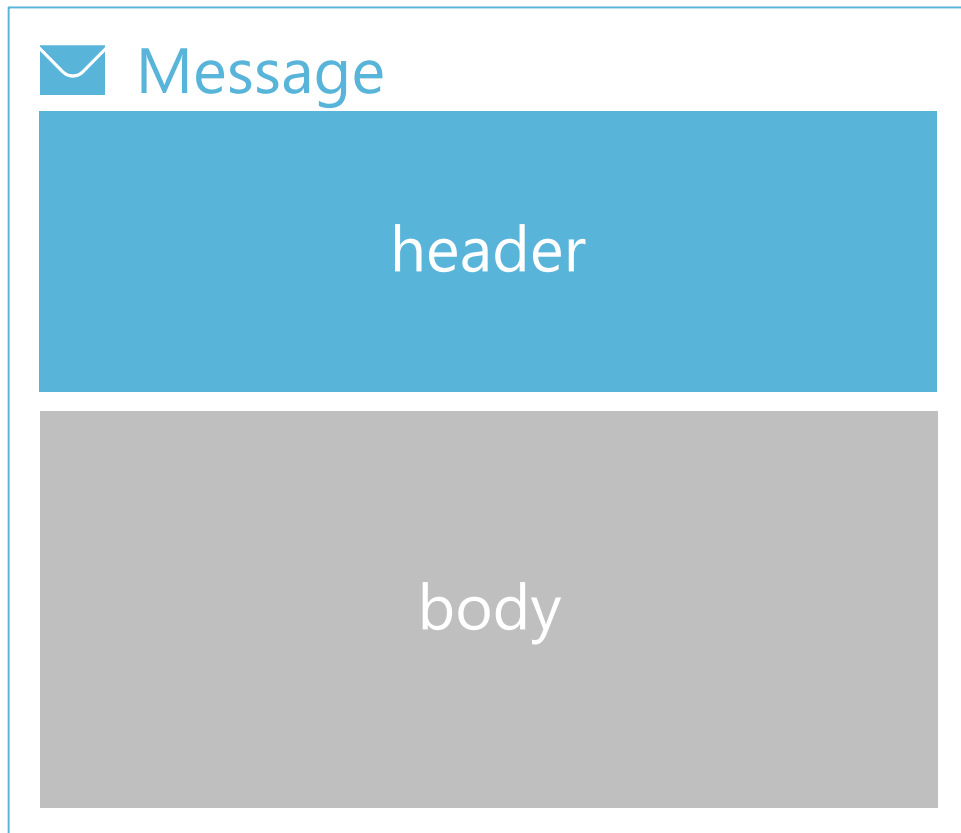
header

body

Message

Header

MessageId

SessionId

Label

Properties

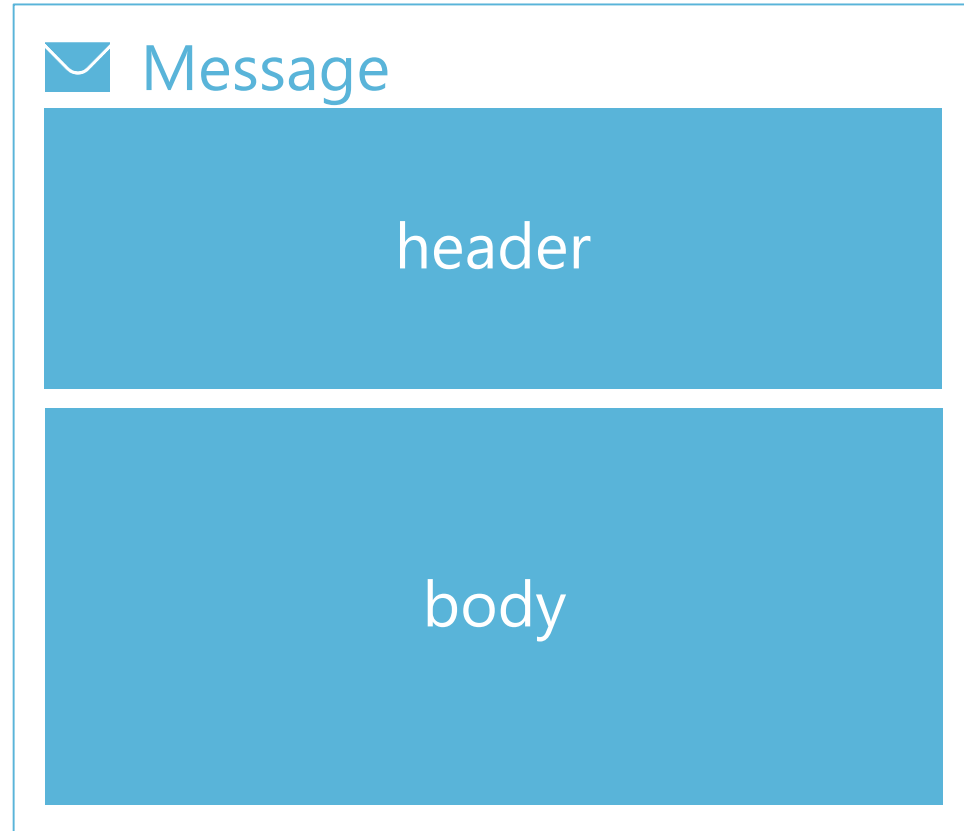ContentType, CorrelationId, SequenceNumber, ReplyTo, ReplyToSessionId, TimeToLive, ScheduledEnqueueTimeUtc, ...

Message

header

body

Messaging

Limitations

Size
Body immutability
Message can only be
sent once
No resend

Message

header

body

Messaging

Receiving messages

Receive and delete

Peek lock

 Complete

 Abandon

 Defer

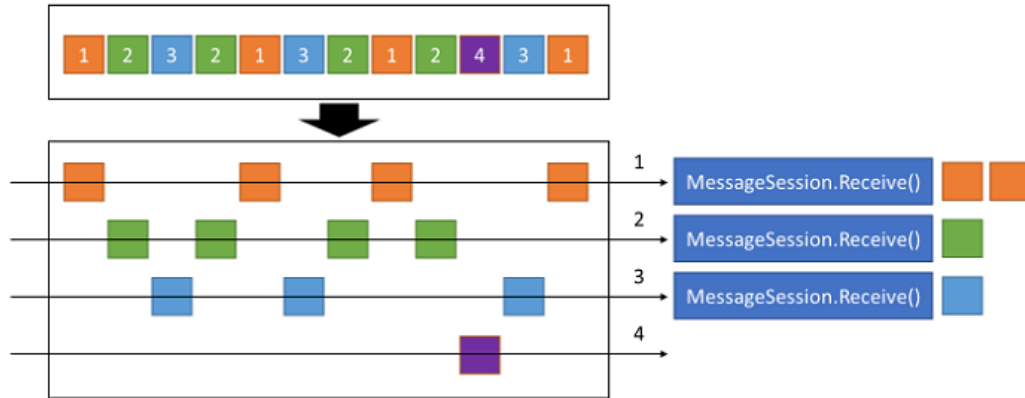 Deadletter

 Lock Timeout Expiration

OnMessage

Messaging

Sessions

Can be required for queues/subscriptions
Receive messages with same sessionId together

Deadletter

Explicit

HeaderSizeExceeded

FilterEvaluationException

TTLExpiredException

SessionId = null

MaxDeliveryCount

Messaging

Security

Shared Access Signature key
Policies identified by name, scope and rights
Scope: namespace, queue/topic, subscription
Rights: listen, send, manage

Pricing tiers

Basic
Only queues, 256 KB msg, 100 connections

Standard
1000 connections, 8€pm, 13M ops incl.

Premium
1 MB msg, 1000 connections per MU, resource isolation

Messaging

Demo

https://github.com/tomreunes/azure-service-bus-demo

Azure Service Bus

Questions?