

Azure Messaging Services & Service Bus

Agenda

- Azure Messaging Services Overview
- What is Azure Service Bus?
- Messaging Design Patterns
- Queues and Topics/Subscriptions
- Features of Service Bus
- Comparison – Azure Storage Queue vs Service Bus

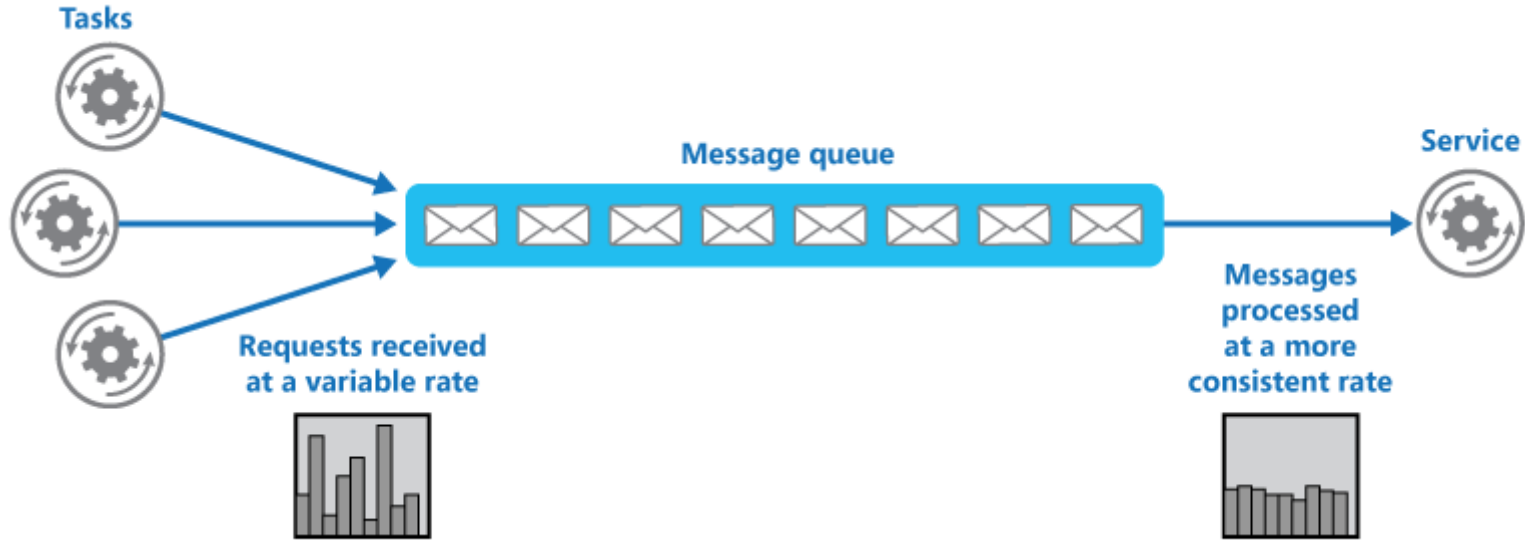
Azure Messaging Services

- **Azure Queue Storage**
 - Store large number of messages up to the capacity of Azure Storage
- **Azure Service Bus**
 - Fully managed, service broker with enterprise level features
 - Handles variety of use cases – reliable message delivery, pub/sub etc.
- **Azure Event Hubs**
 - Fully managed, stream ingestion service used in big data scenarios
 - Handles millions of events per second
- **Azure Event Grid**
 - Fully managed events based service
 - Build event-driven applications

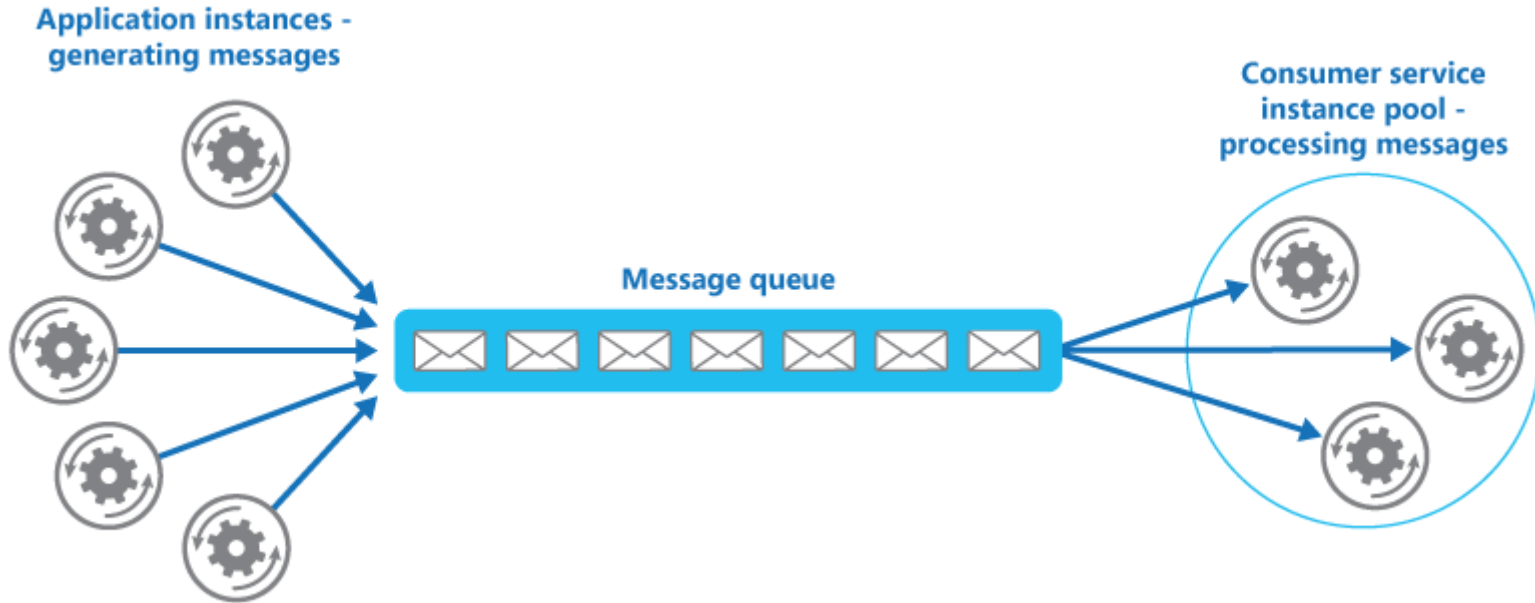
Azure Service Bus

- Fully managed, enterprise message broker
- Provides reliable delivery of messages from sender to receiver
- Uses AMQP 1.0 (Advanced Messaging Queueing Protocol)
- Supports at-least once and exactly-once delivery

Queue-Based Load Leveling

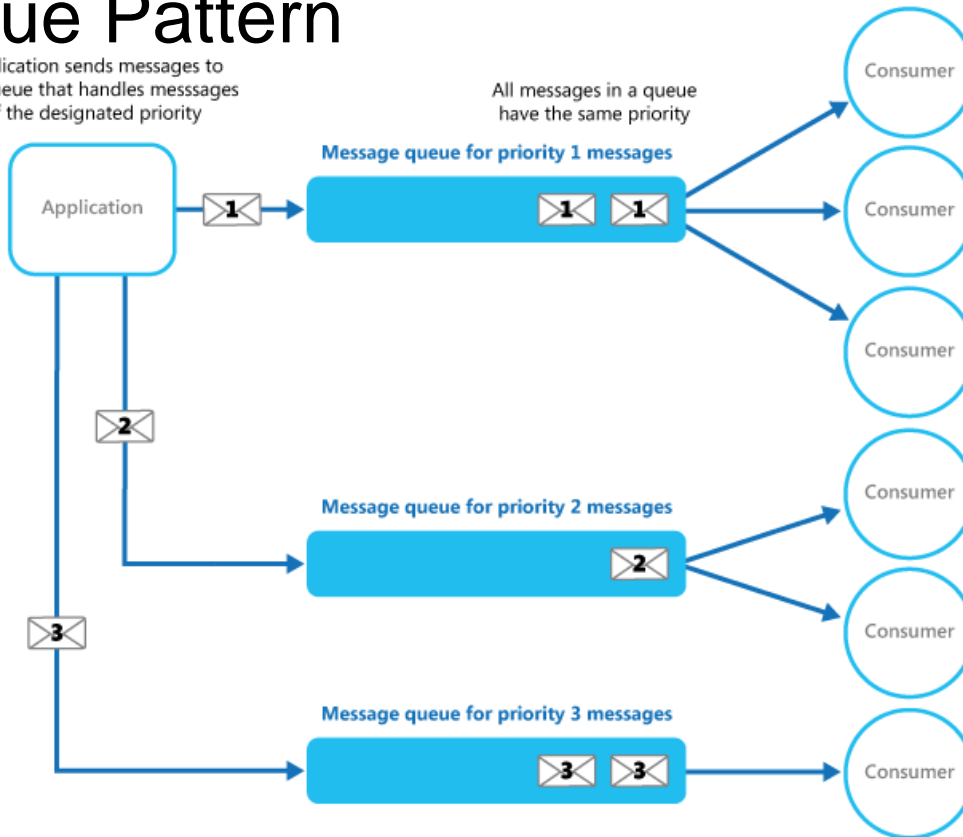


Competing Consumer Pattern

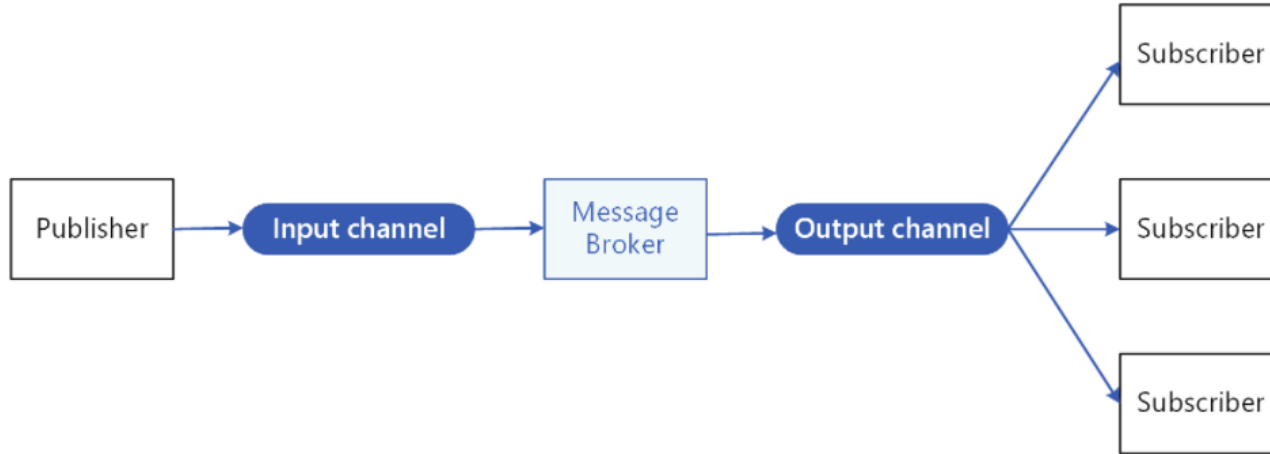


Priority Queue Pattern

Application sends messages to the queue that handles messages of the designated priority



Publisher/Subscriber Pattern



Azure Storage Queue vs Service Bus

	Storage Queues	Service Bus
Max queue size	Unlimited	80 GB
Max message size	64 KB	256 KB
Dead letter handling / events	No	Yes
Publisher / Subscriber	No	Yes
Transaction Support	No	Yes
Guaranteed FIFO	No	Yes
Receive Mode	Peek & Lease	Peek & Lease, Receive & Delete
Lease duration (default)	30 seconds	60 seconds
Duplicate detection	No	Yes

Azure Event Hubs & Event Grid

Agenda

- Azure Messaging Services Overview
- What are Azure Event Hubs?
- Features of Azure Event Hubs
- What is Azure Event Grid?
- Using Azure Event Grid

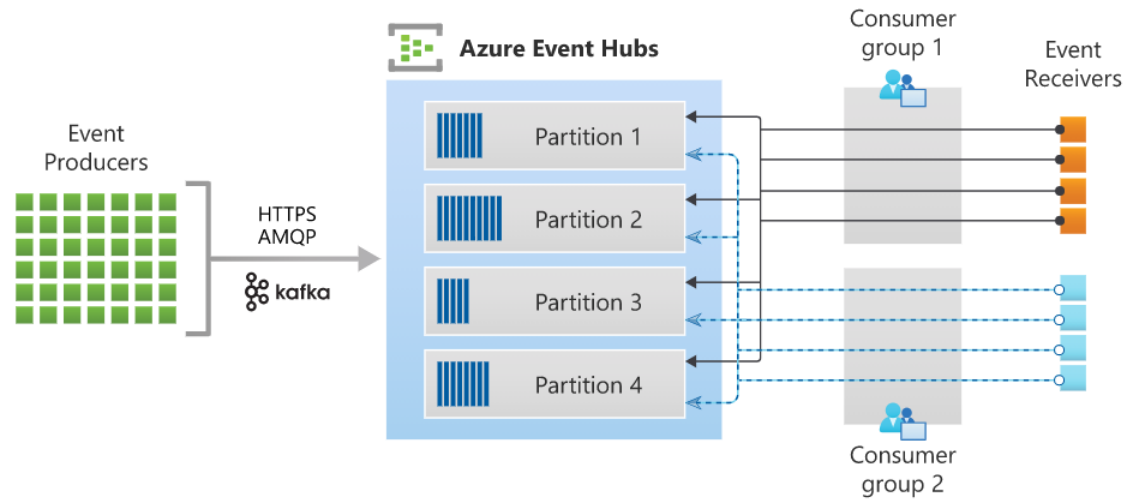
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Azure Event Hubs

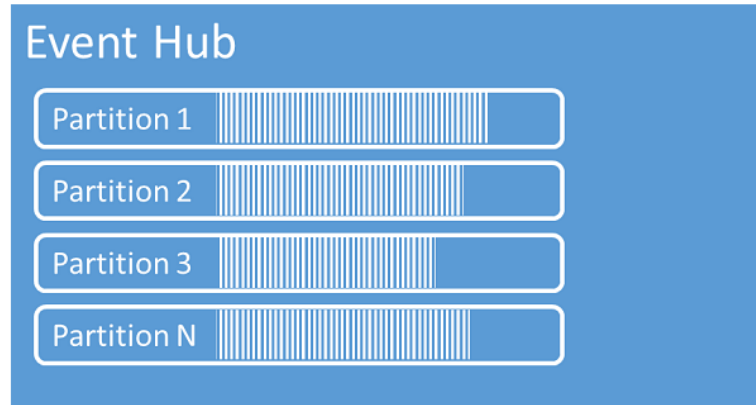
Terminology

- EventData (message)
- Publishers (or producers)
- Partitions
- Partition Keys / Partition Id
- Receivers (or consumer)
- Consumer Groups
- Protocols (HTTPS, AMQP)
- Throughput Units



Event Hub Partitions

- Number of partitions are defined while creating Event Hub
- Partition key and Partition Id are properties of EventData
- If no partition key specified by sender, EH uses round robin distribution
- If partition key specified by sender, data is stored in specific partition
- An event is added to only one partition



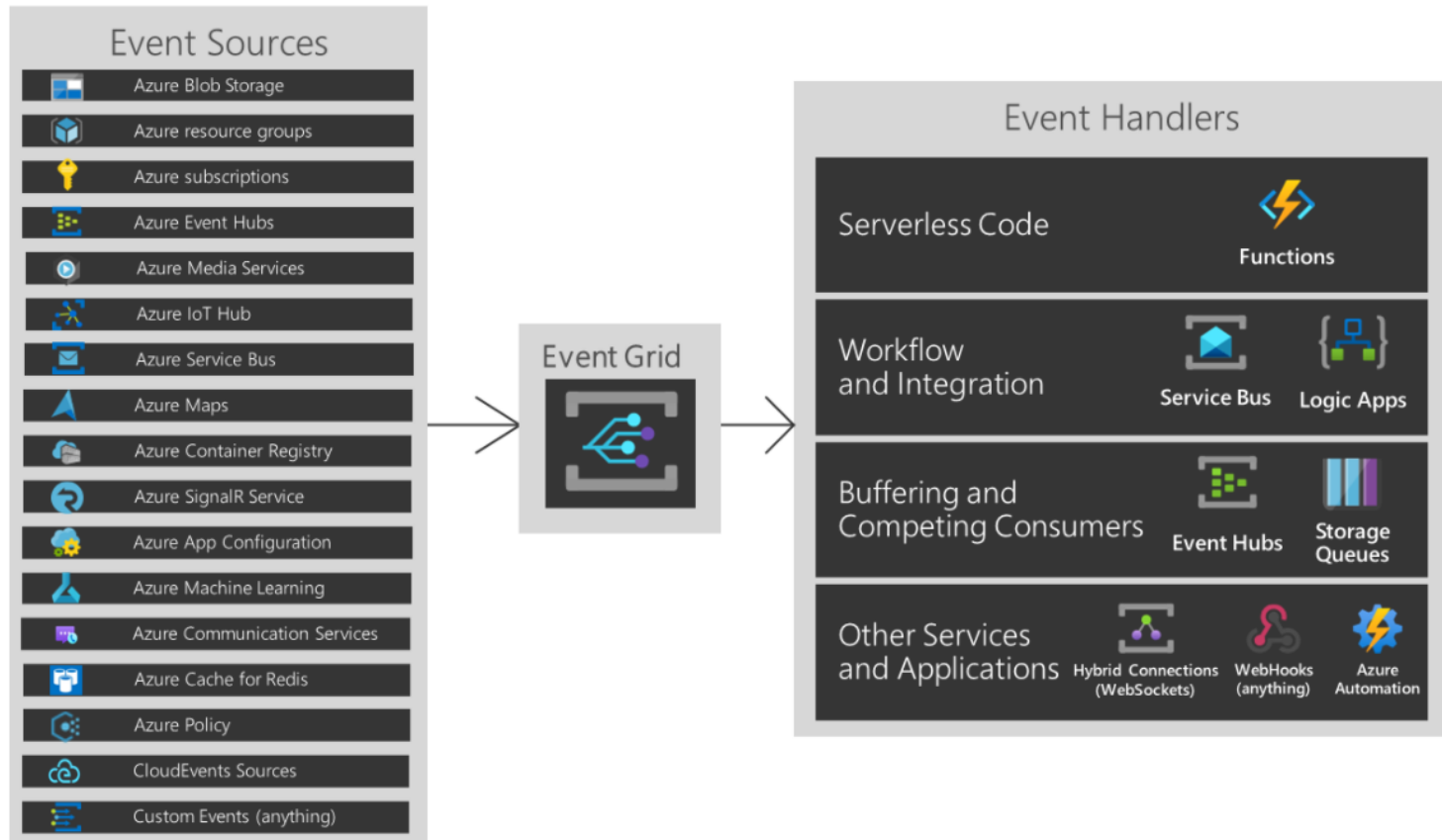
Azure Event Hubs

- Event Data
 - Contains body of event in binary format
 - Actual data can be in any format – JSON, XML etc.
 - Contains properties (event time etc.)
- Max event size is 256 KB
- Events remain in Event Hub (partitions) even after it is read by receiver
- Events are removed from Event Hub (partitions) only after

Throughput Units

- Pre-purchased units of capacity
- 1 Throughput Unit
 - Ingress → 1 MB/sec or 1000 events/sec
 - Egress → 2 MB/sec or 4096 events/sec

Event Grid



ARM Templates

Agenda

- What is Azure Resource Manager
- What are ARM Templates?
- Building ARM Templates
- Deploying ARM Templates