Don't put your messages in a bottle

Implement messaging patterns

@egrootenboer

Speaker Bio

Eldert Grootenboer

He/Him

Program Manager - Azure Service Bus
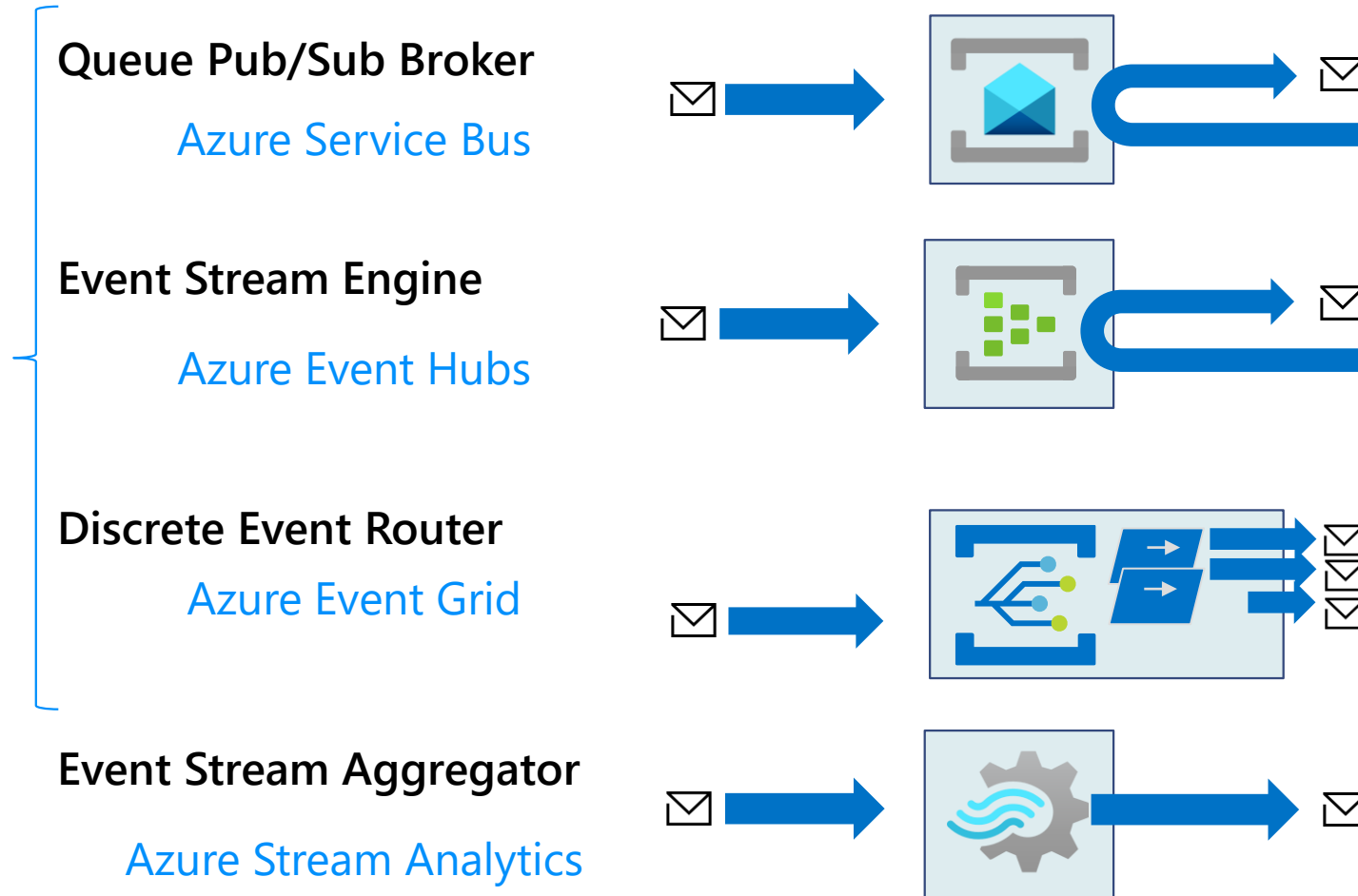
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Azure Messaging Platform

Messages vs. events

Queue Pub/Sub Broker

Azure Service Bus

Pull-style, queue-based transfer of jobs and control via message queues and topics

Event Stream Engine

Azure Event Hubs

Partitioned, high-volume, tape-drive-style sequential recording and unlimited, pull-style re-reads of event streams.

Discrete Event Router

Azure Event Grid

Push-style distribution of discrete events to serverless workloads or other messaging infrastructures

Event Stream Aggregator

Azure Stream Analytics

Stateful transformation and analytics of event streams yielding event streams and discrete events as continuous output

Messaging Patterns

What are messaging patterns

Recurring scenarios

Abstract

Reusable

Why use messaging patterns
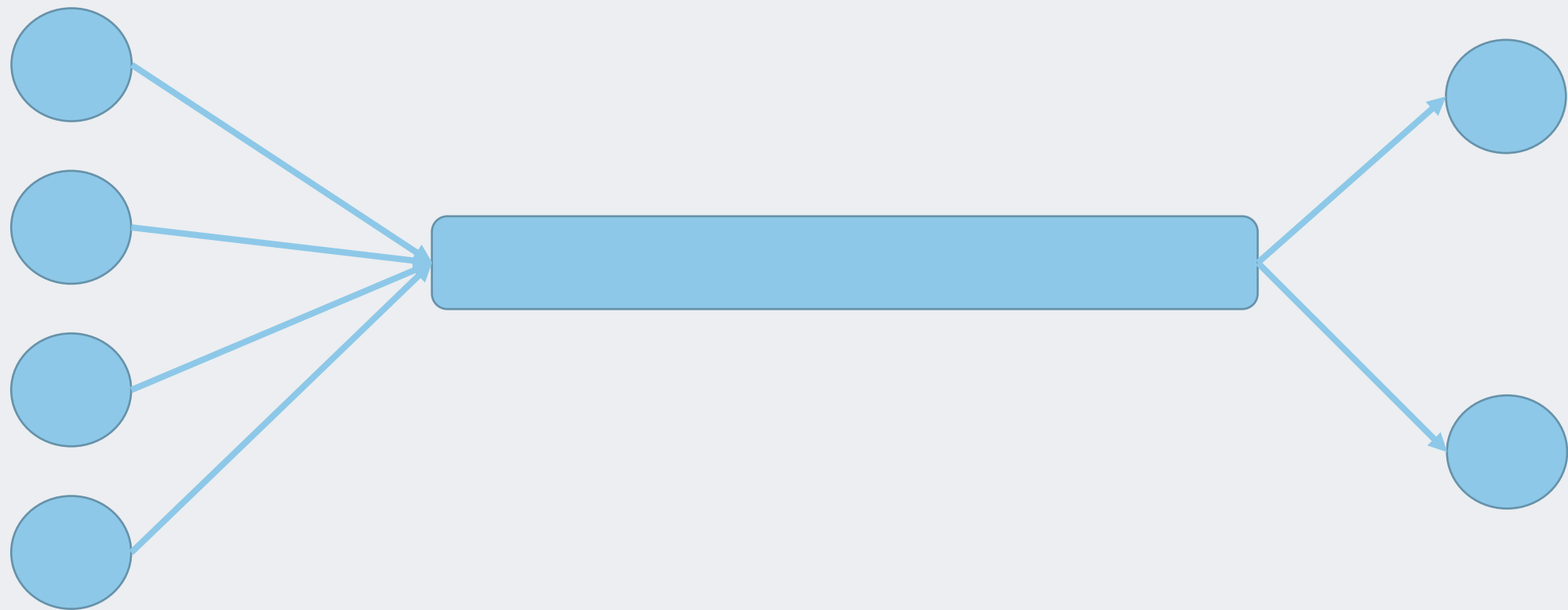

Don't reinvent the wheel

Use experts' experience

Standards

Competing Consumers

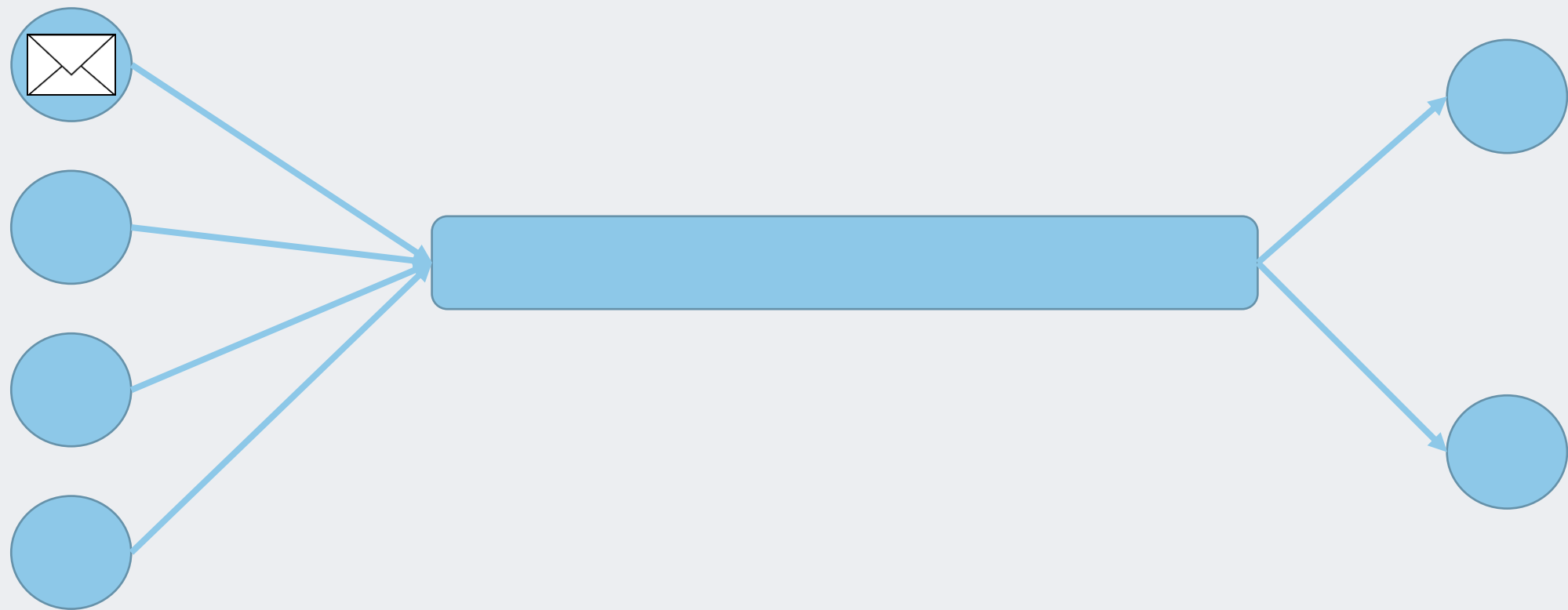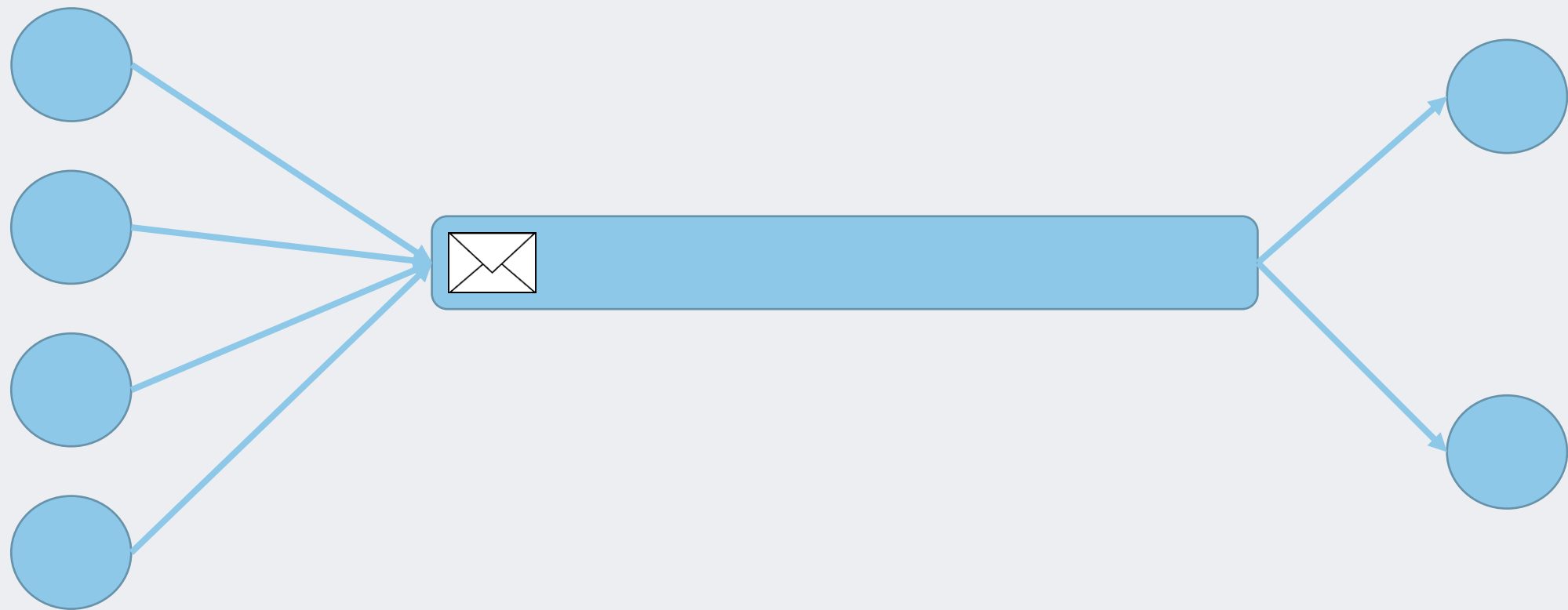https://docs.microsoft.com/en-us/azure/architecture/patterns/competing-consumers
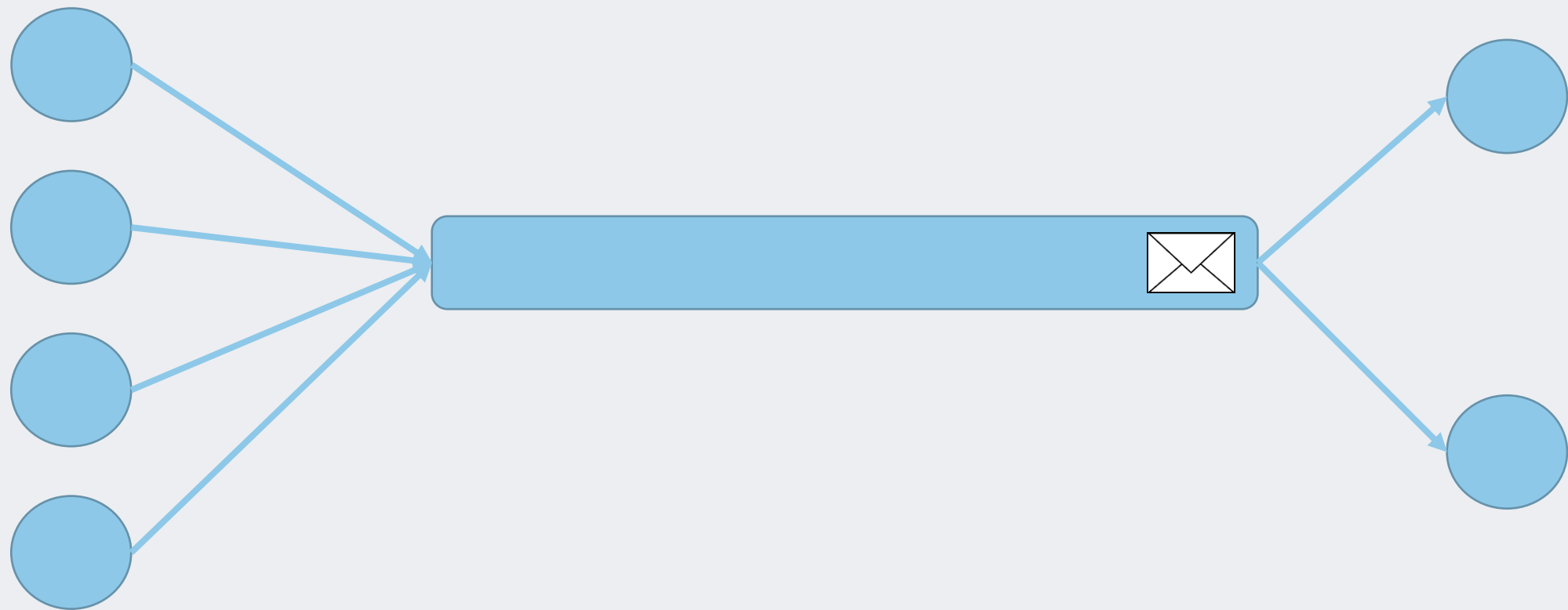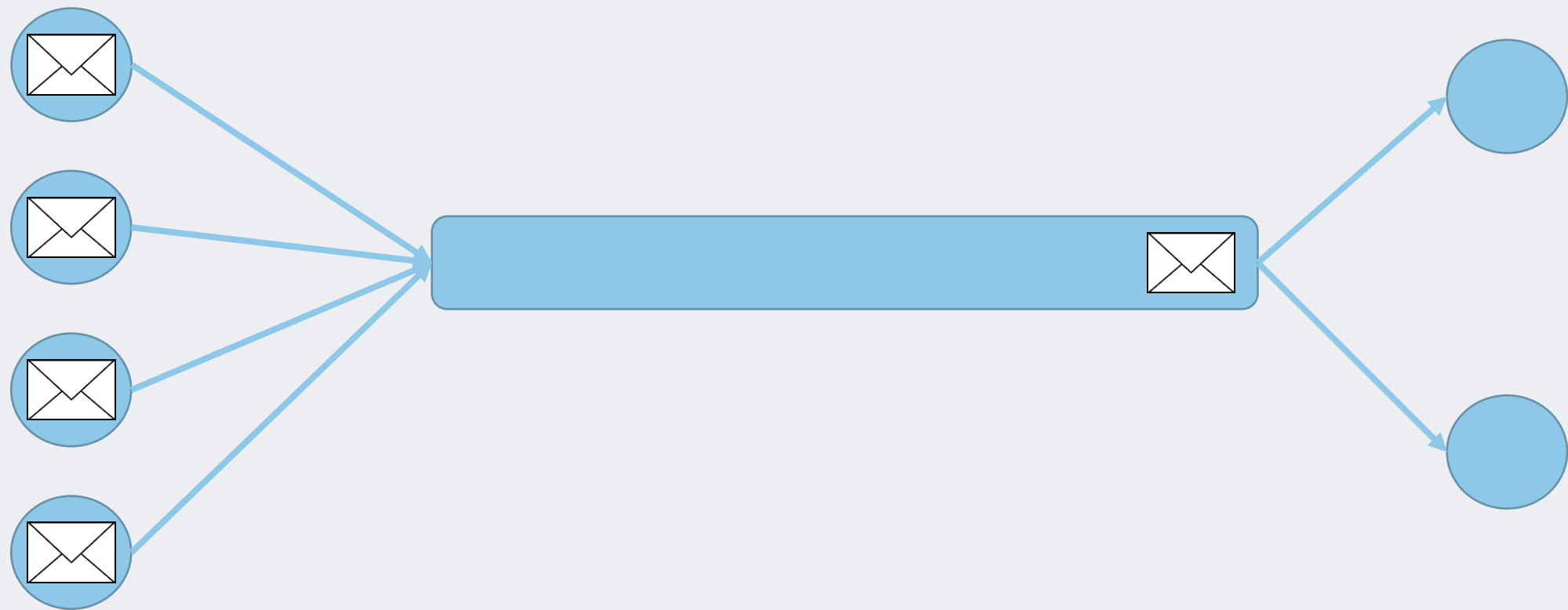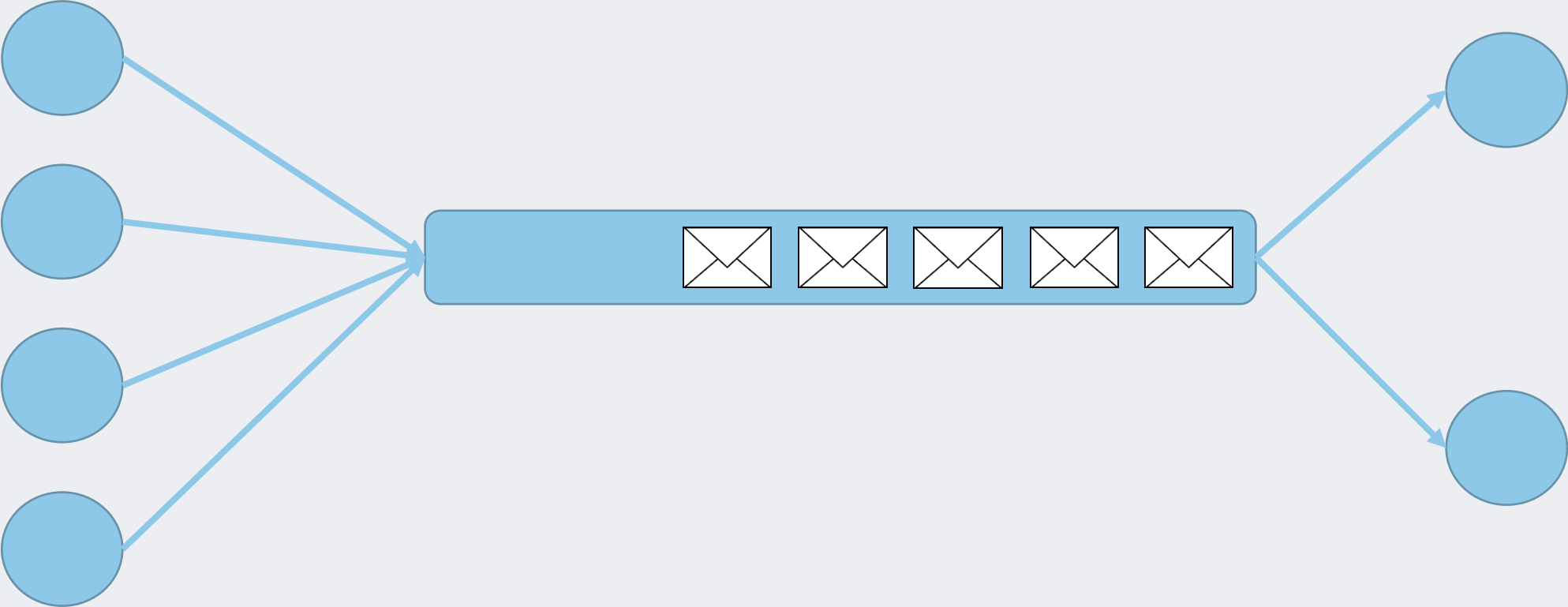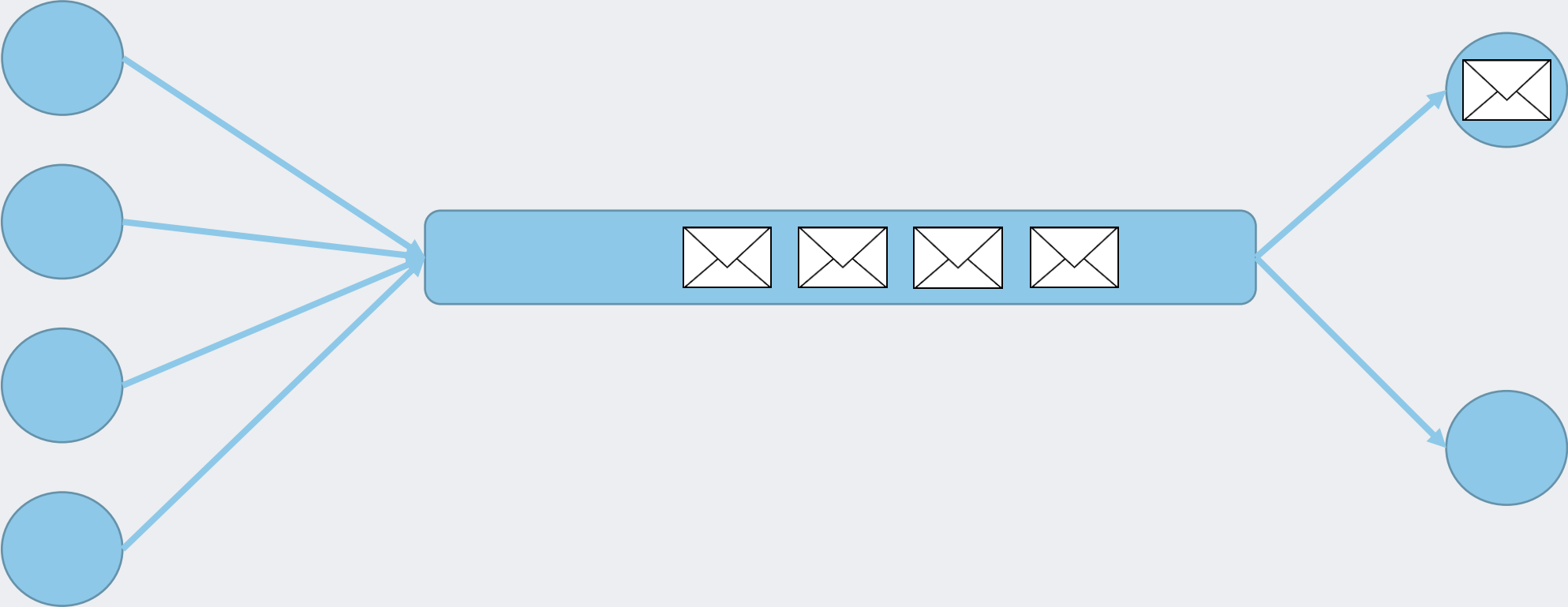
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Competing Consumers

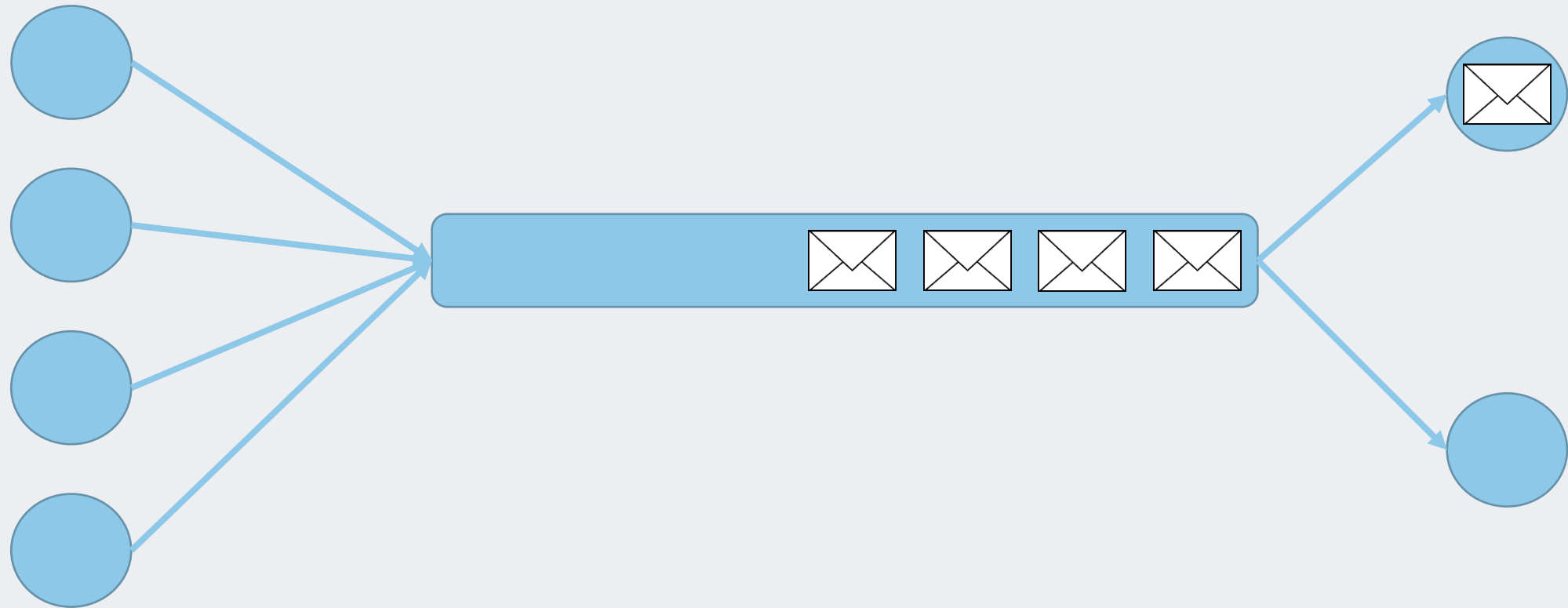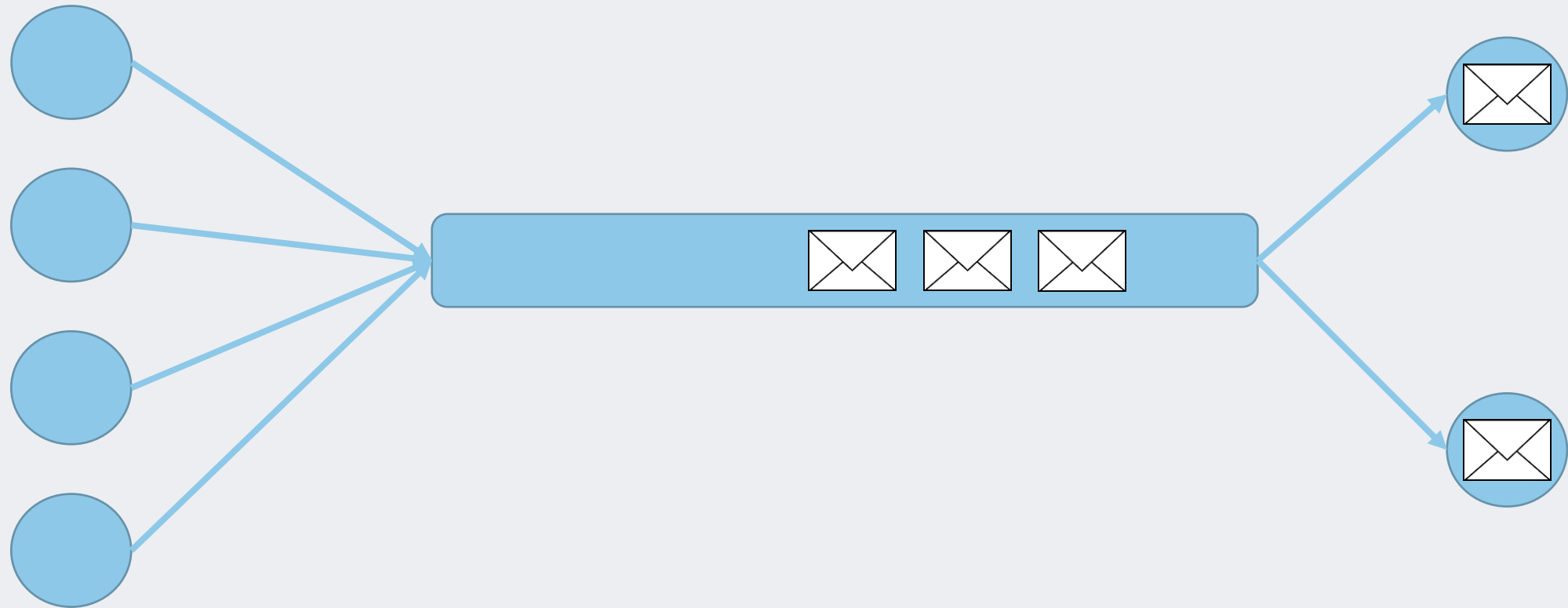# Competing Consumers

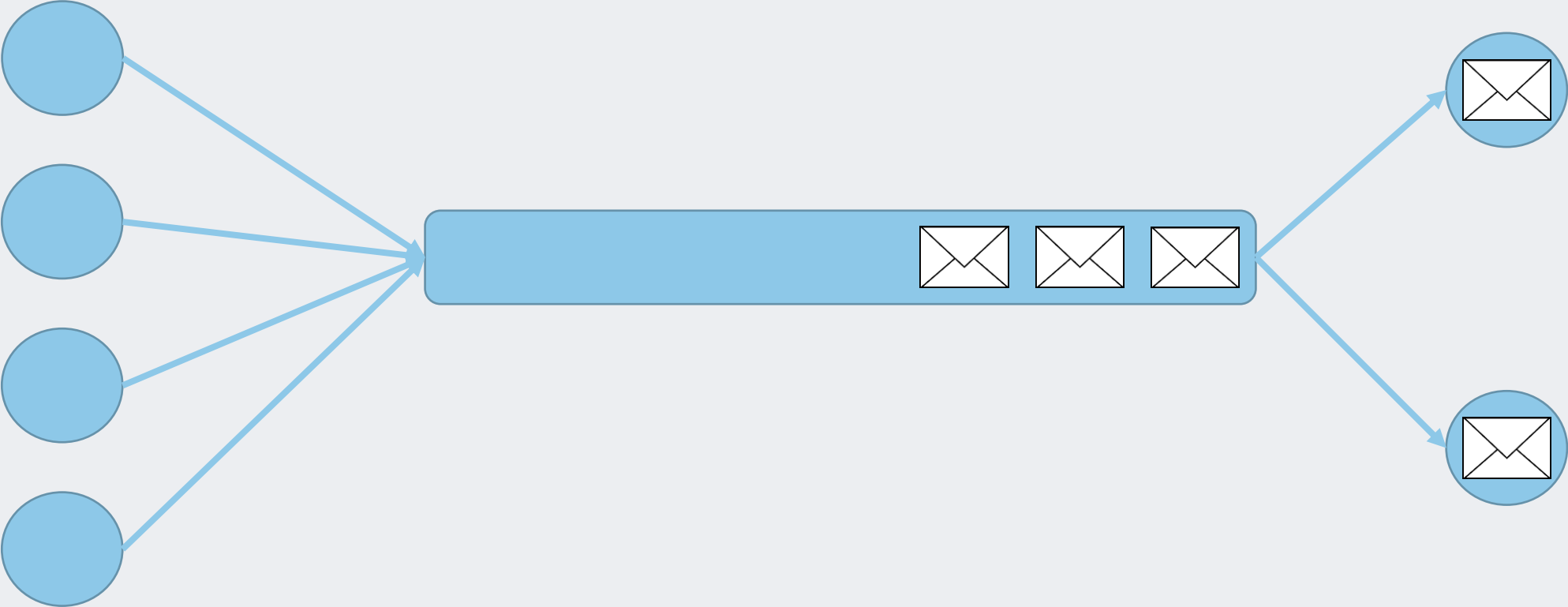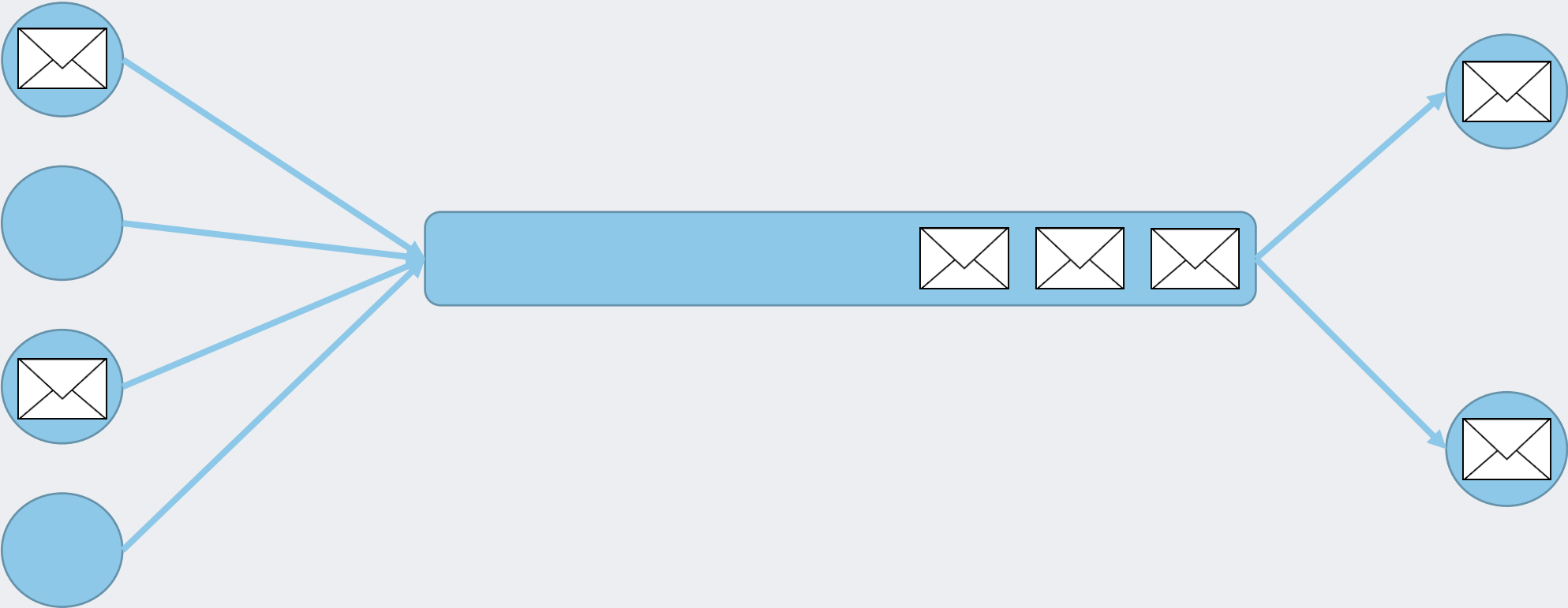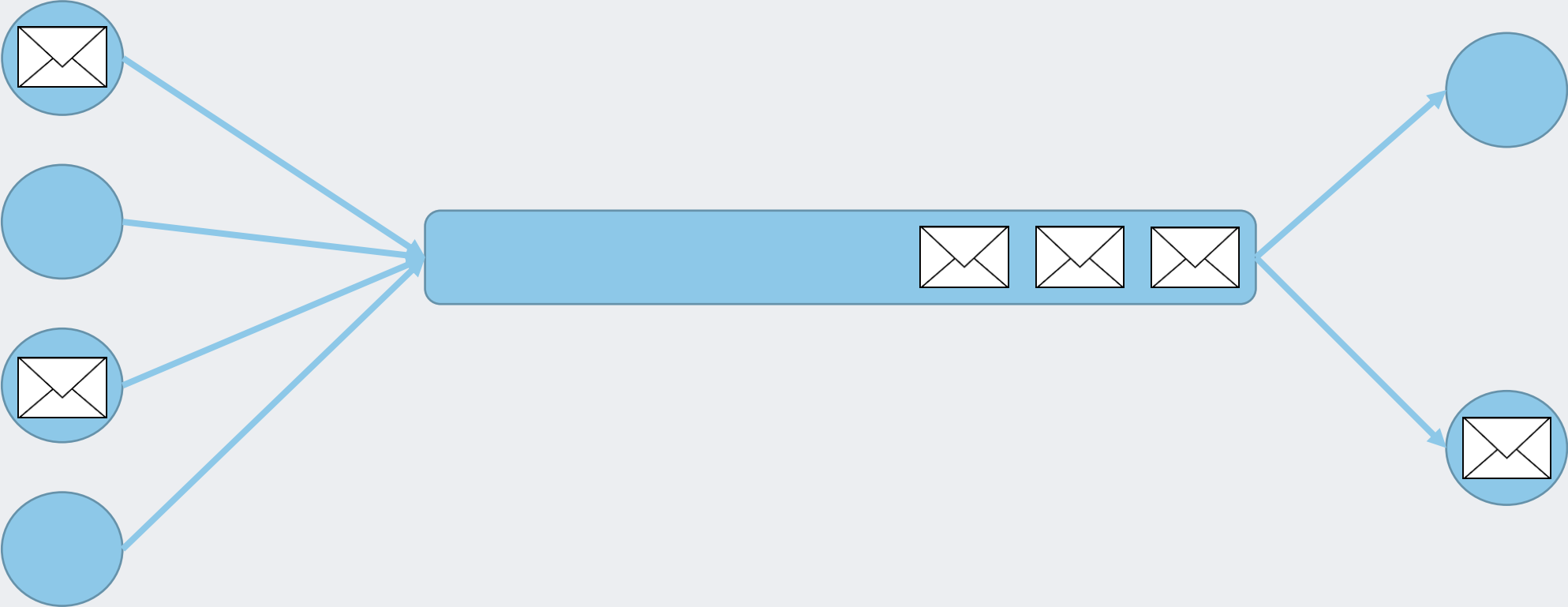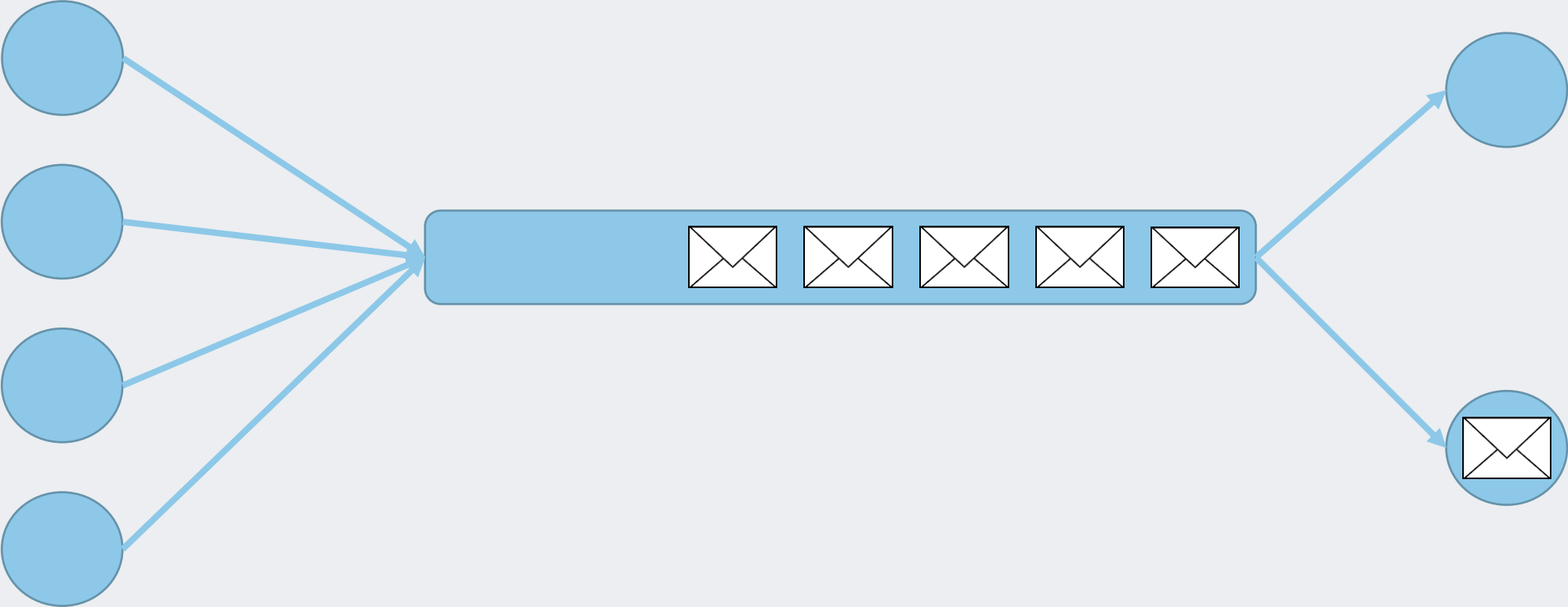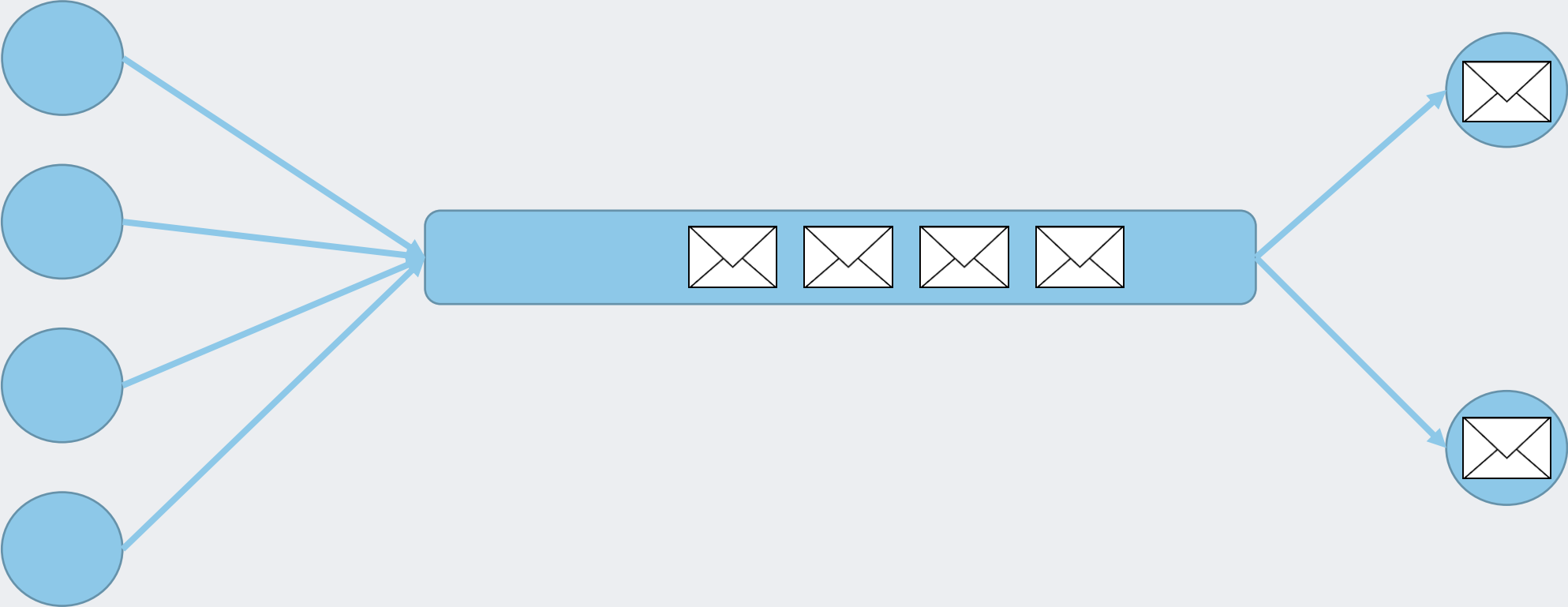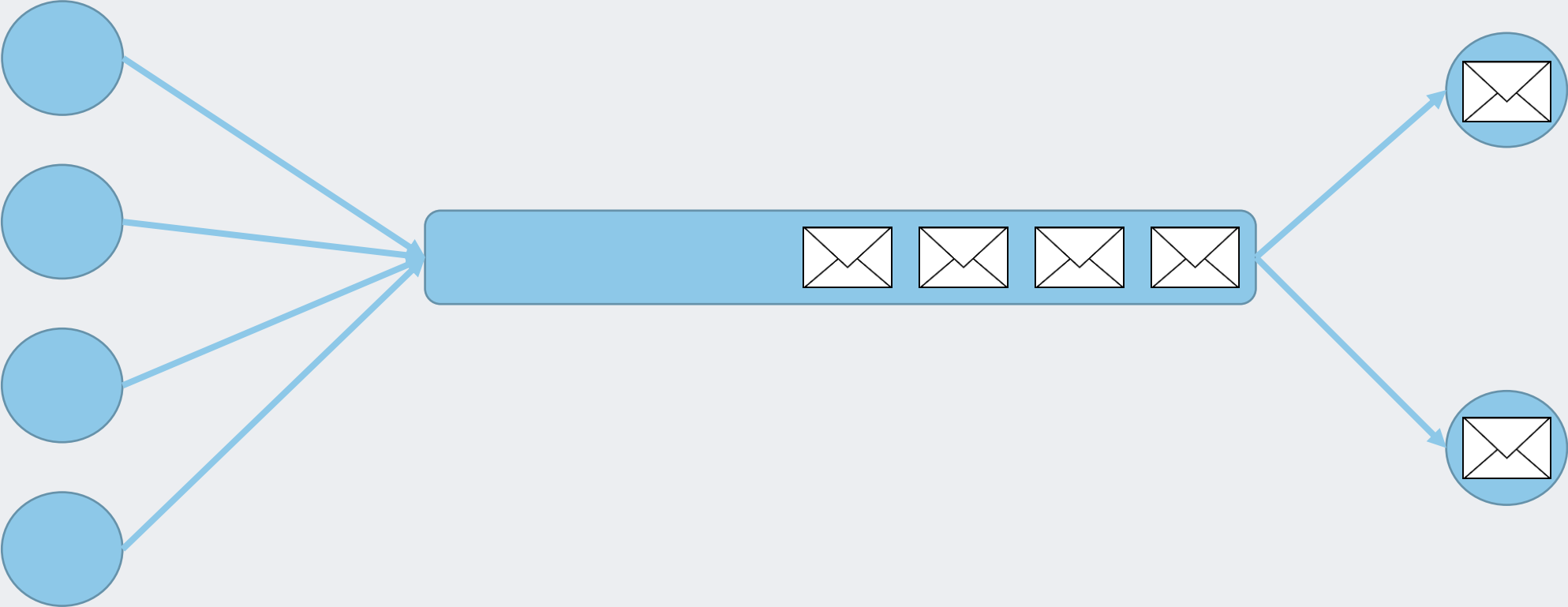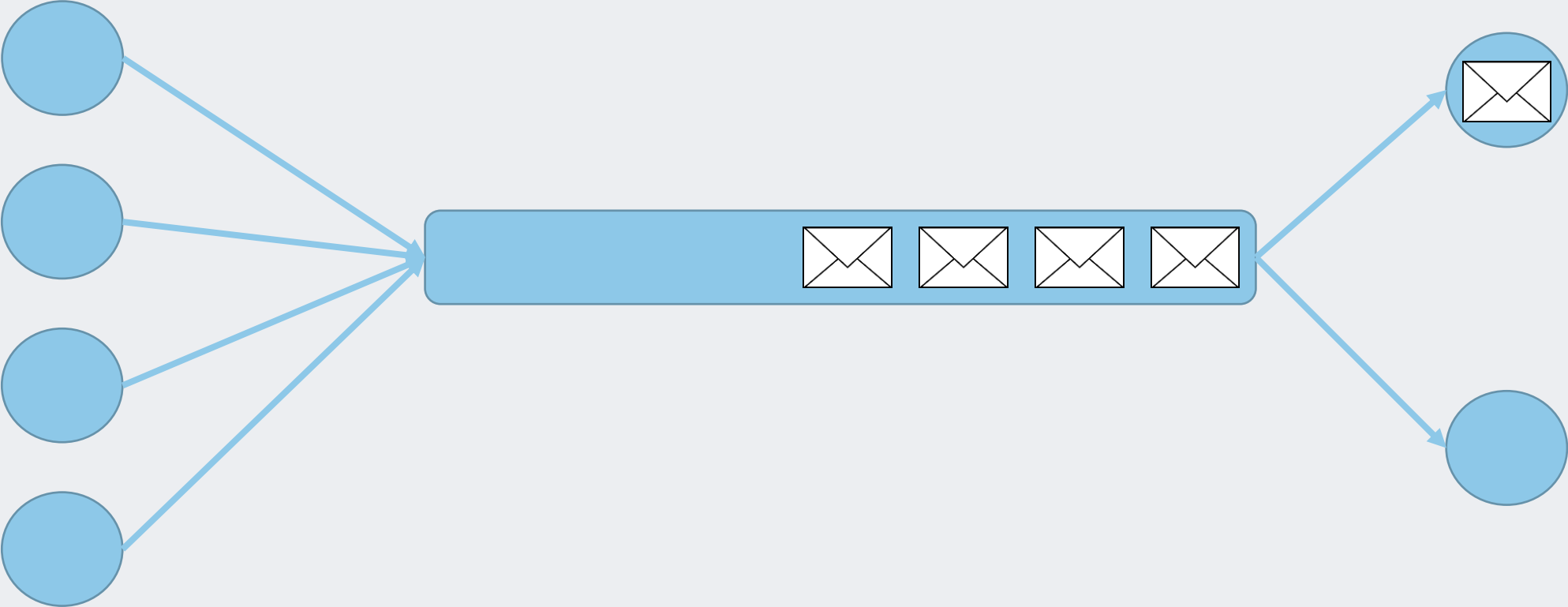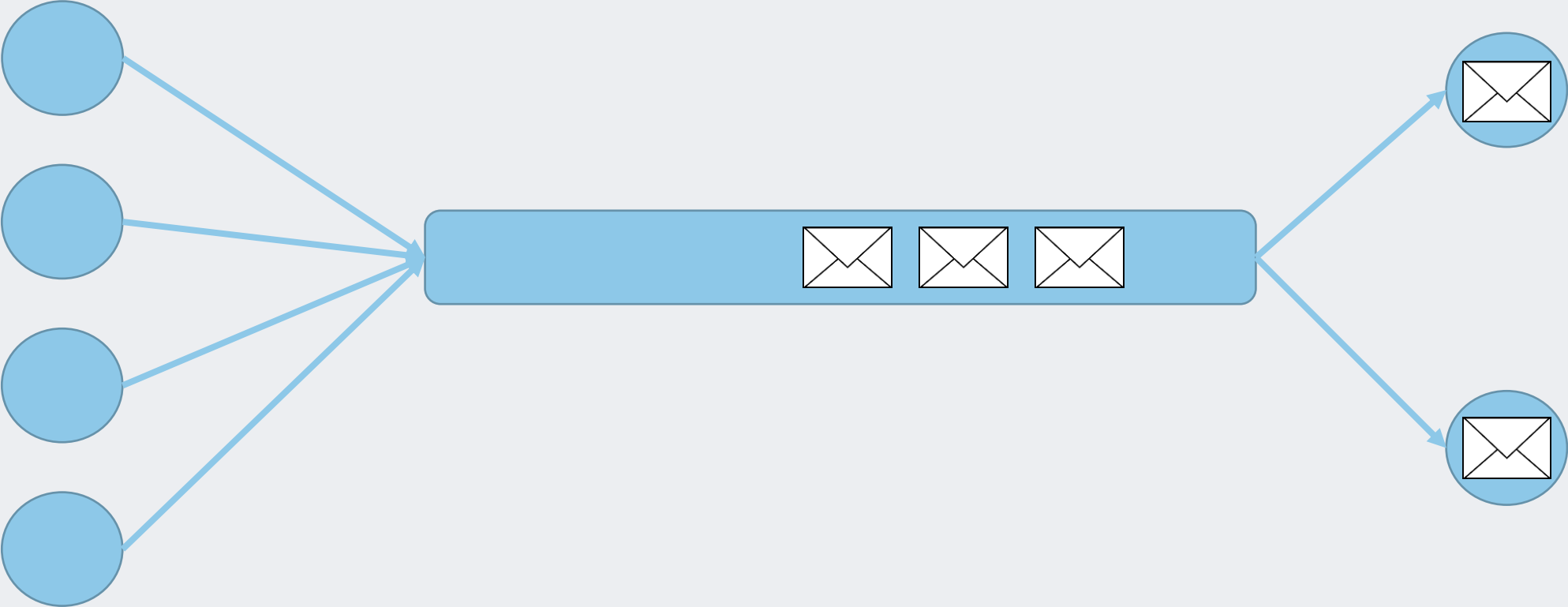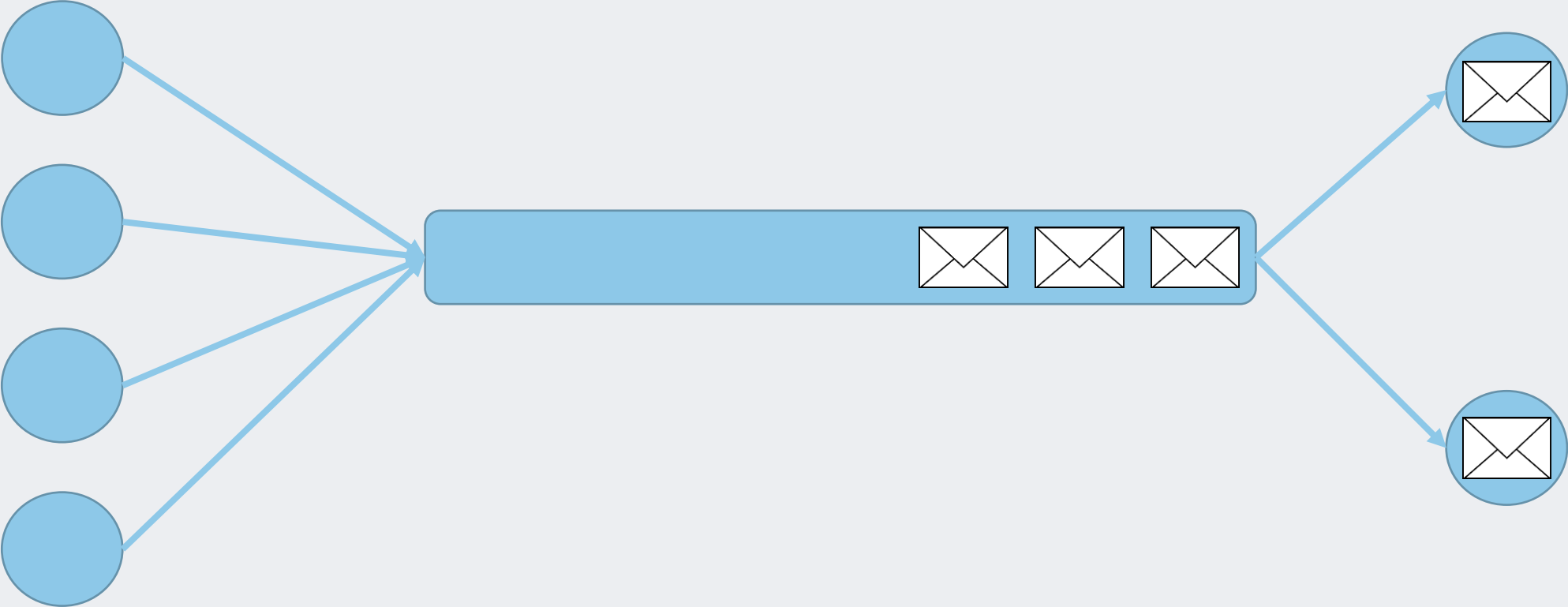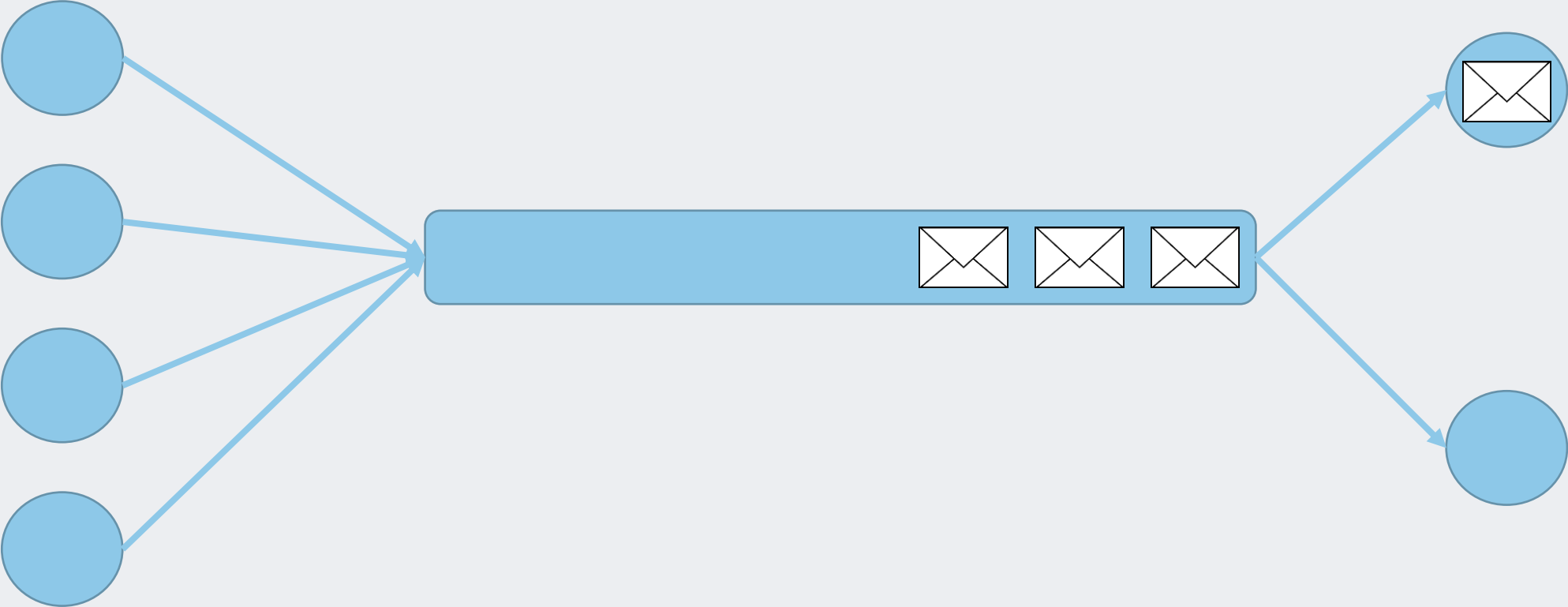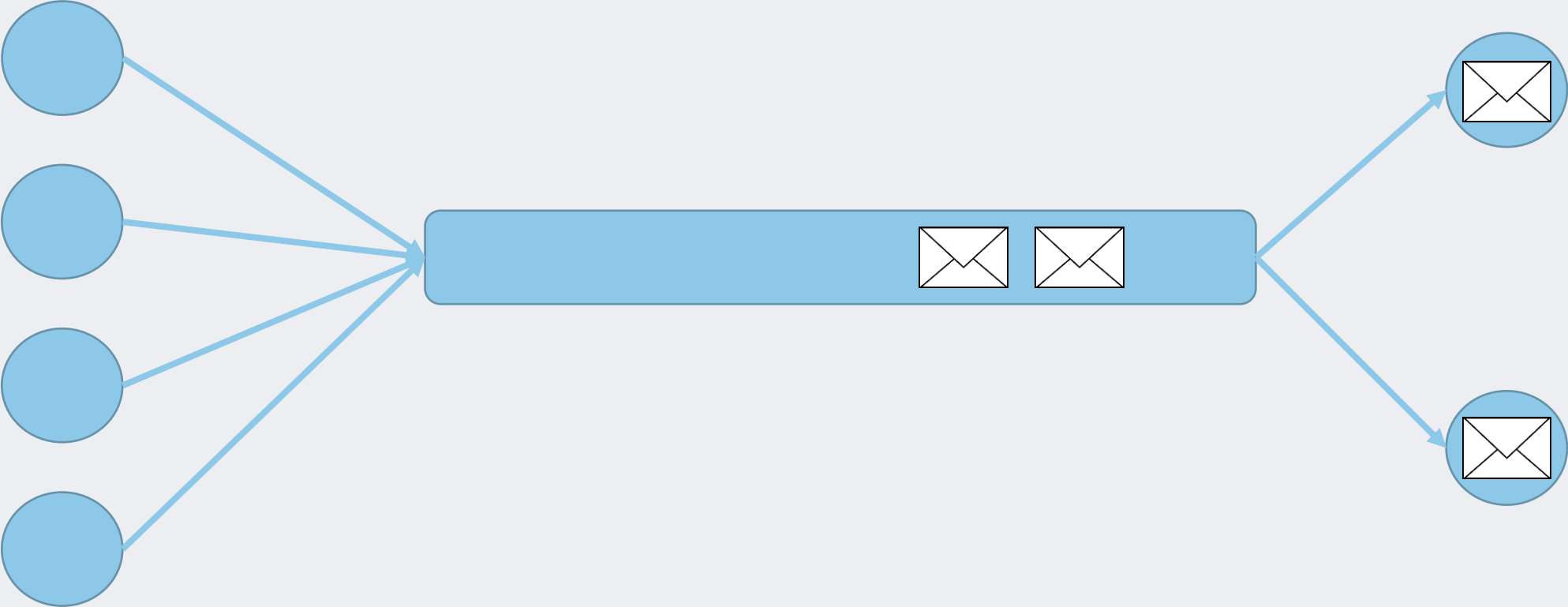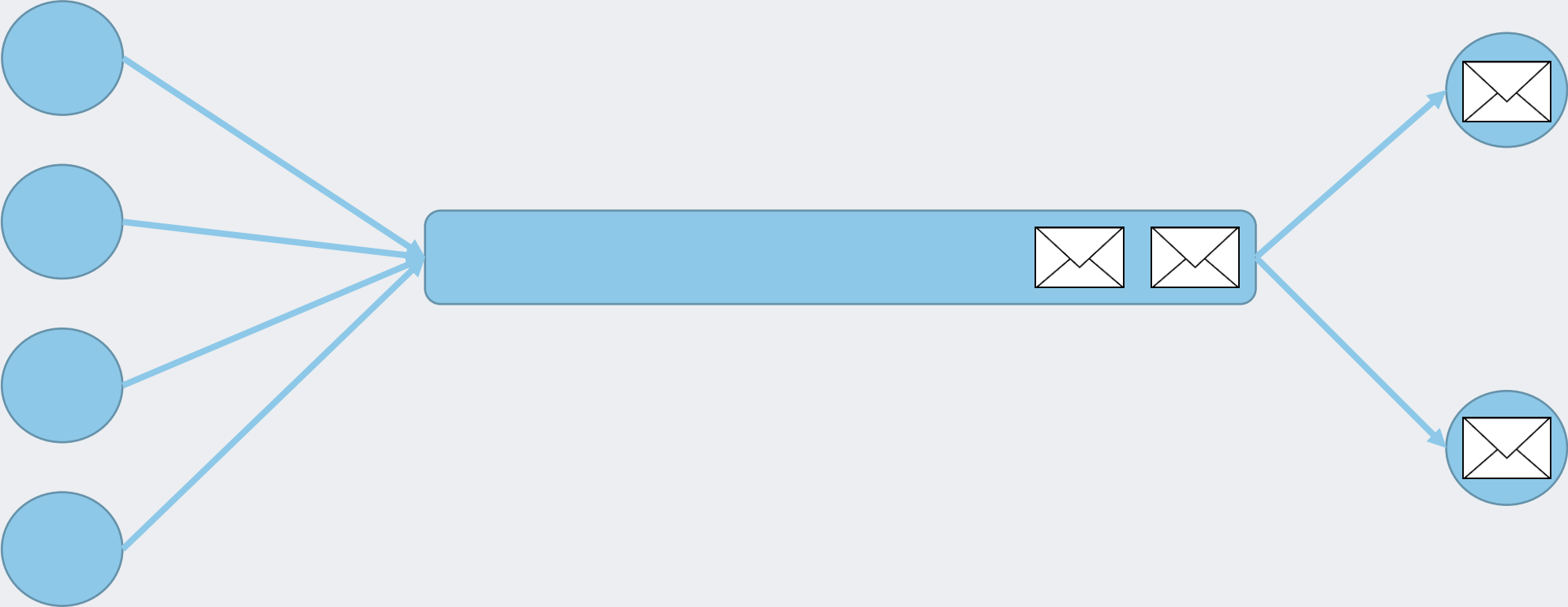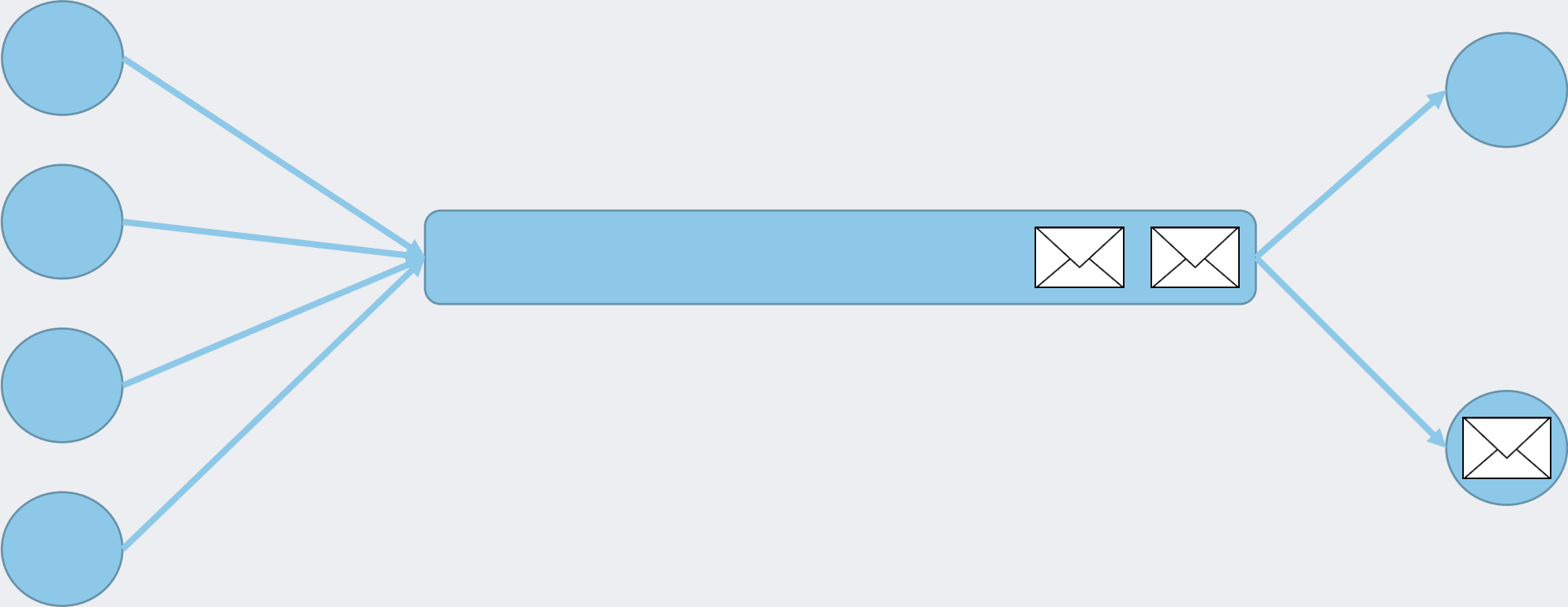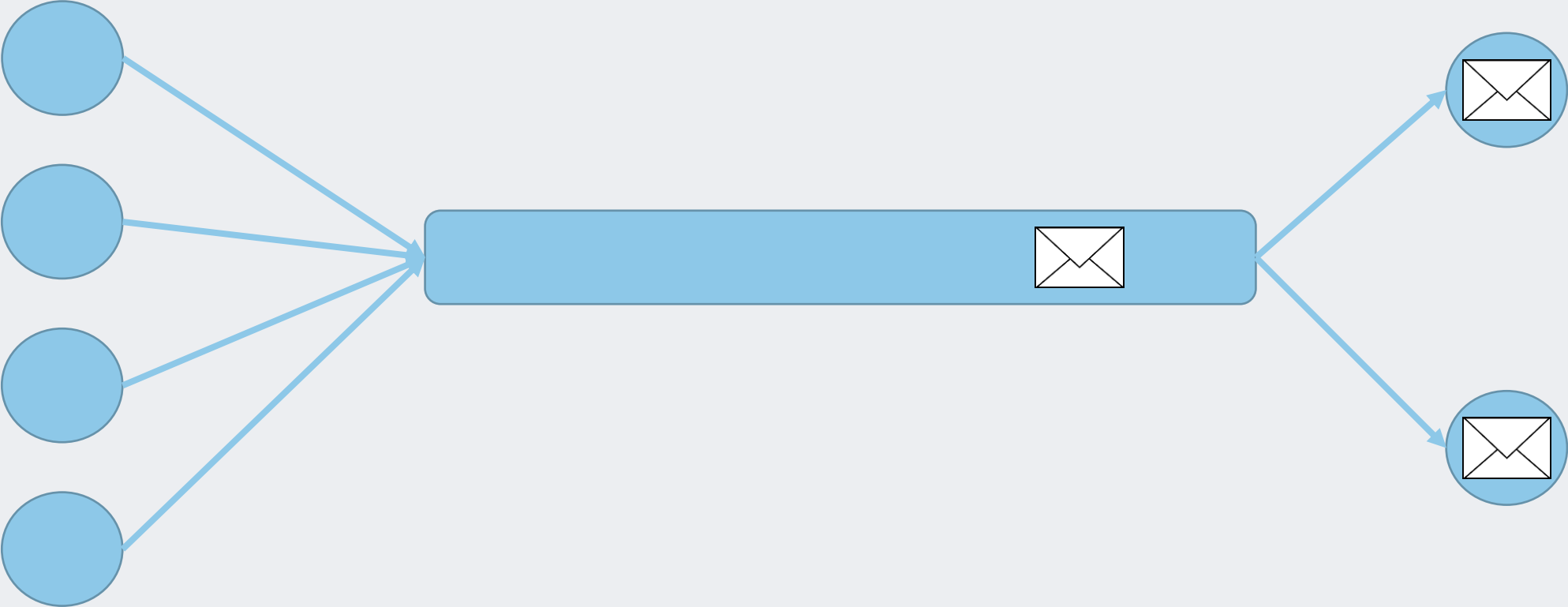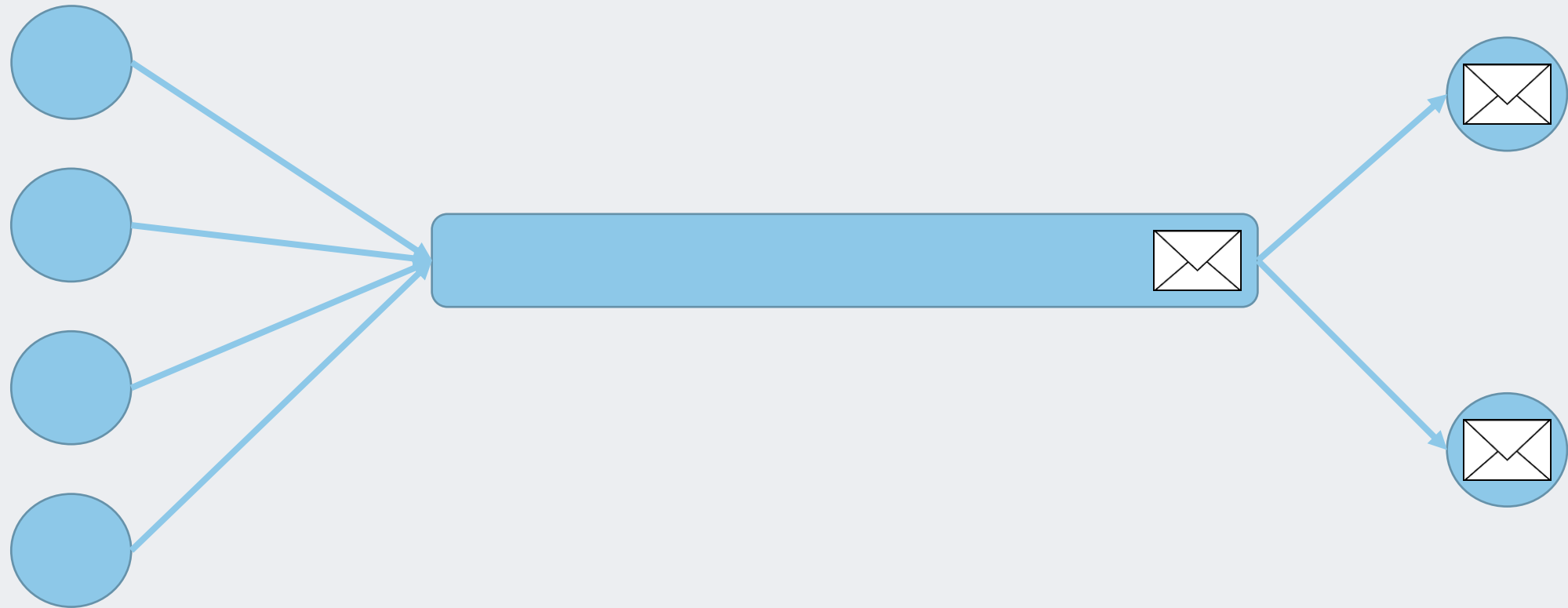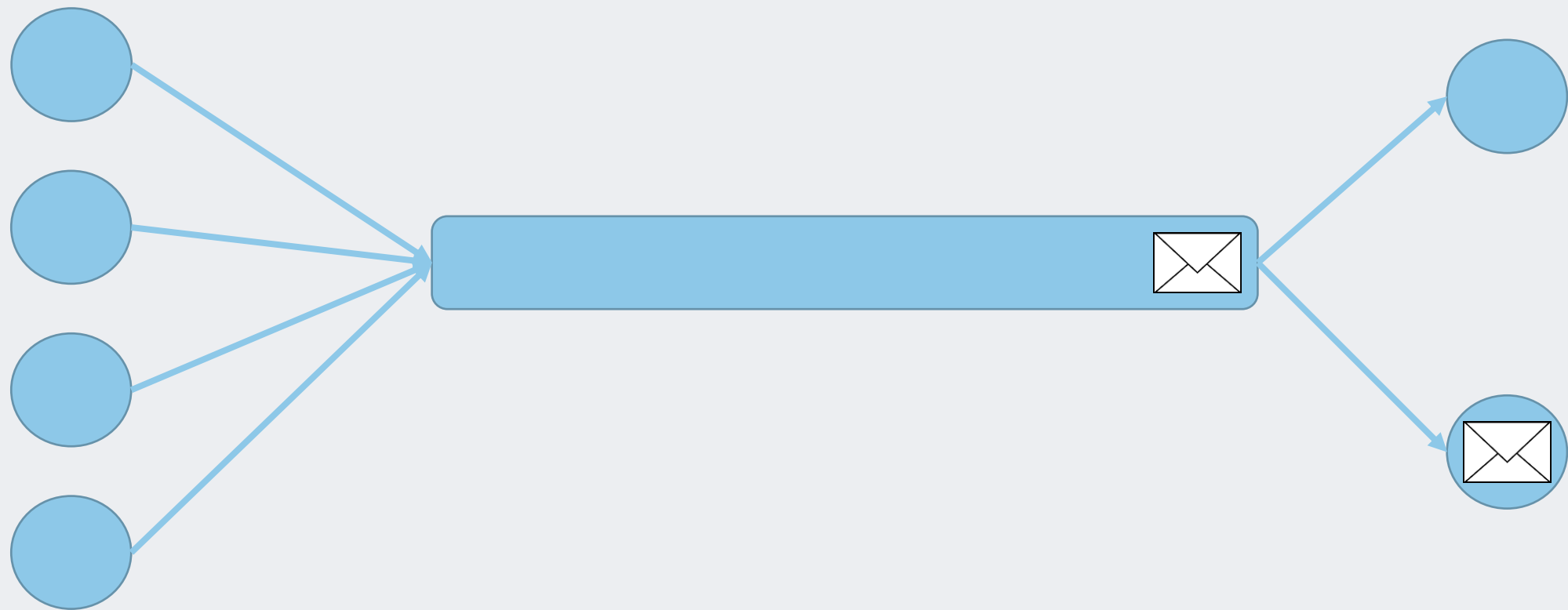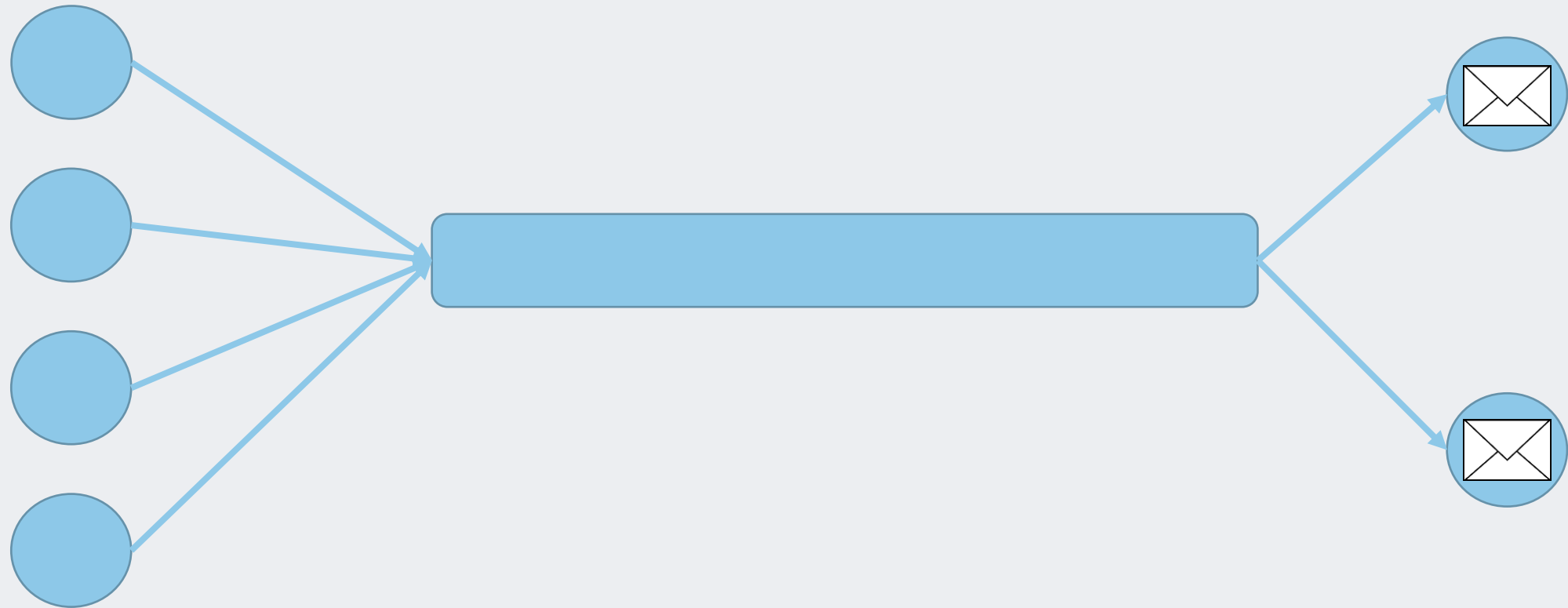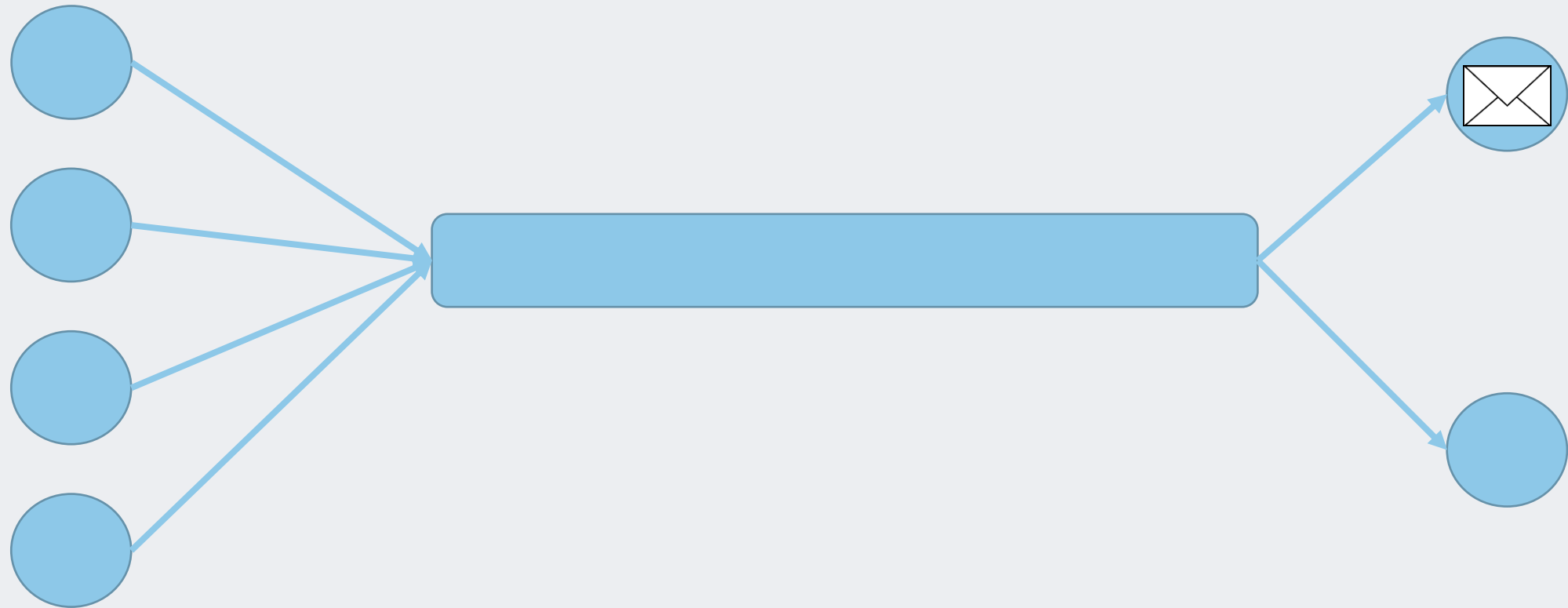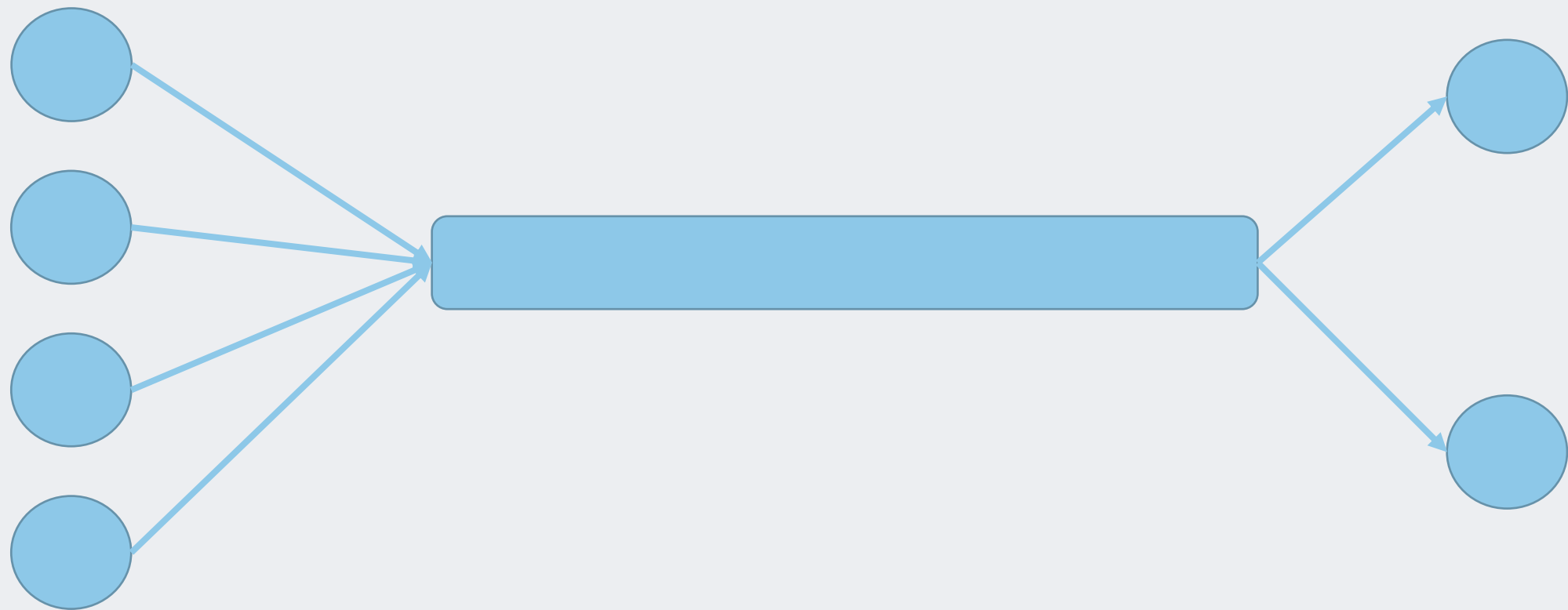# Competing Consumers

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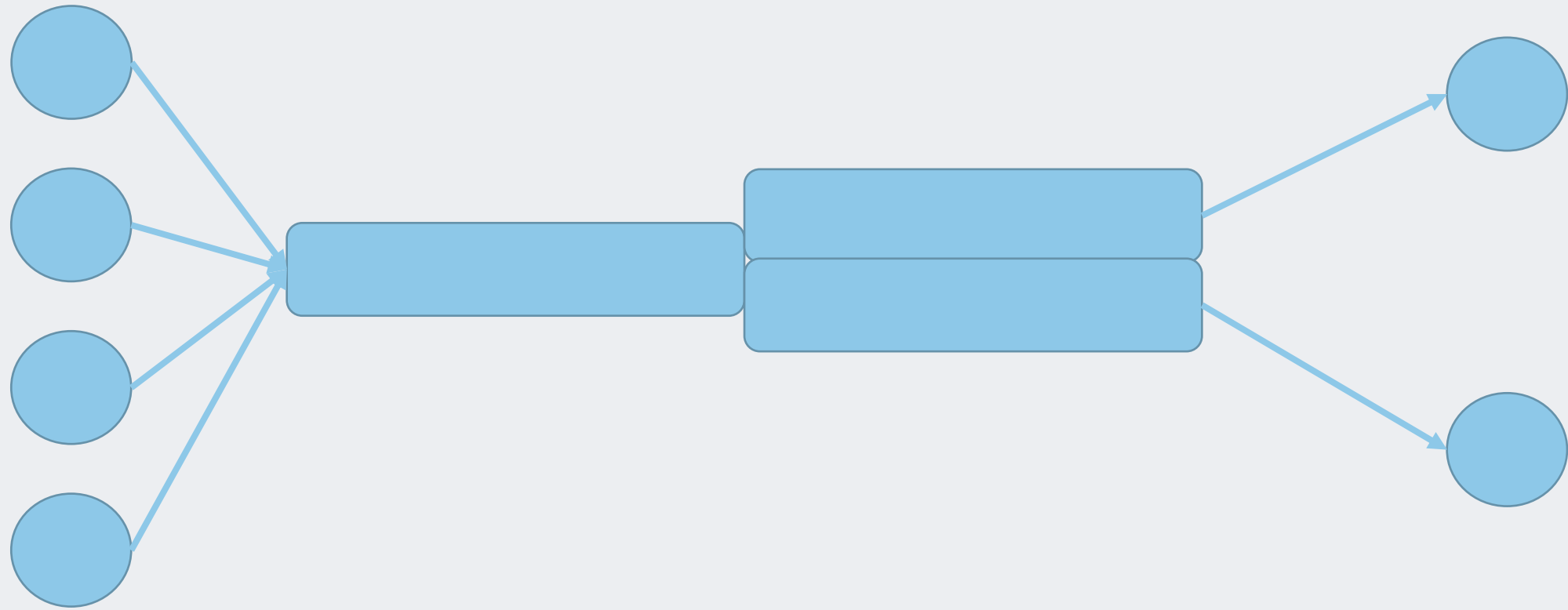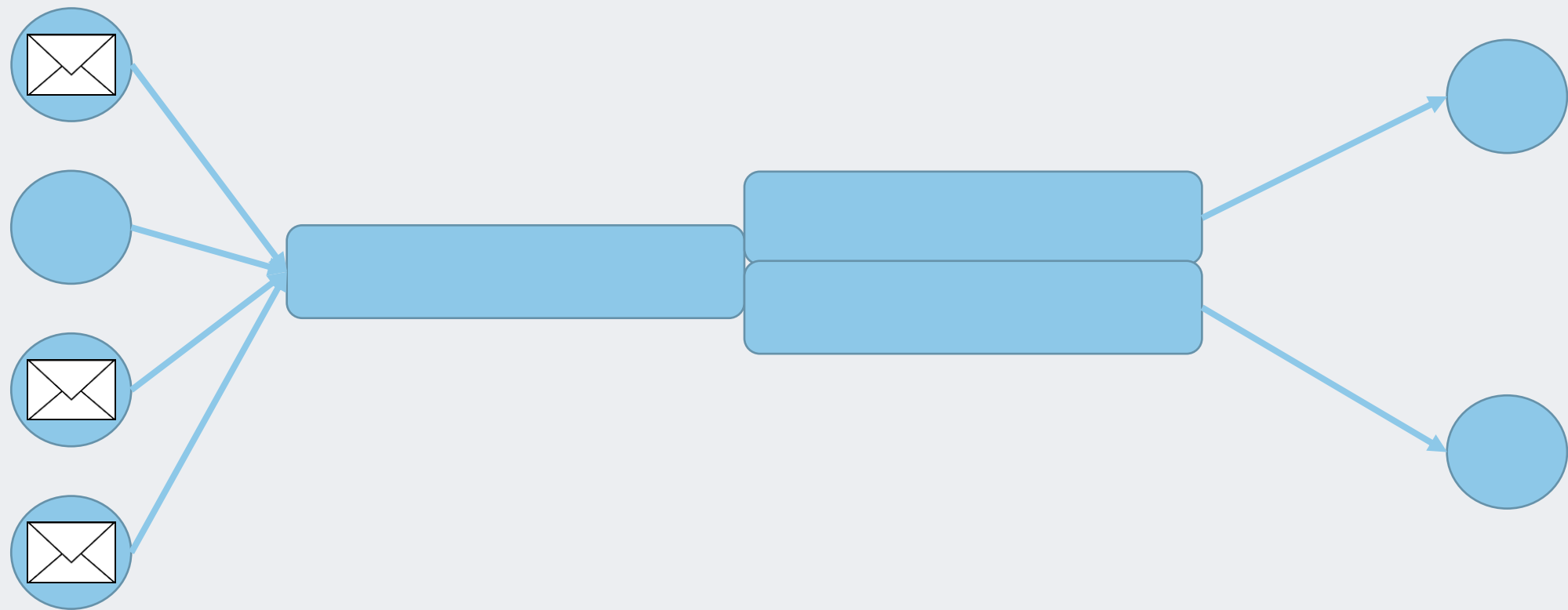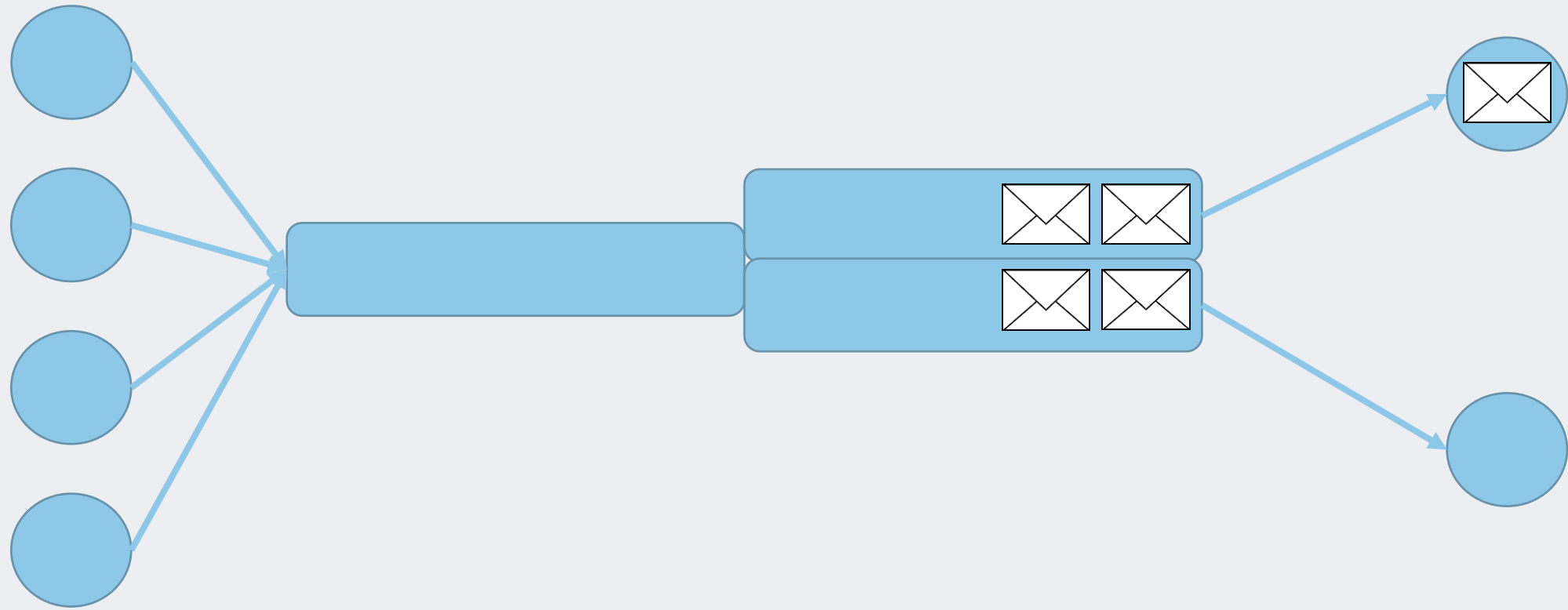
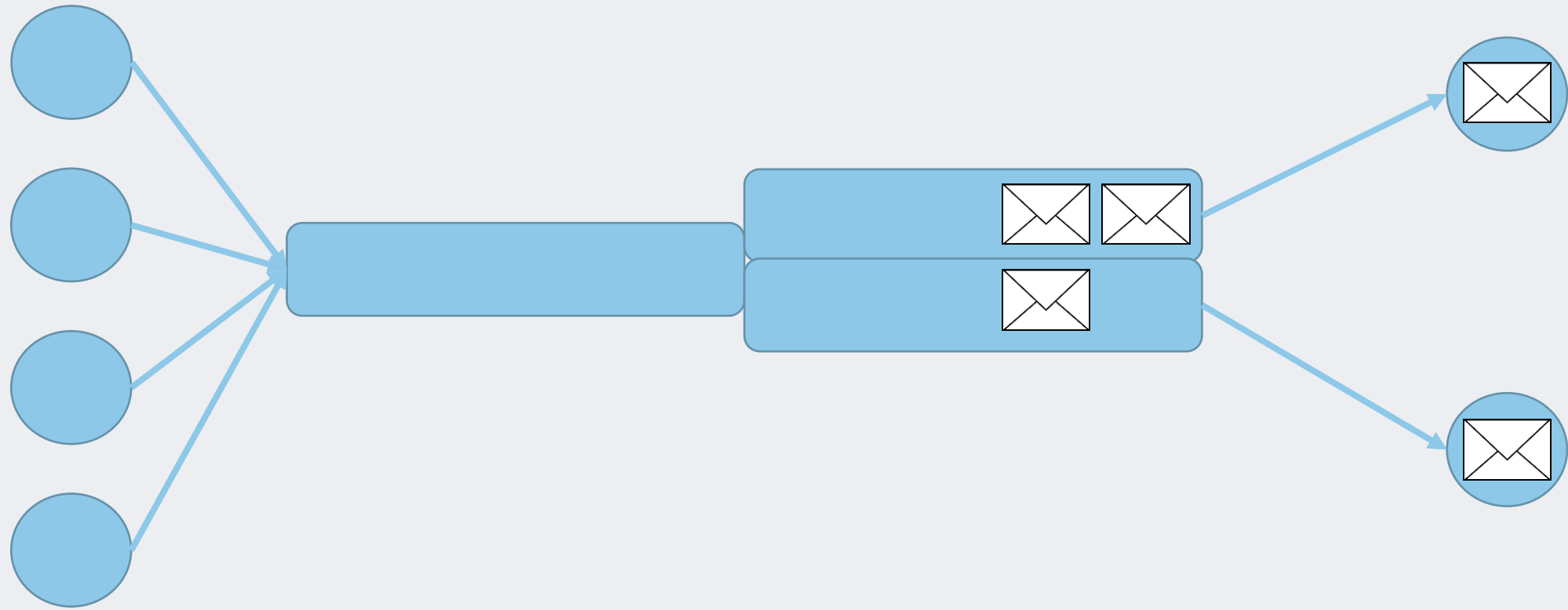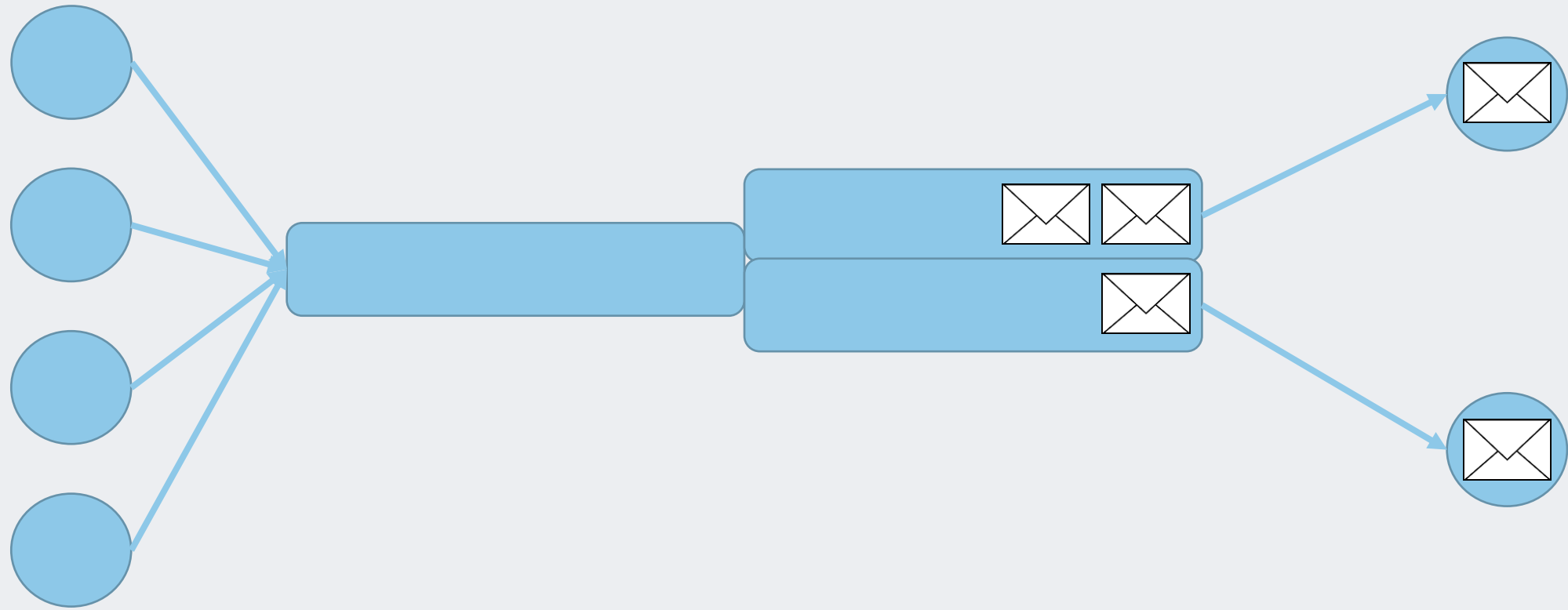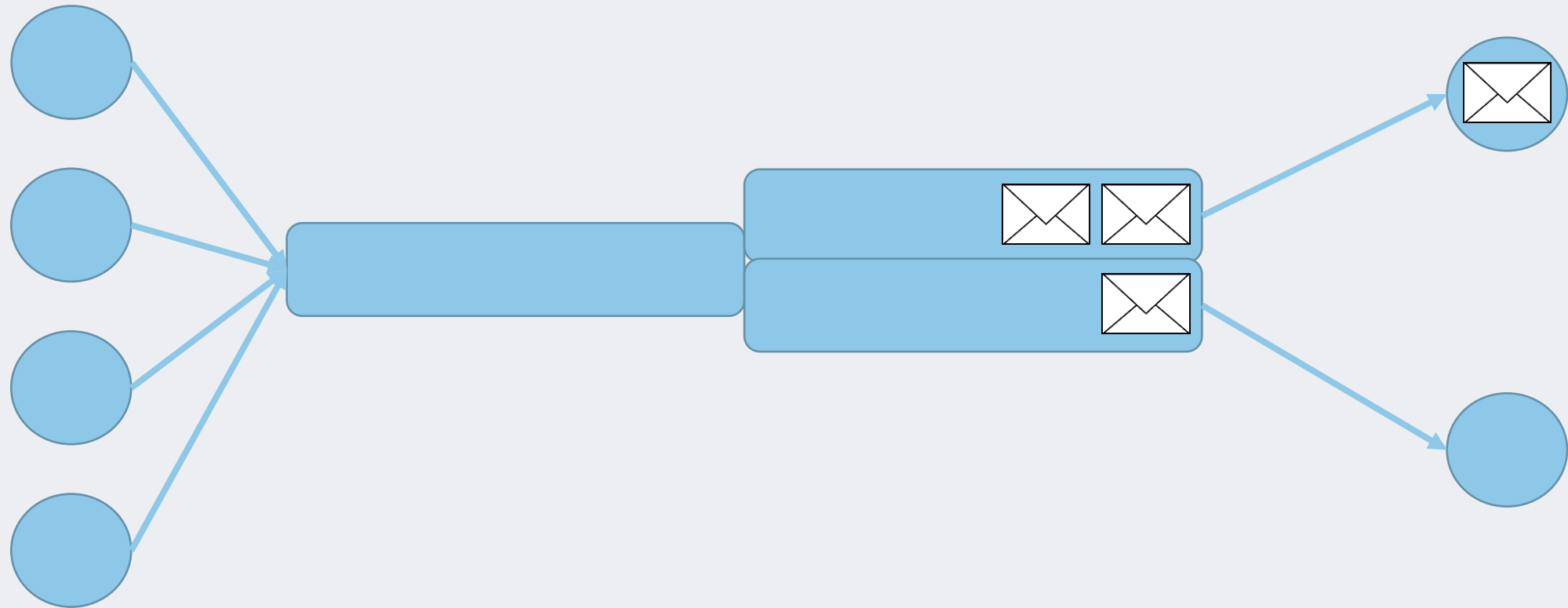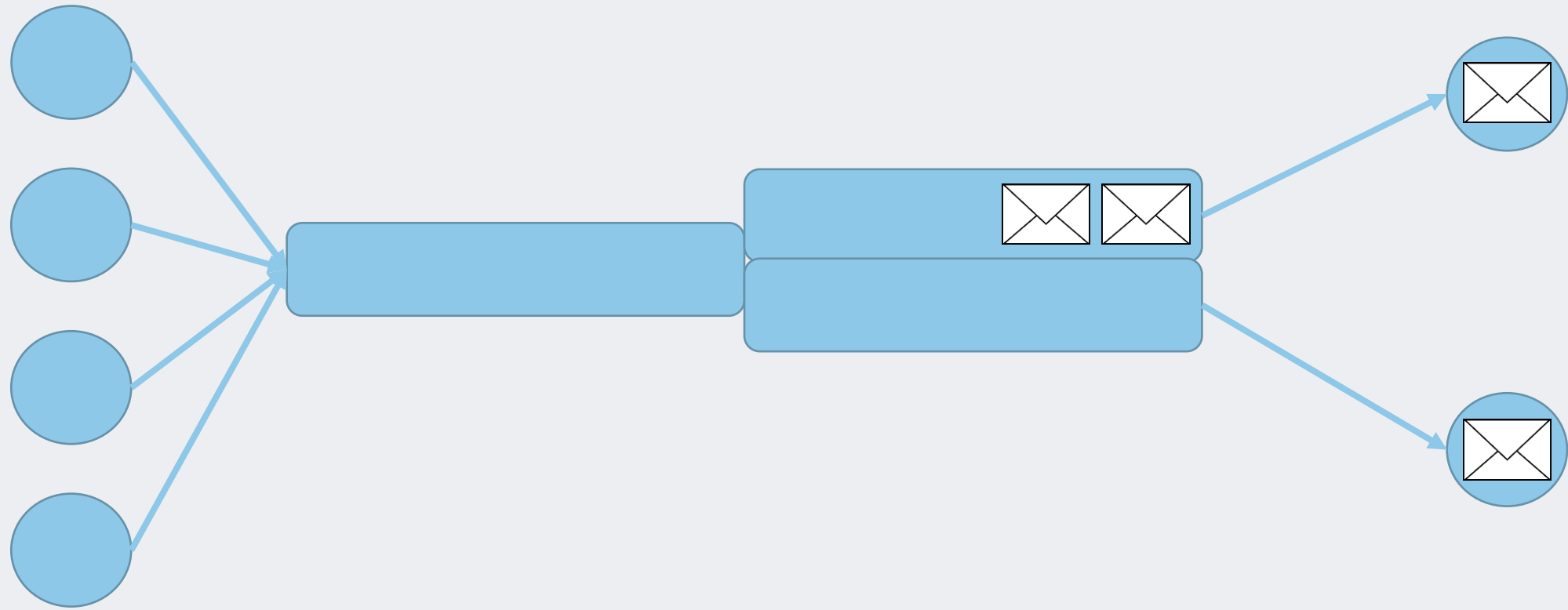https://docs.microsoft.com/en-us/azure/architecture/patterns/publisher-subscriber
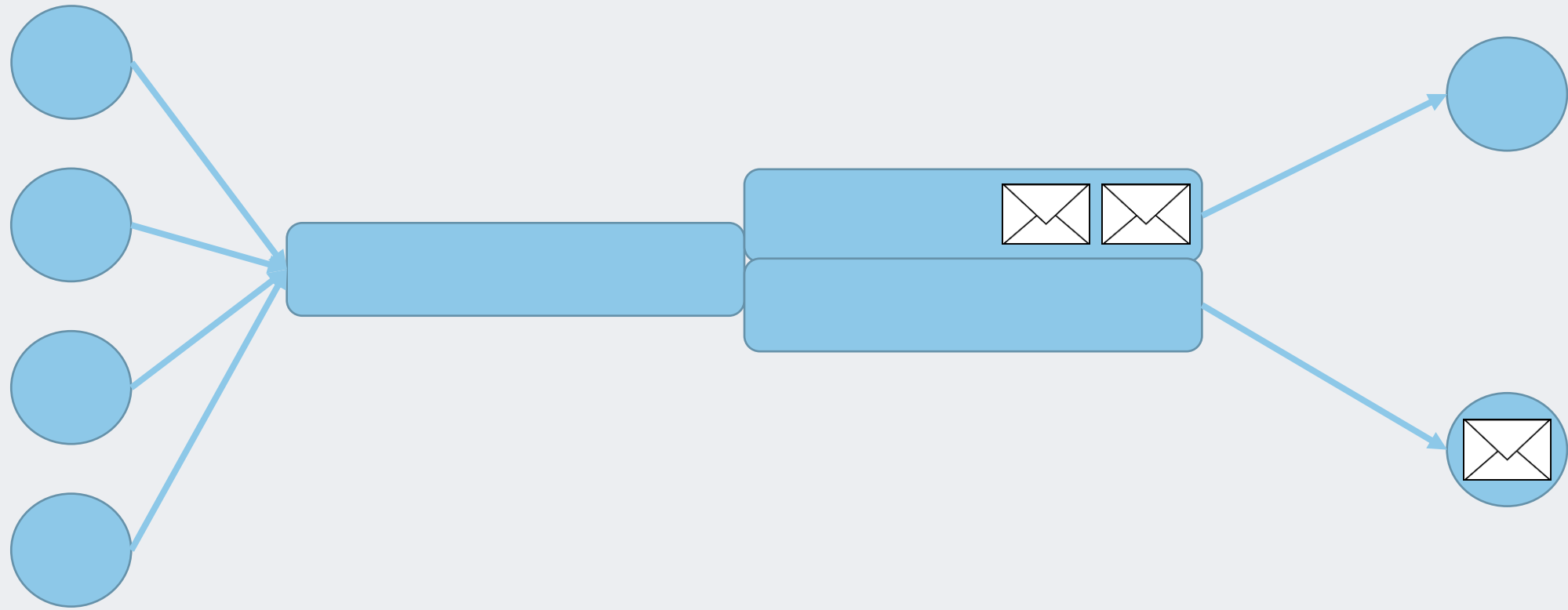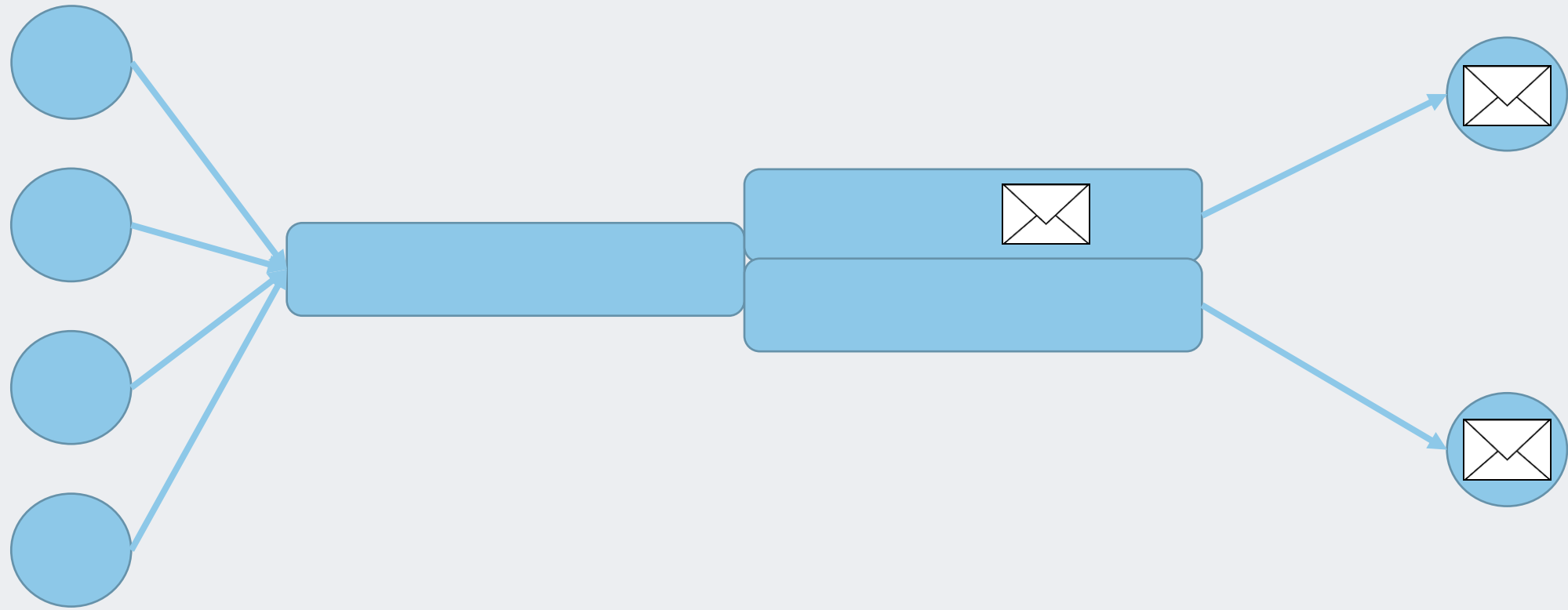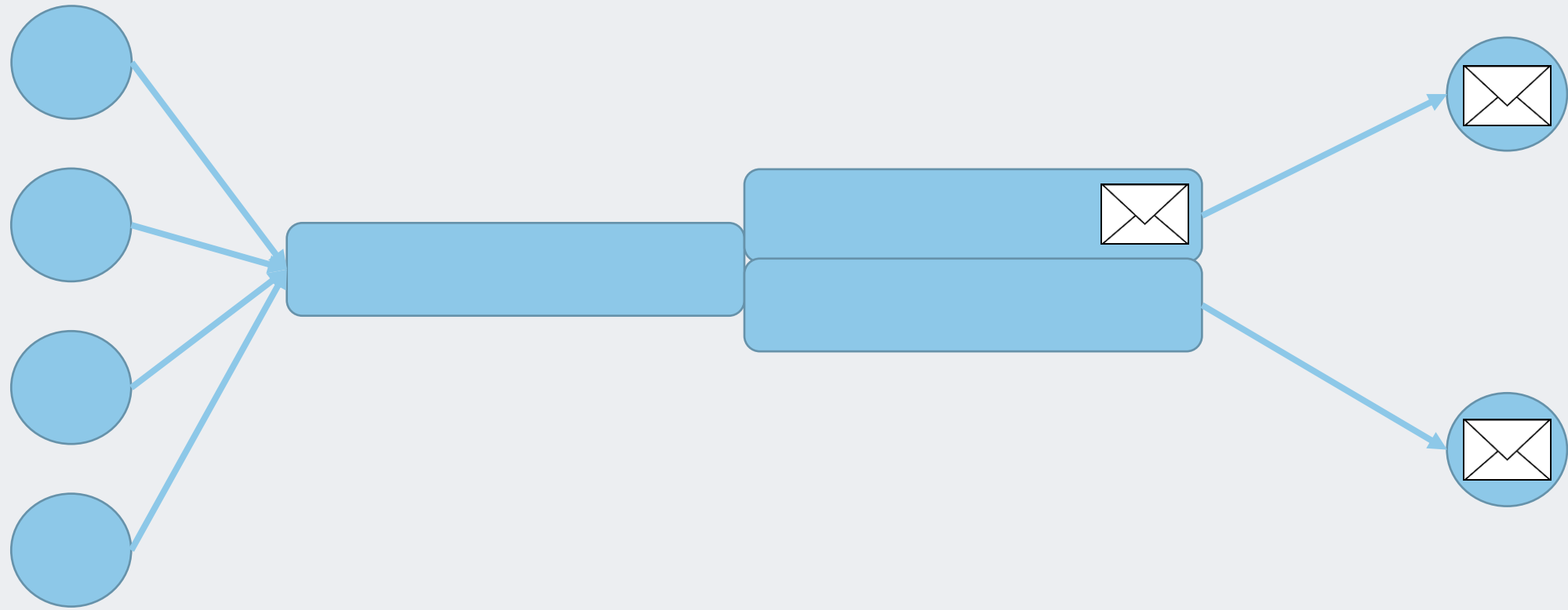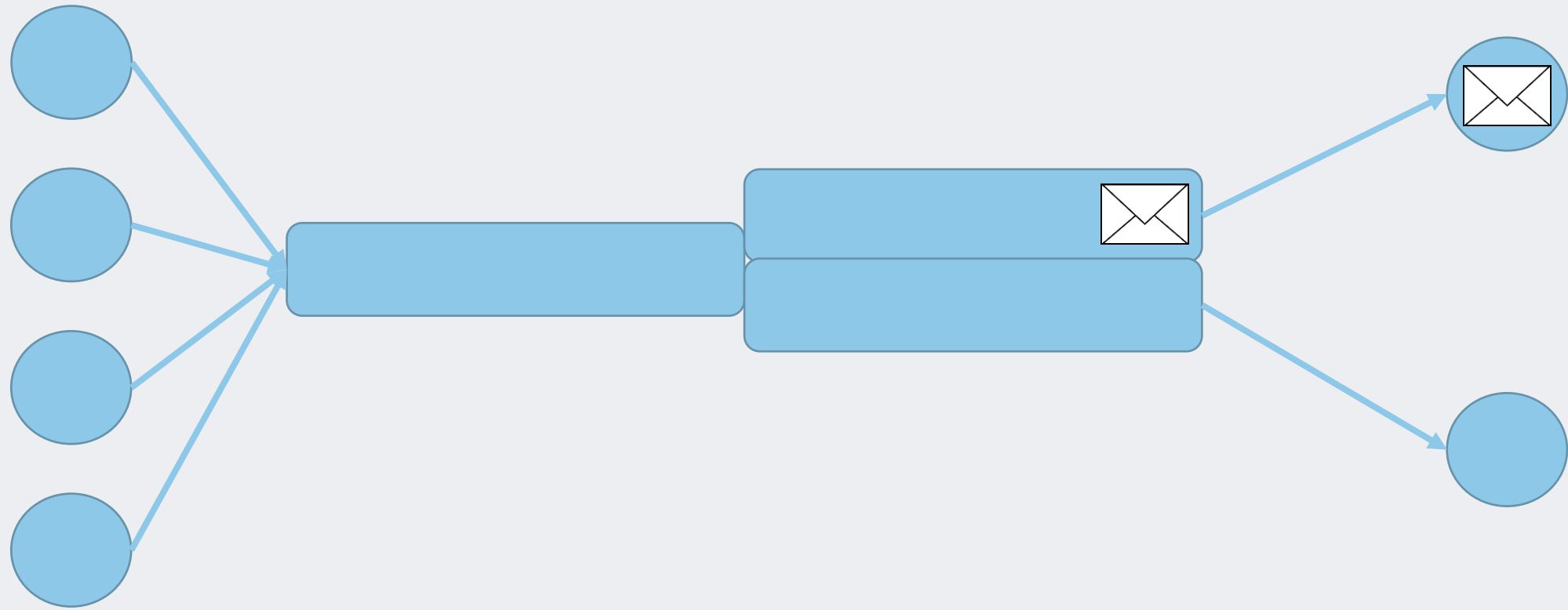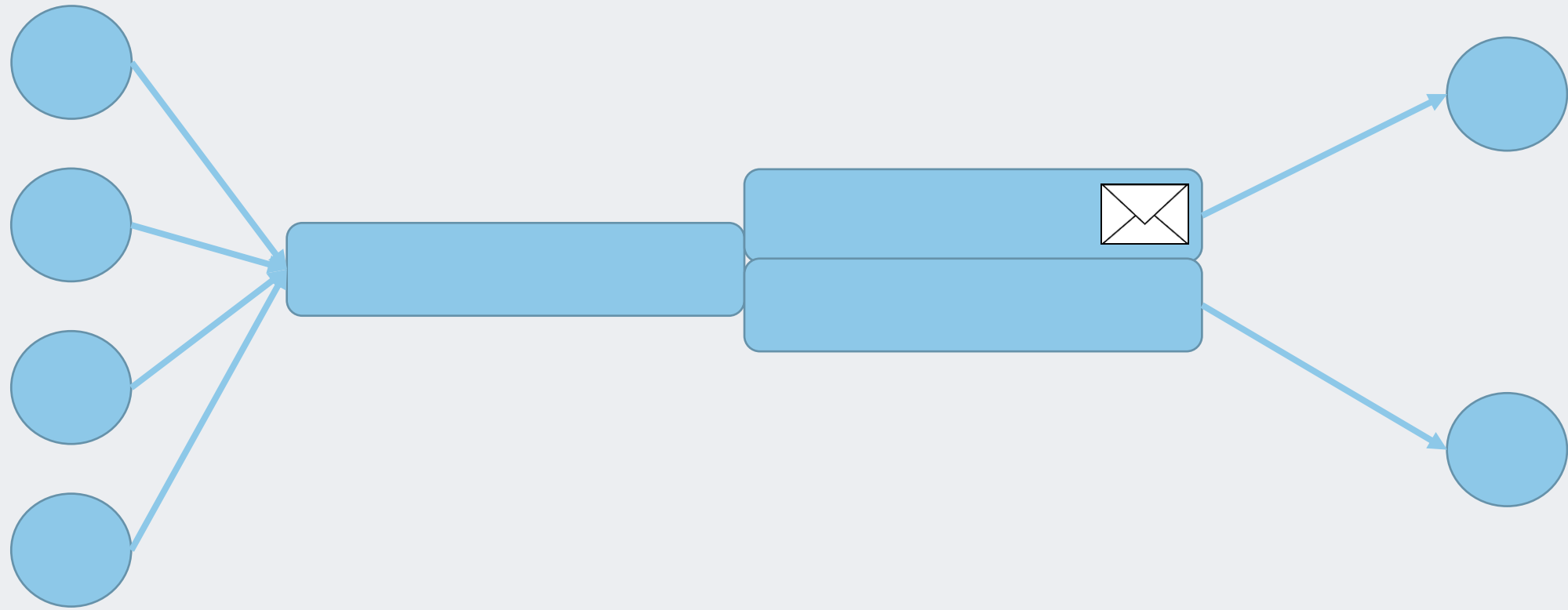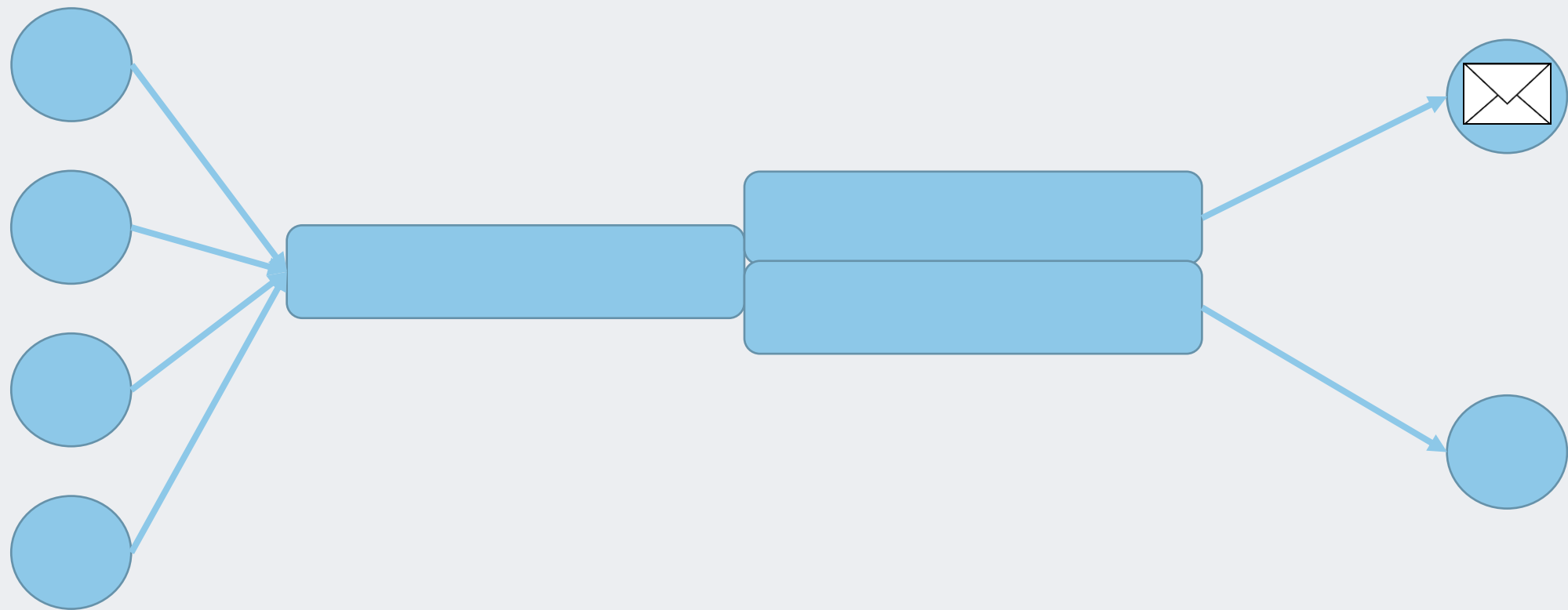
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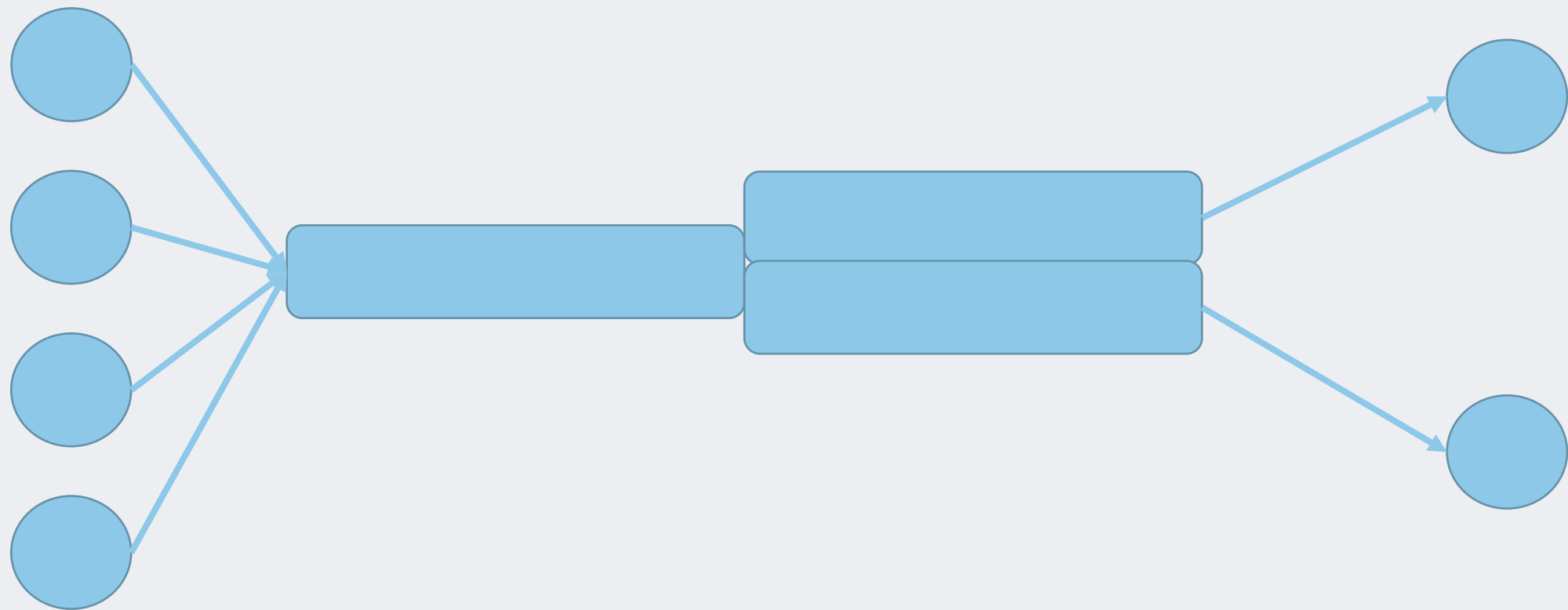
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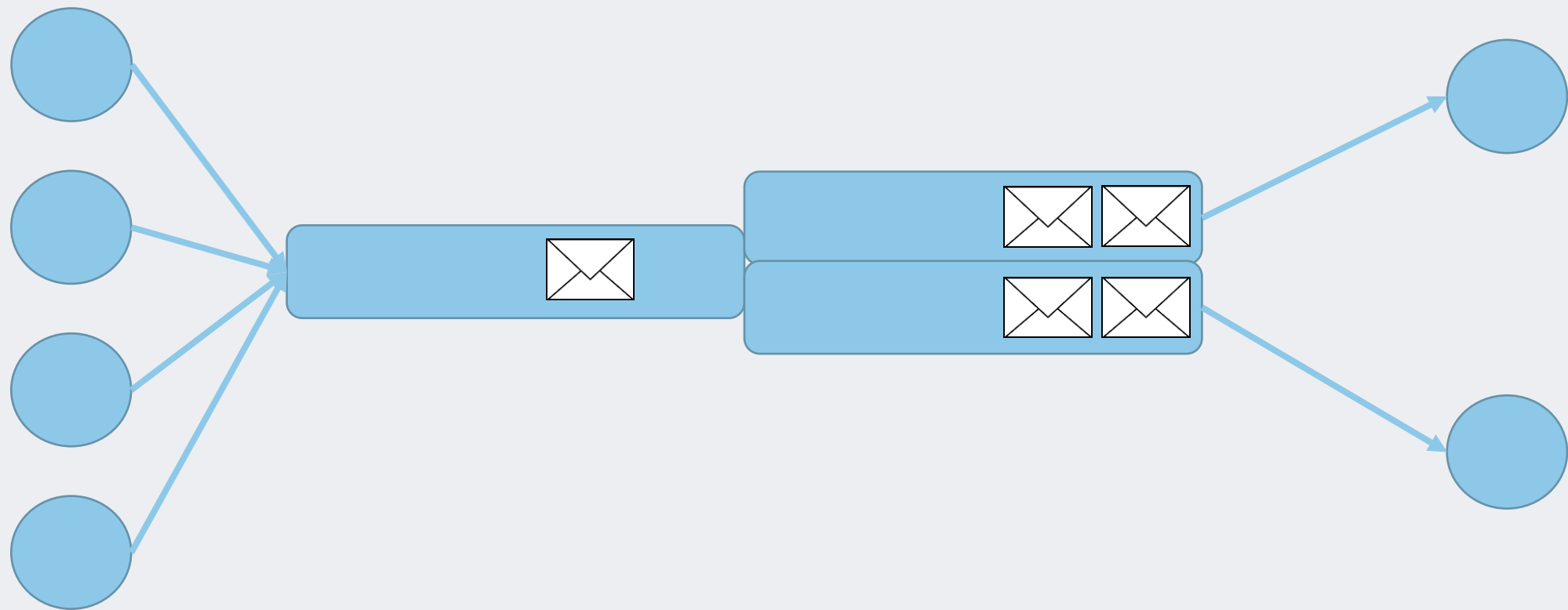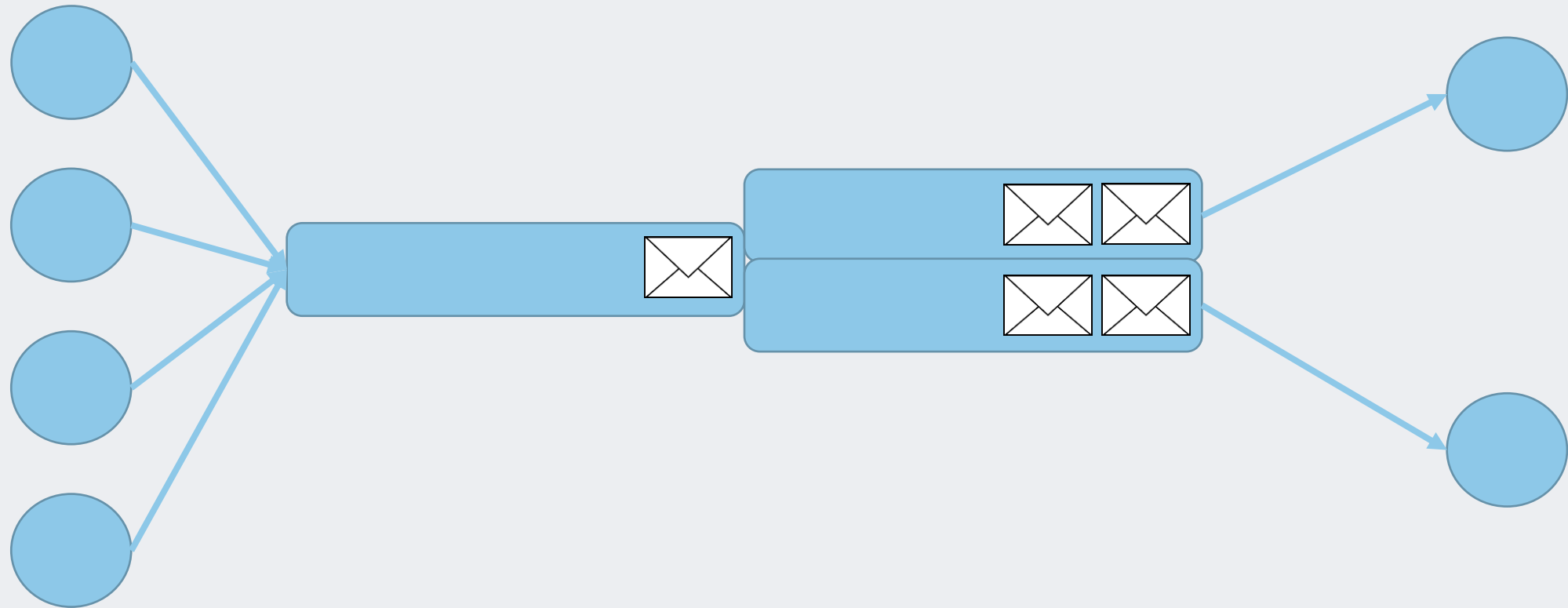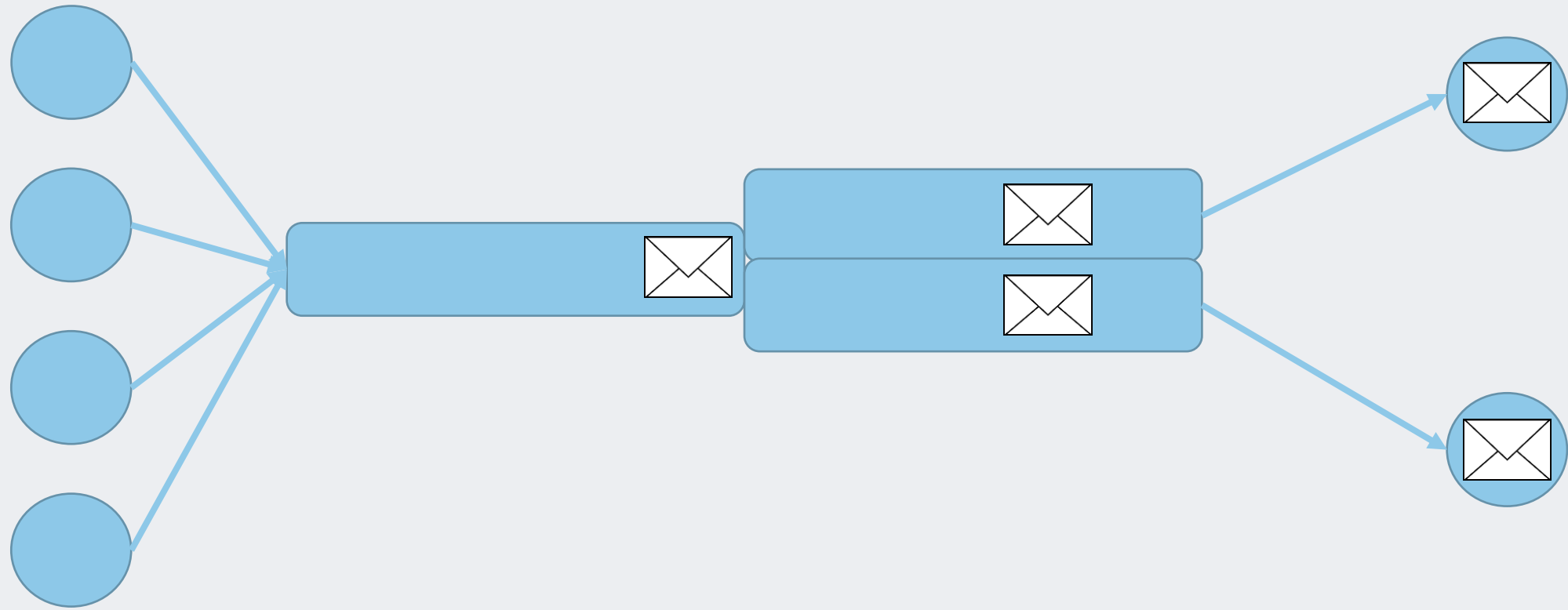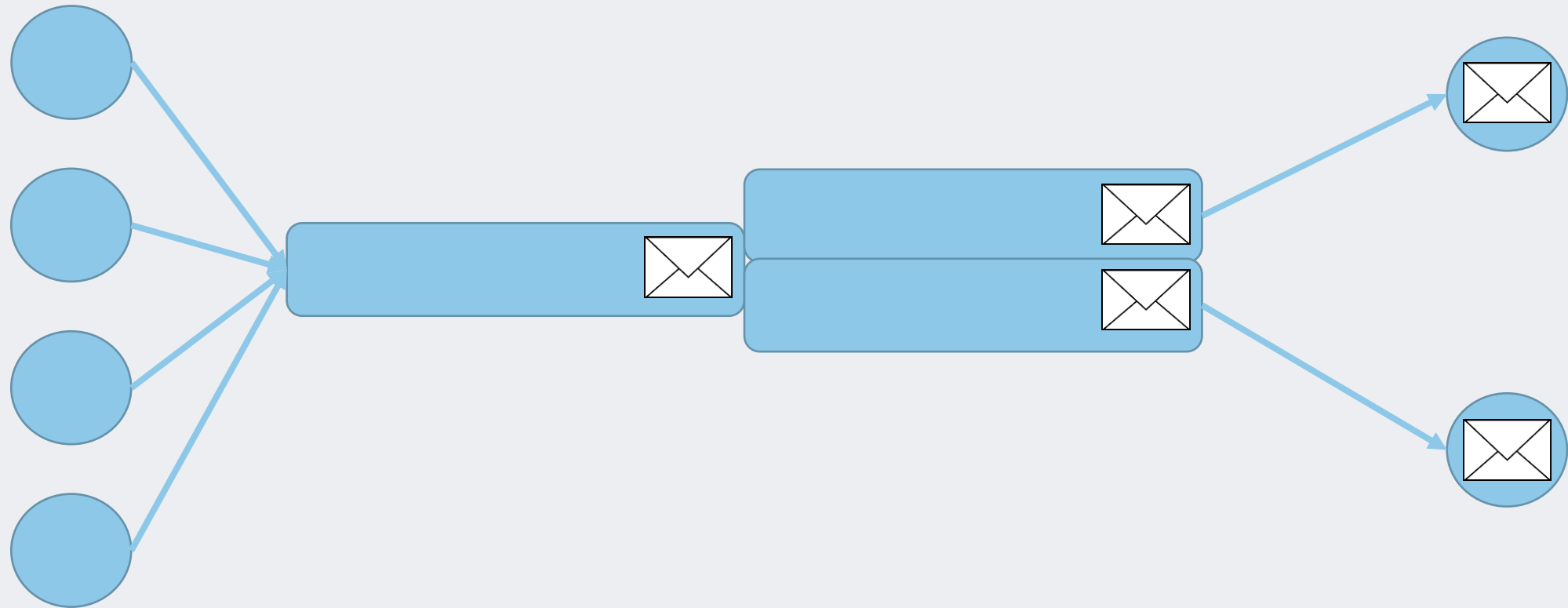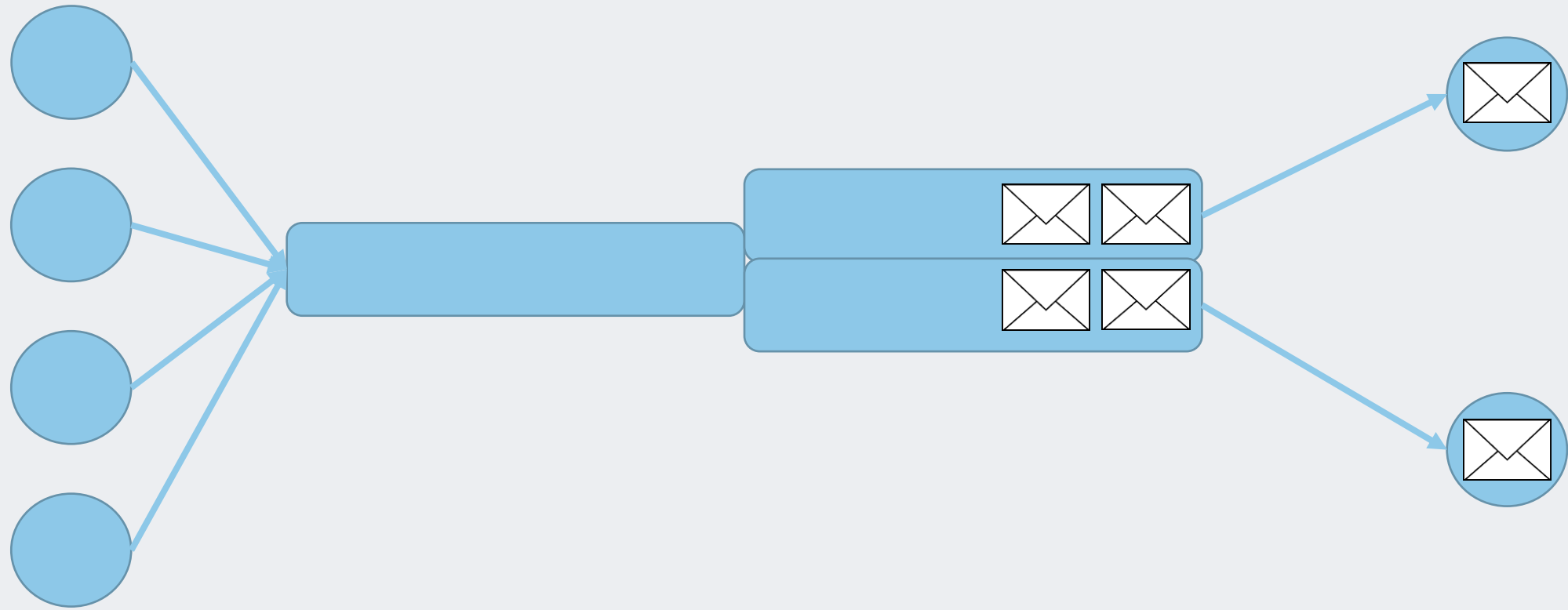
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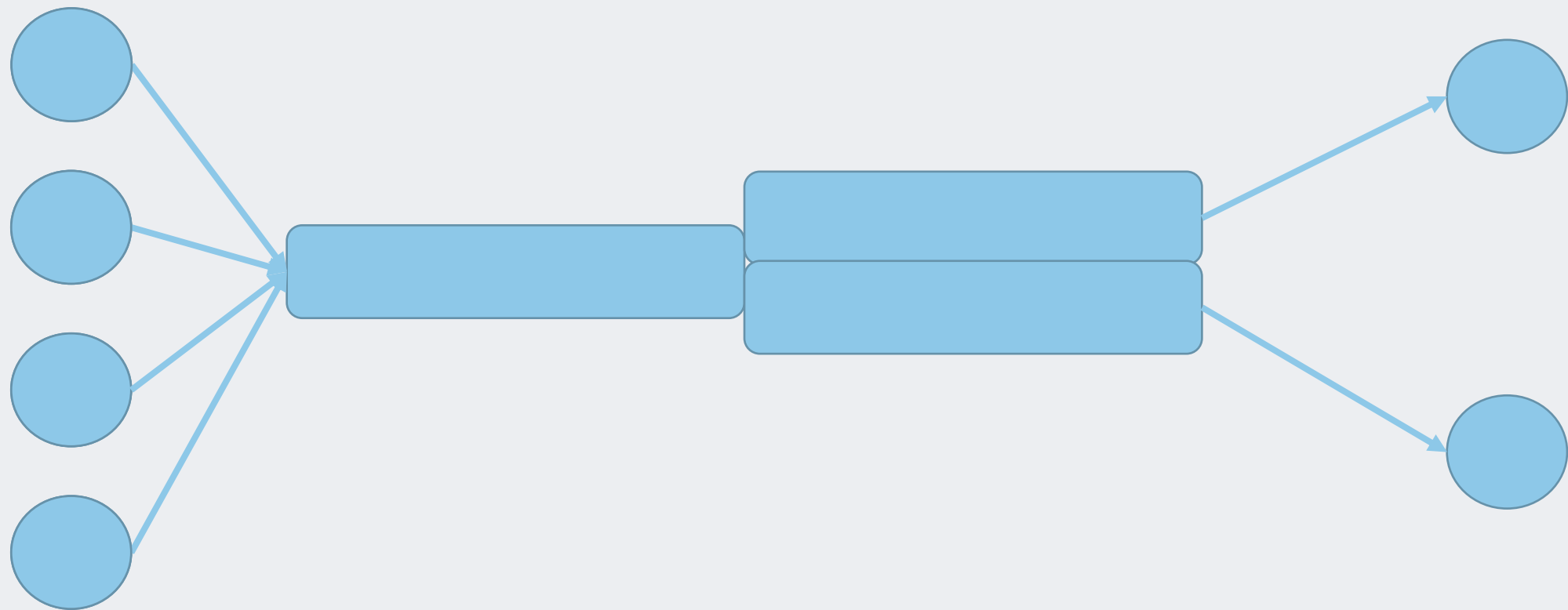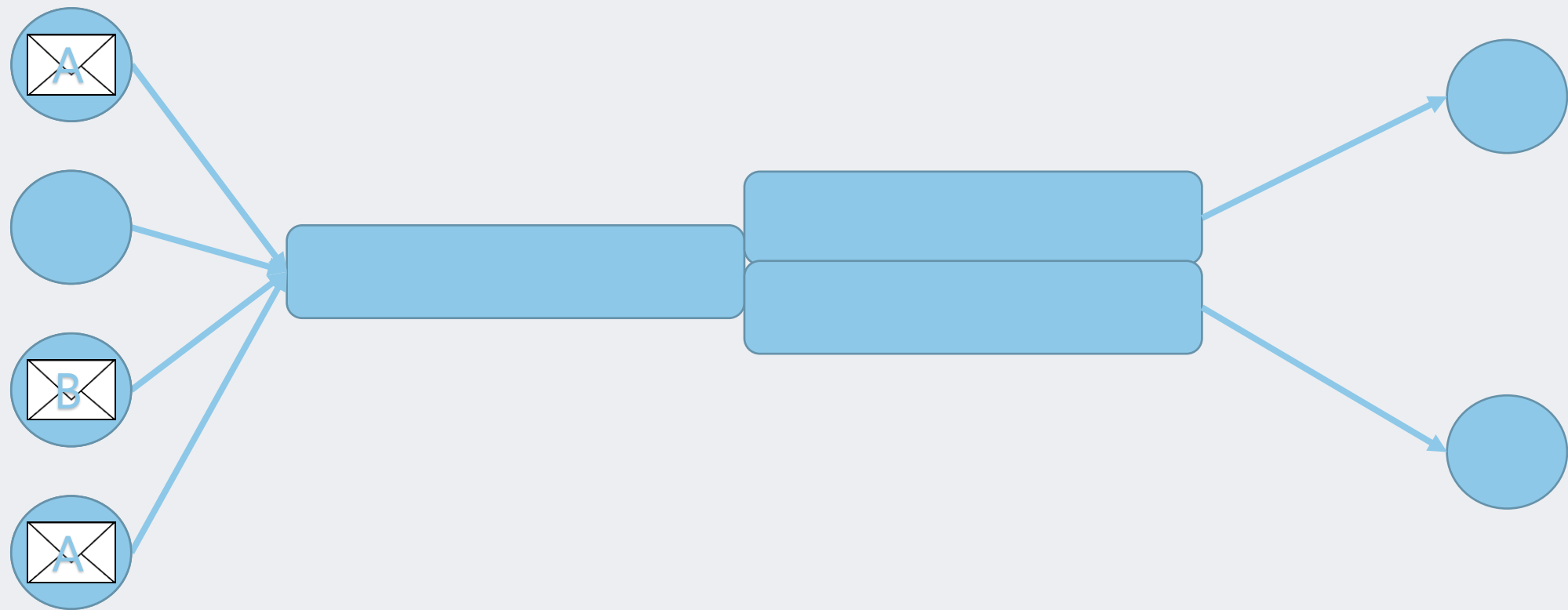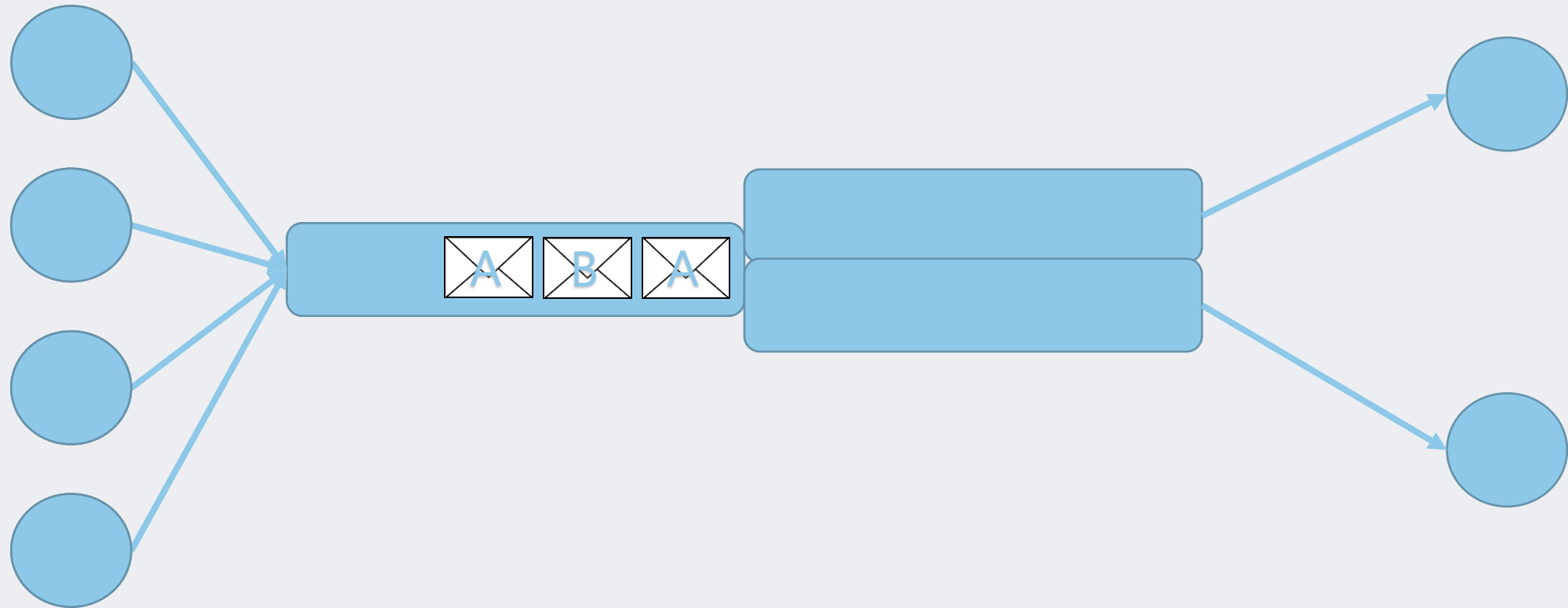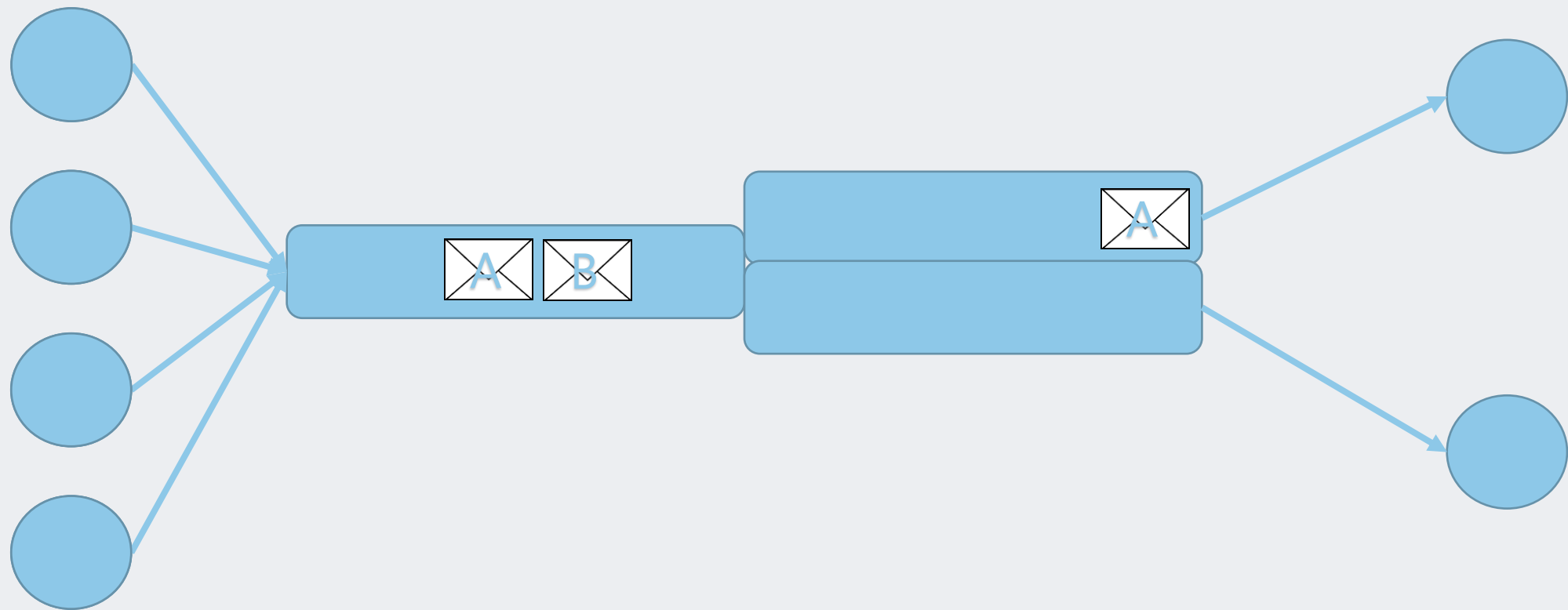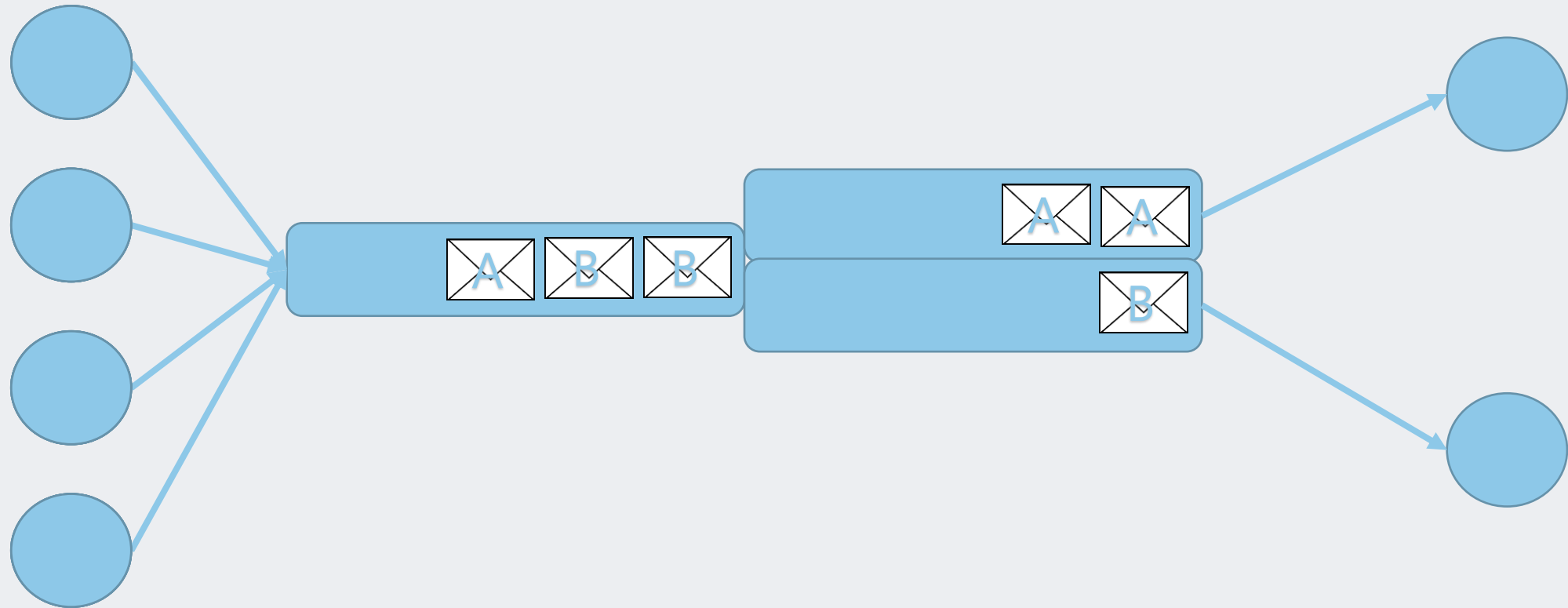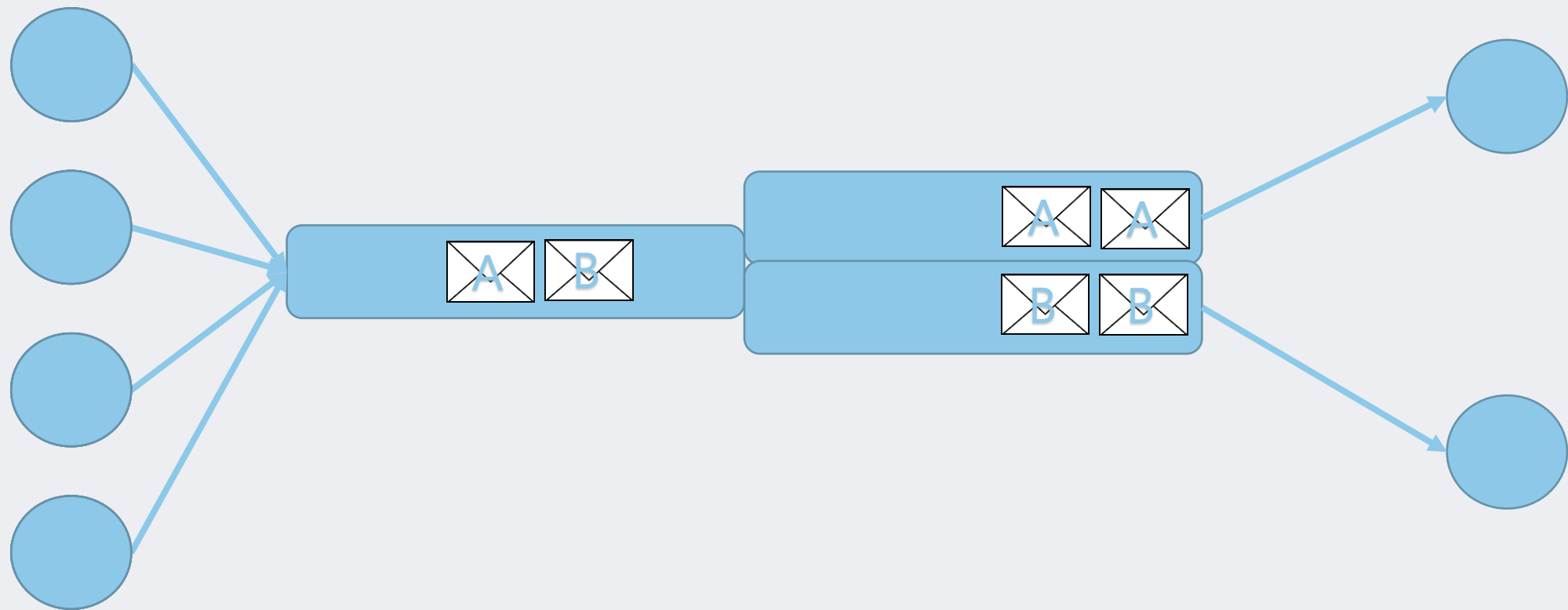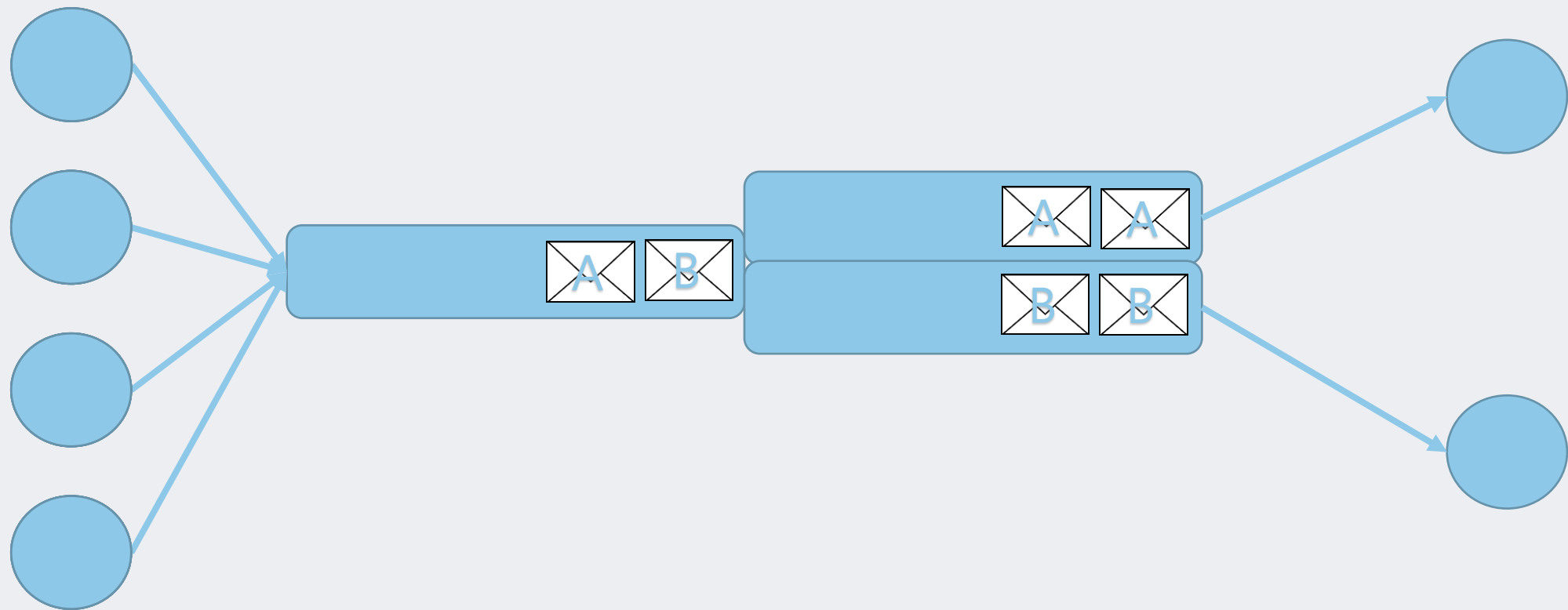
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Message Filter

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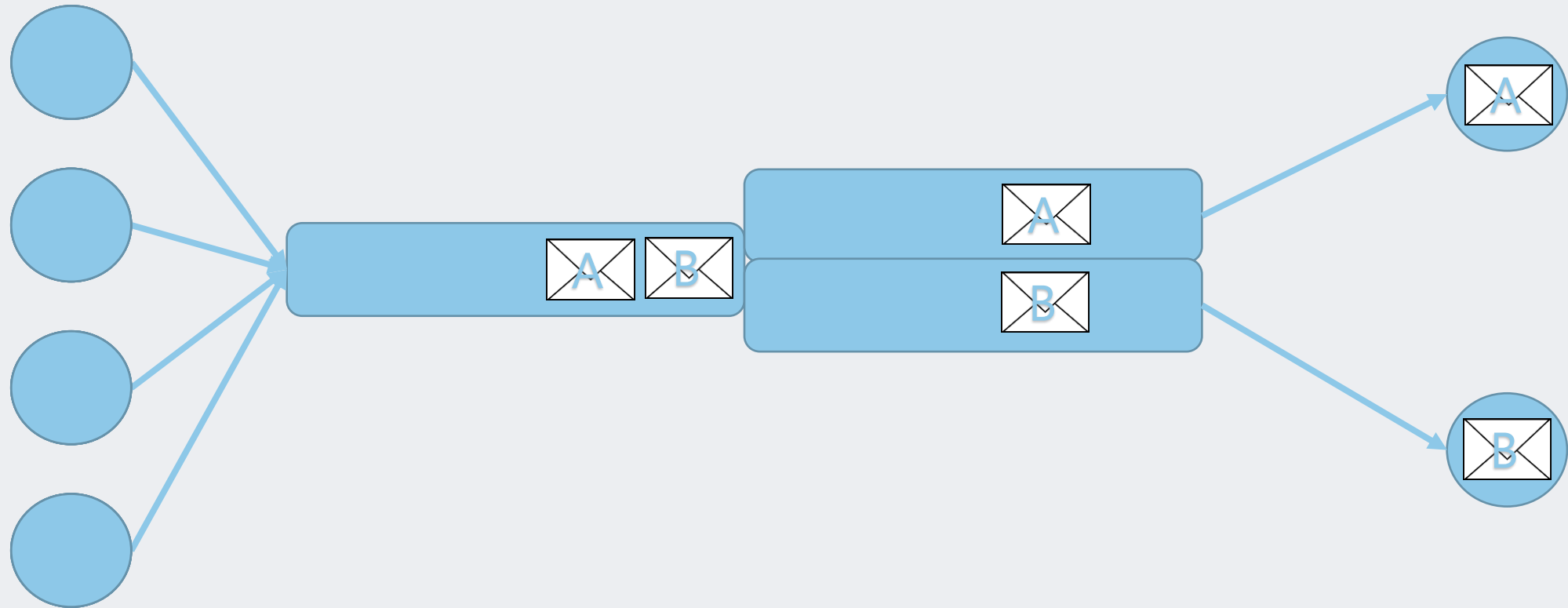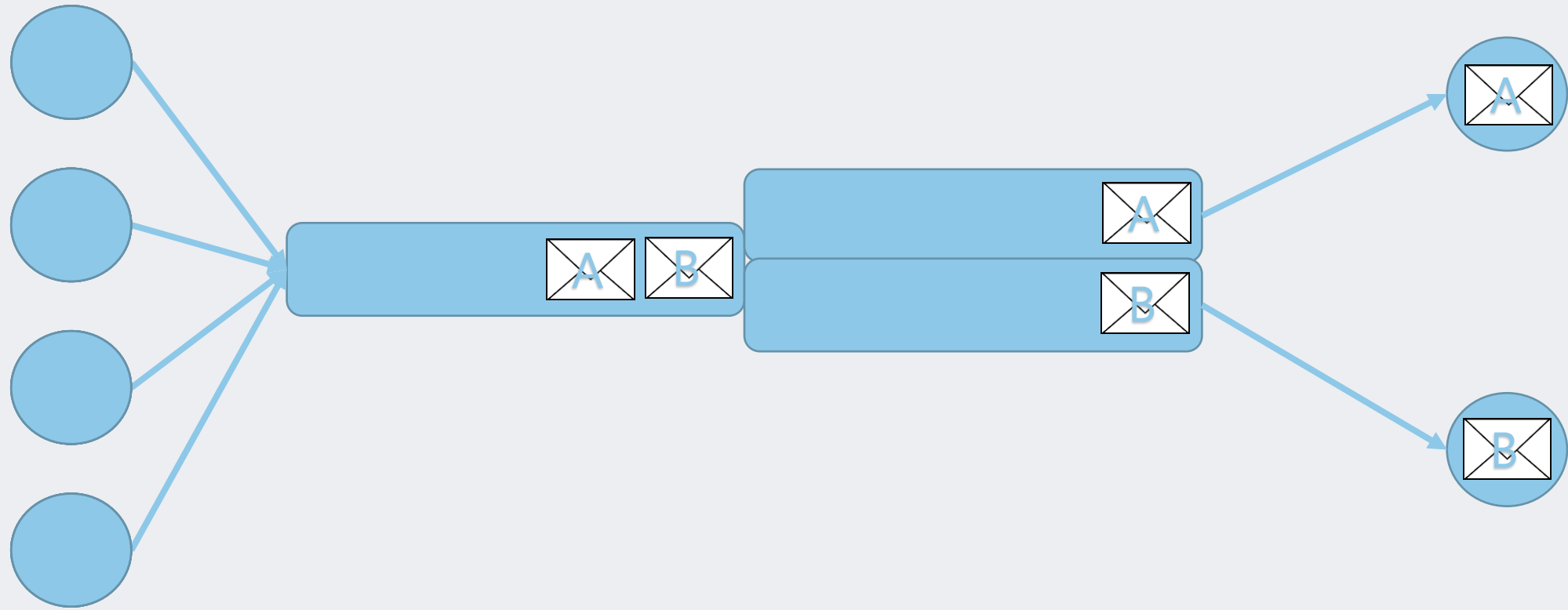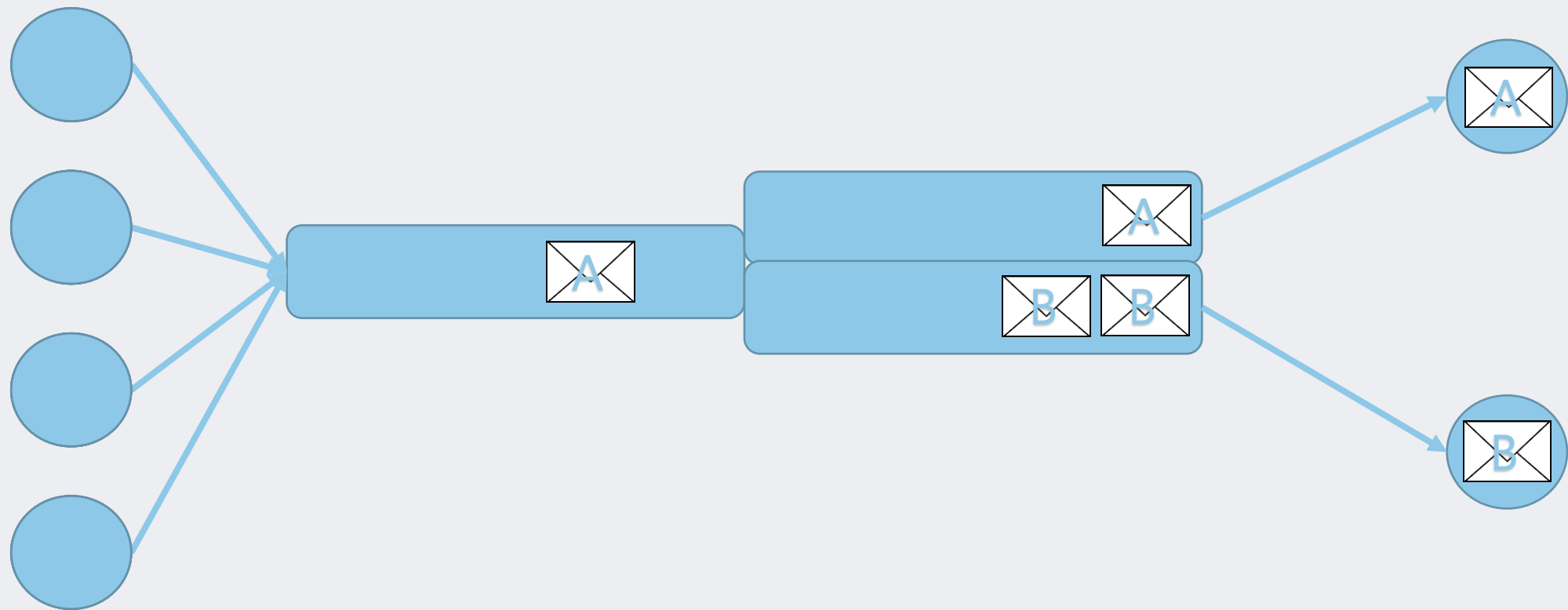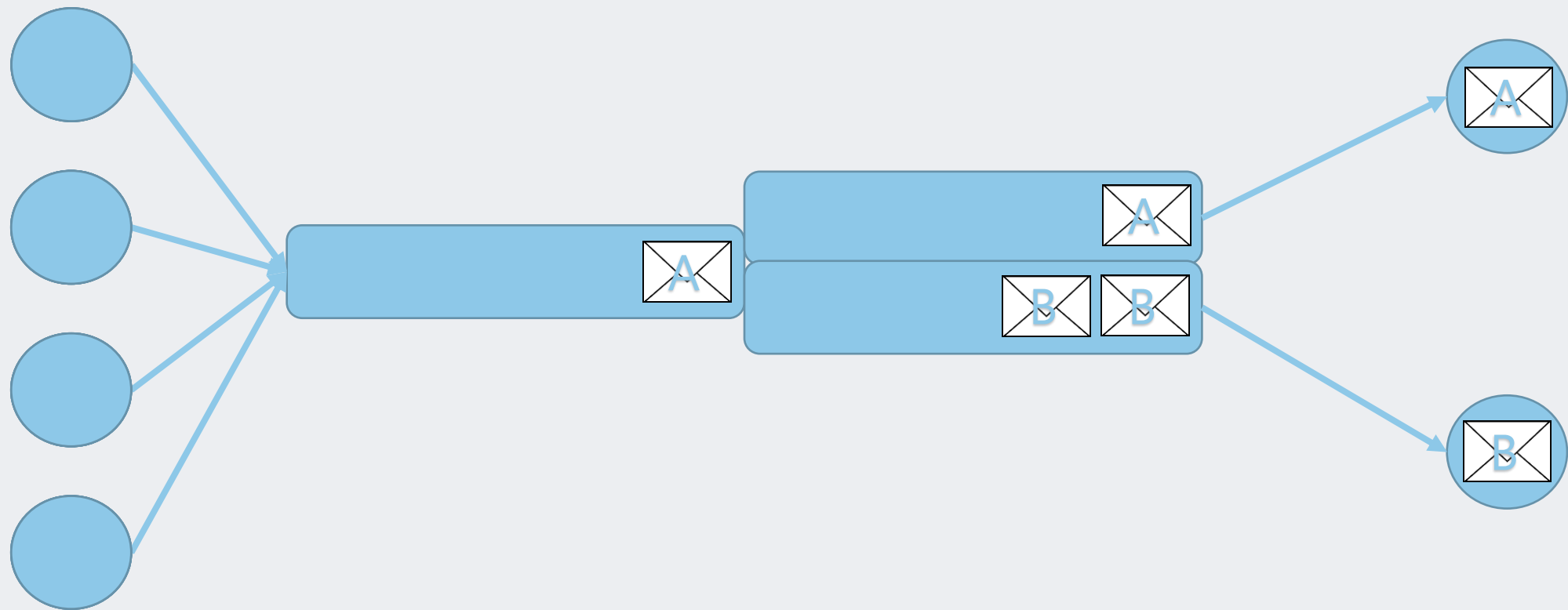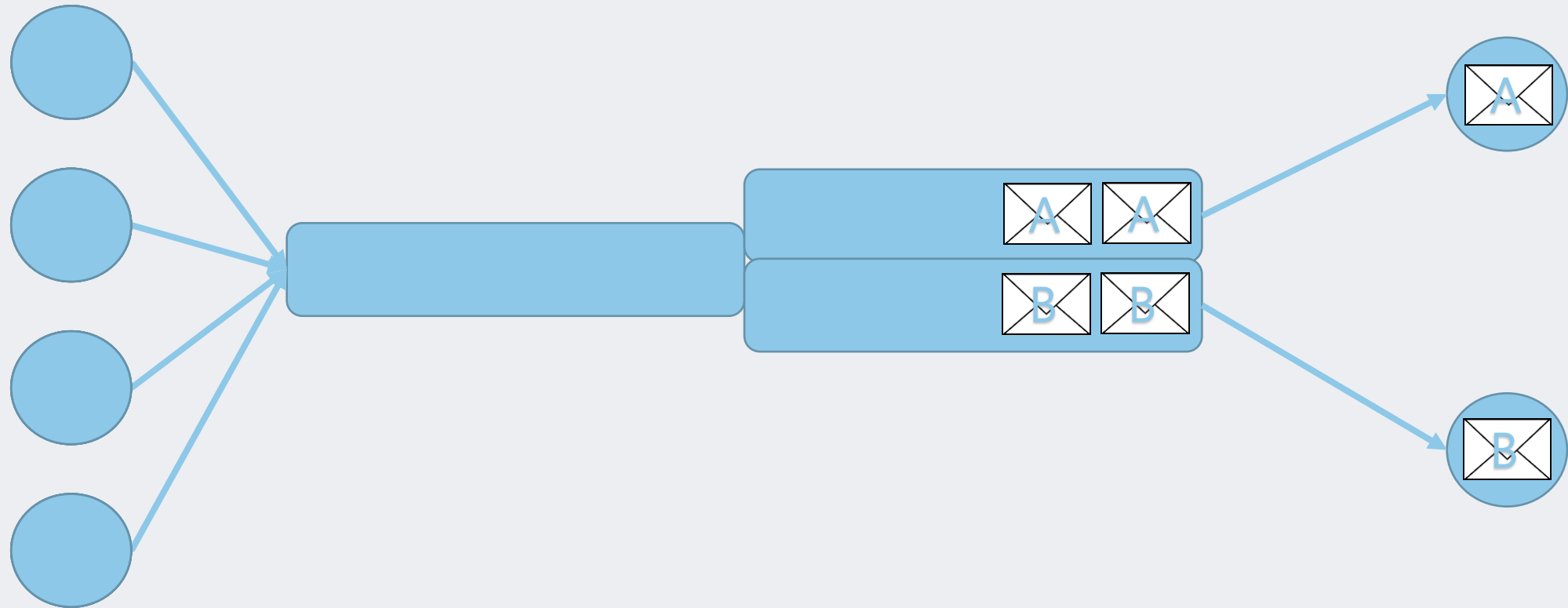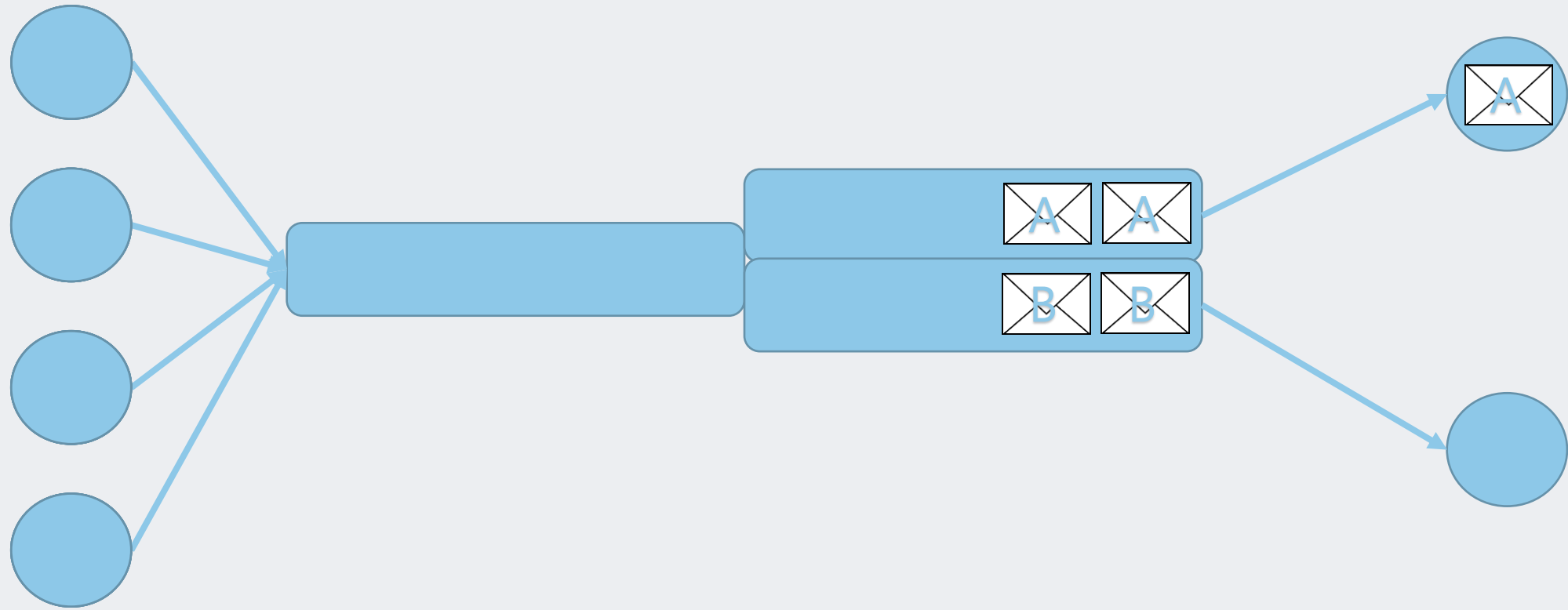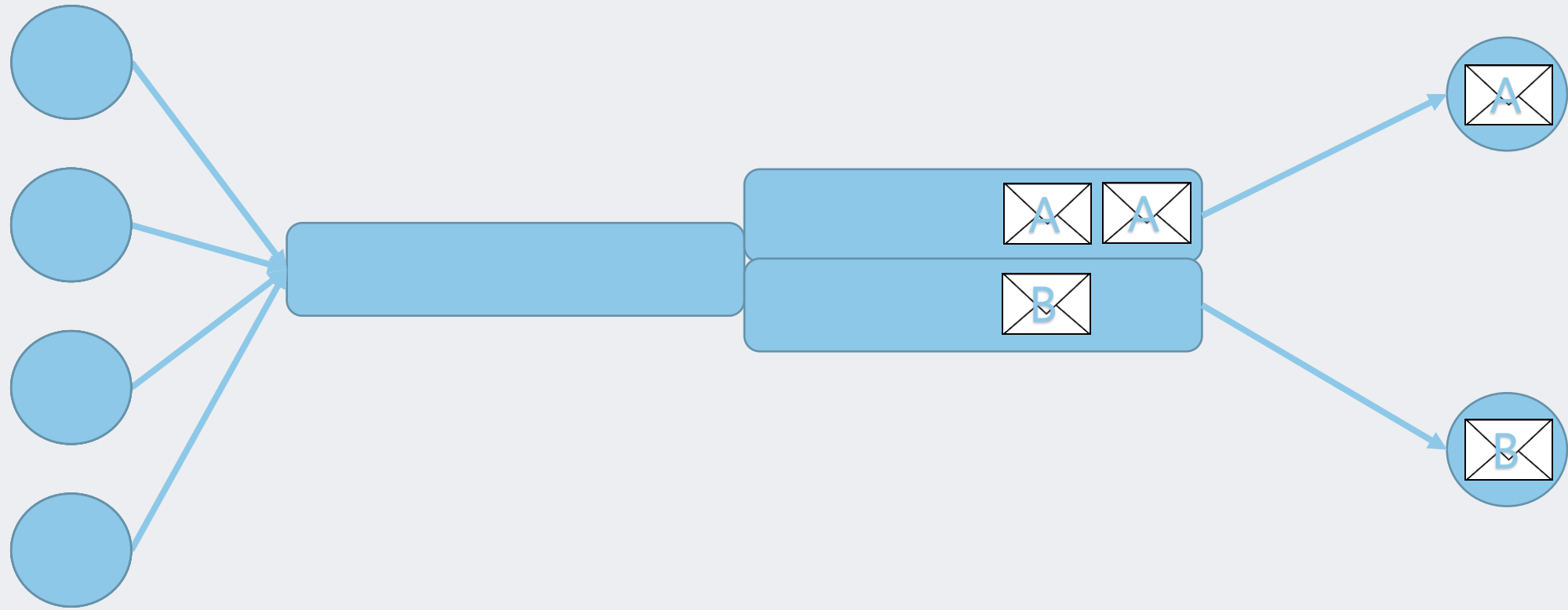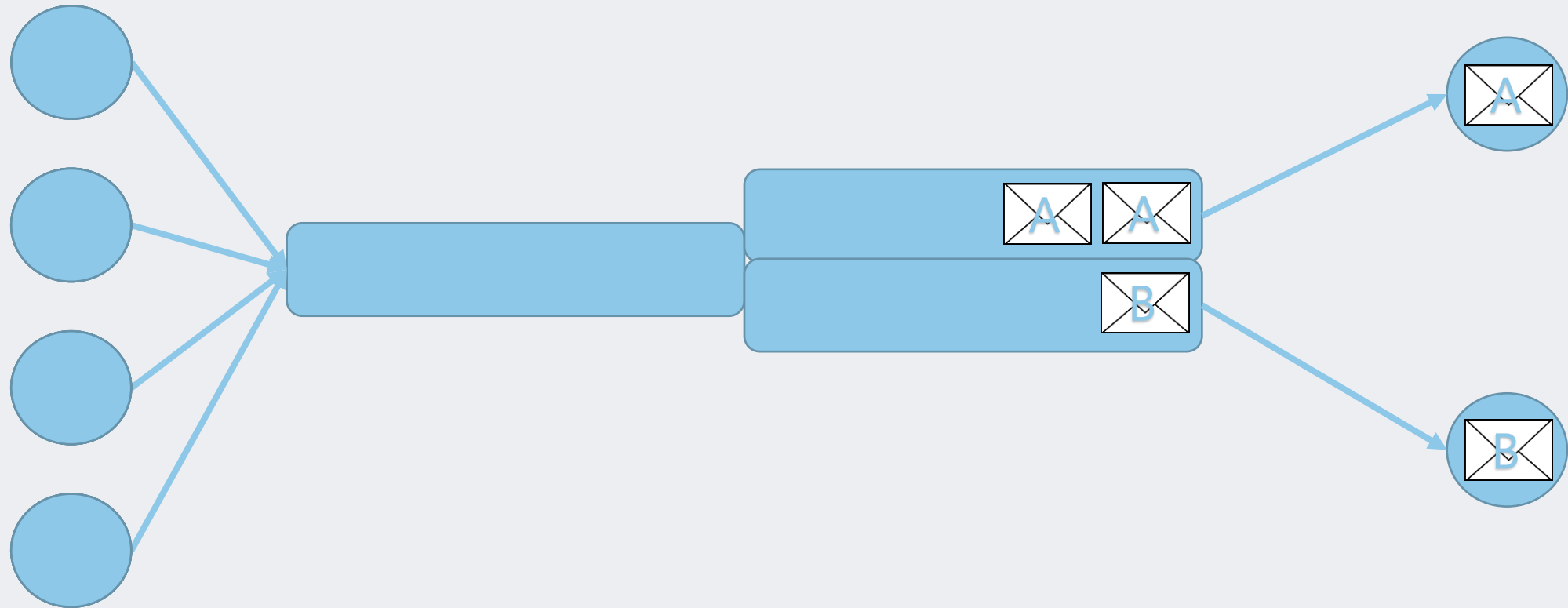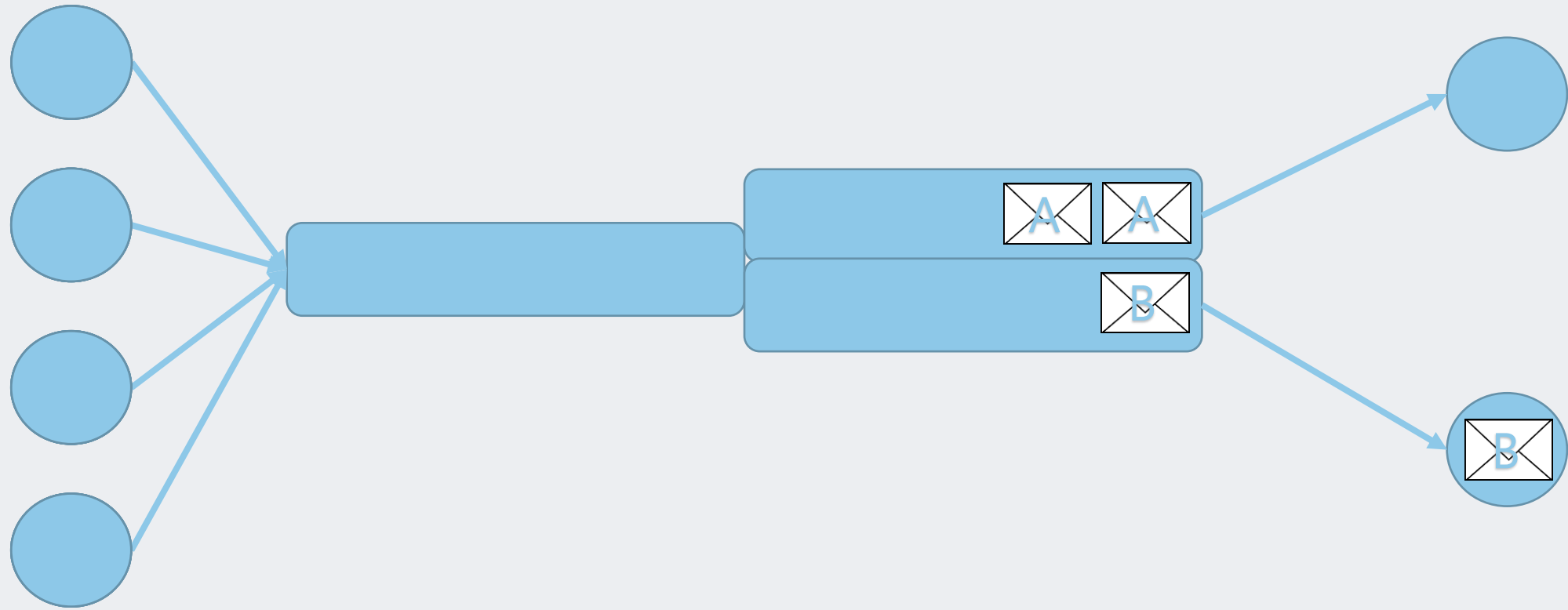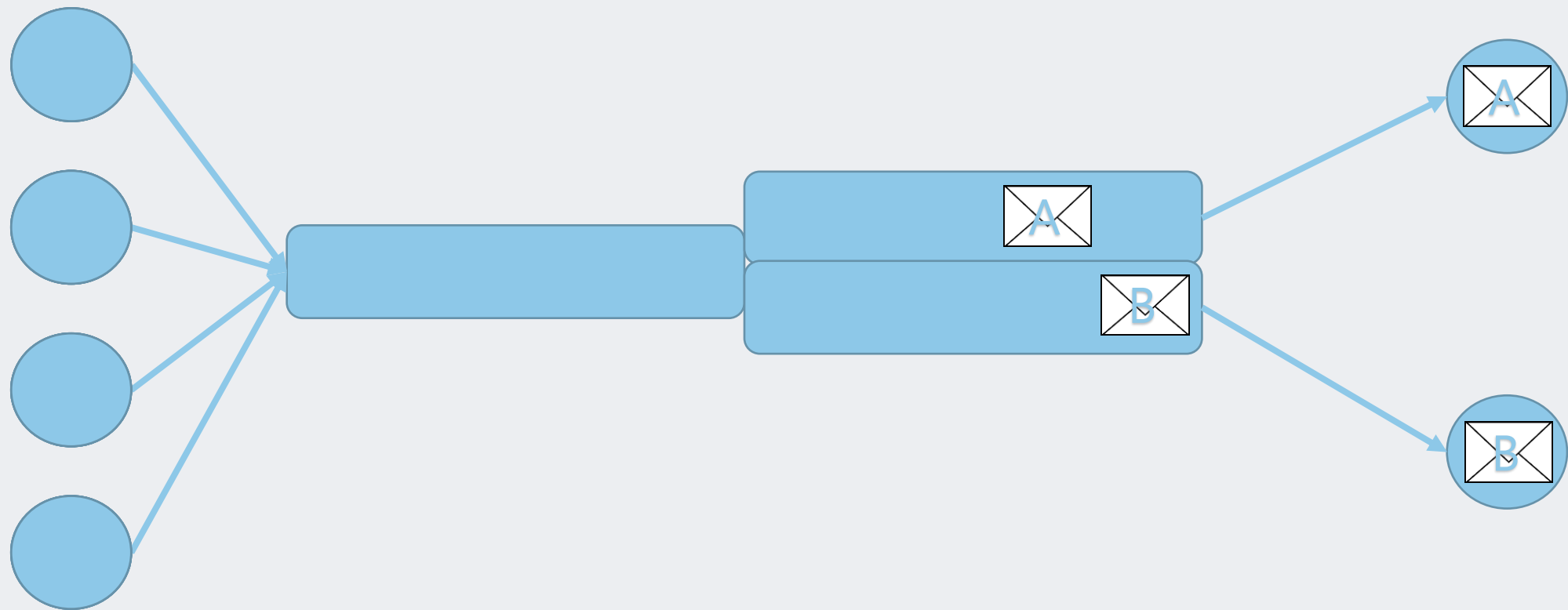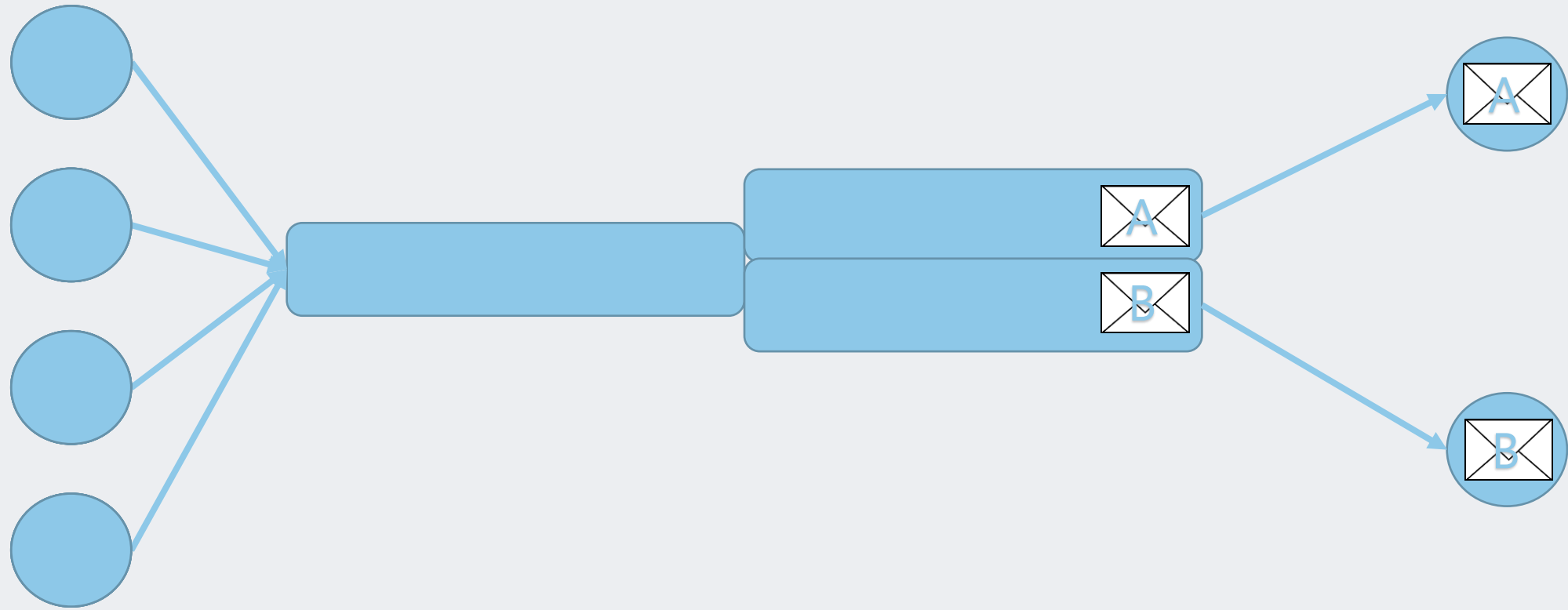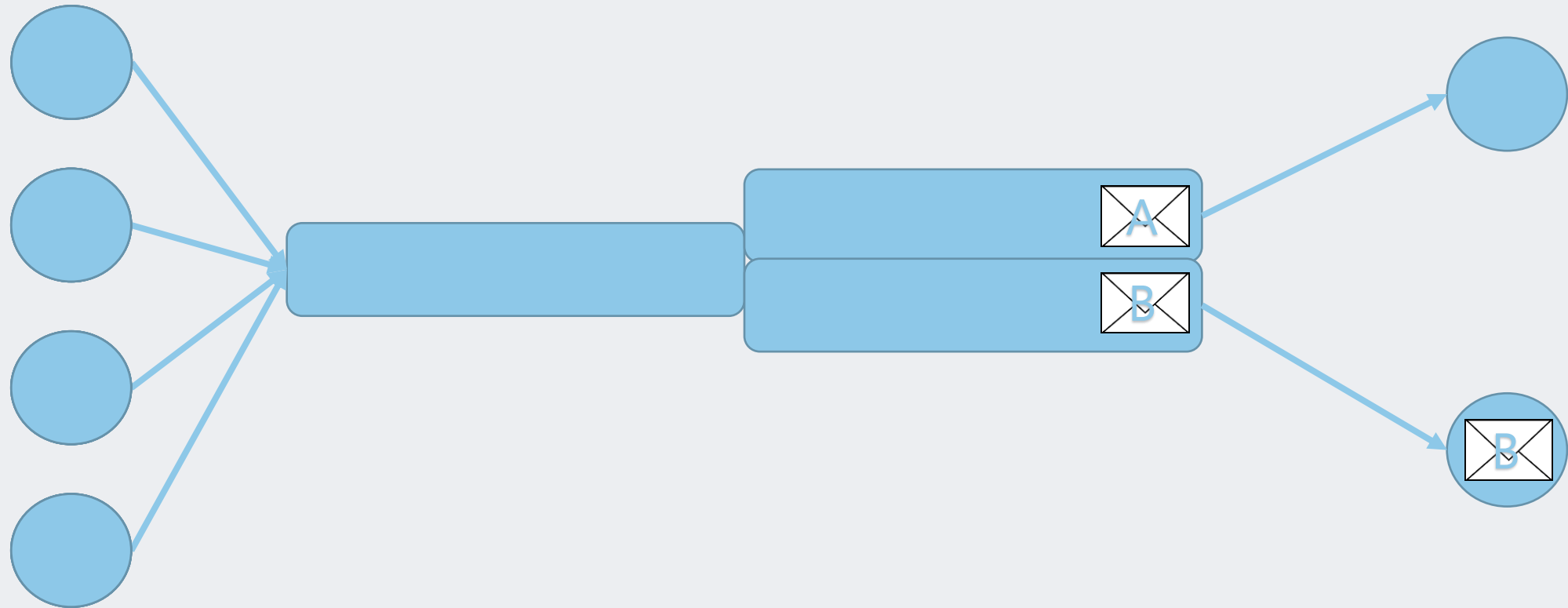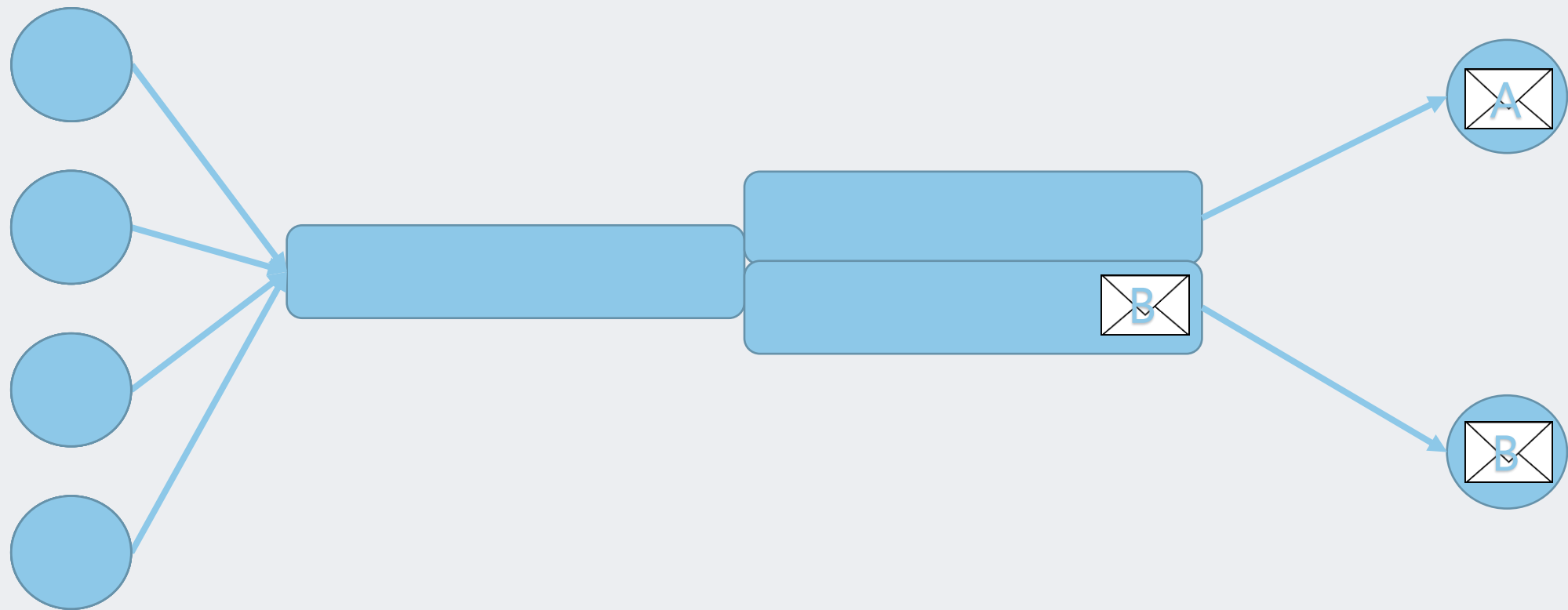# Message Filter

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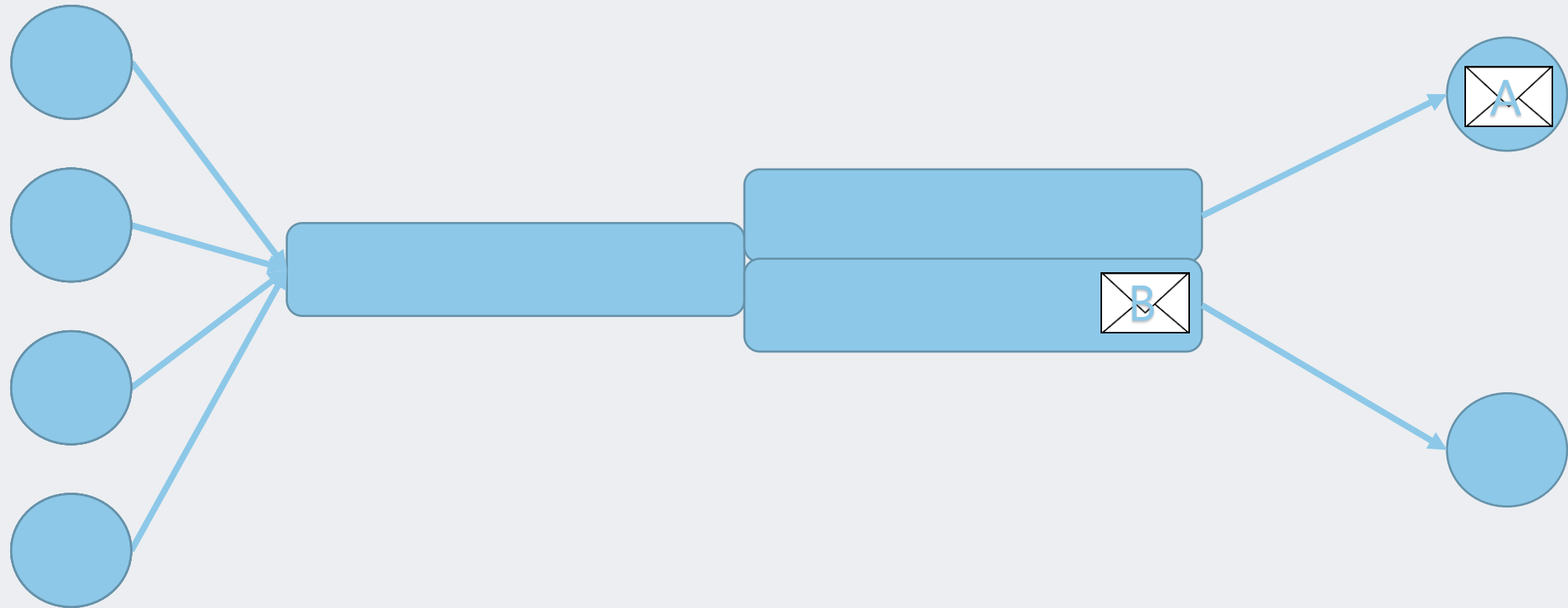
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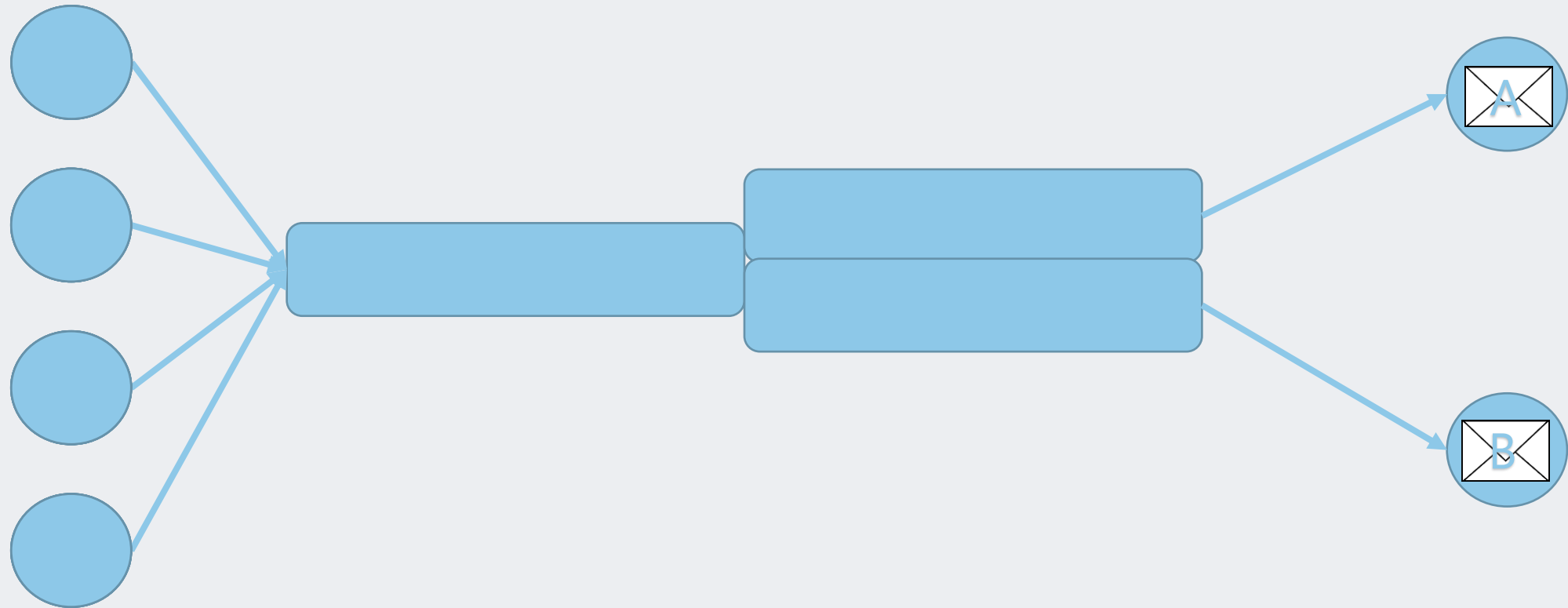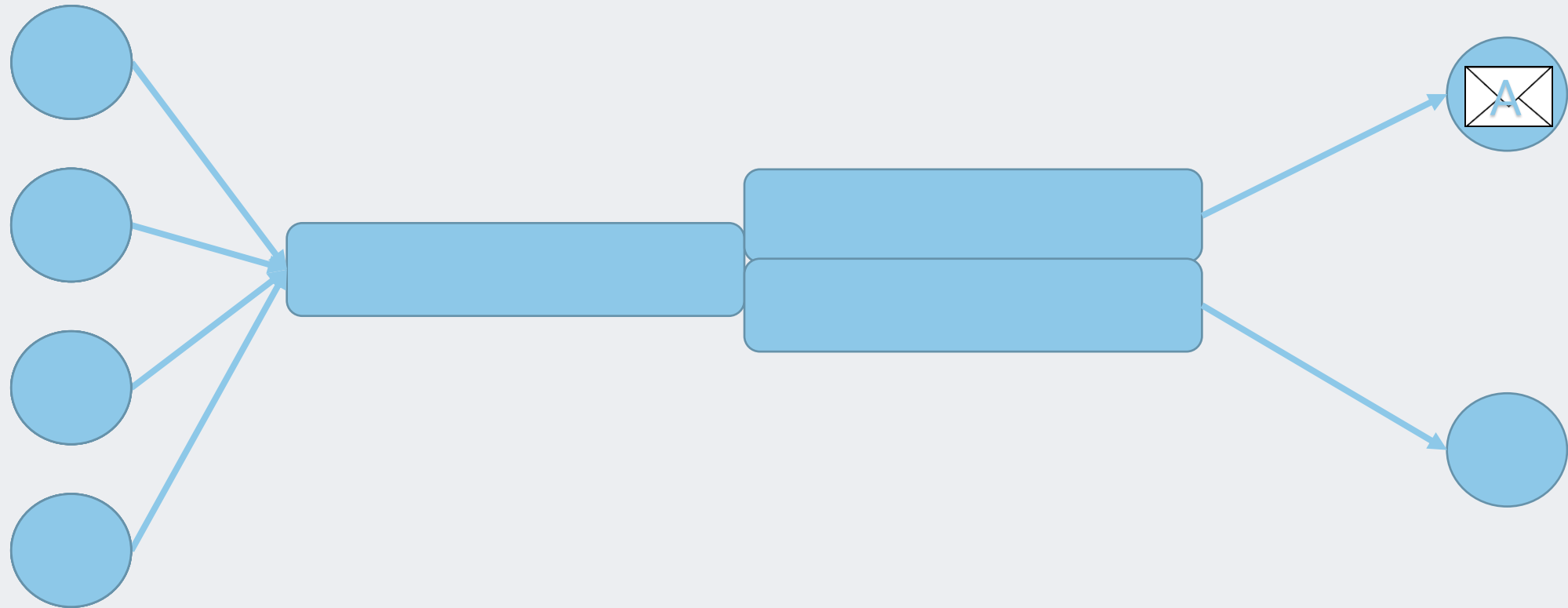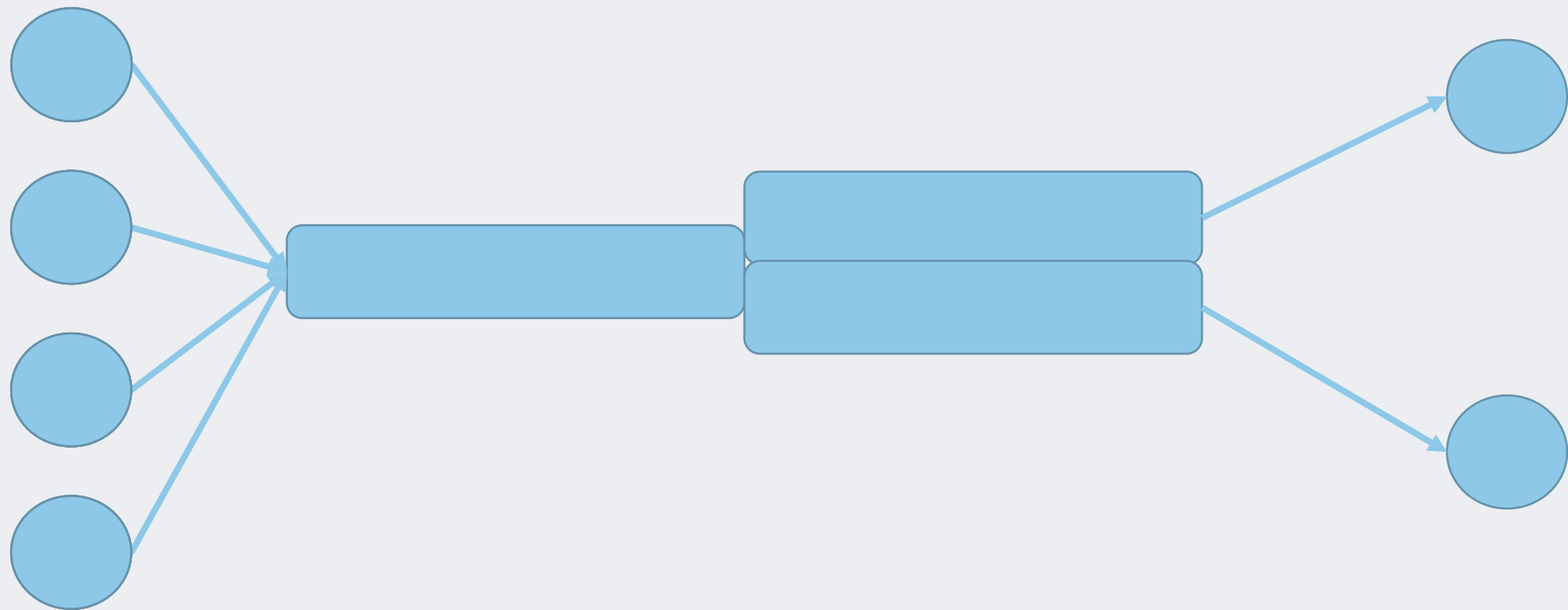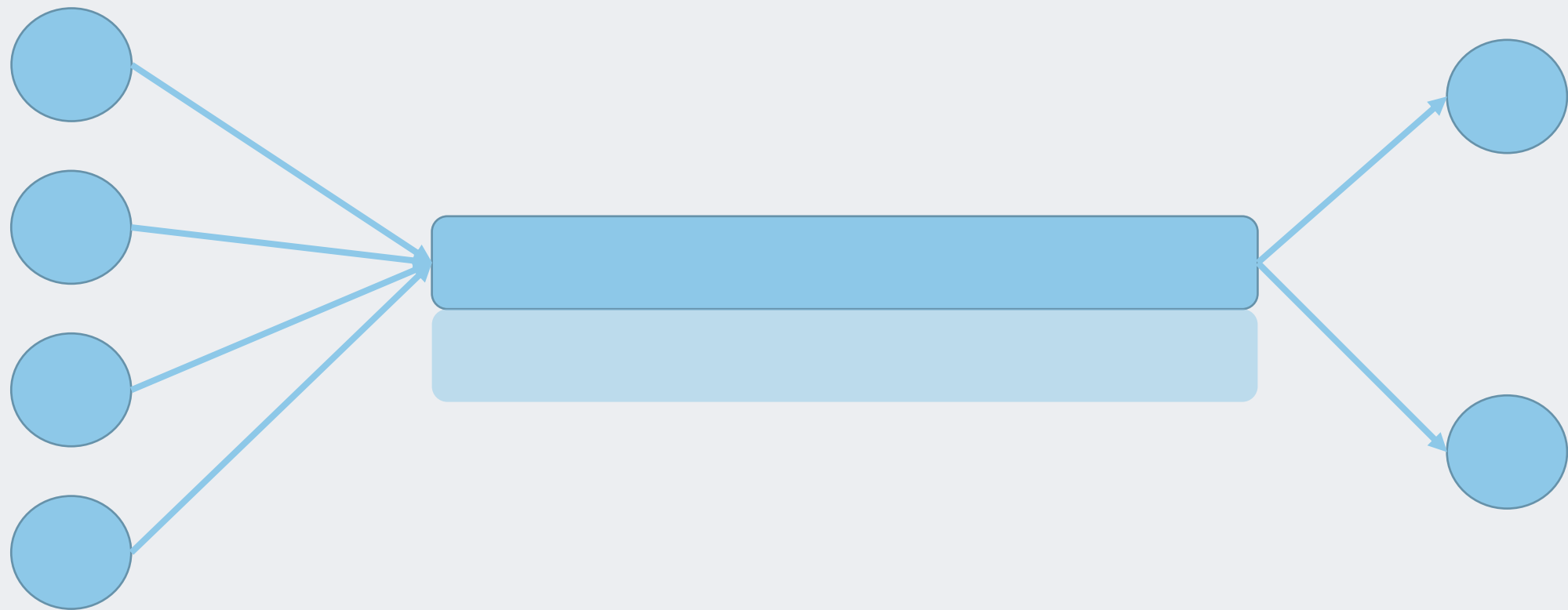
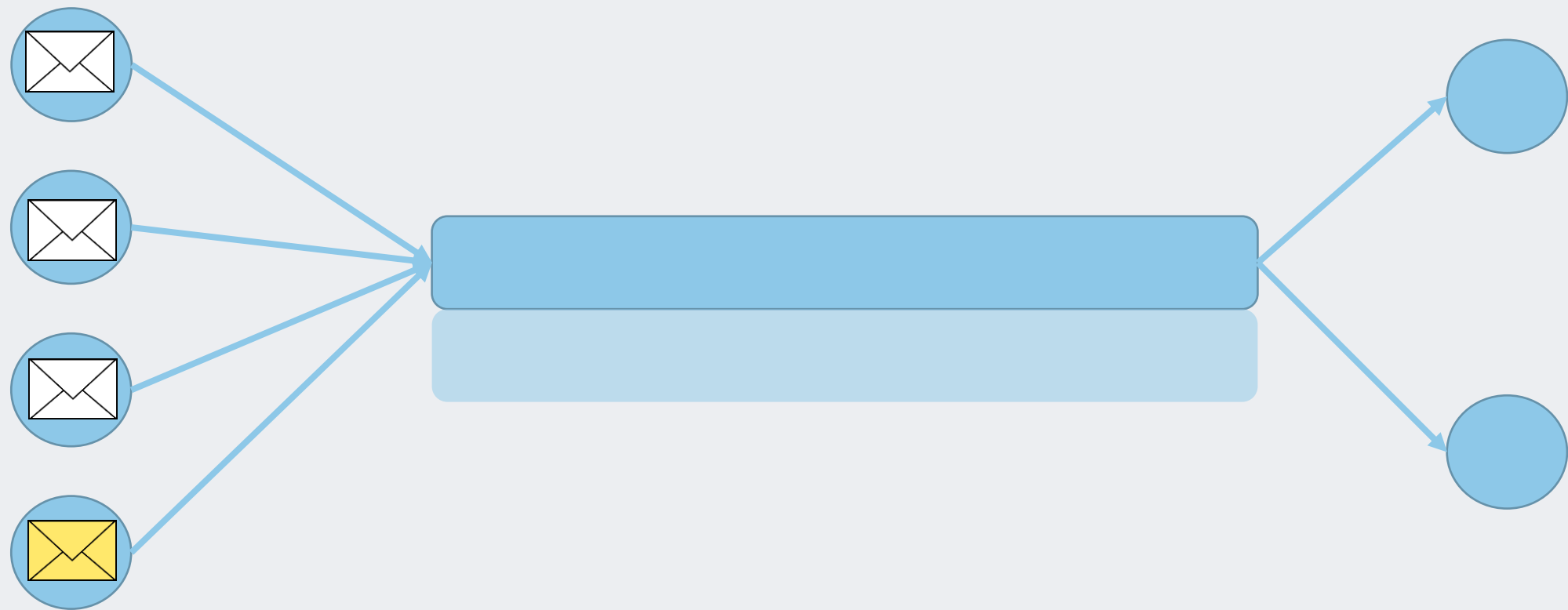# Message Filter

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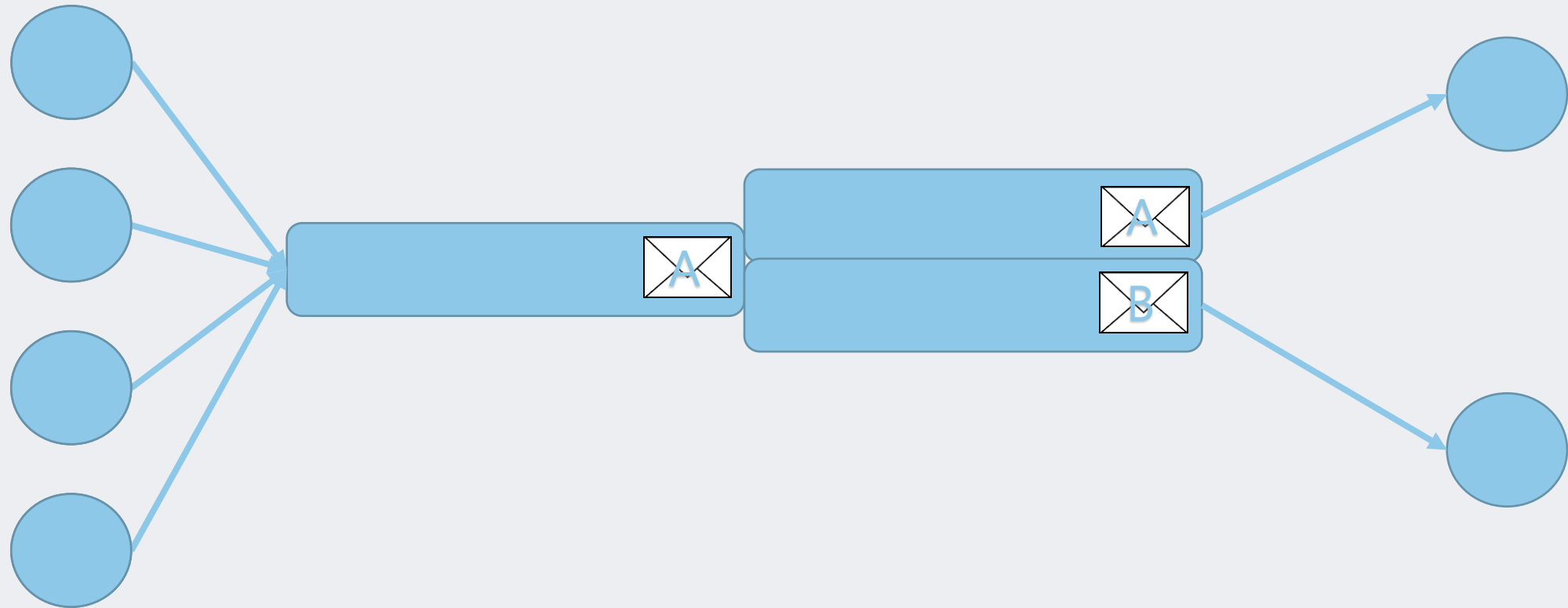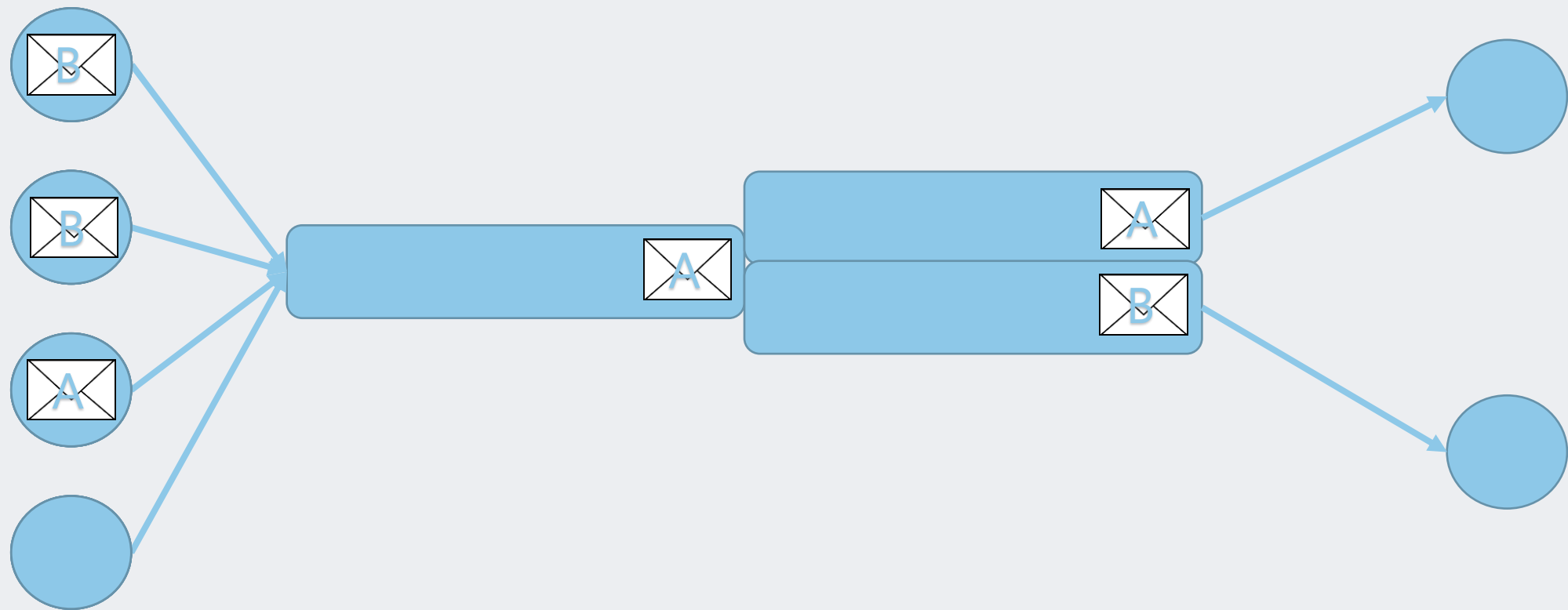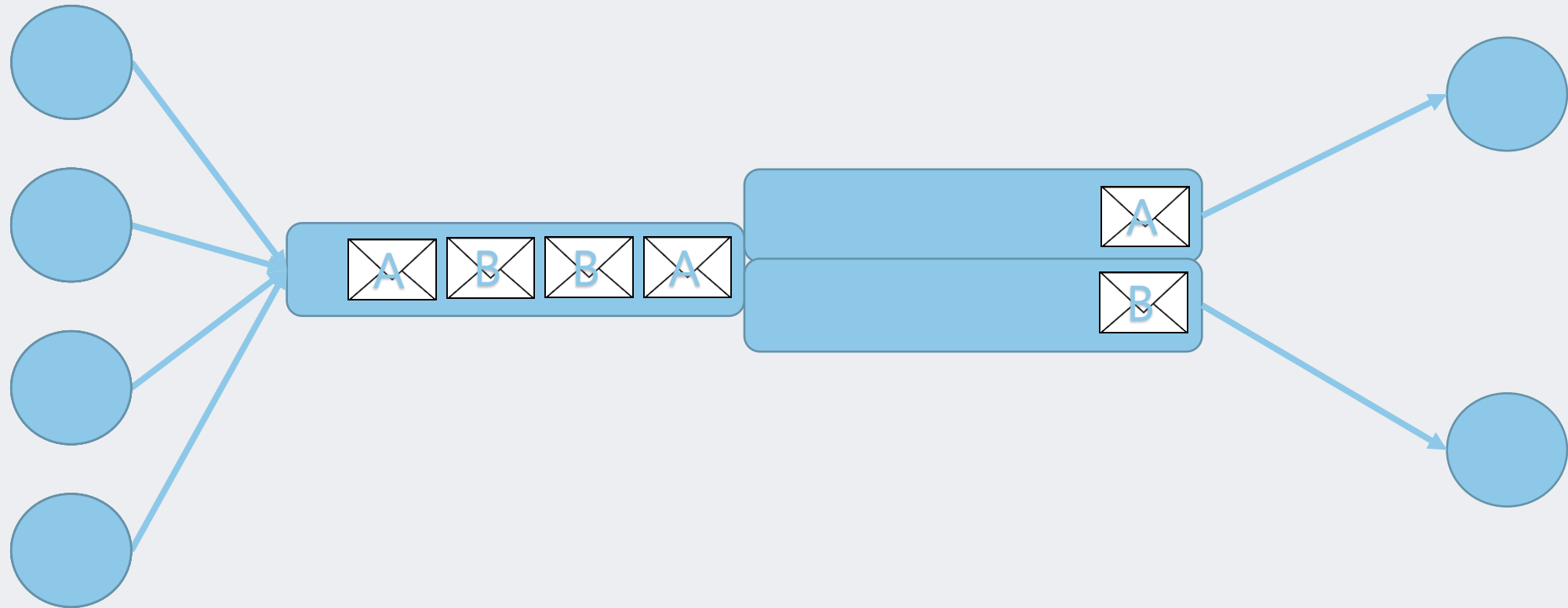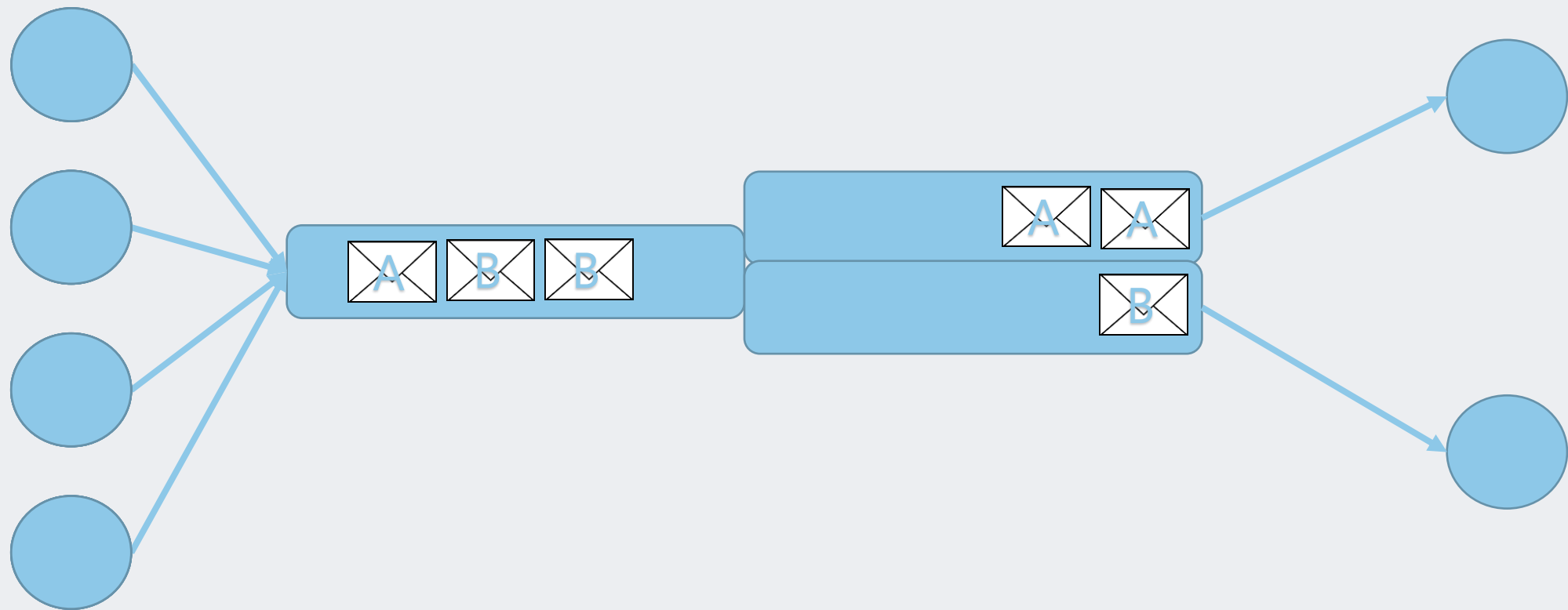
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Message Poisoning
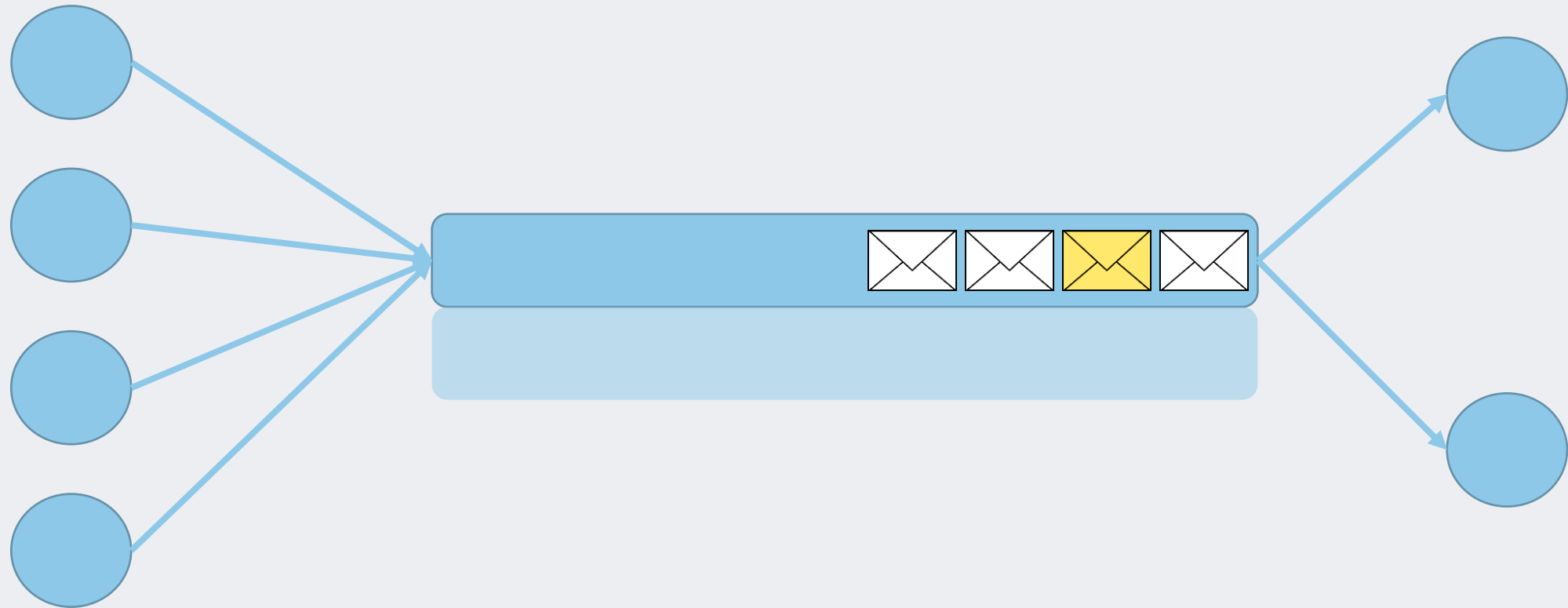
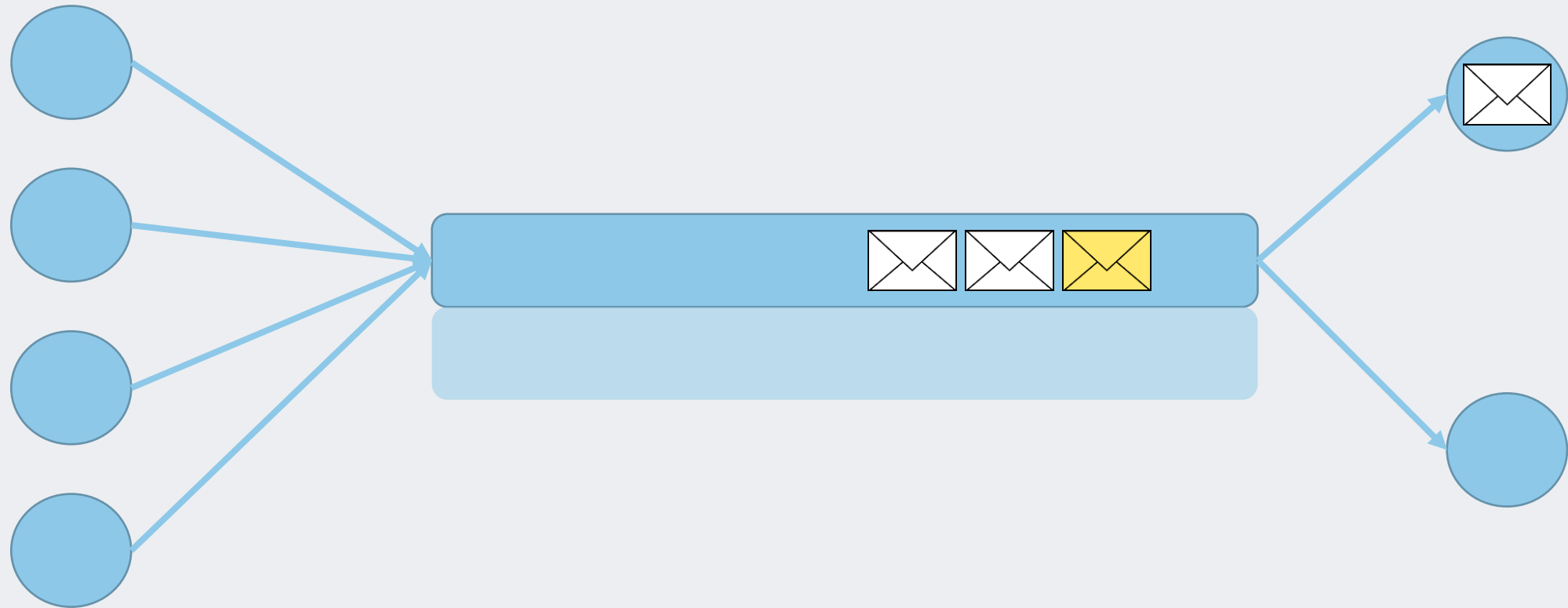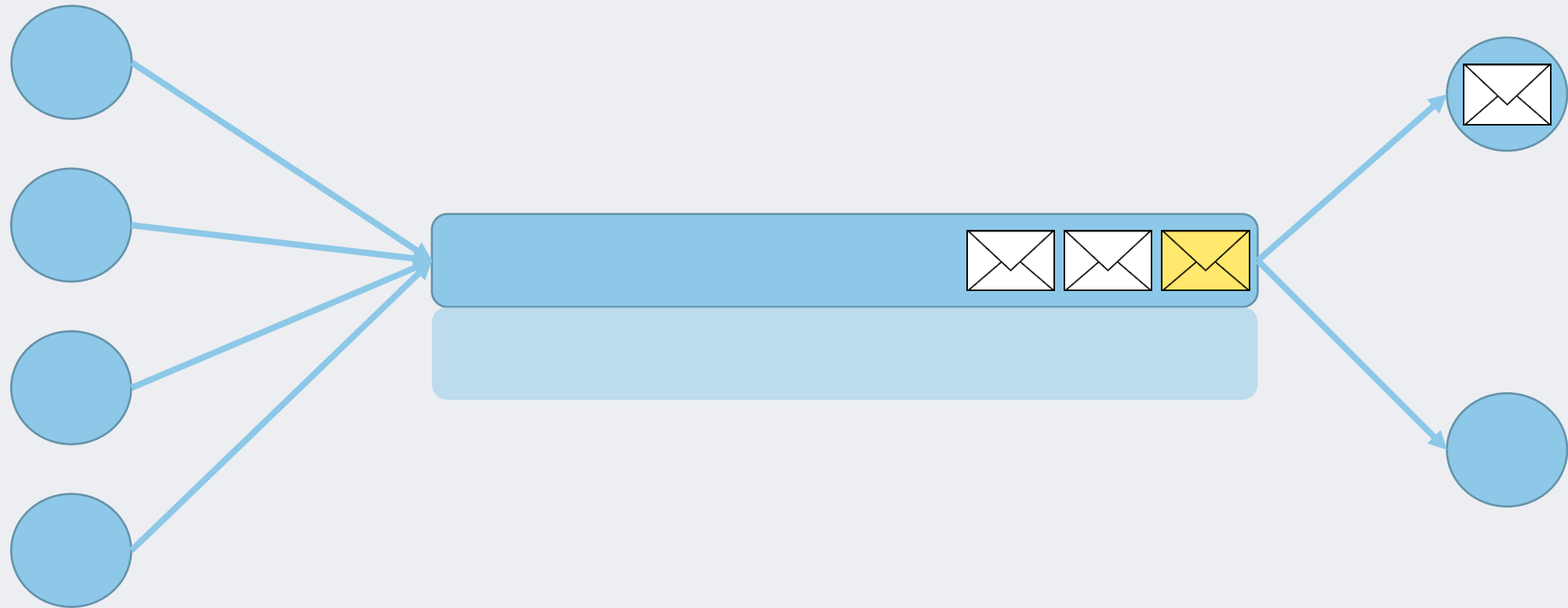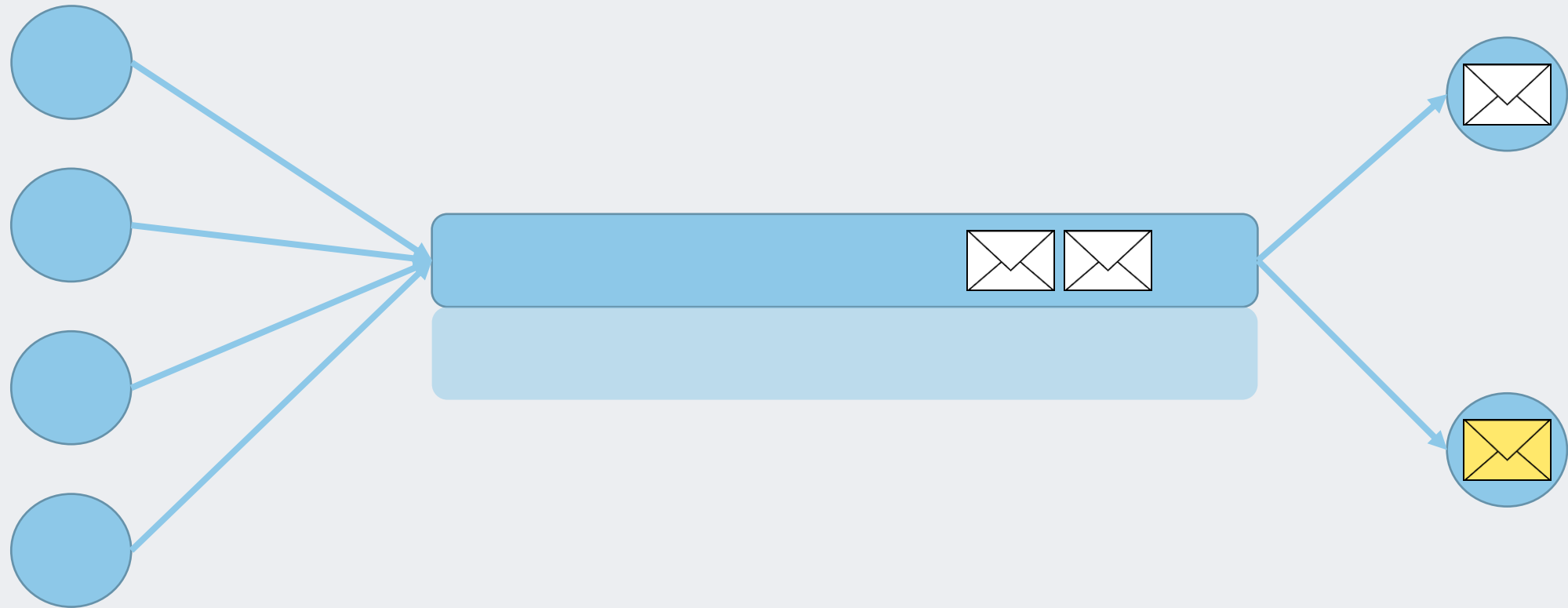https://en.wikipedia.org/wiki/Poison_message
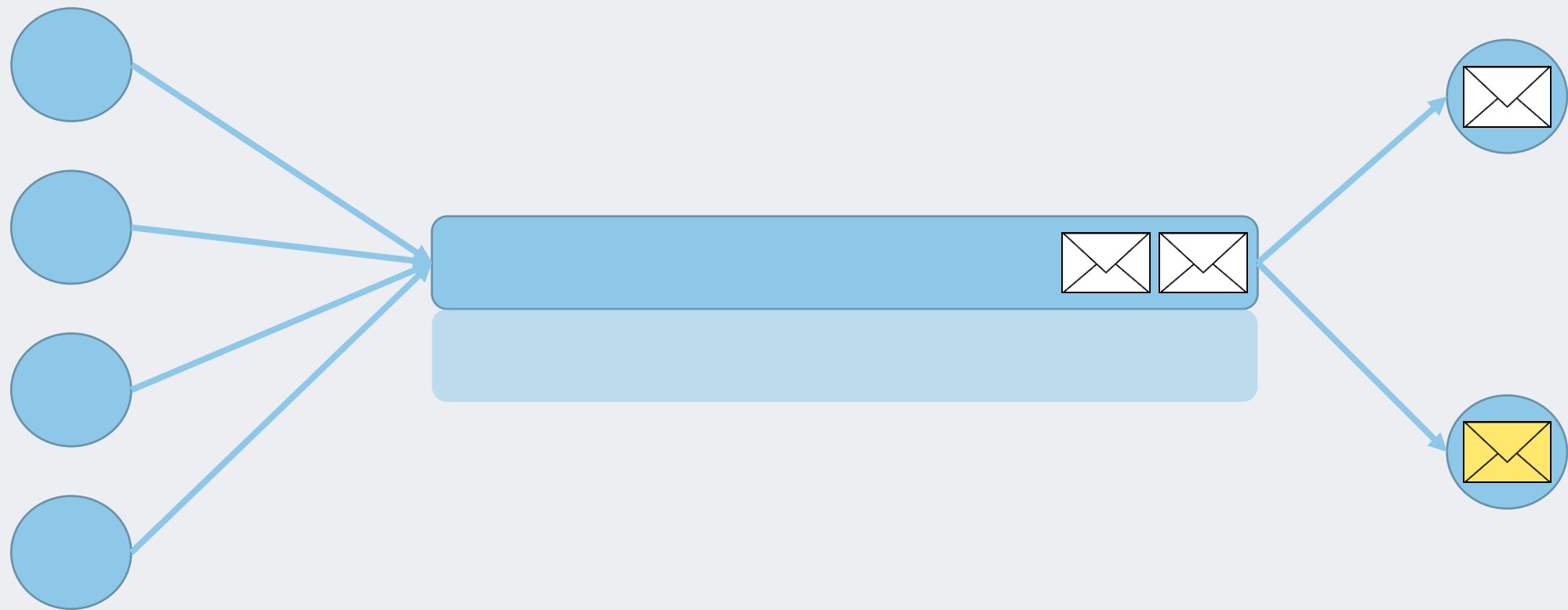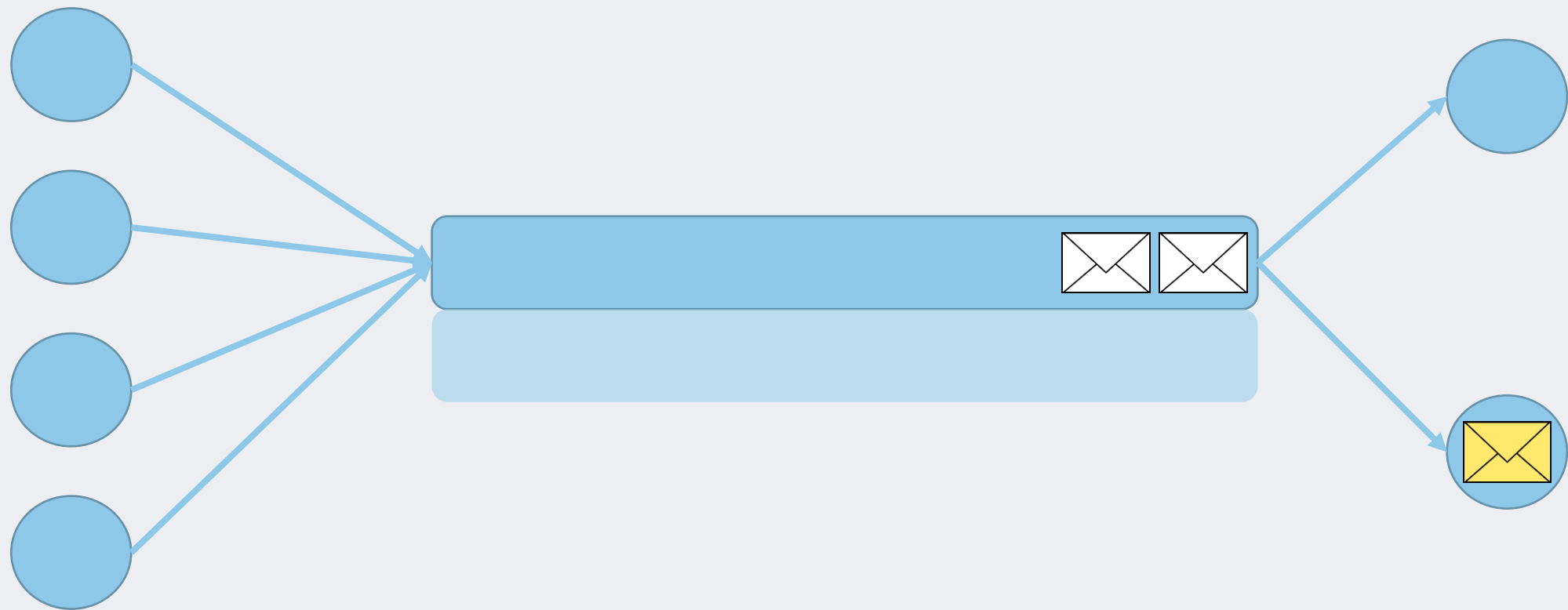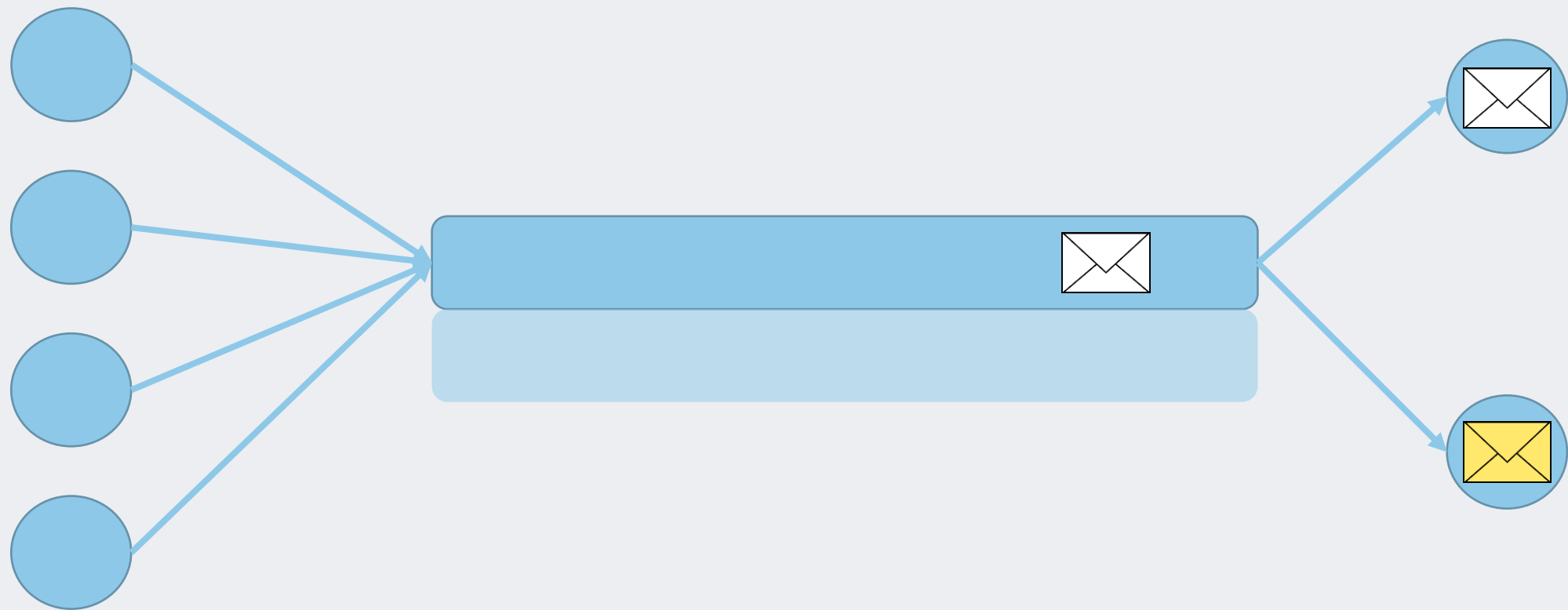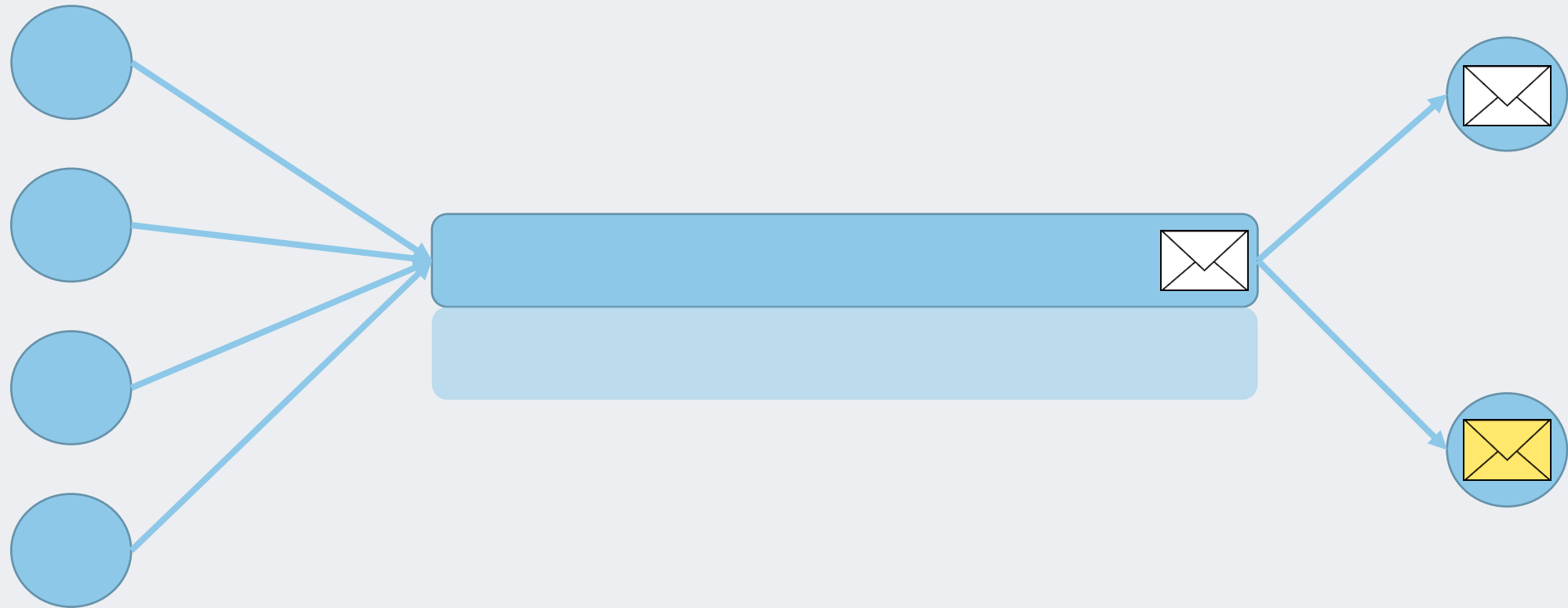
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Message Poisoning
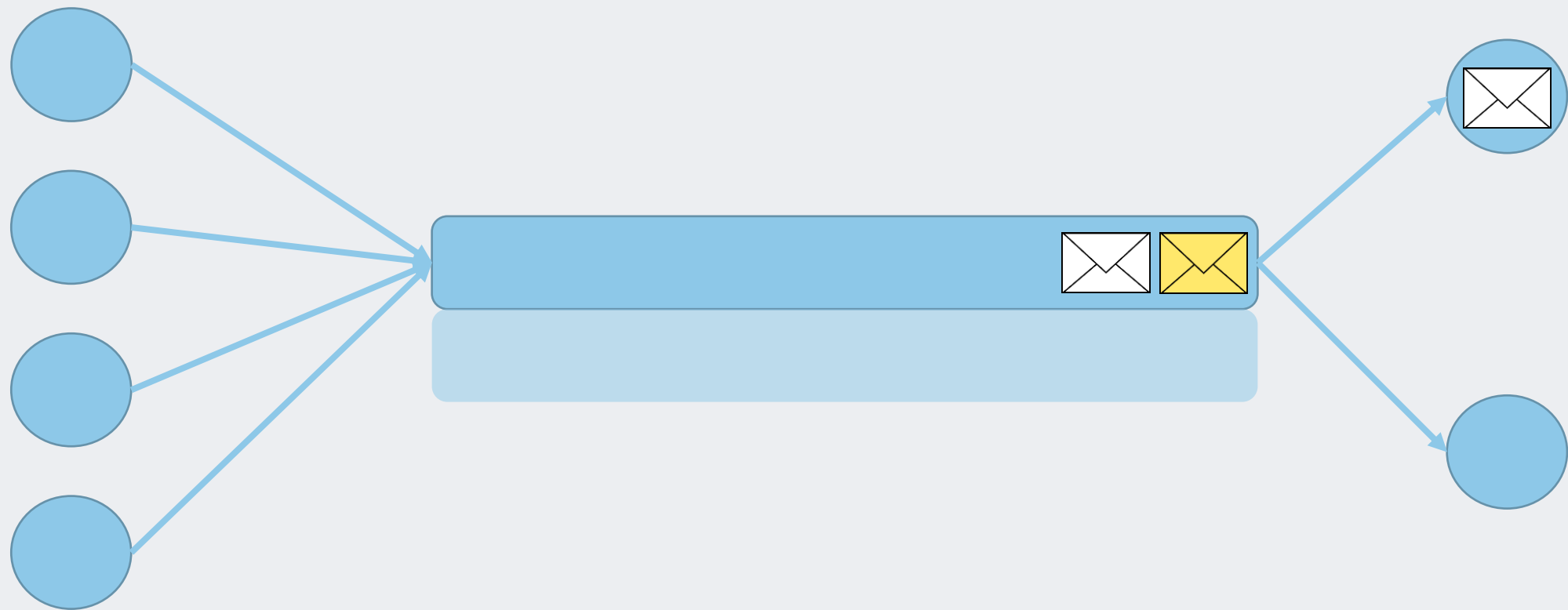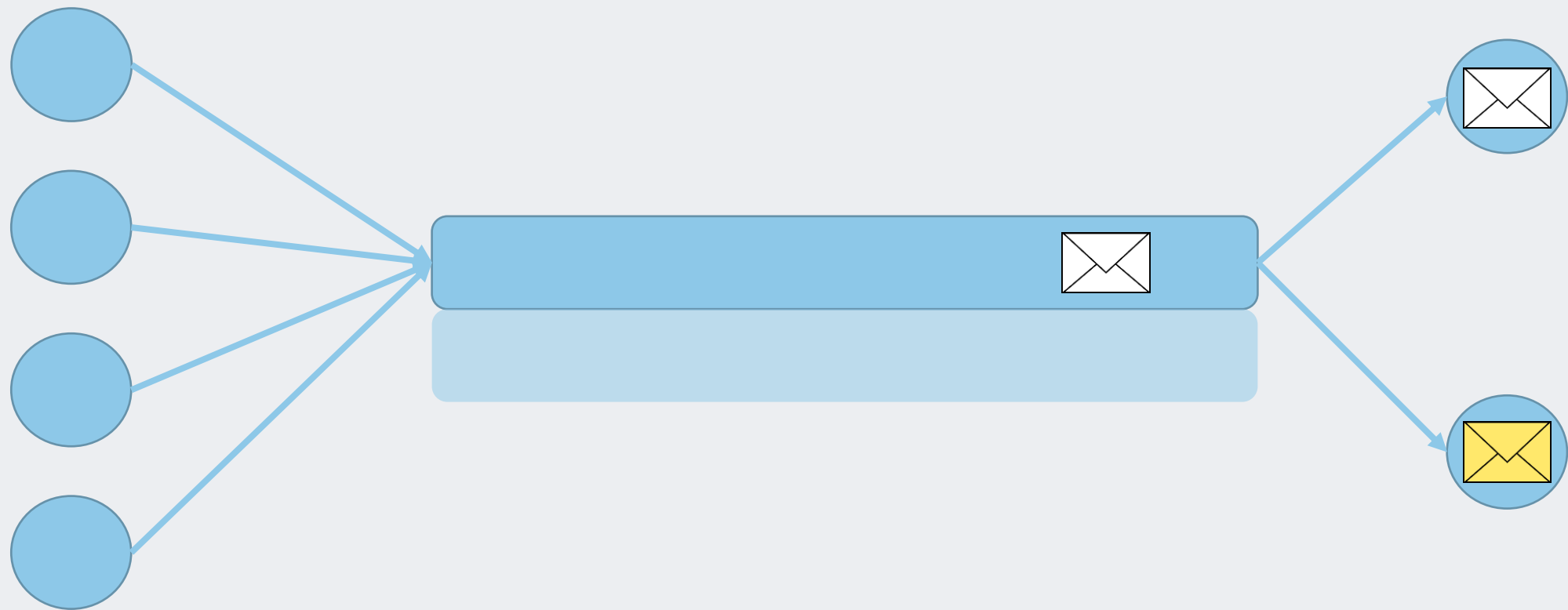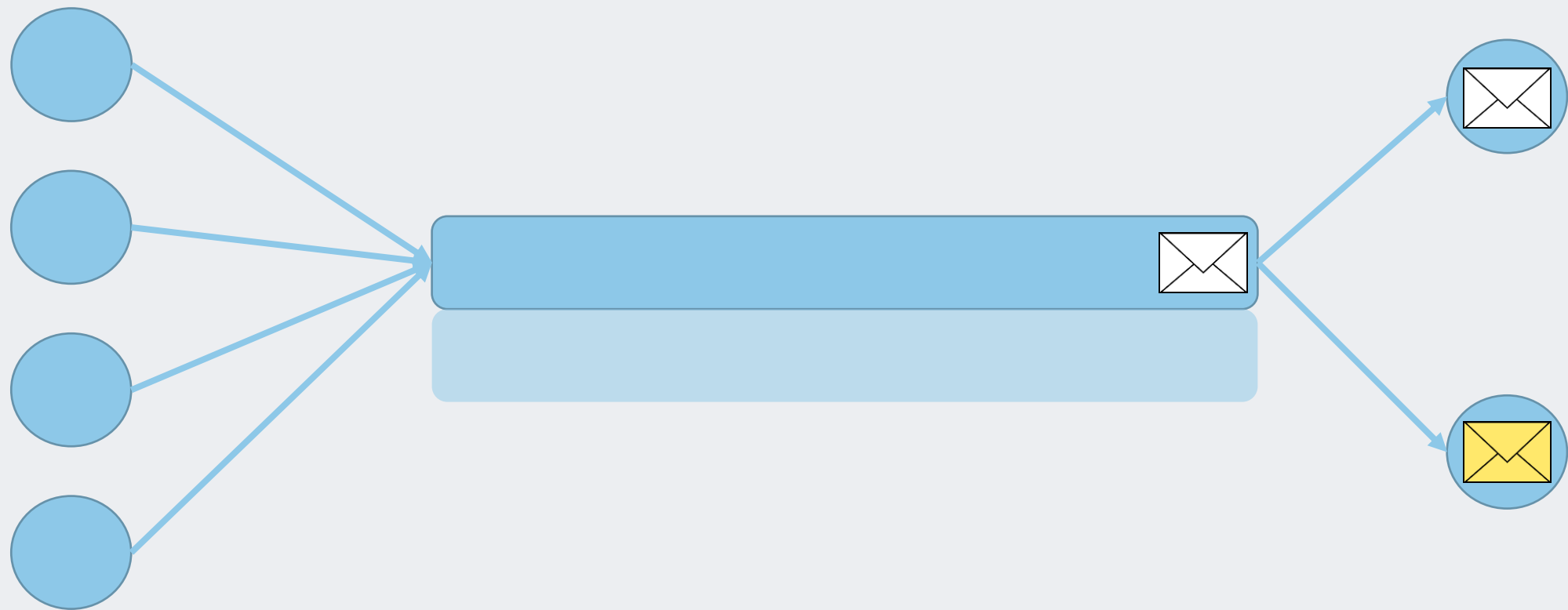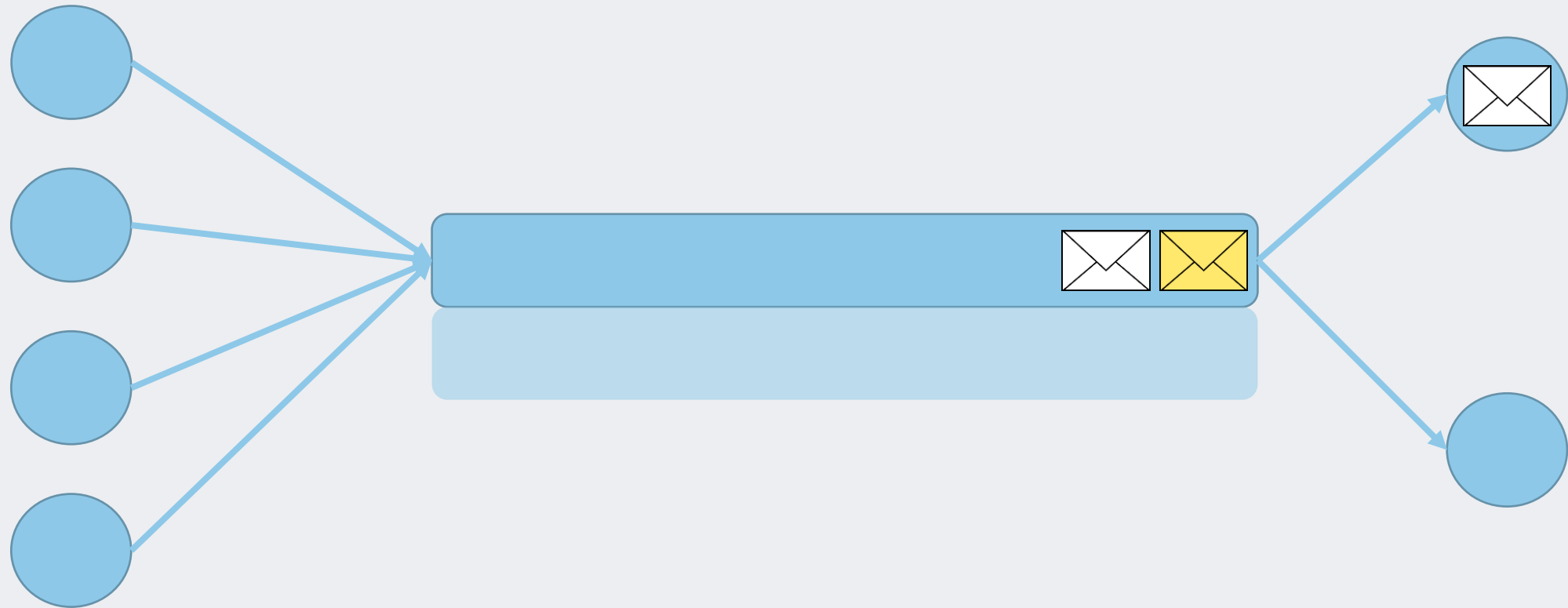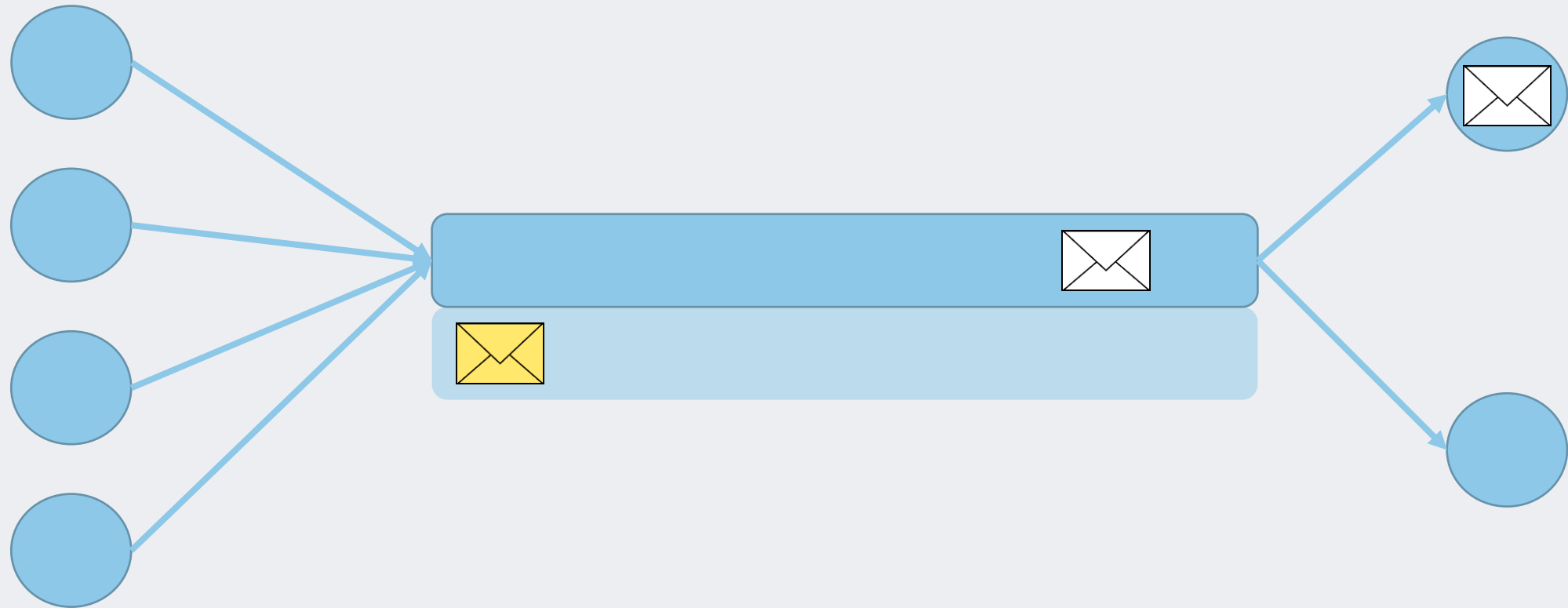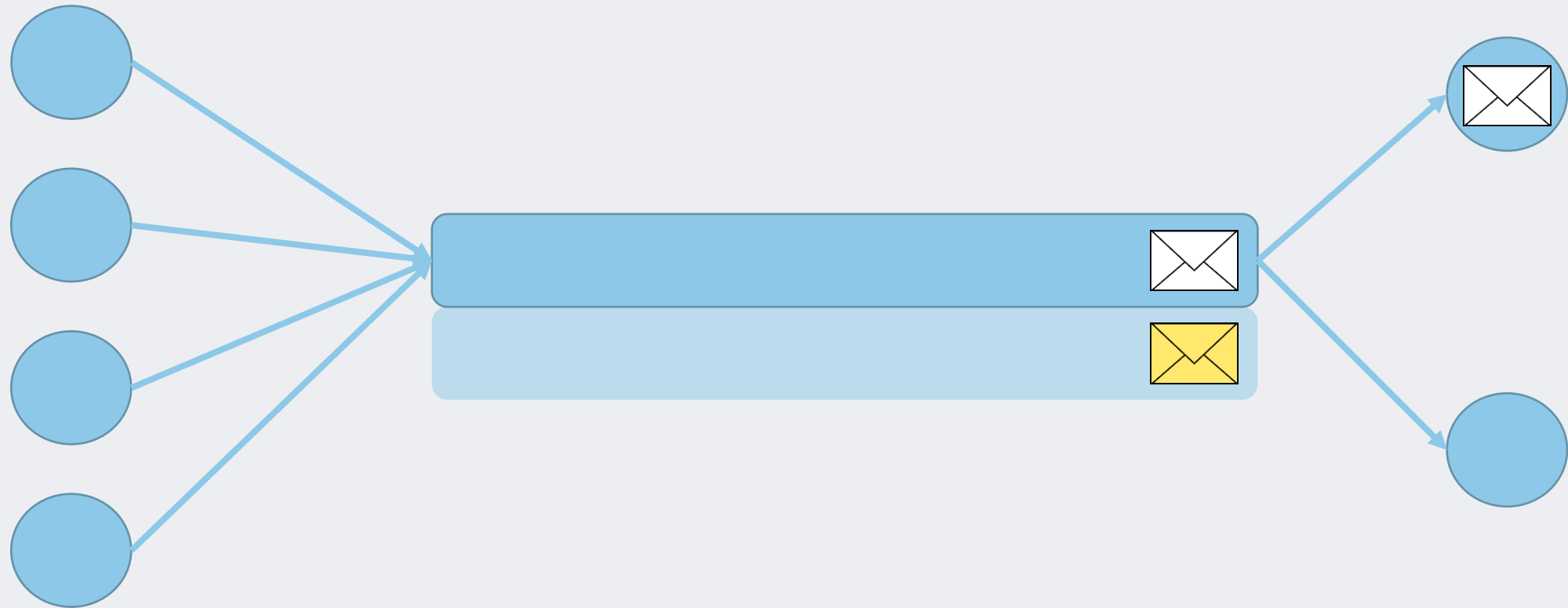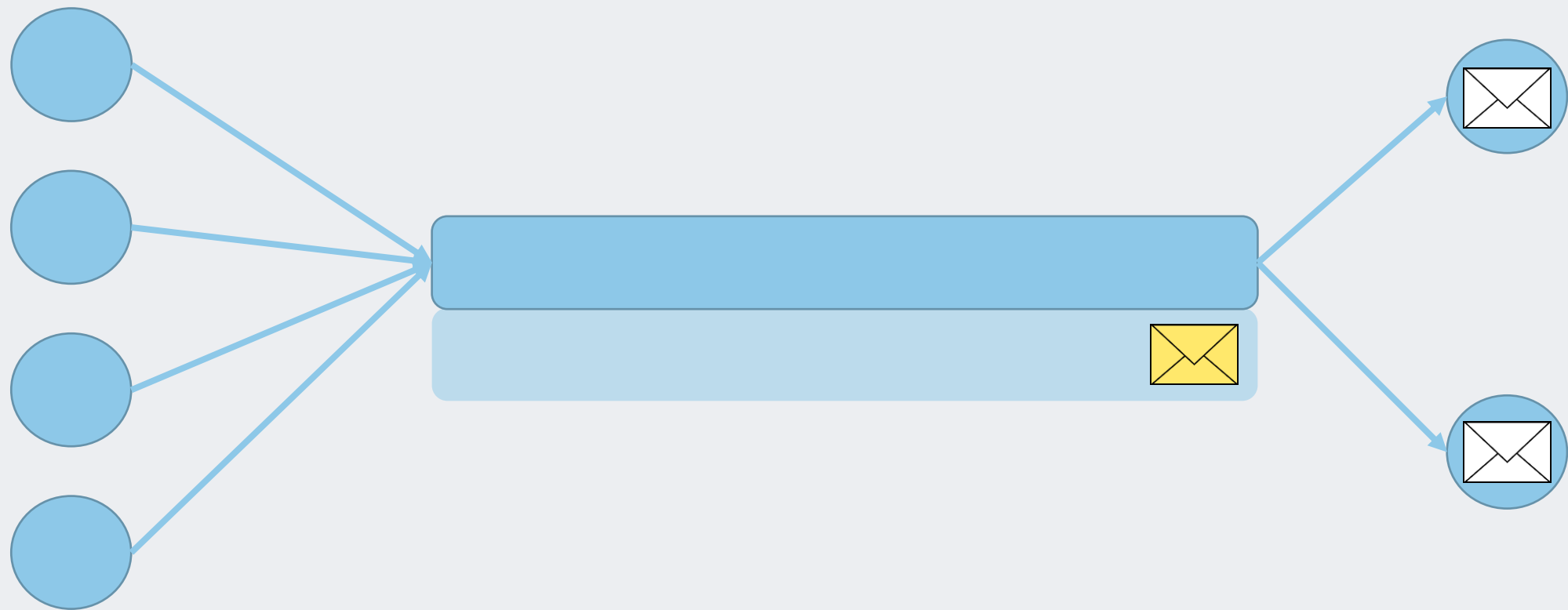
Message Poisoning

Message Poisoning

Message Poisoning

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Message Poisoning

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Message Poisoning
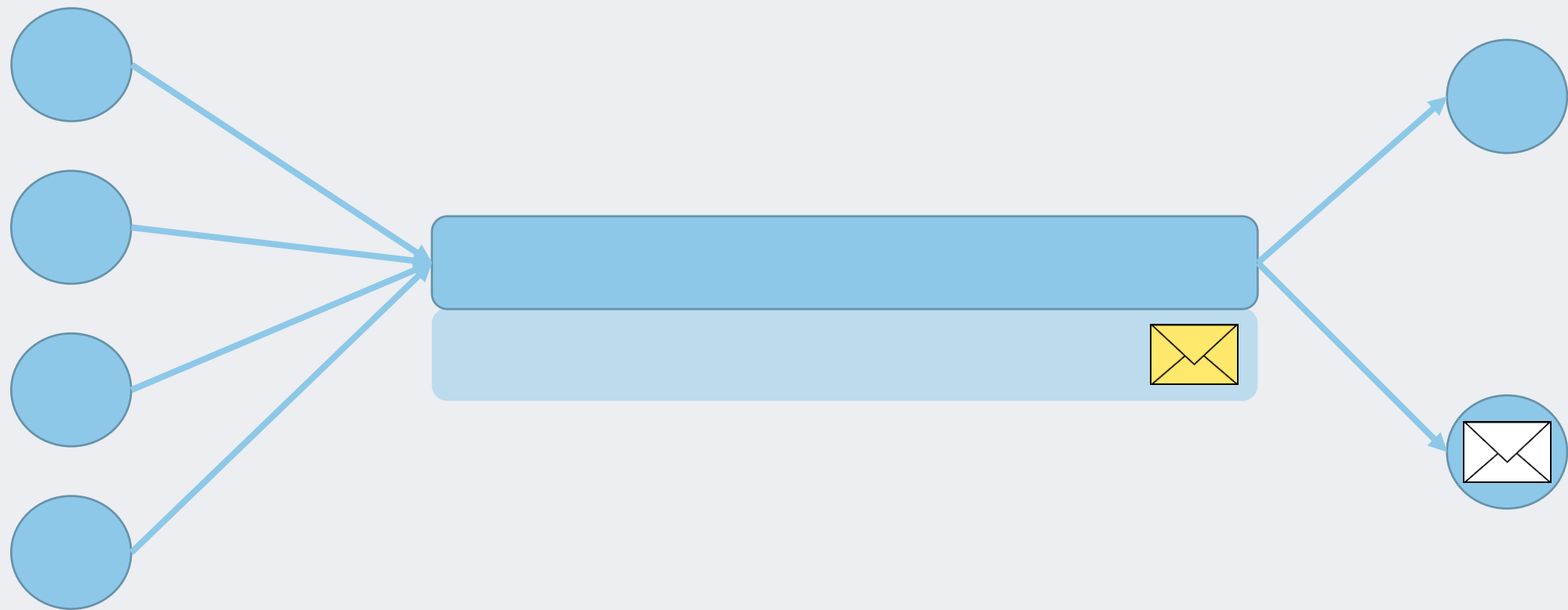
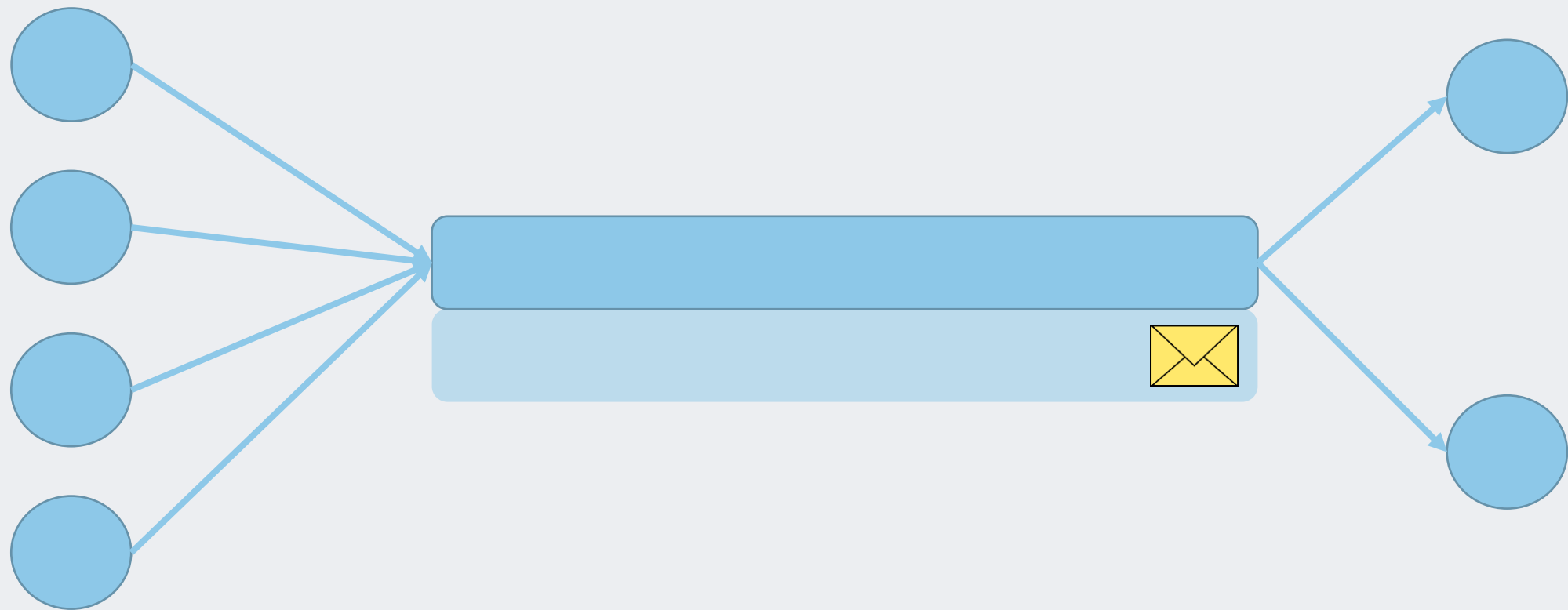# Message Poisoning

Message Poisoning

Message Poisoning

Message Poisoning

Message Poisoning

Message Poisoning

Idempotent Receiver
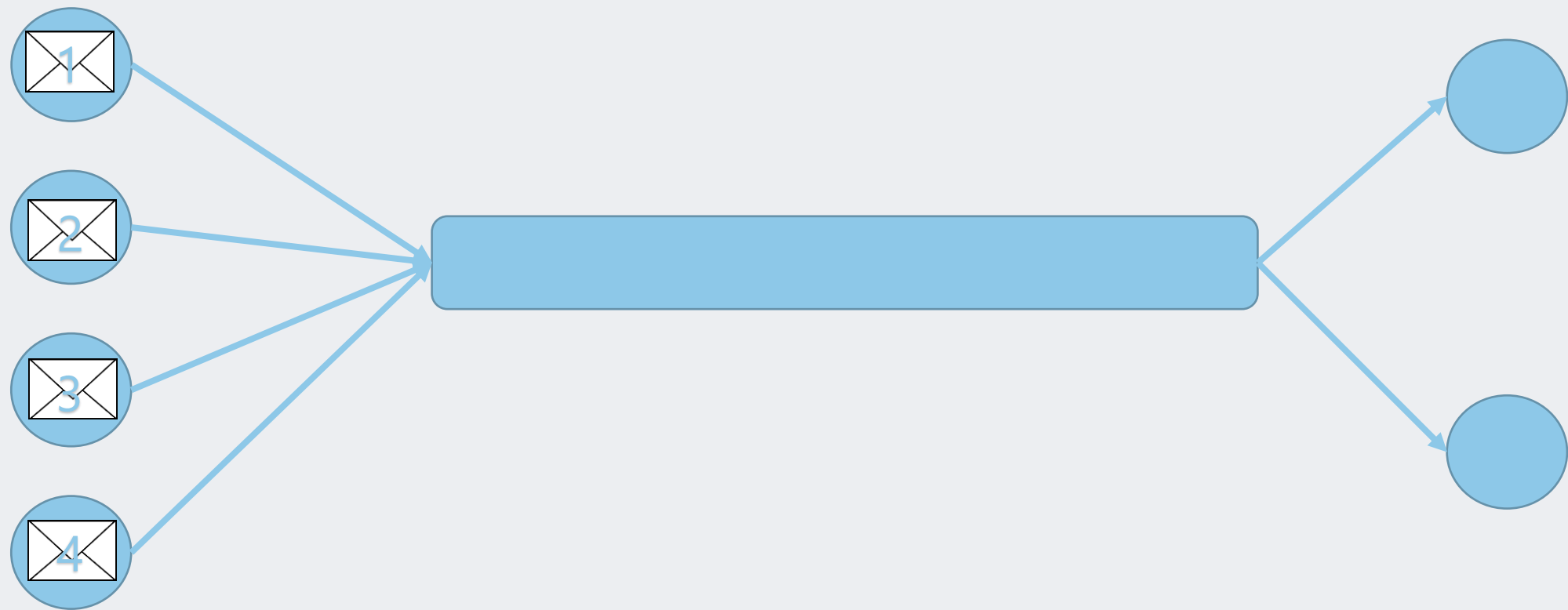
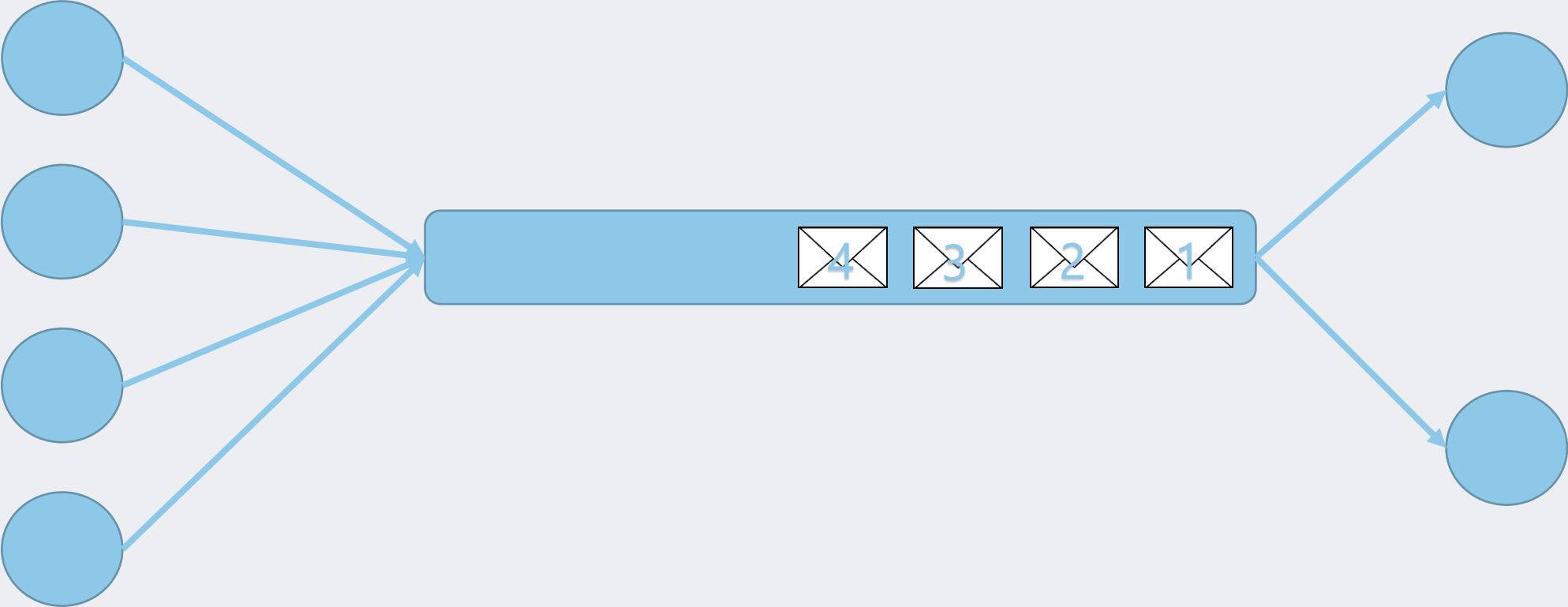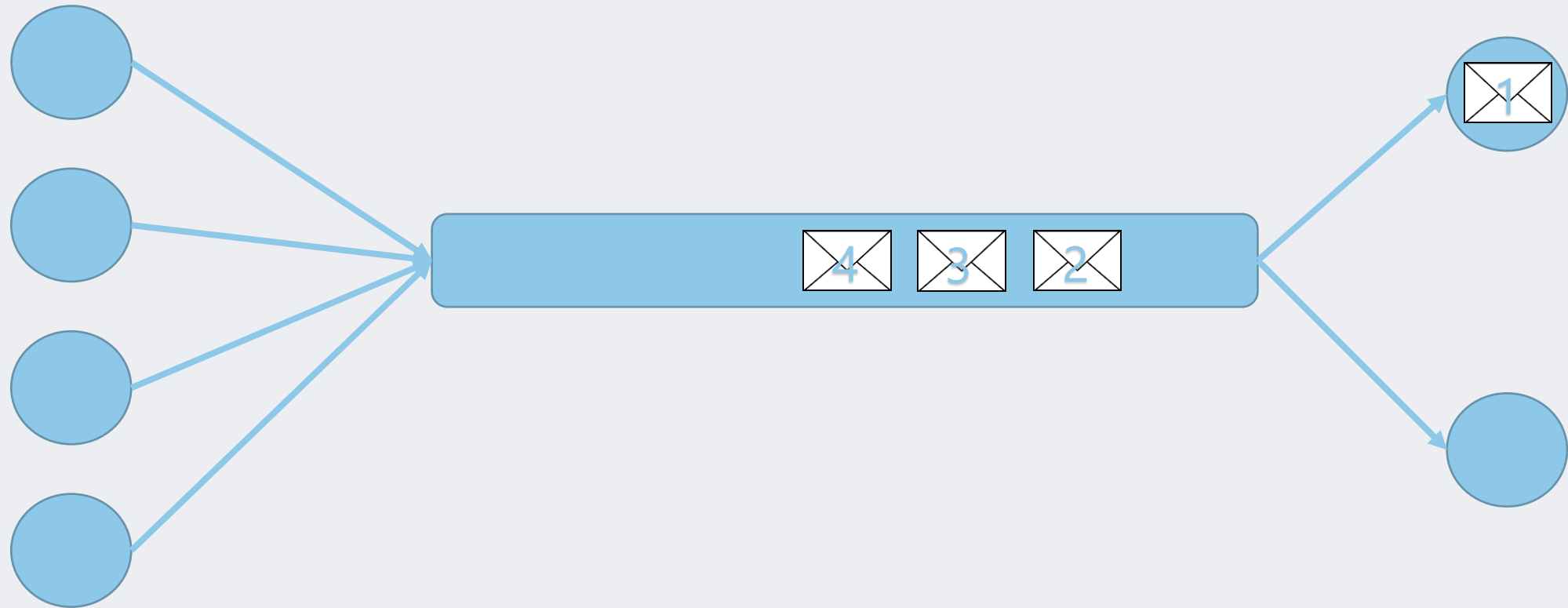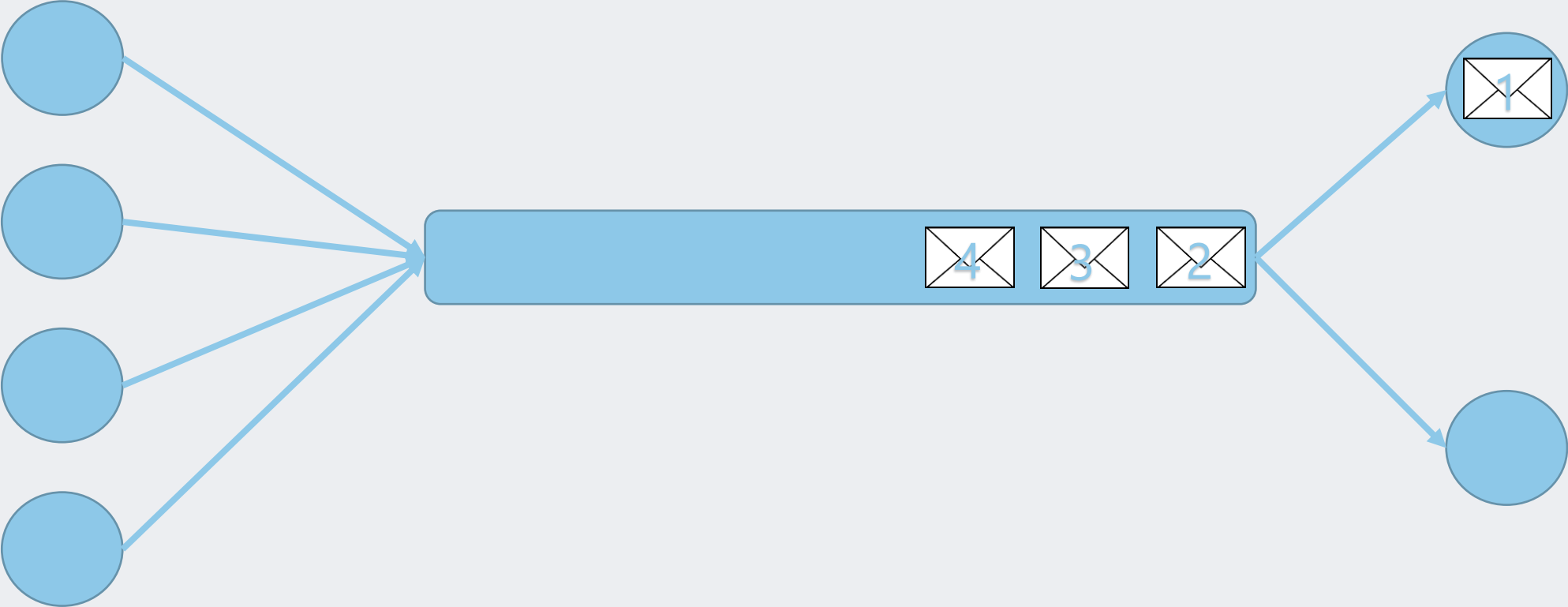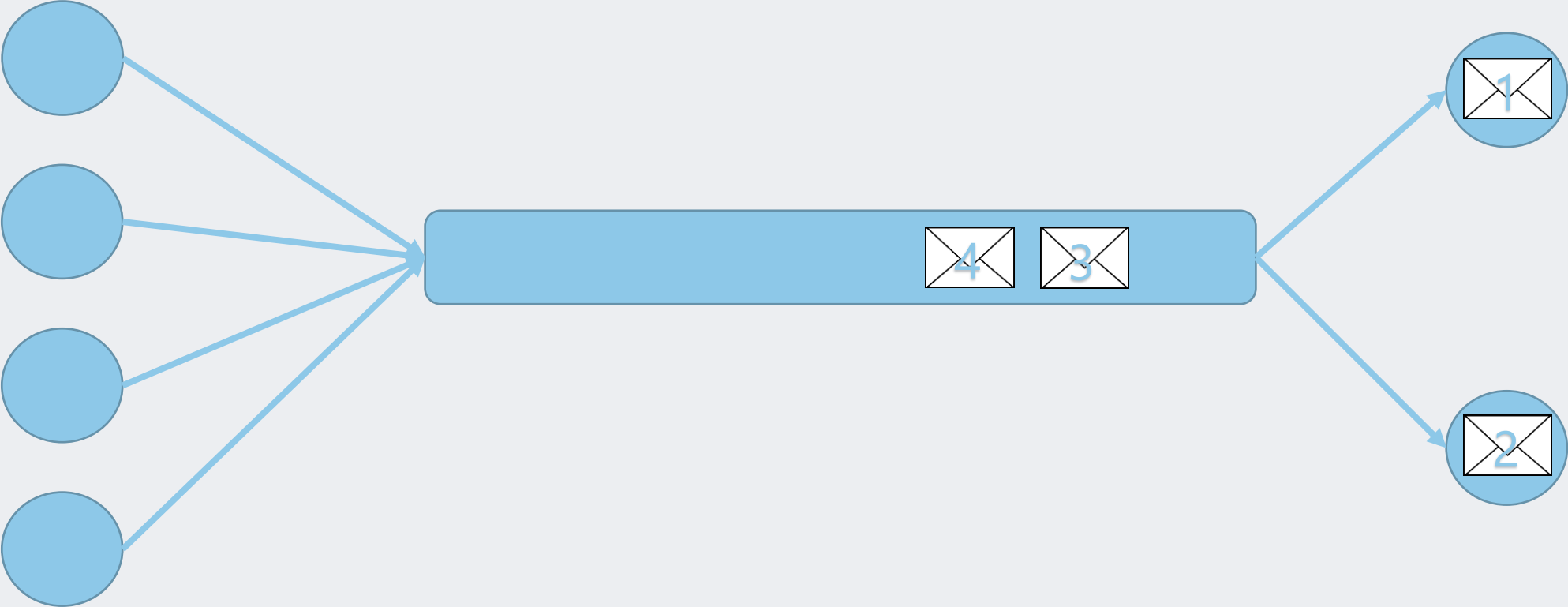https://www.enterpriseintegrationpatterns.com/IdempotentReceiver.html

Idempotent Receiver

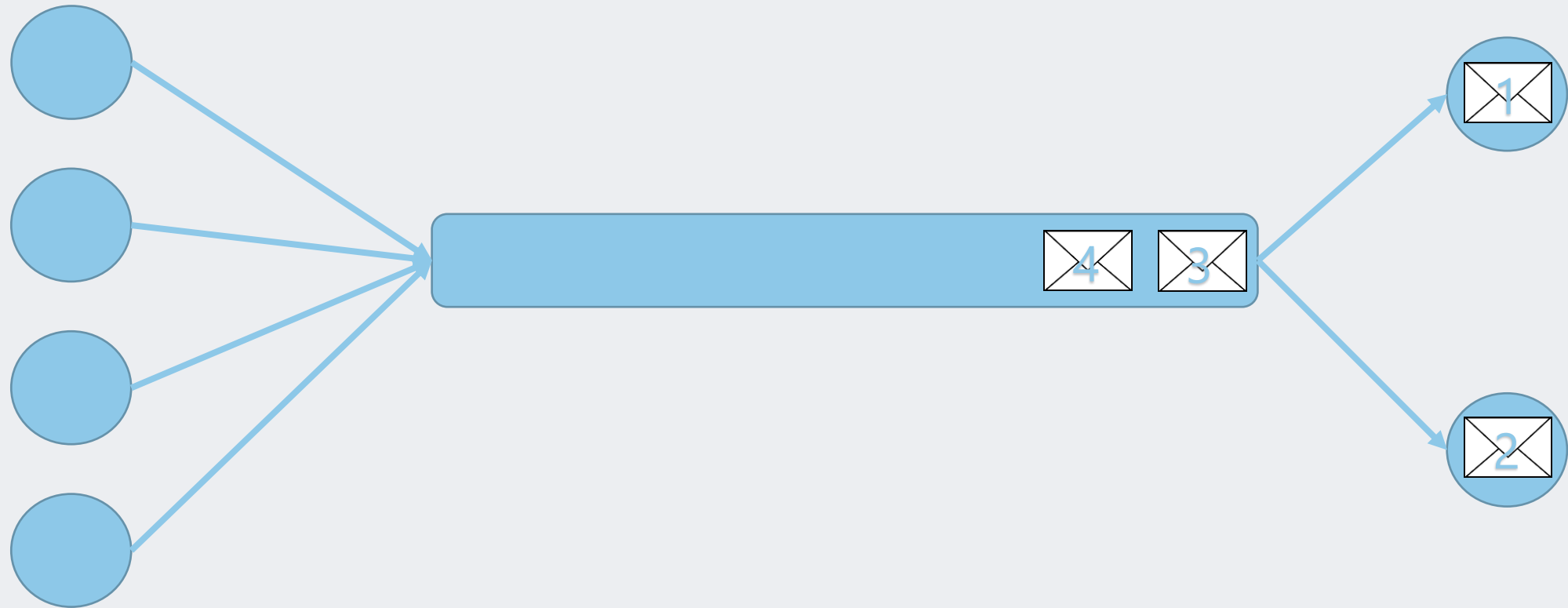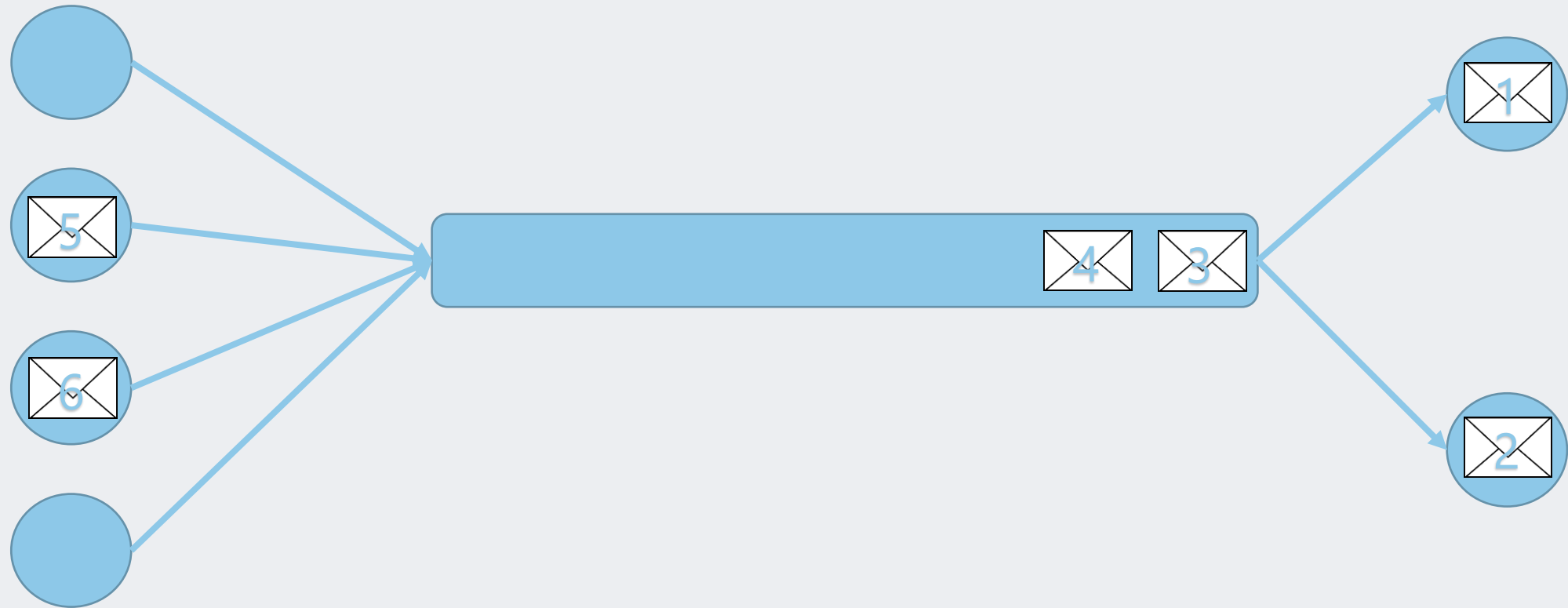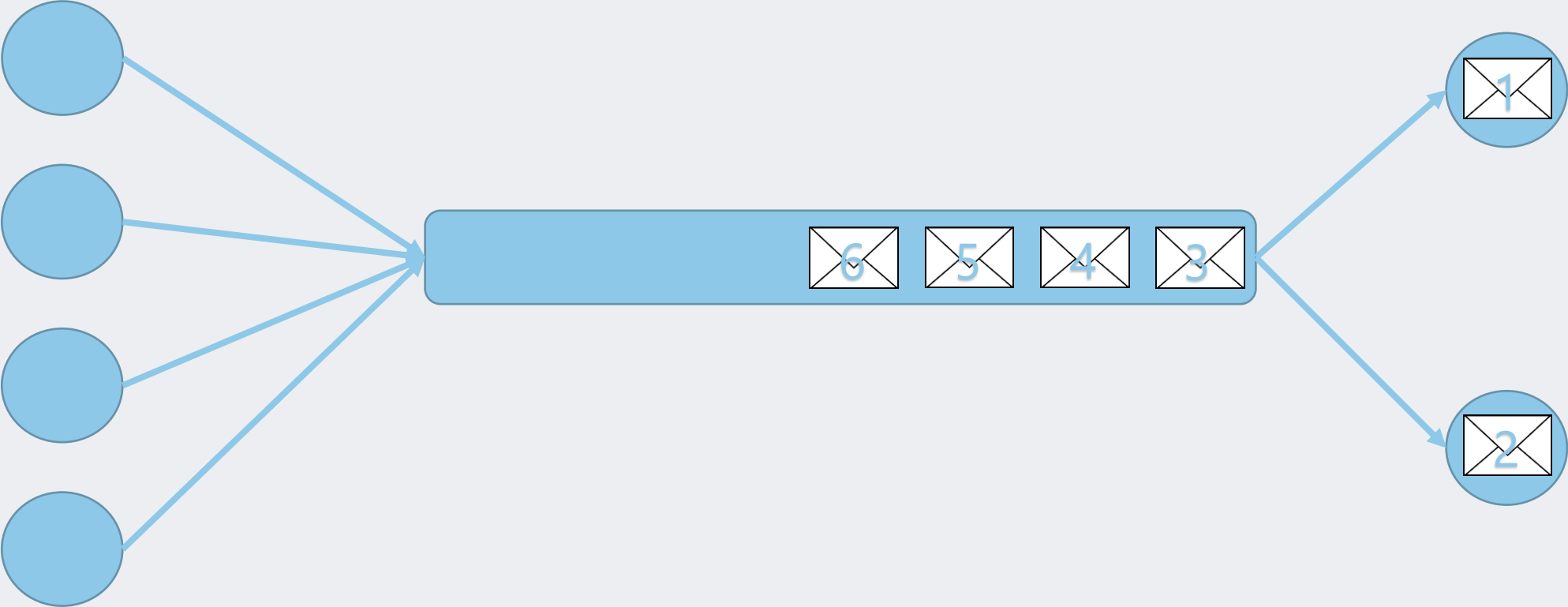# Idempotent Receiver

Idempotent Receiver

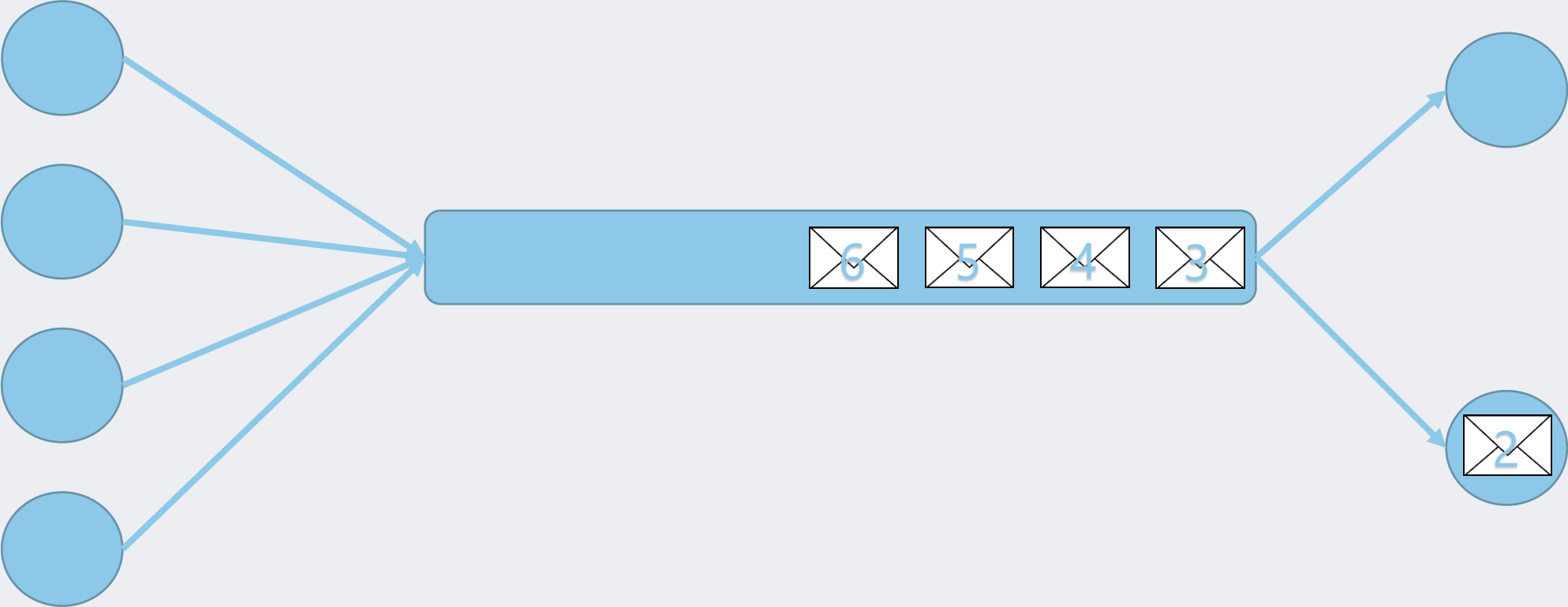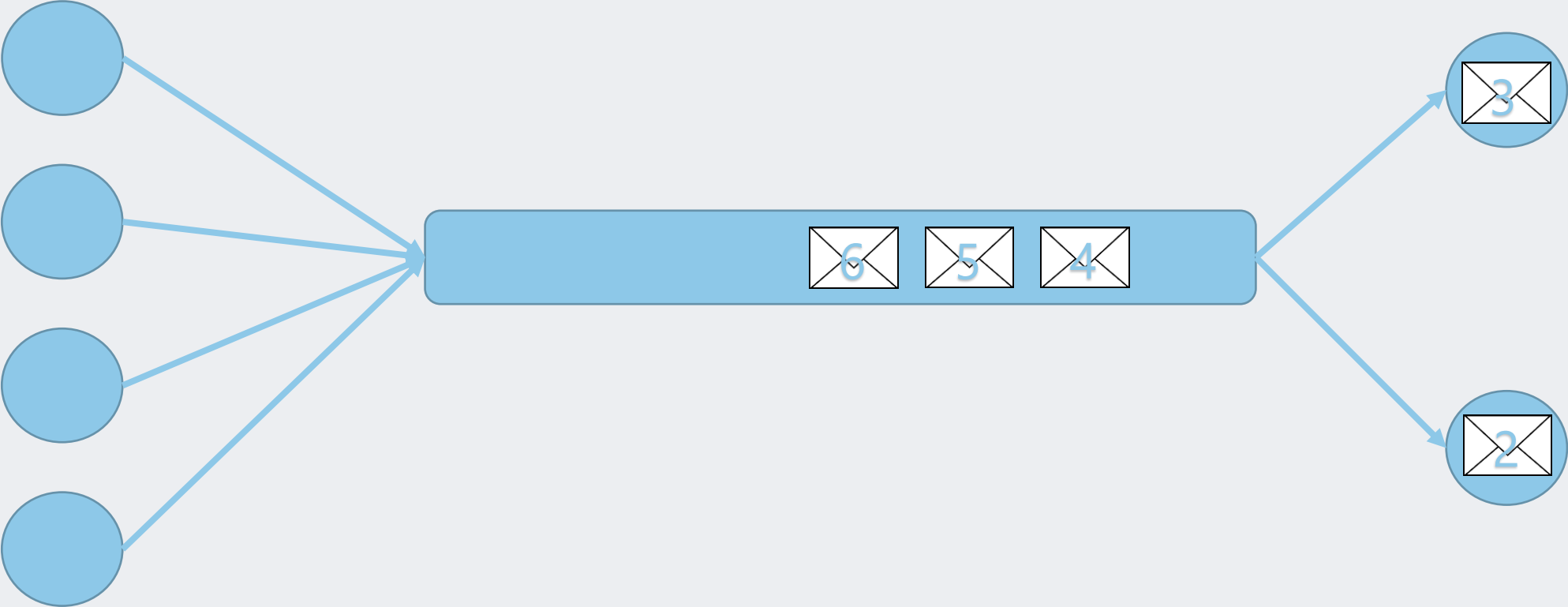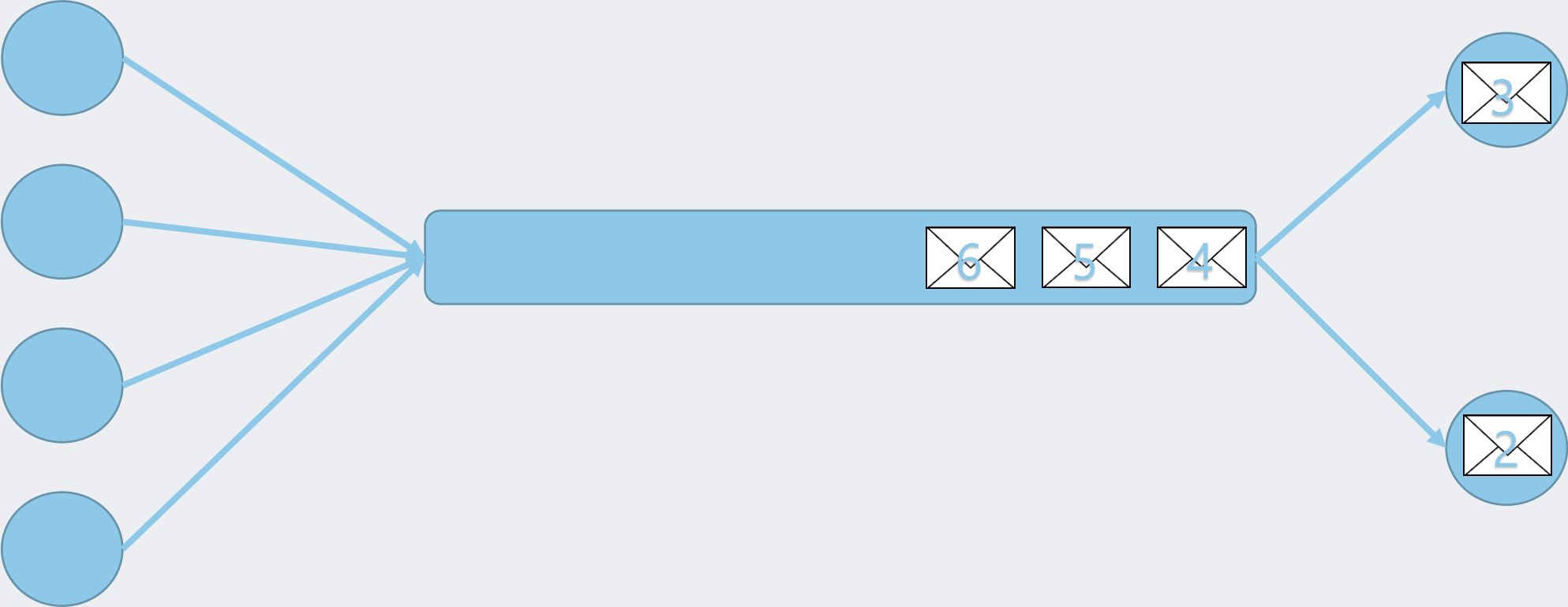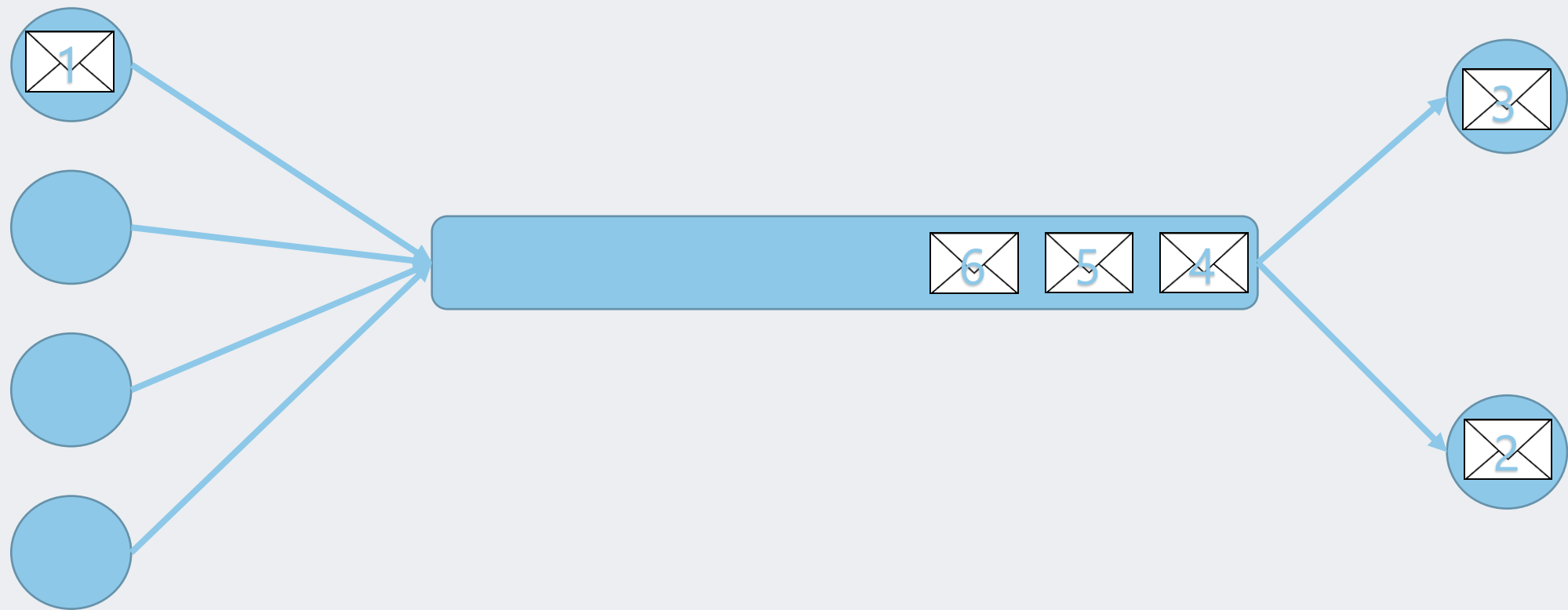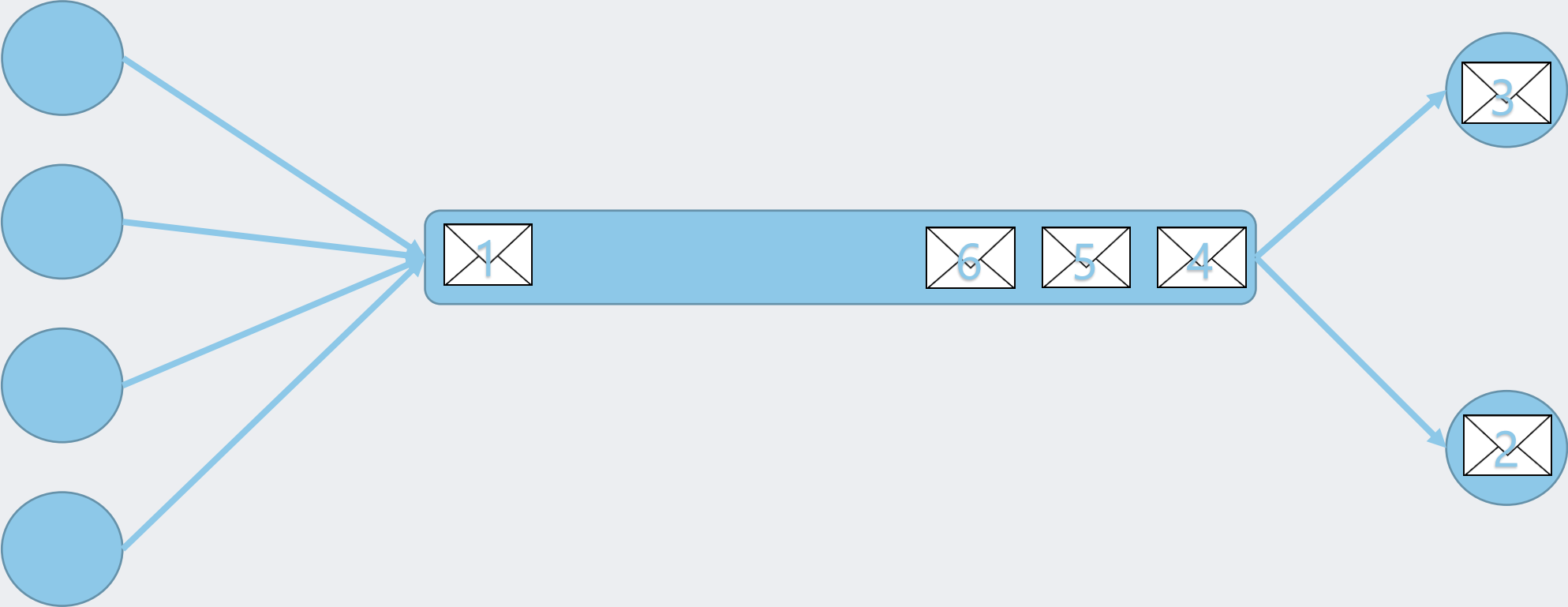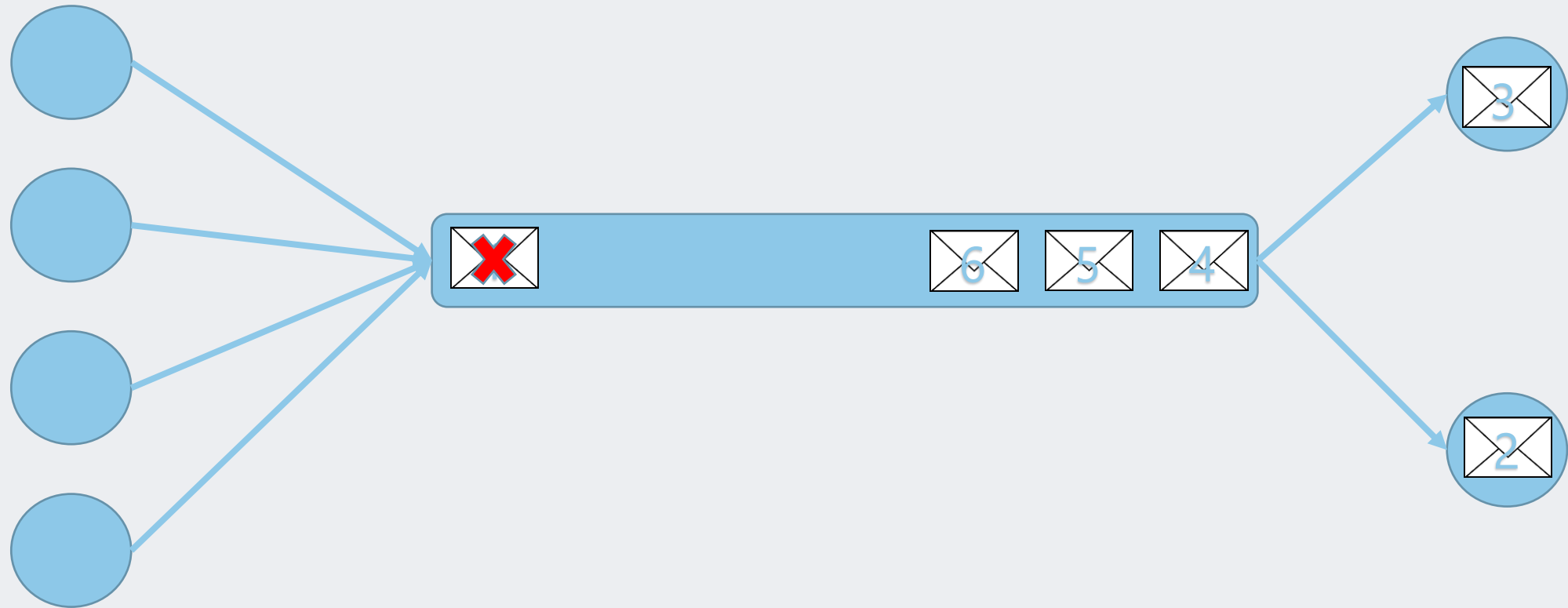# Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver
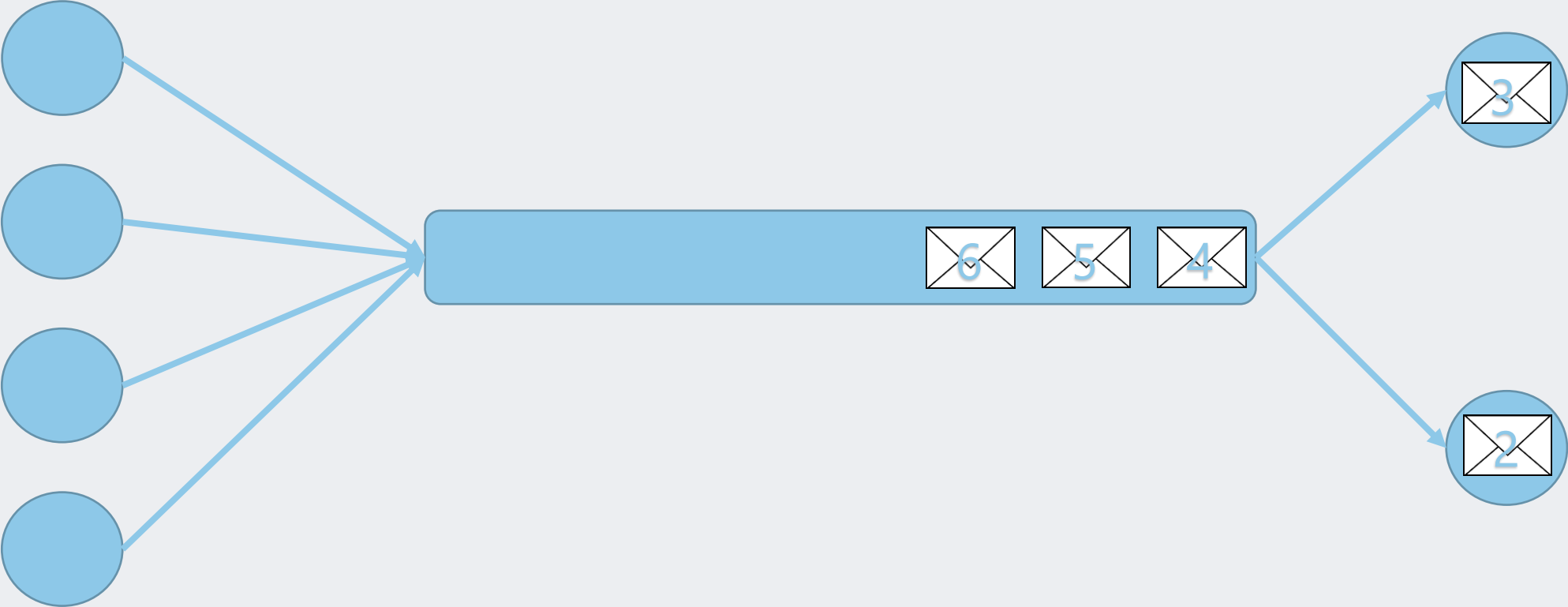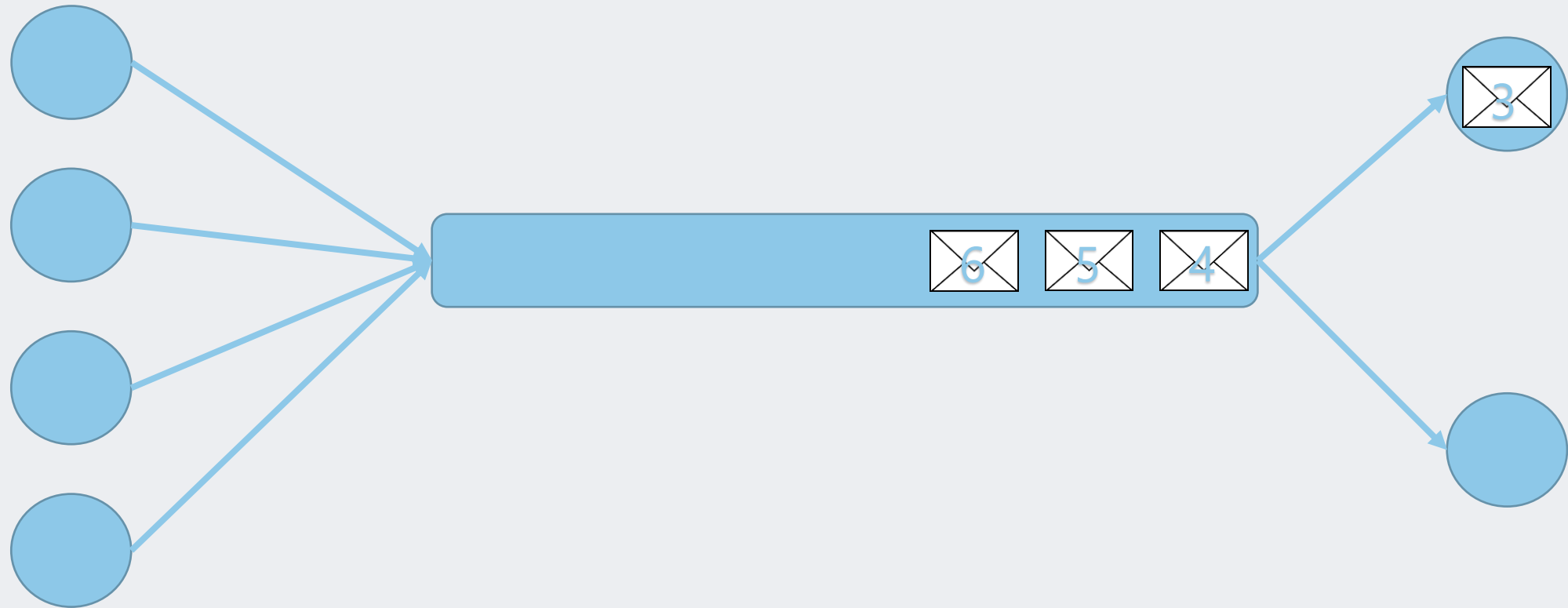
Idempotent Receiver
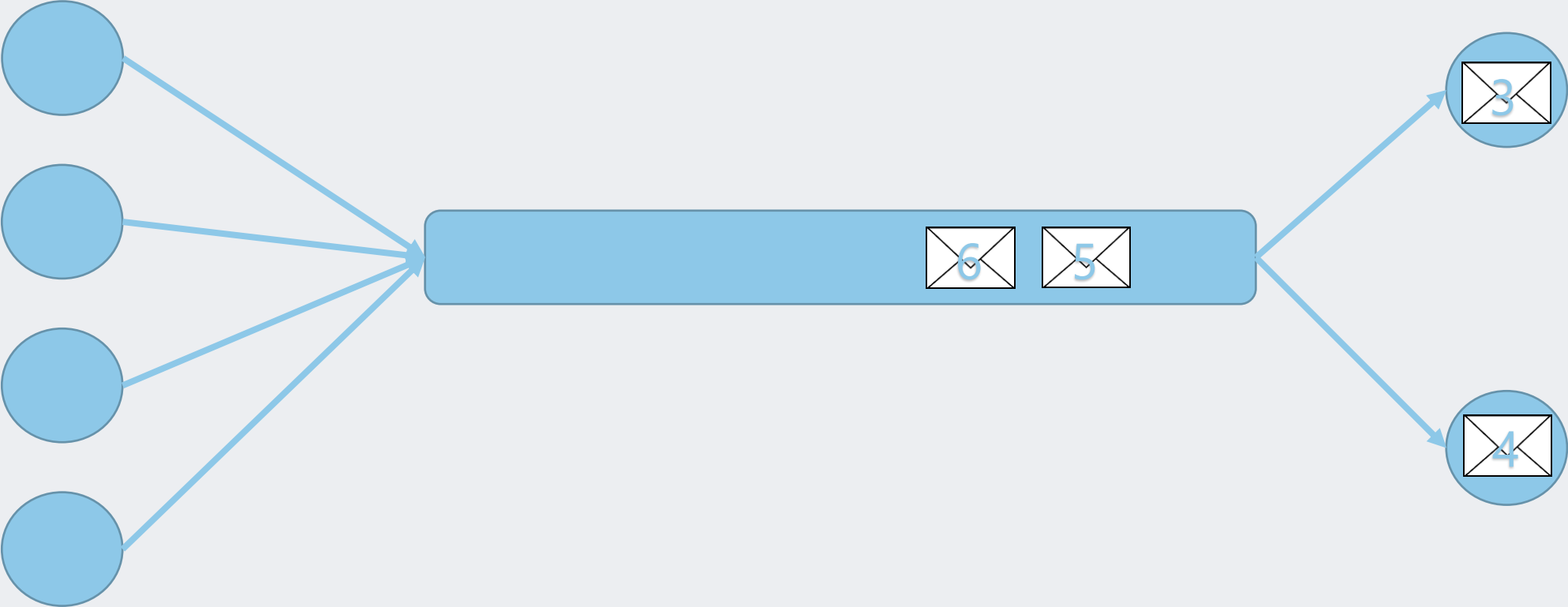
Idempotent Receiver
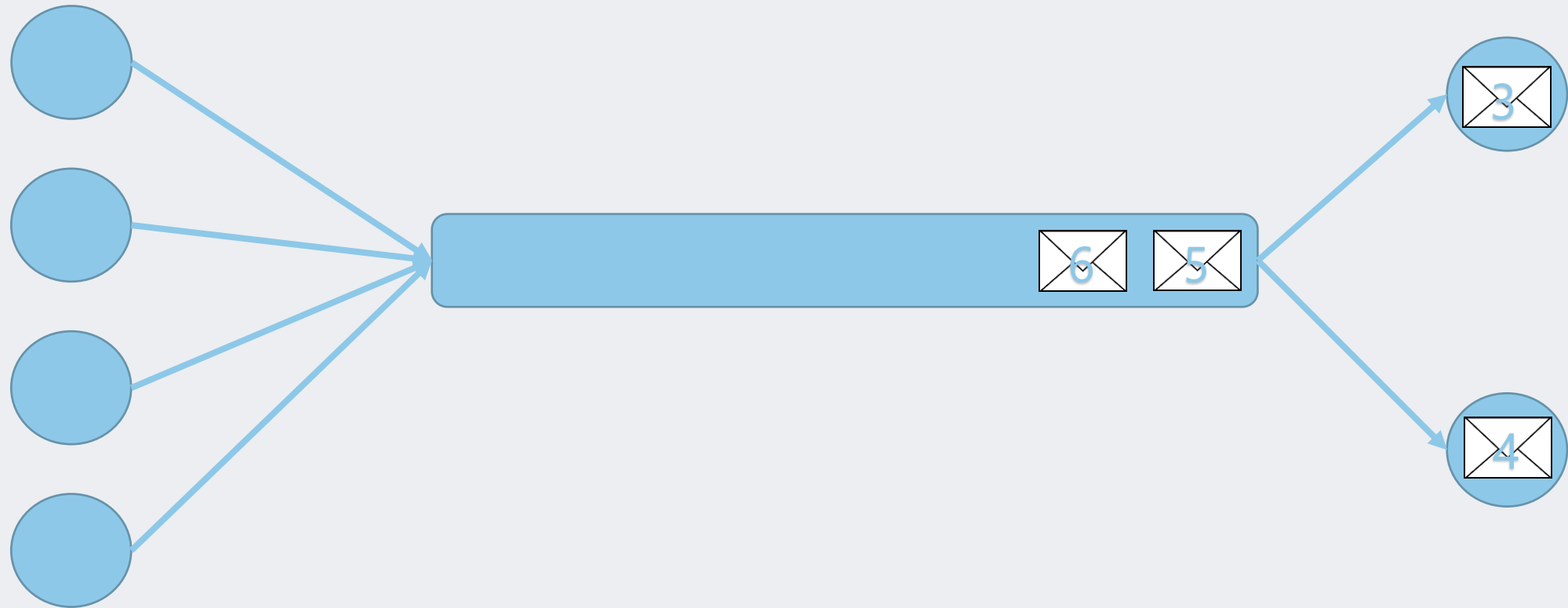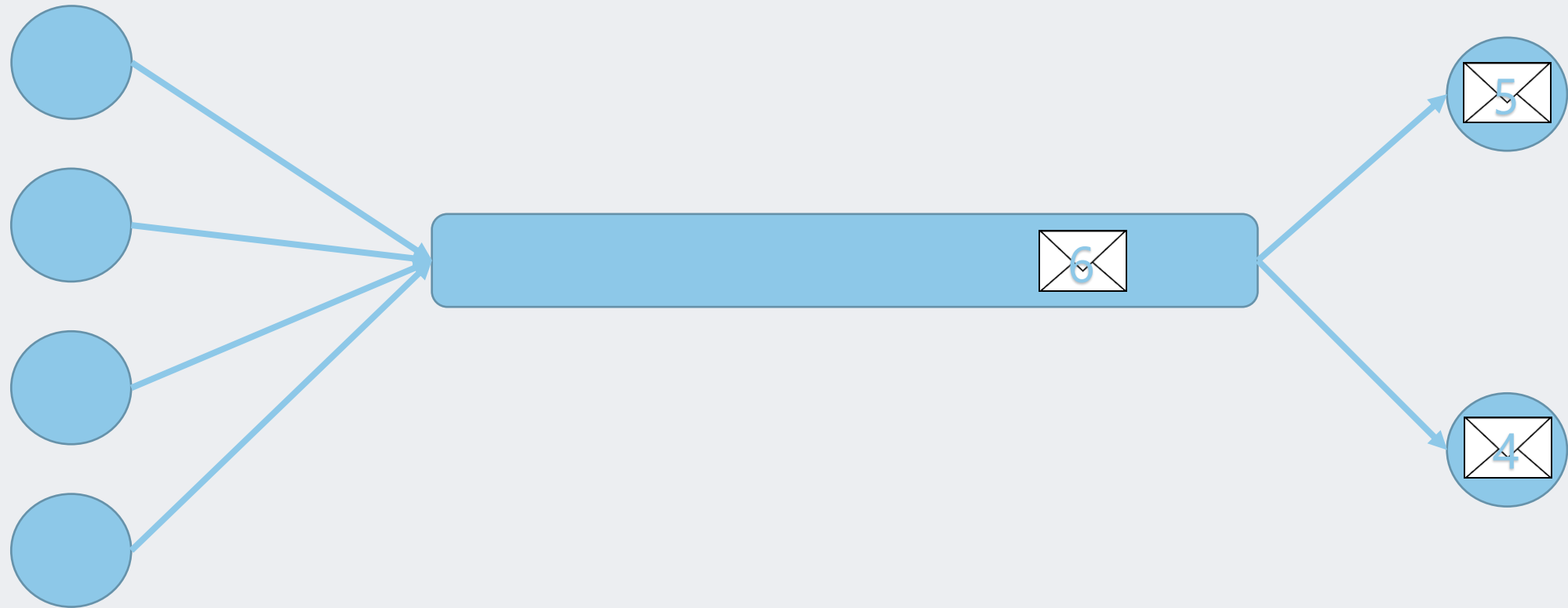
Idempotent Receiver

Idempotent Receiver

Idempotent Receiver
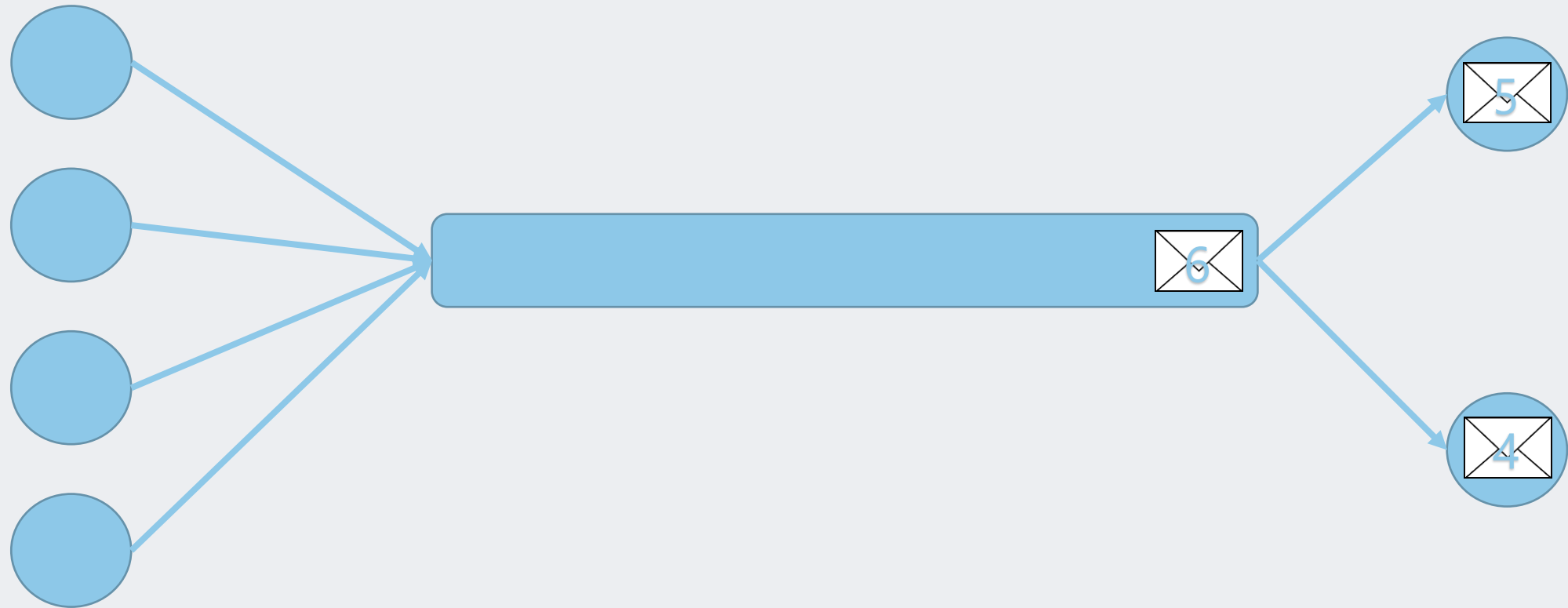

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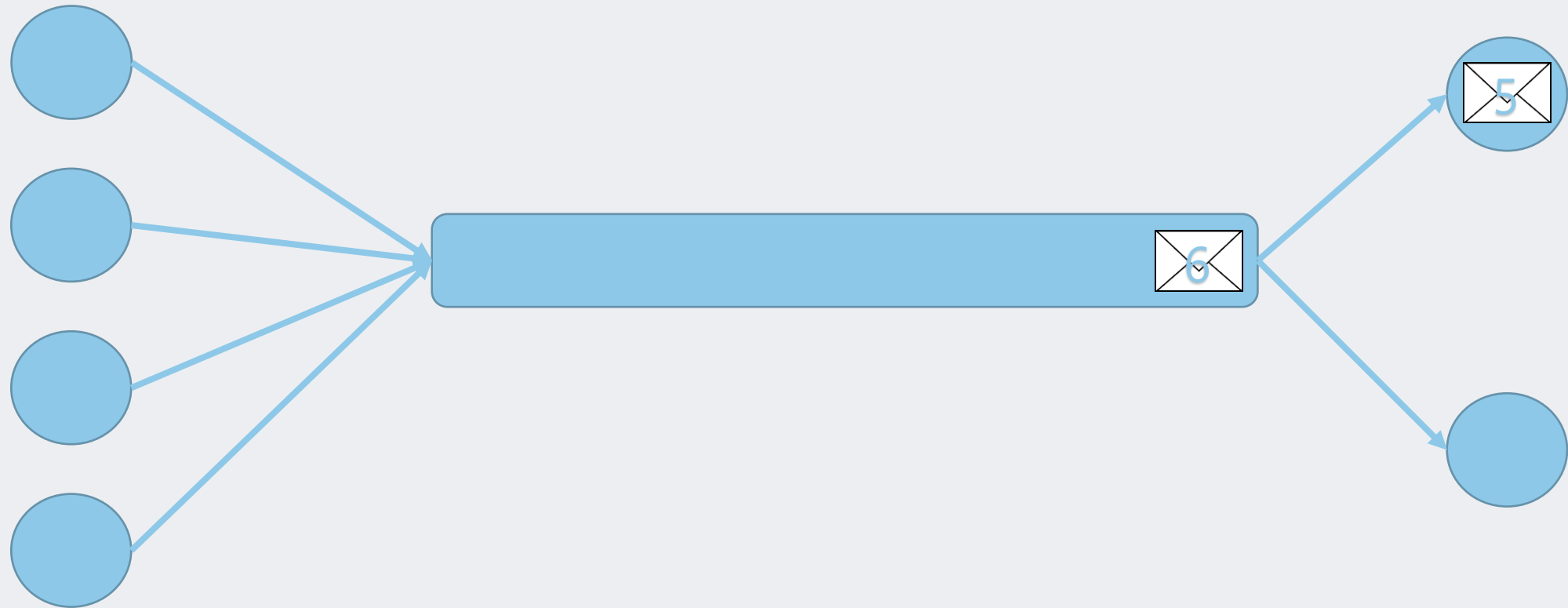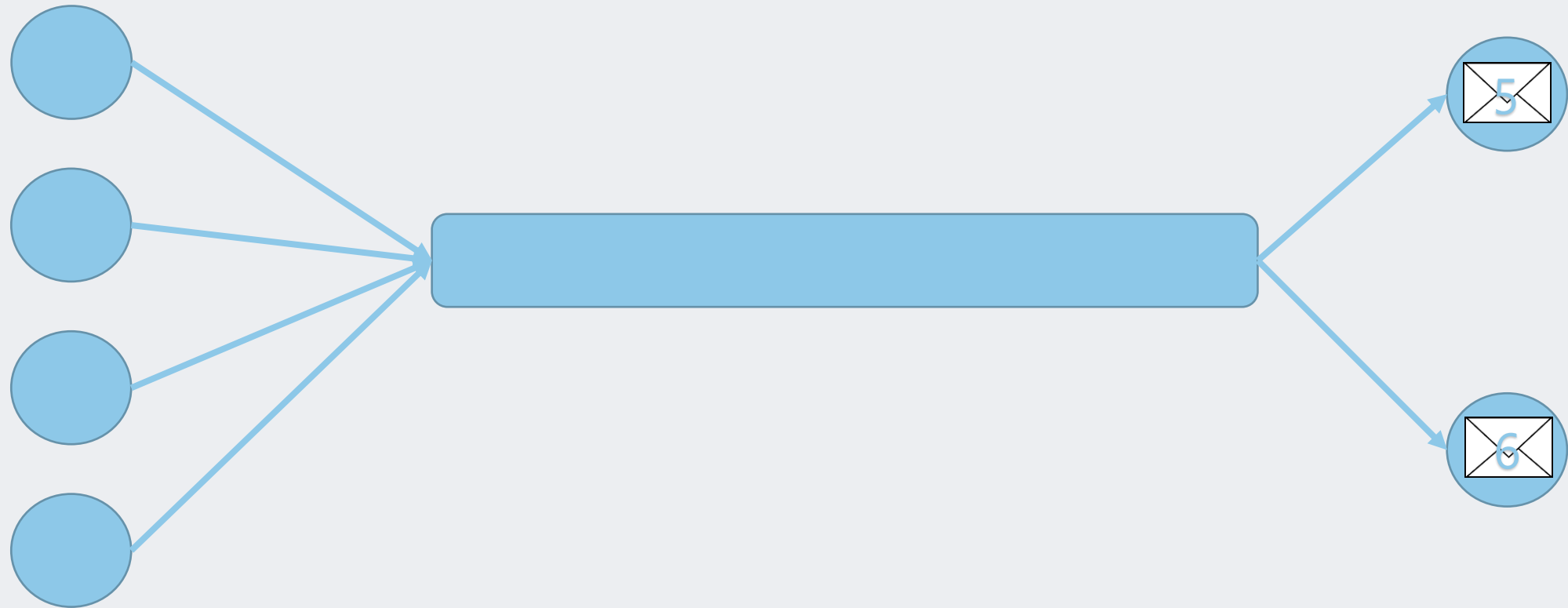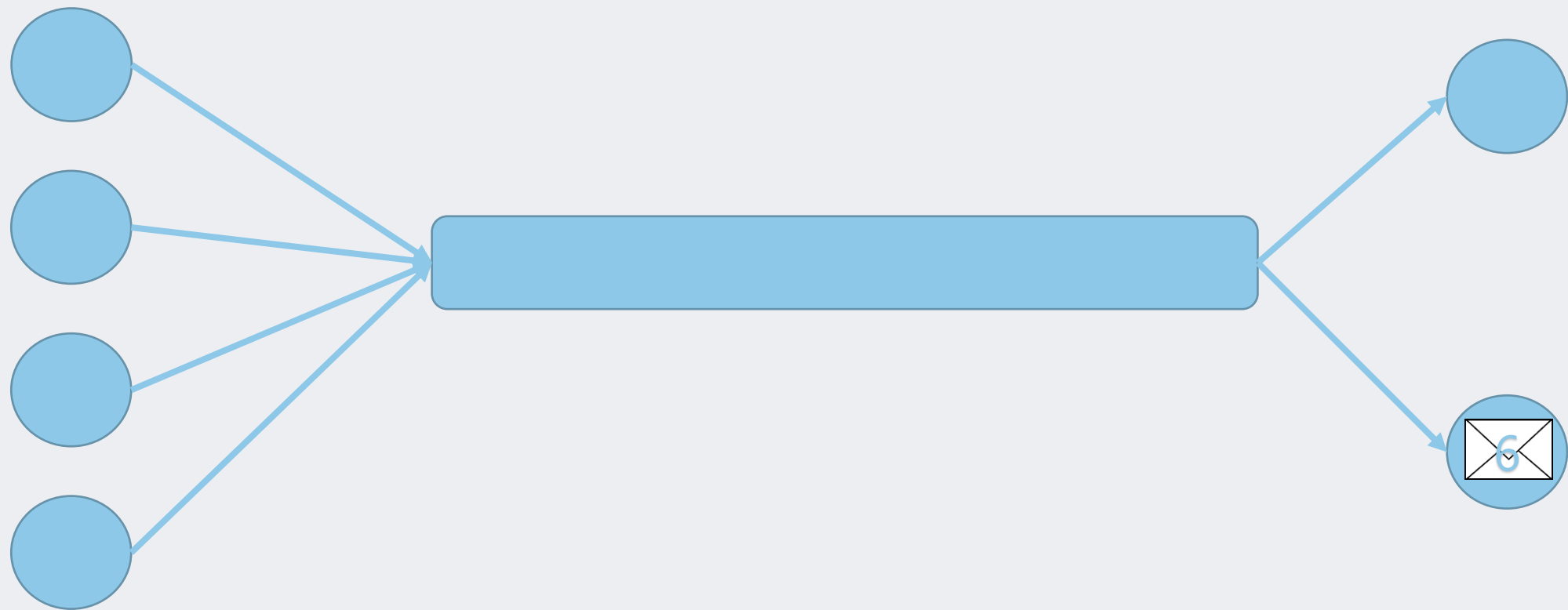
Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

Idempotent Receiver

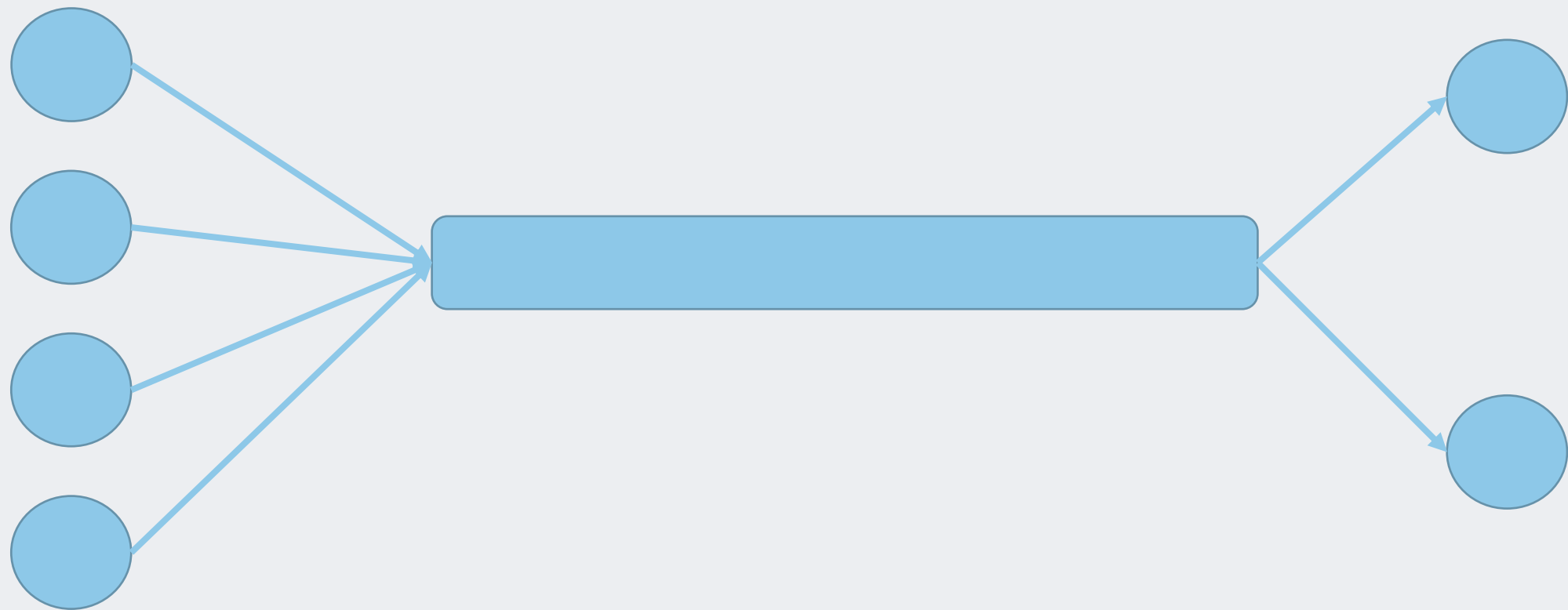# Idempotent Receiver

Idempotent Receiver
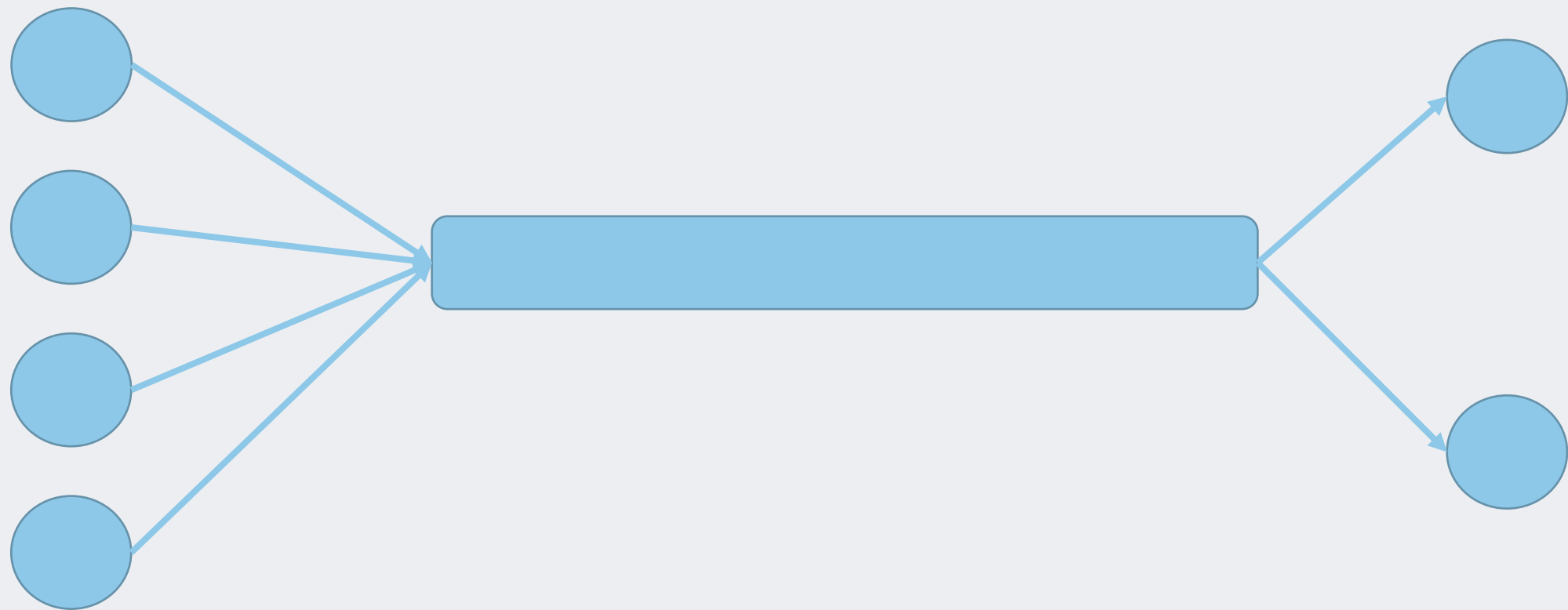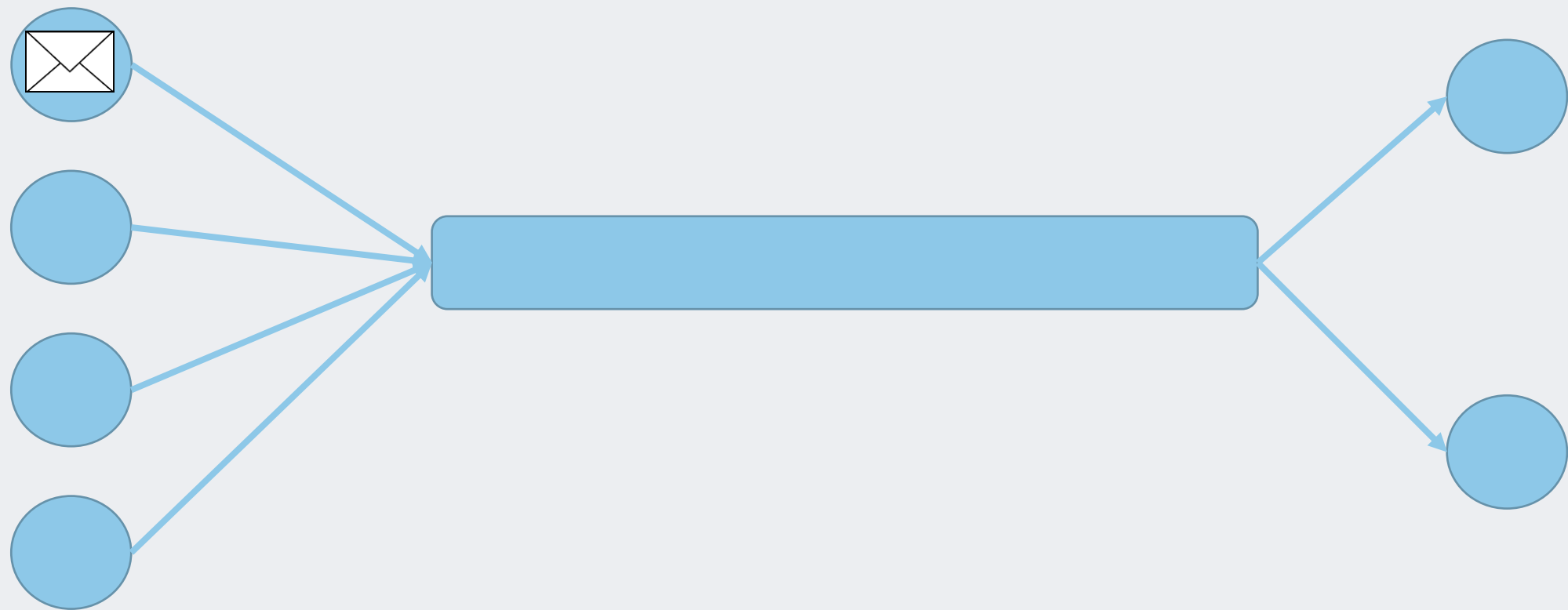
Idempotent Receiver

Idempotent Receiver

Message Scheduling

https://docs.microsoft.com/en-us/azure/service-bus-messaging/message-sequencing#scheduled-messages
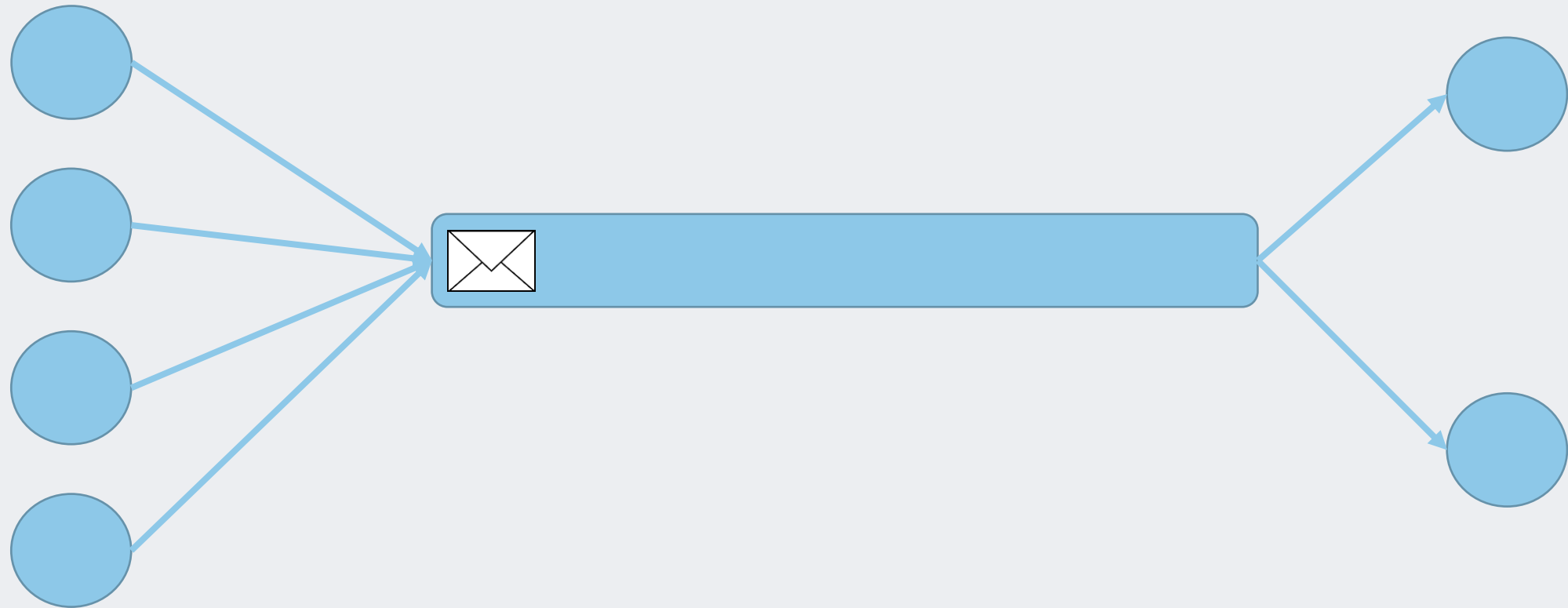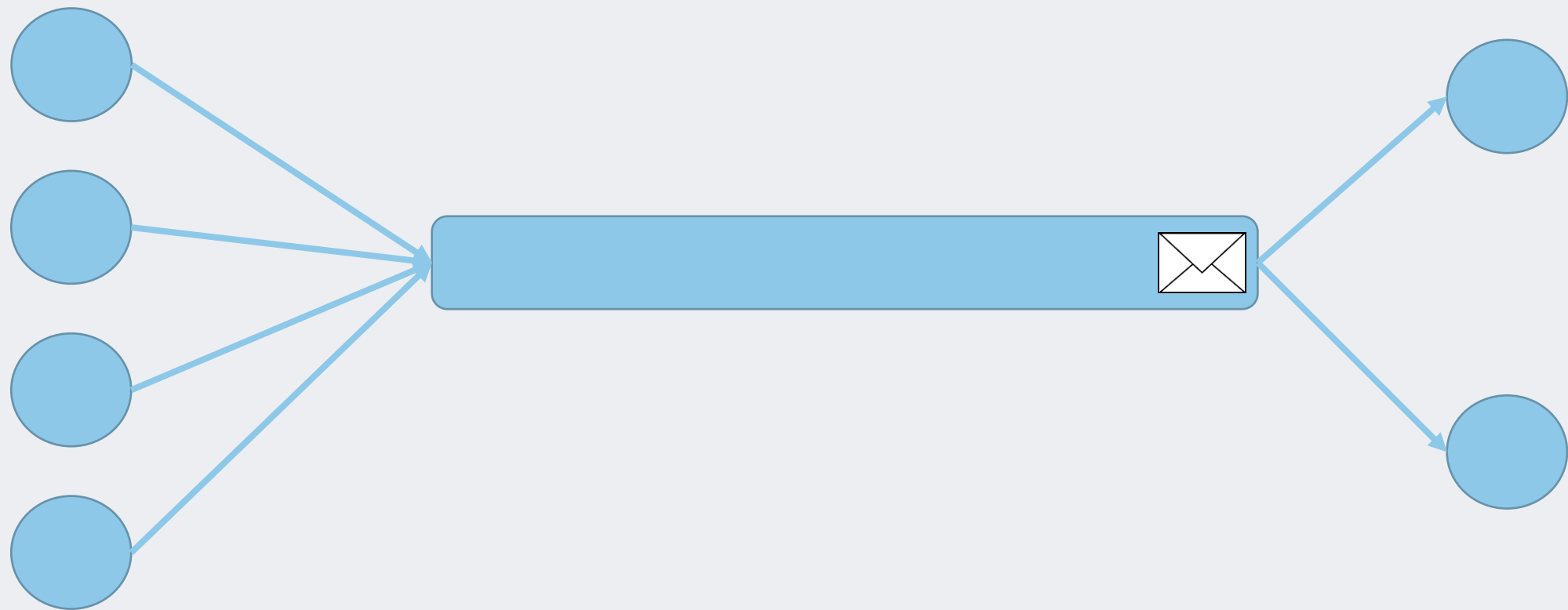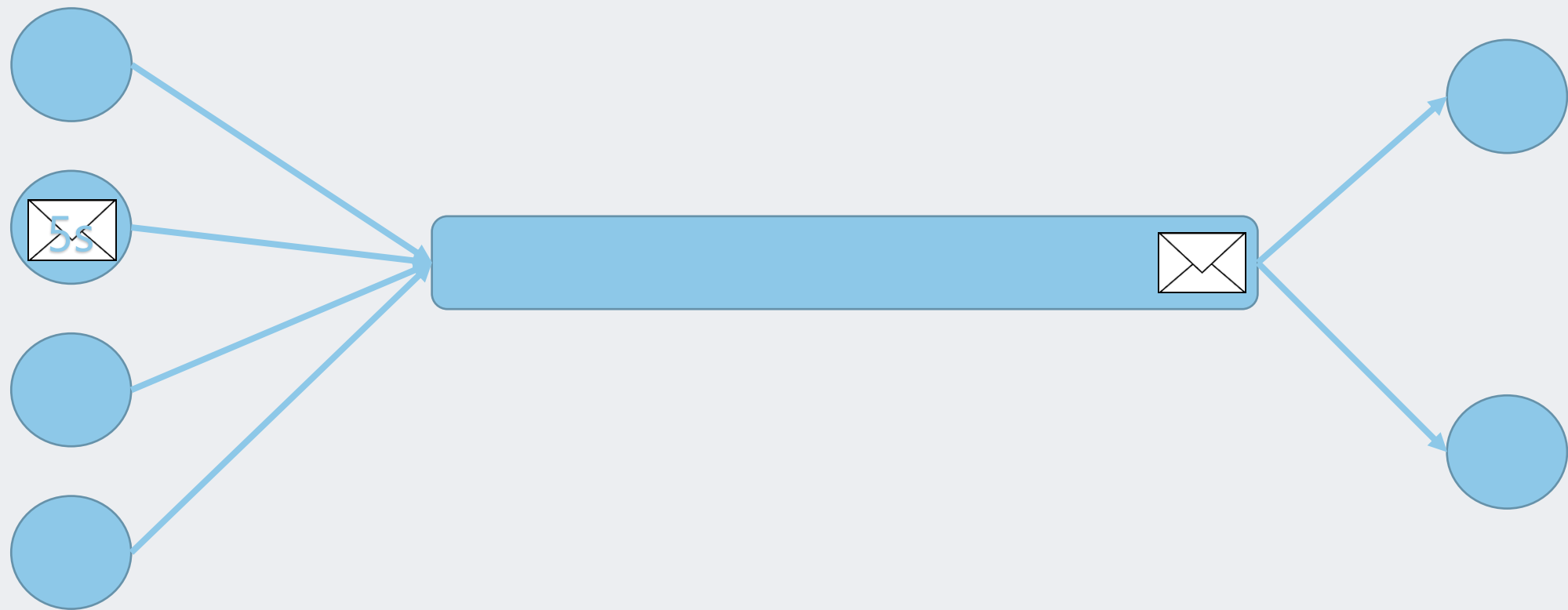
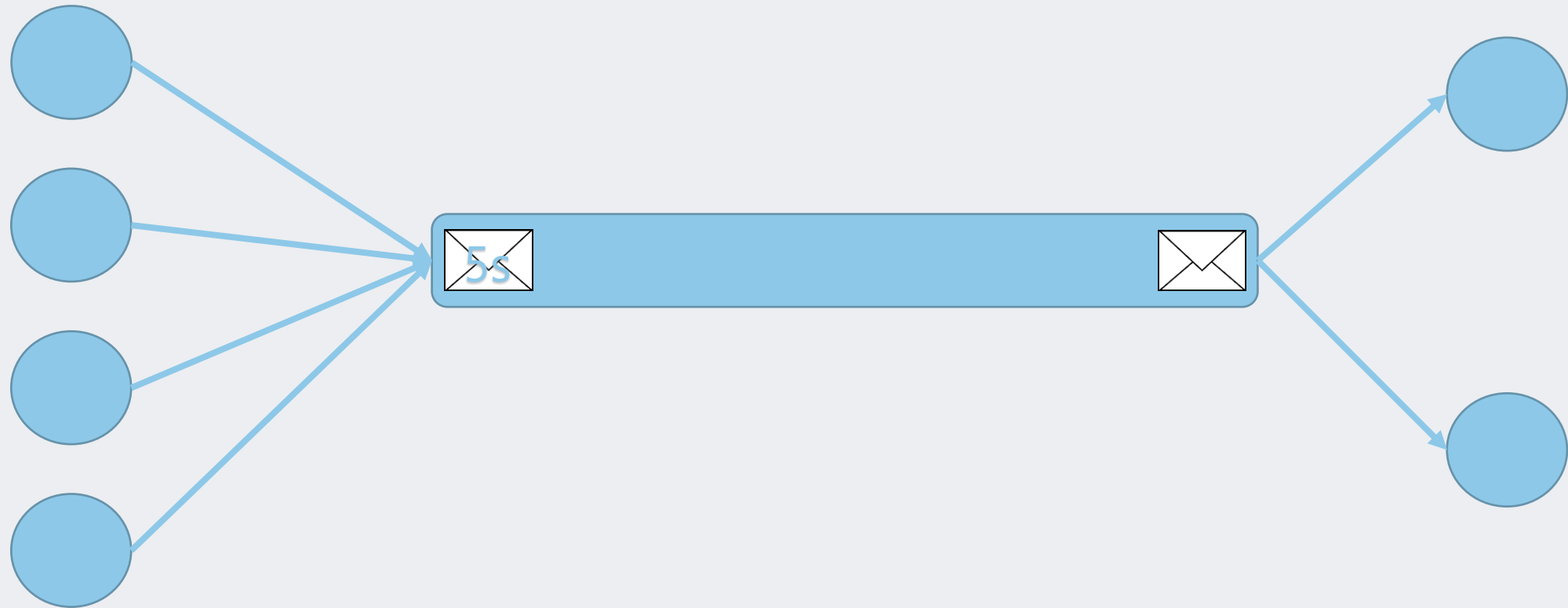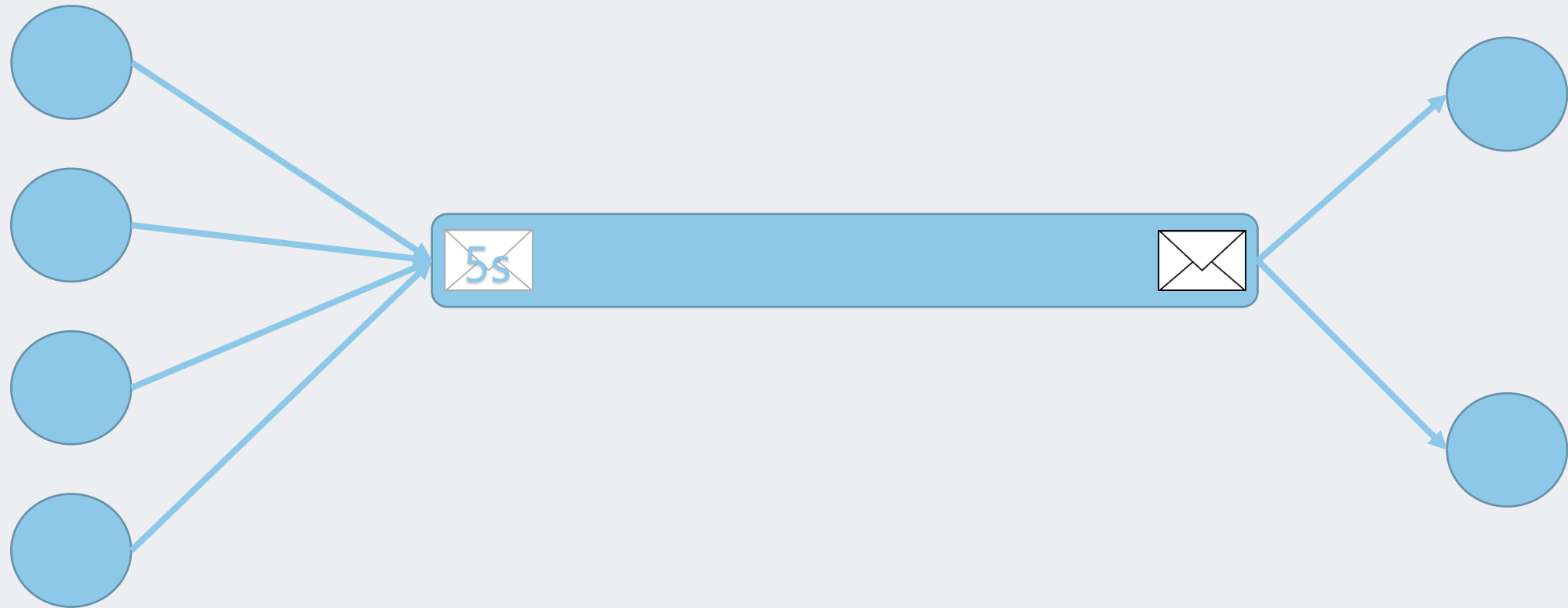# Message Scheduling

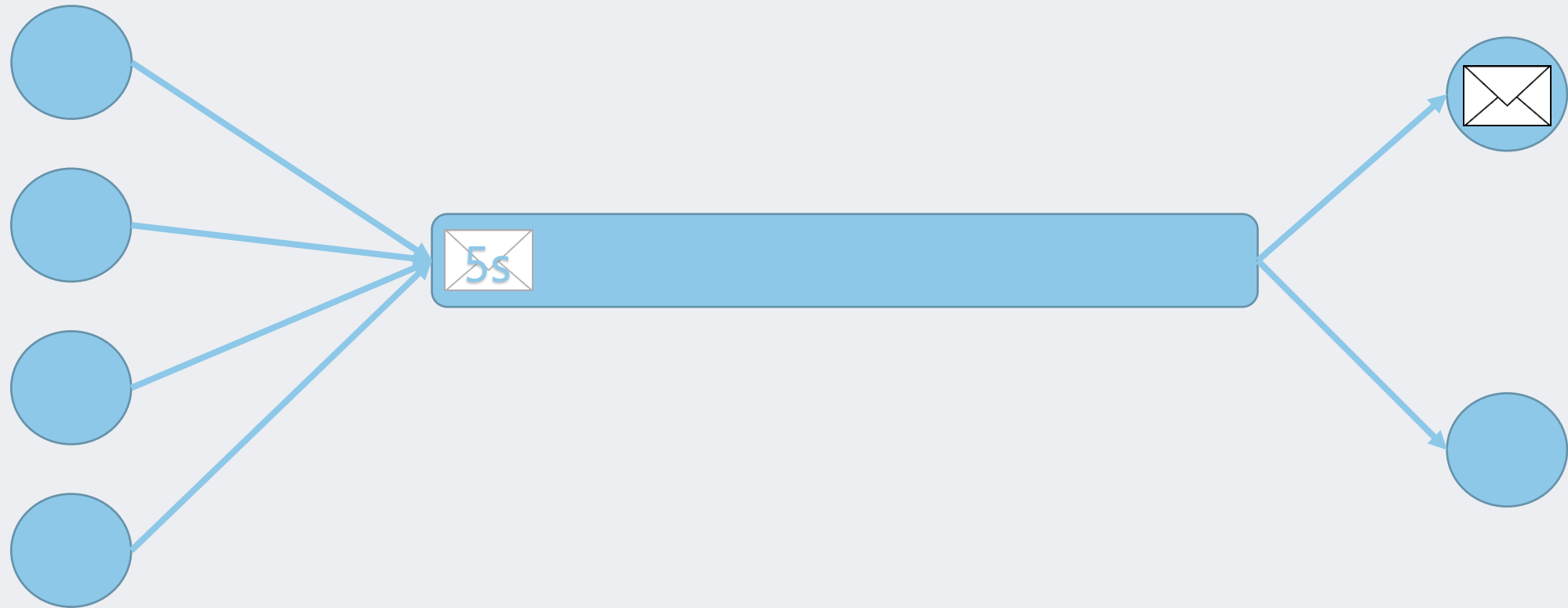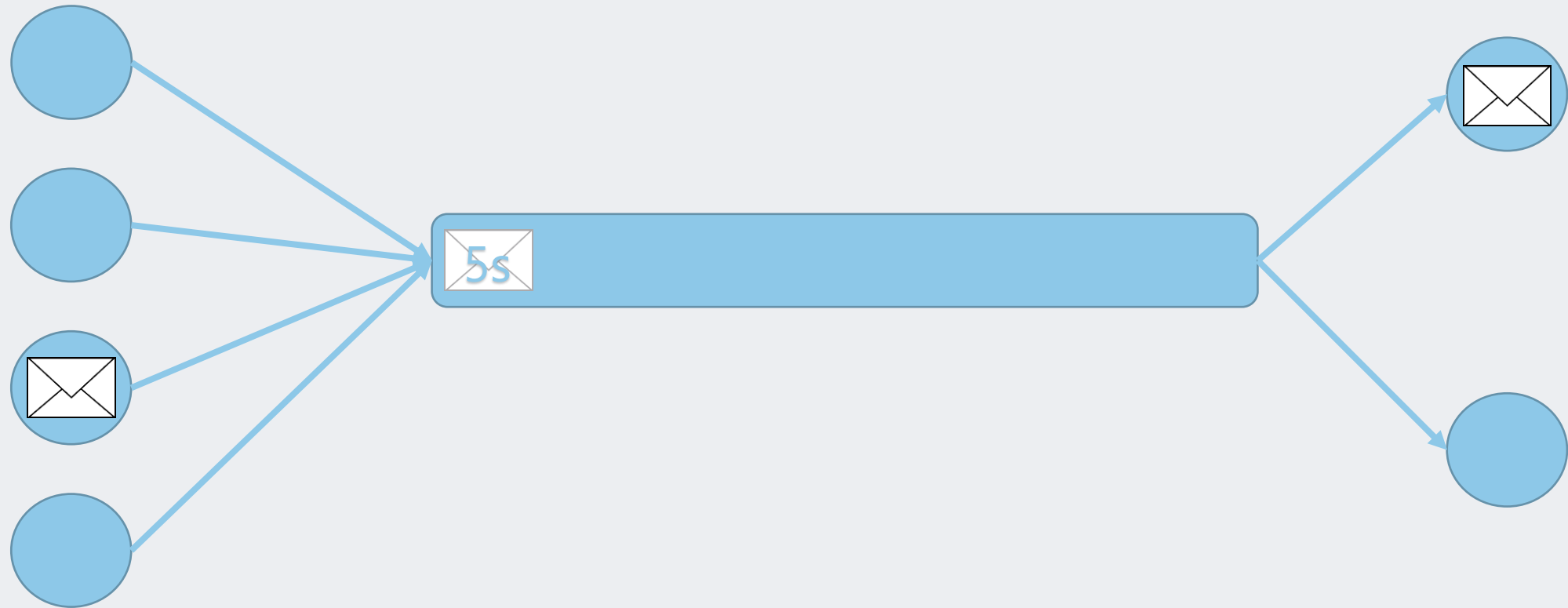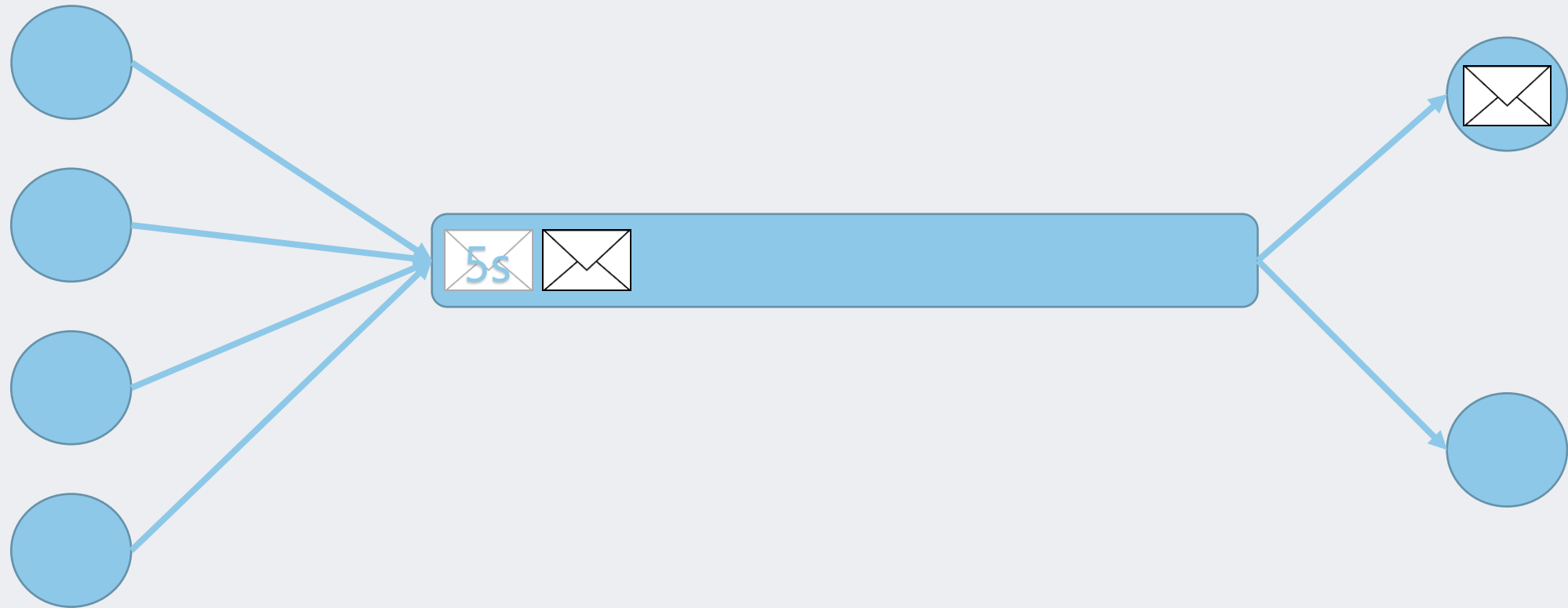# Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling

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Message Scheduling

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Message Scheduling
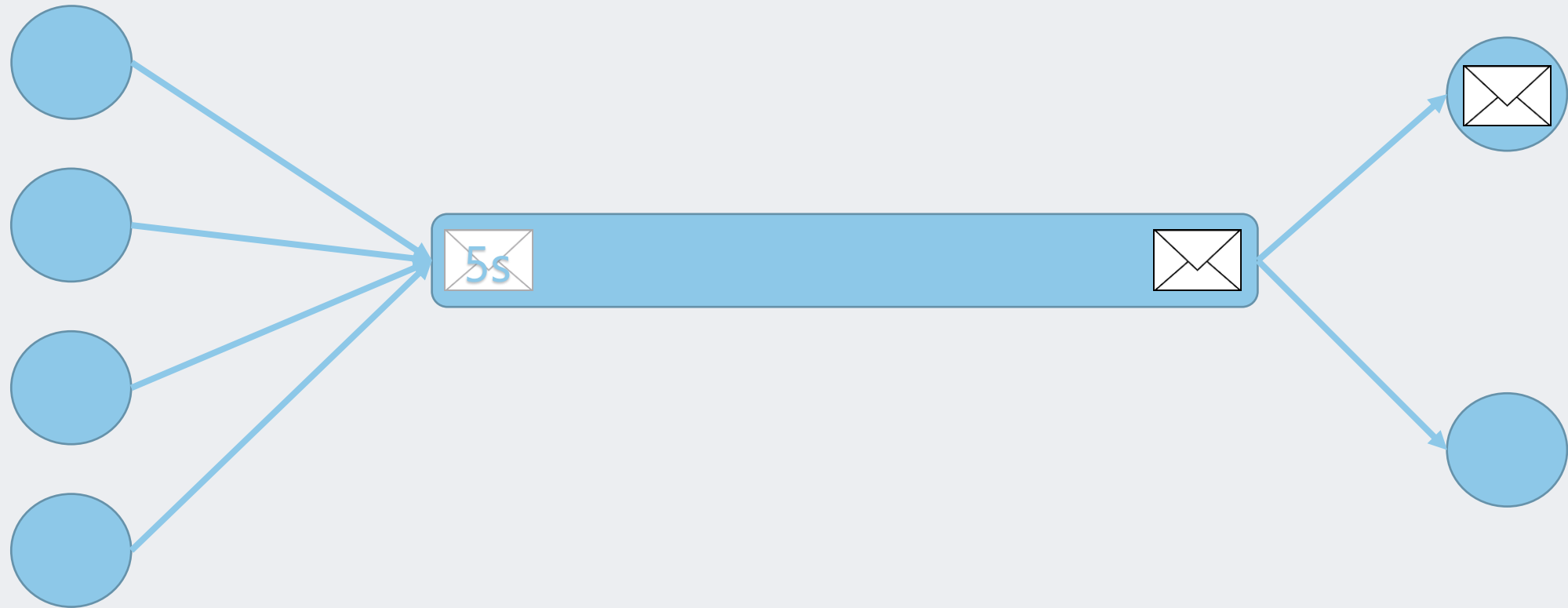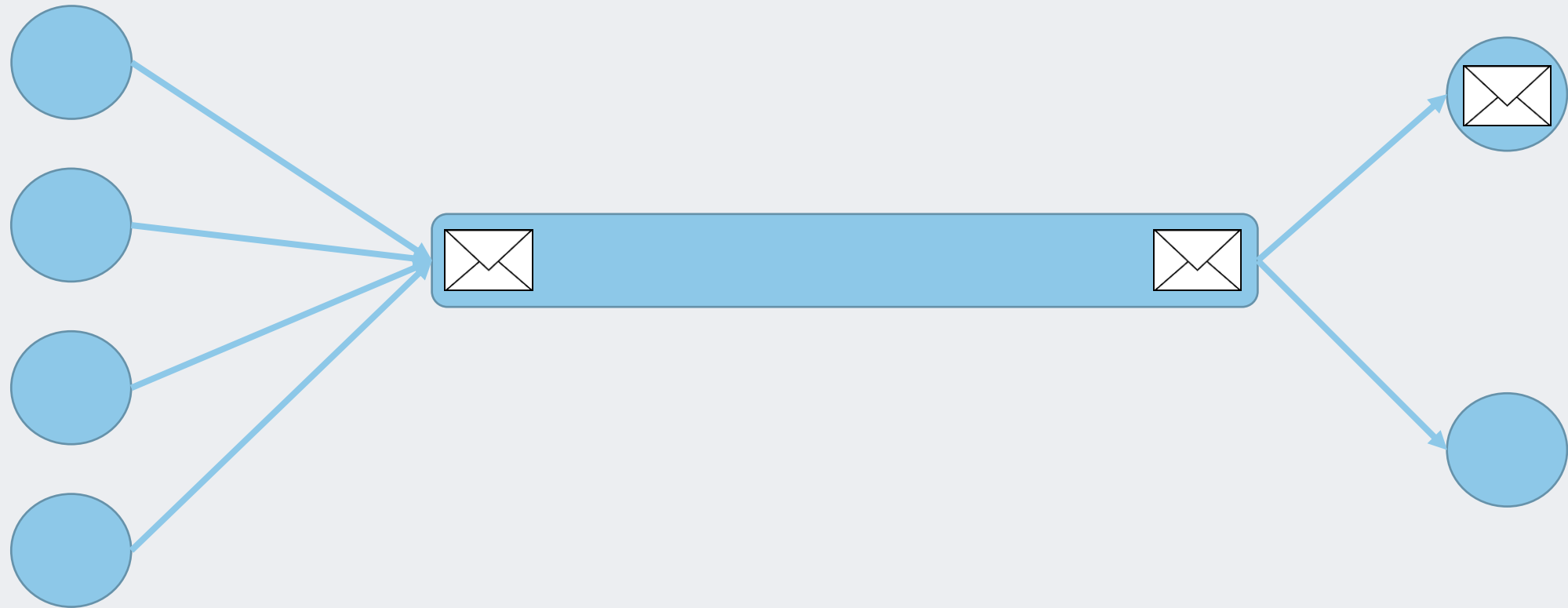
Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling

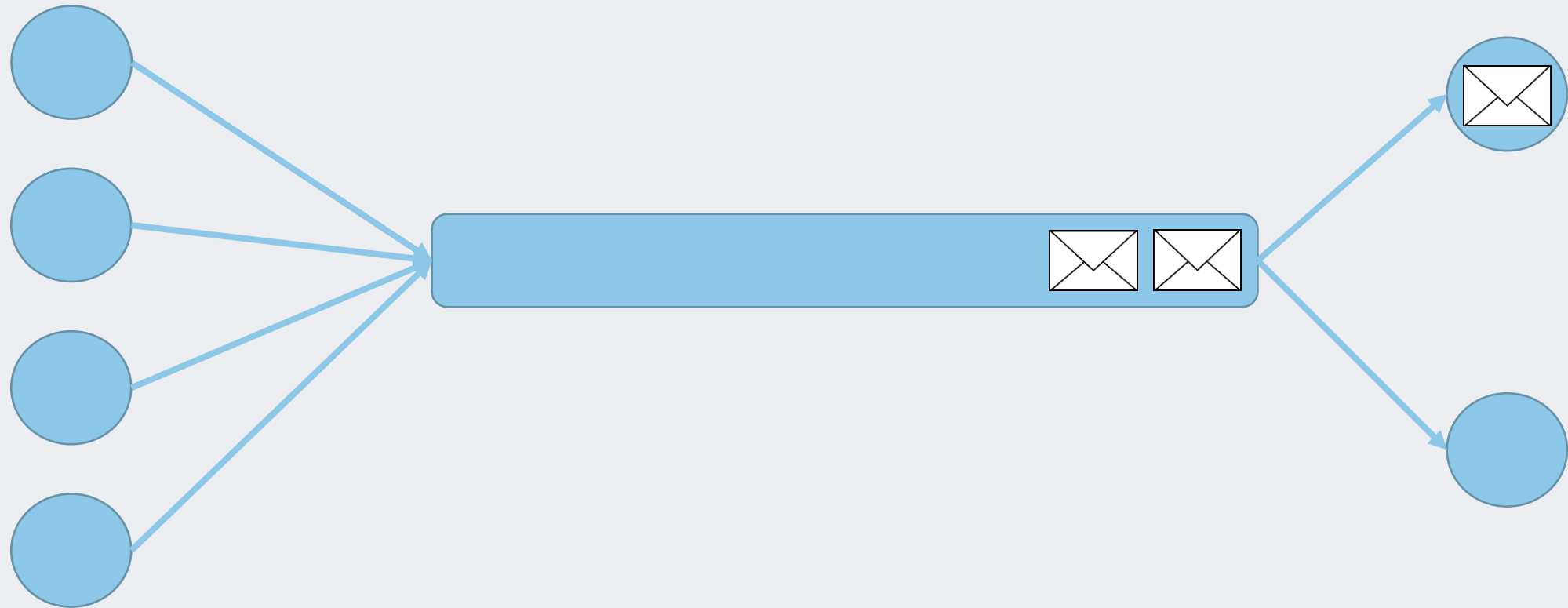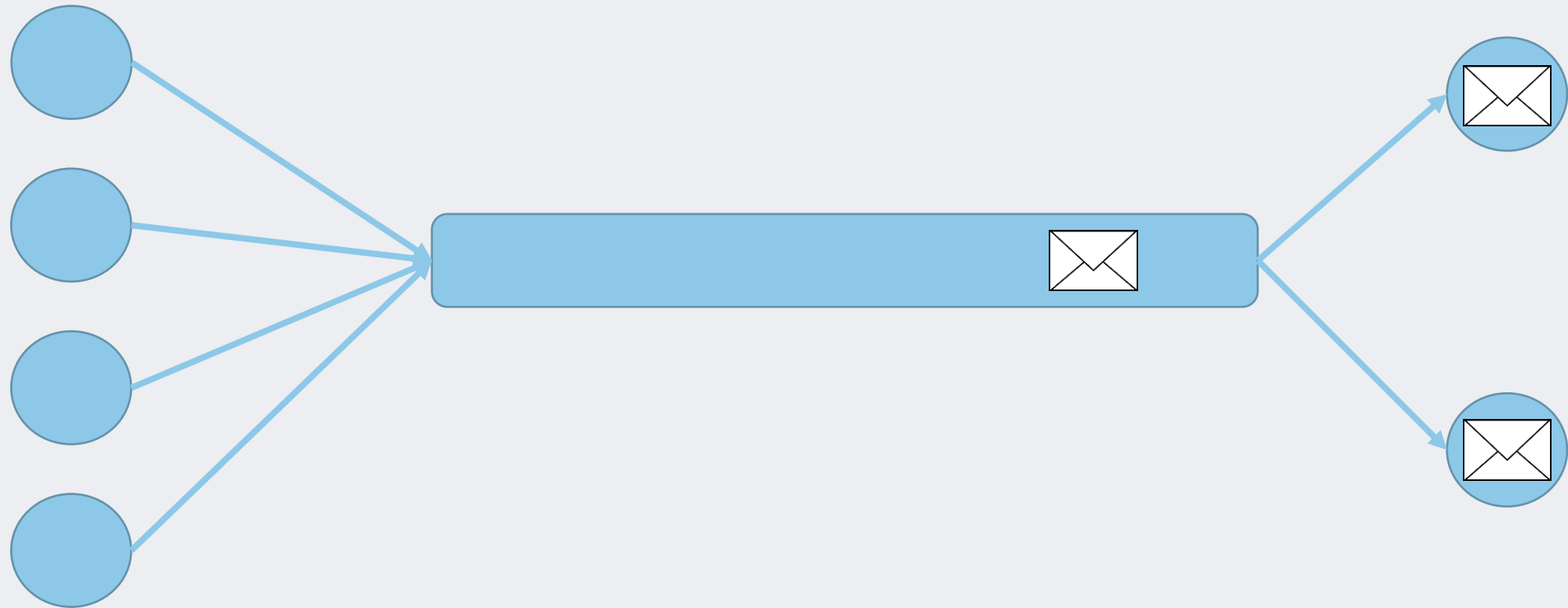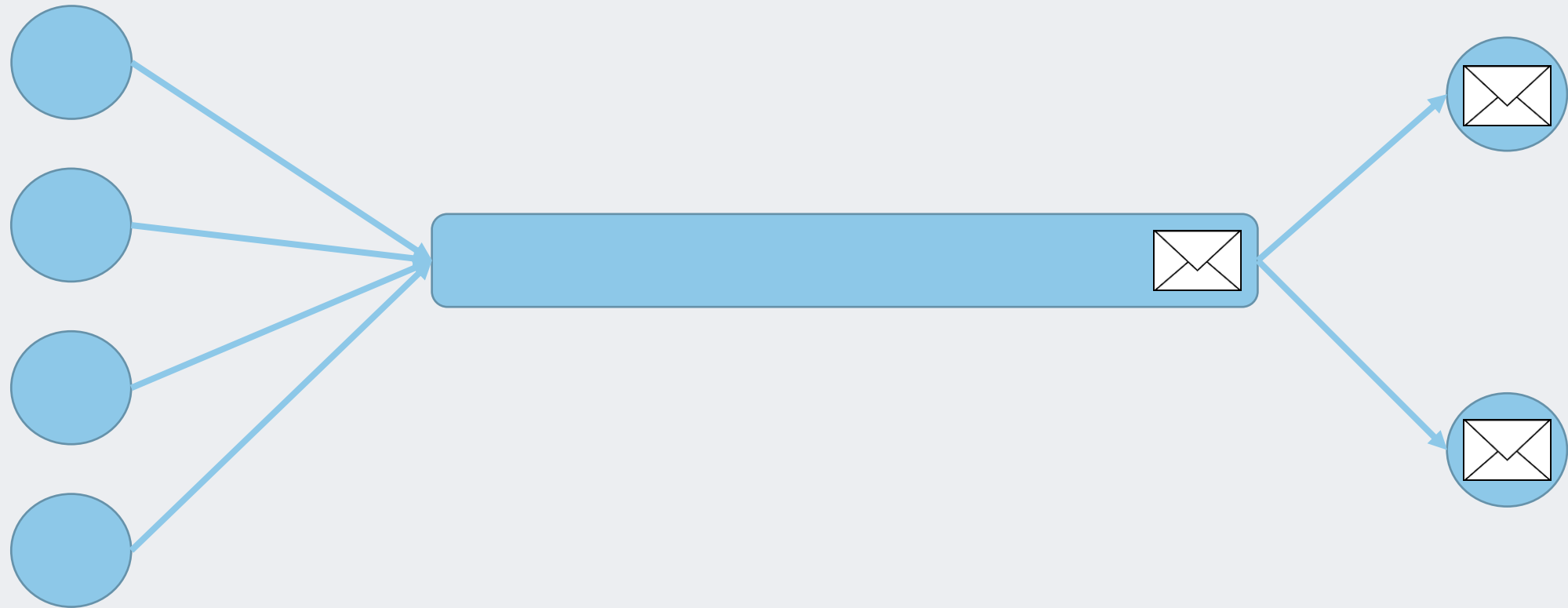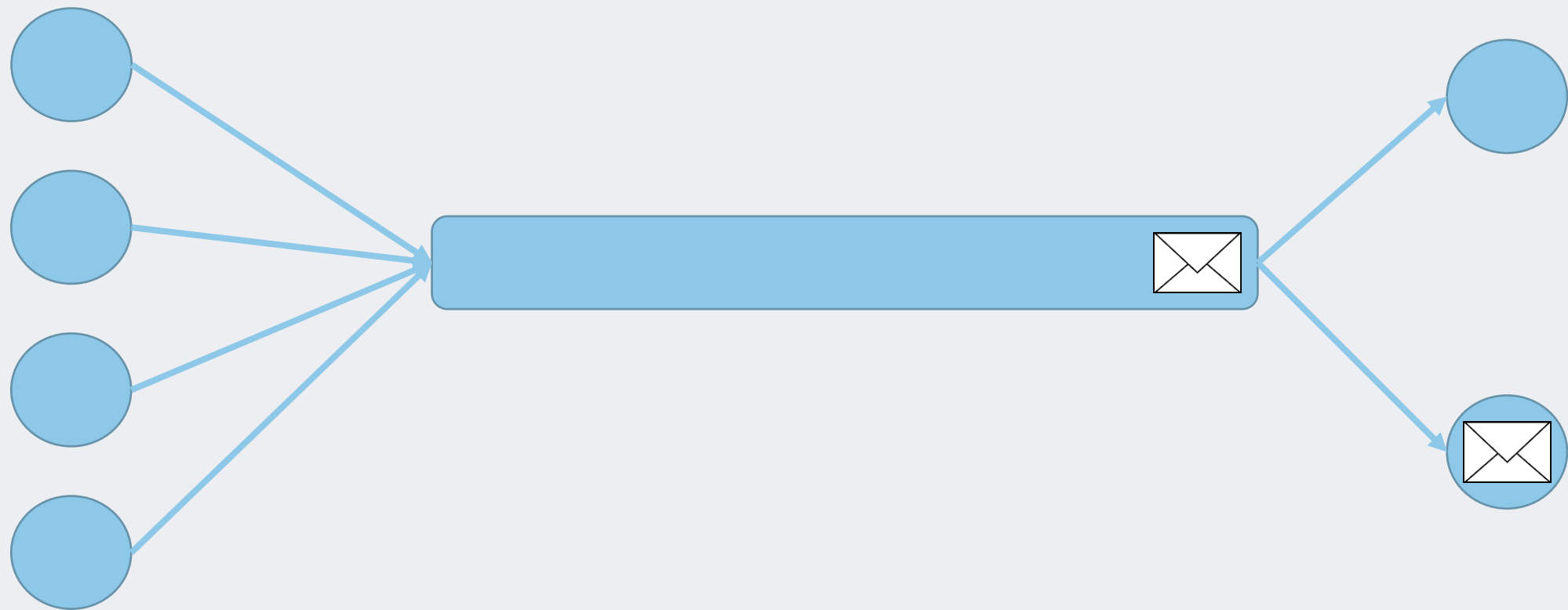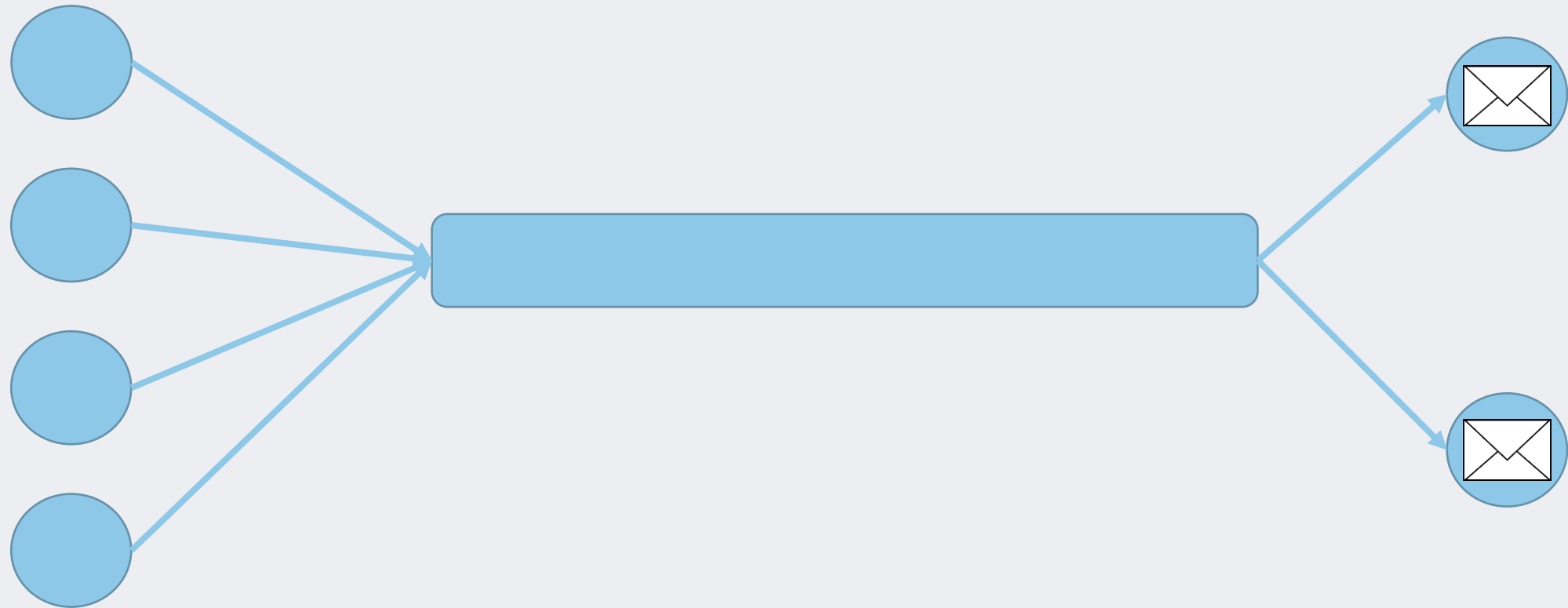# Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling

Message Scheduling
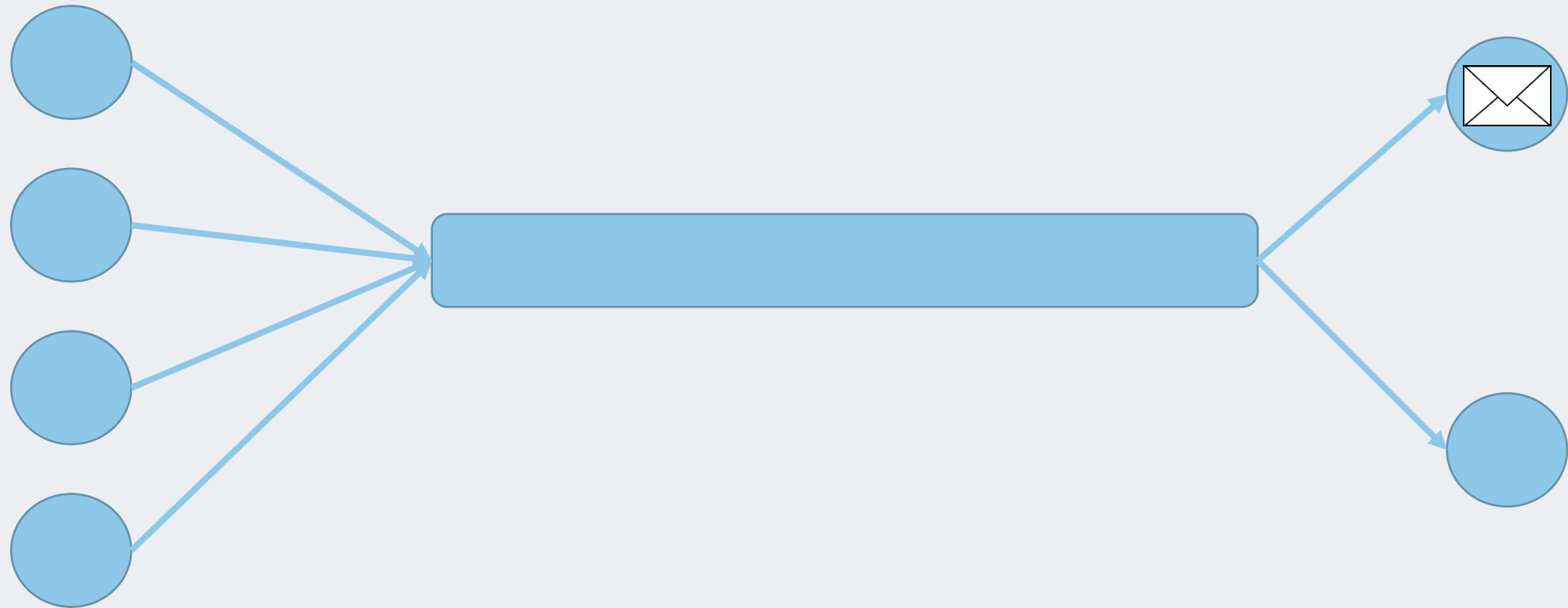
Message Scheduling
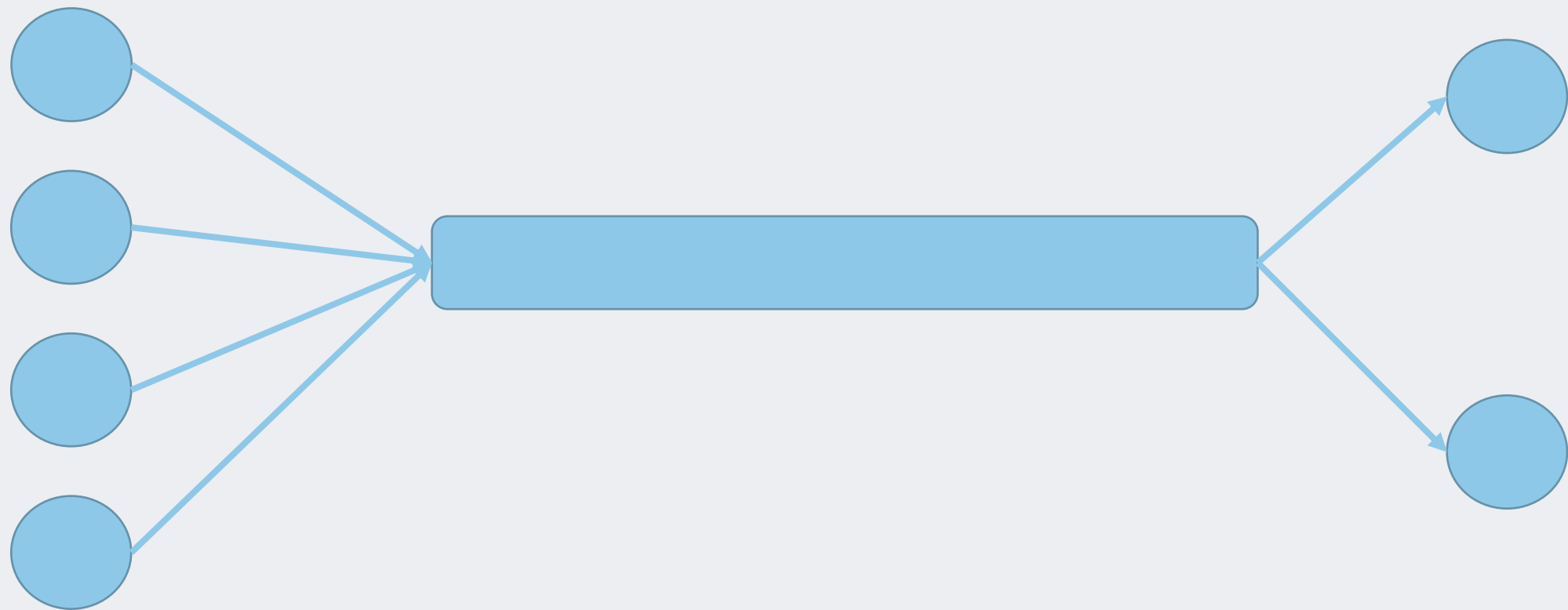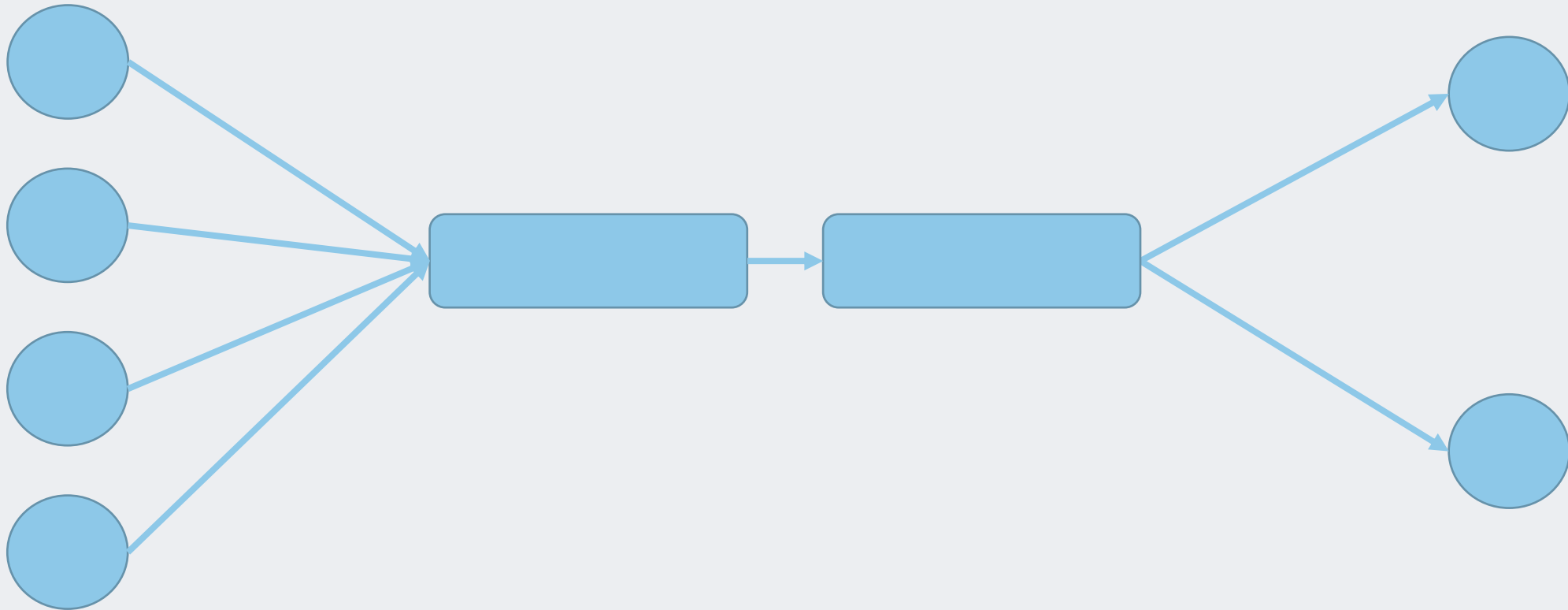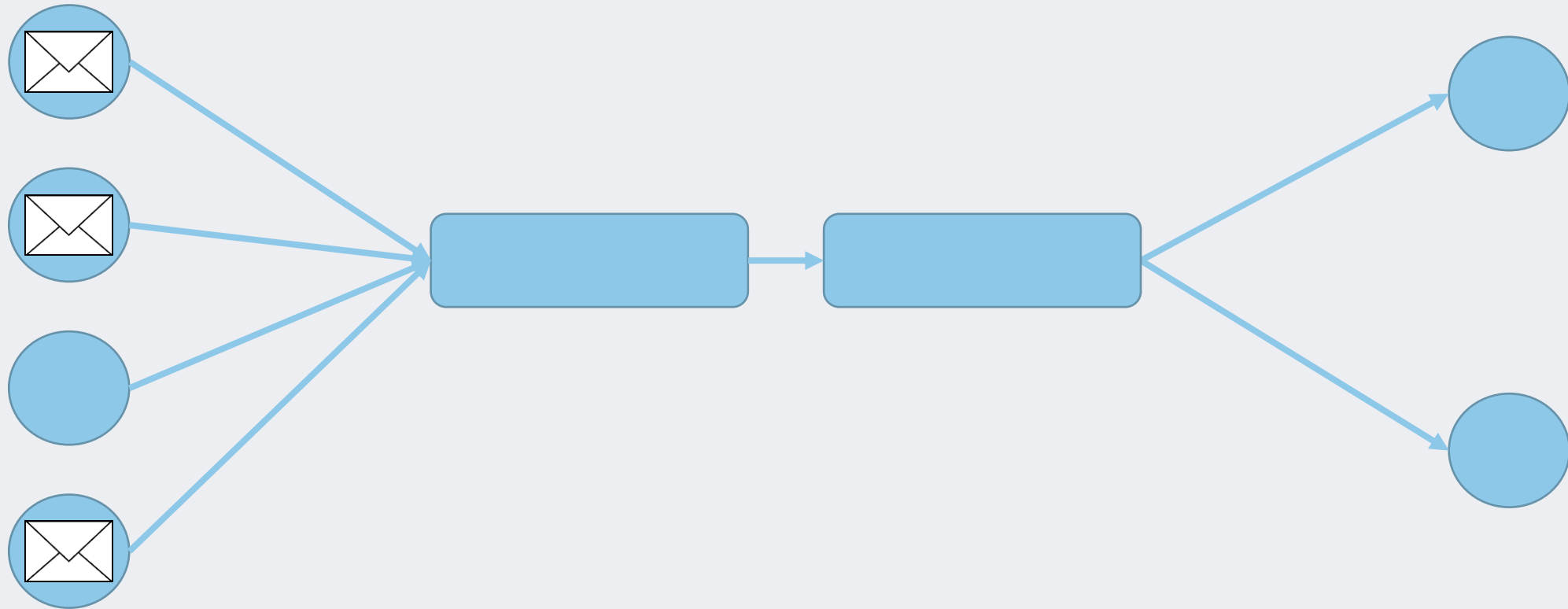
Transactional Queues

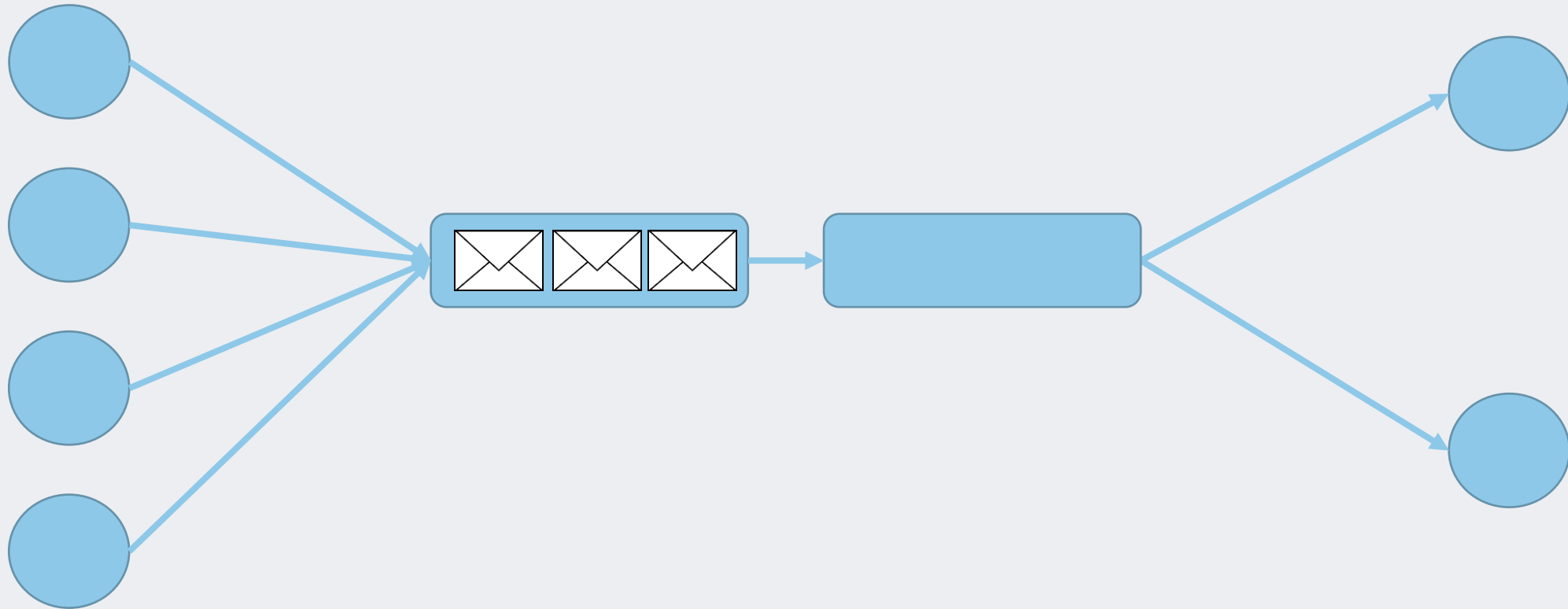https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-transactions
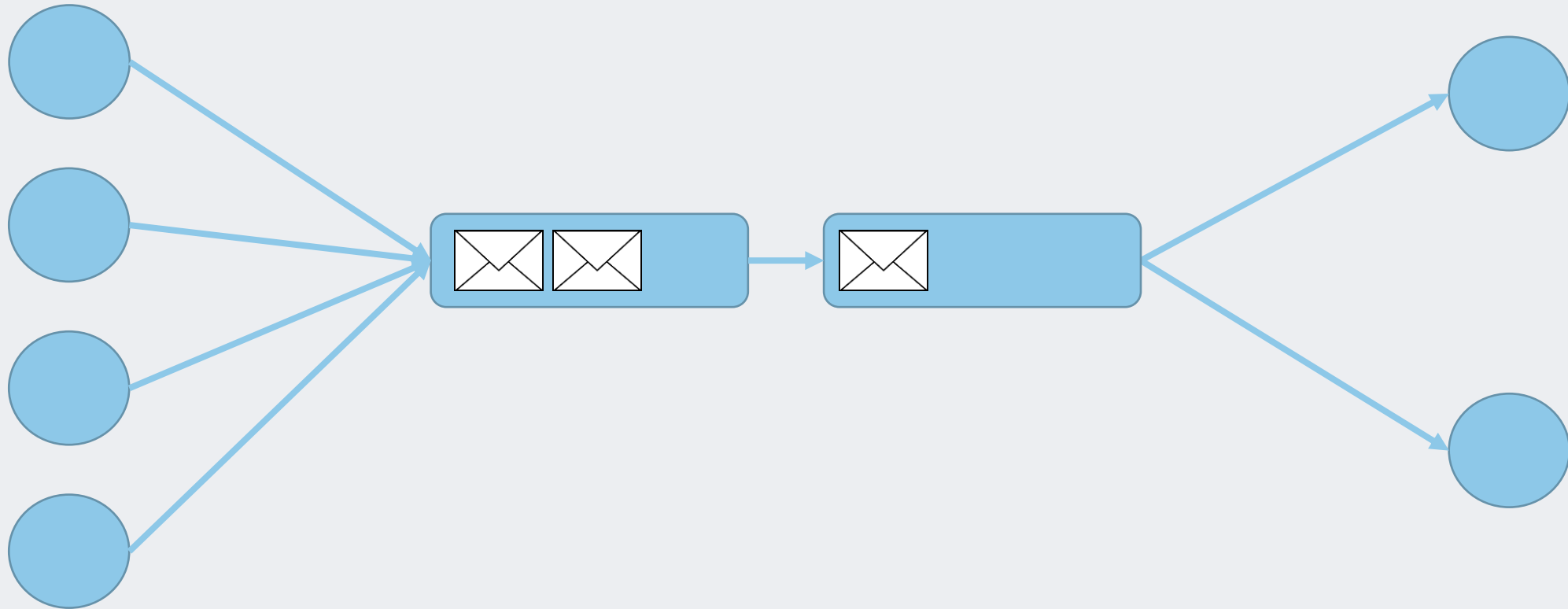
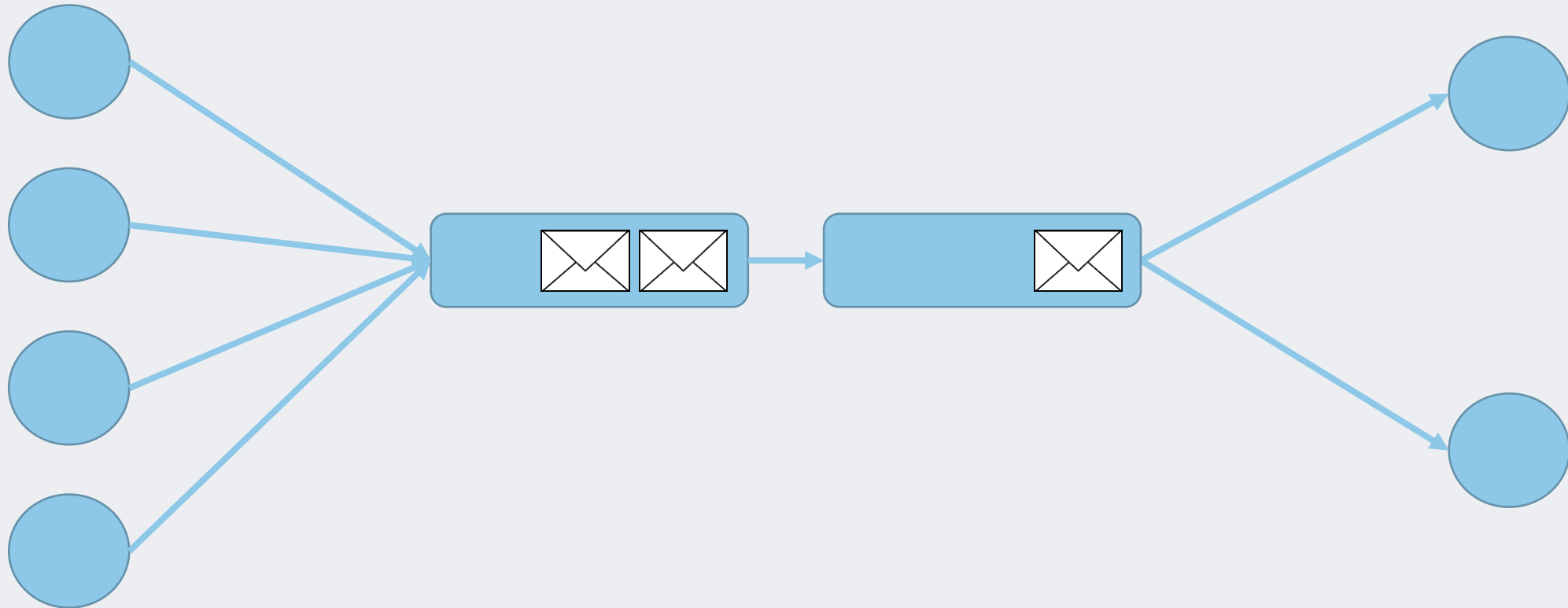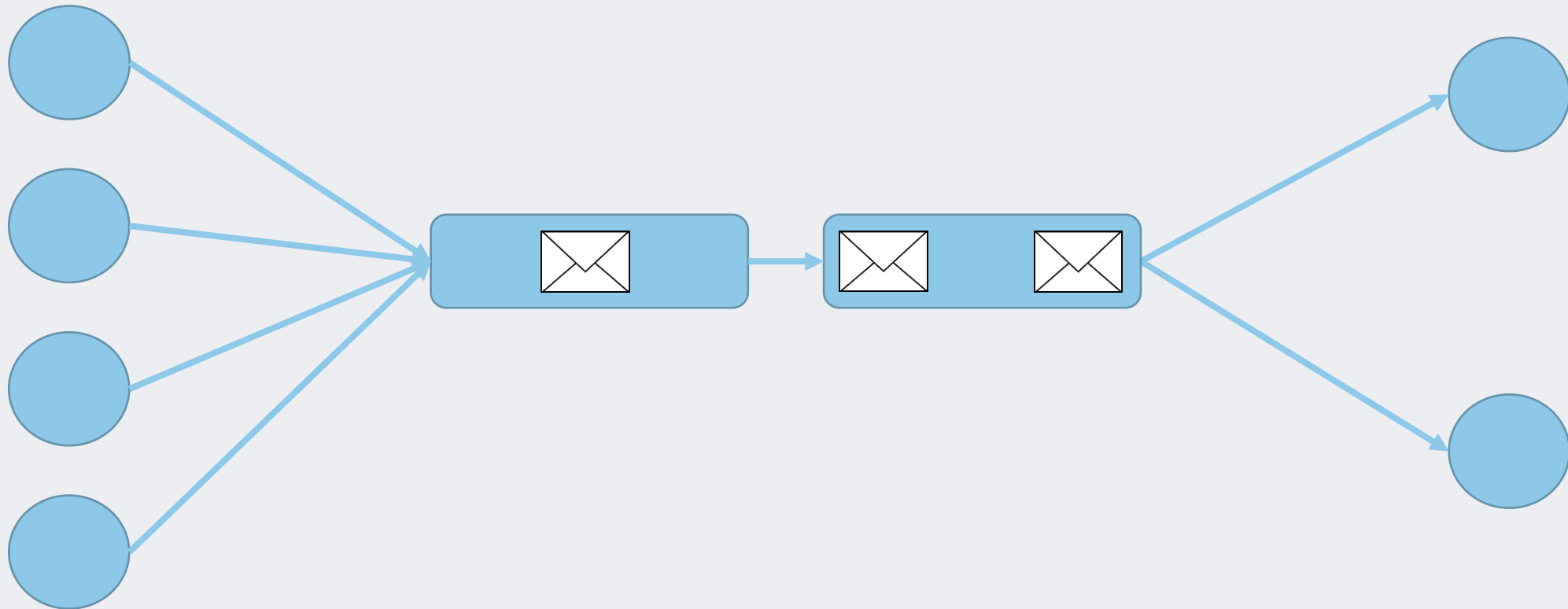# Transactional Queues

Transactional Queues

Transactional Queues

Transactional Queues

Transactional Queues

Transactional Queues

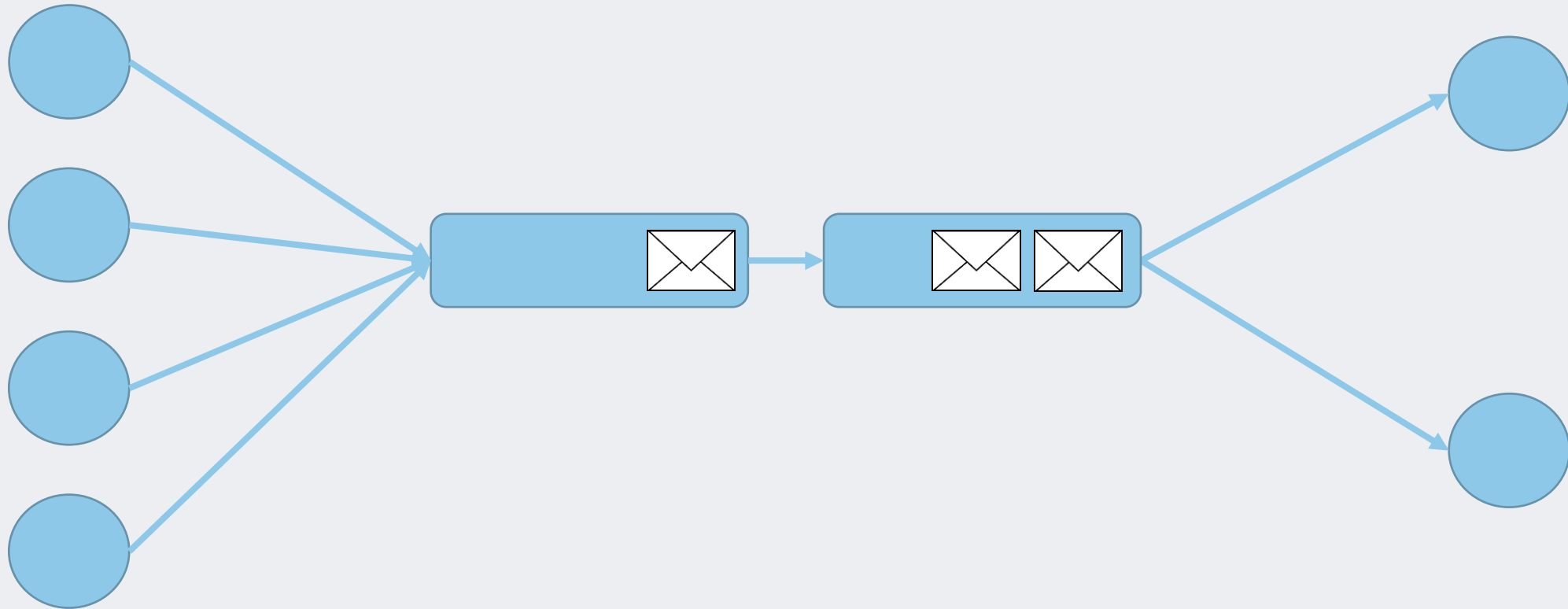# Transactional Queues

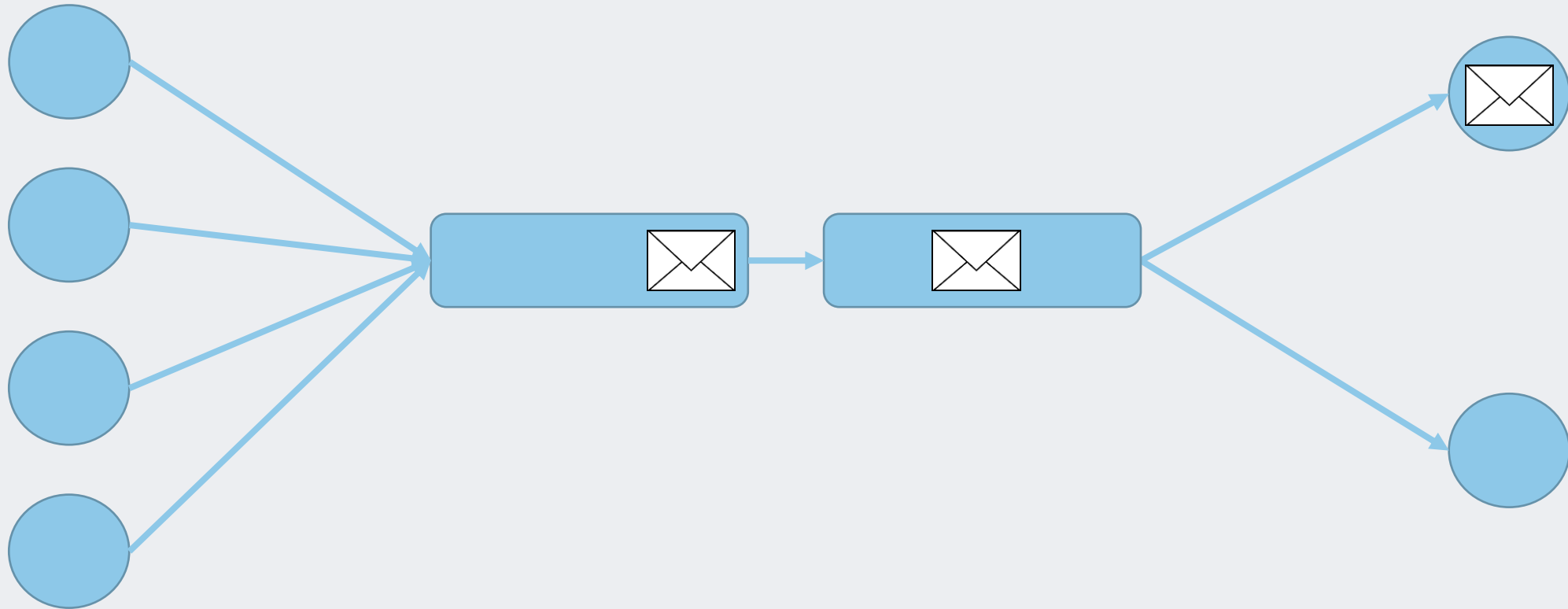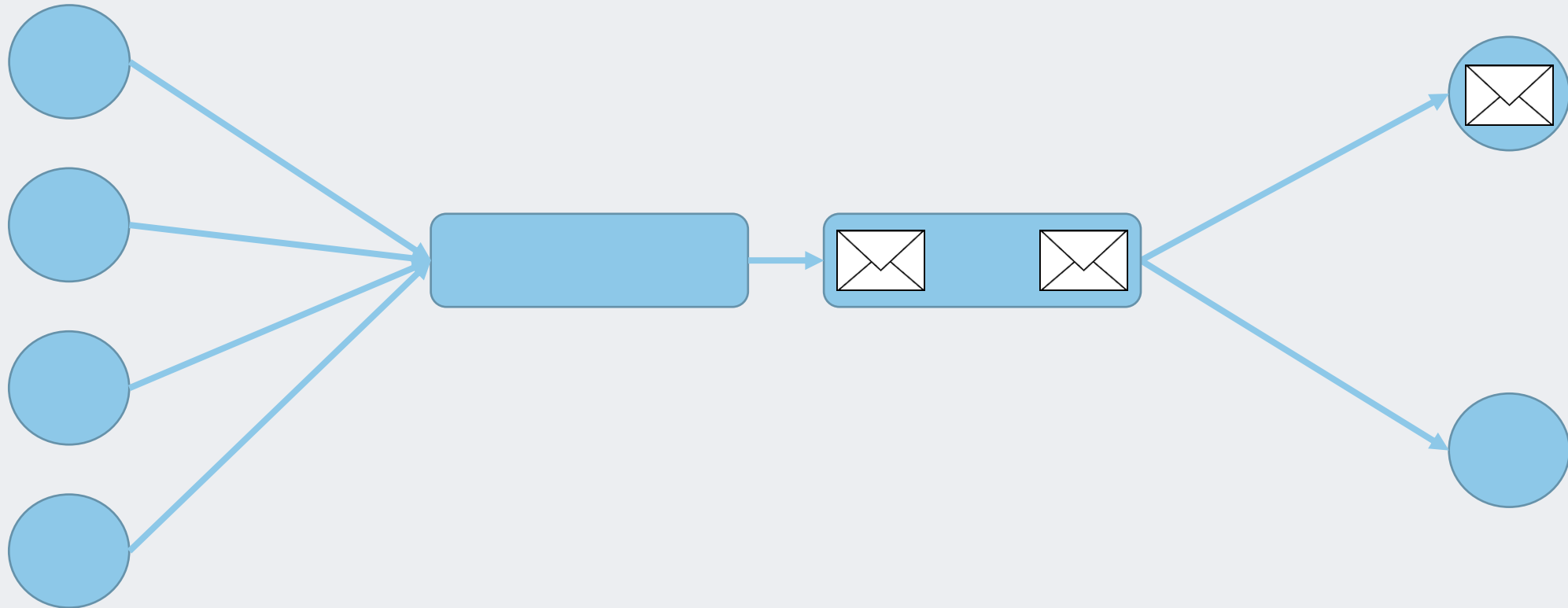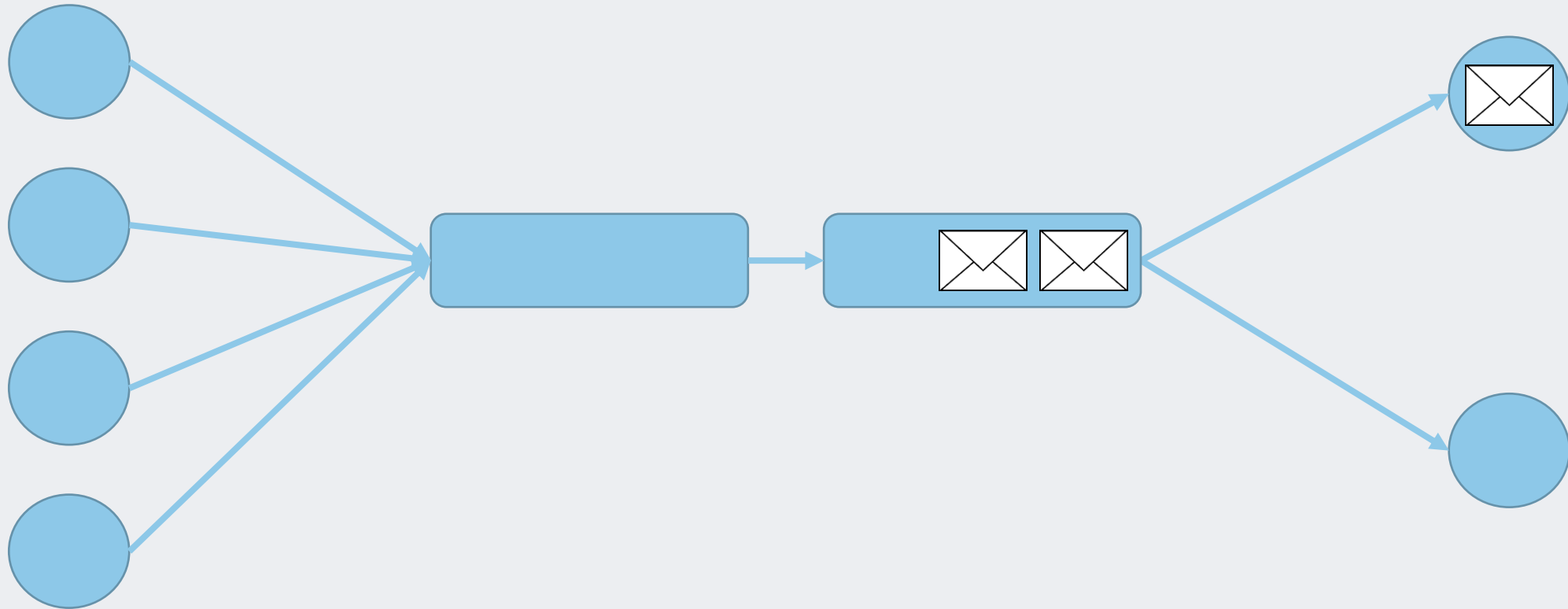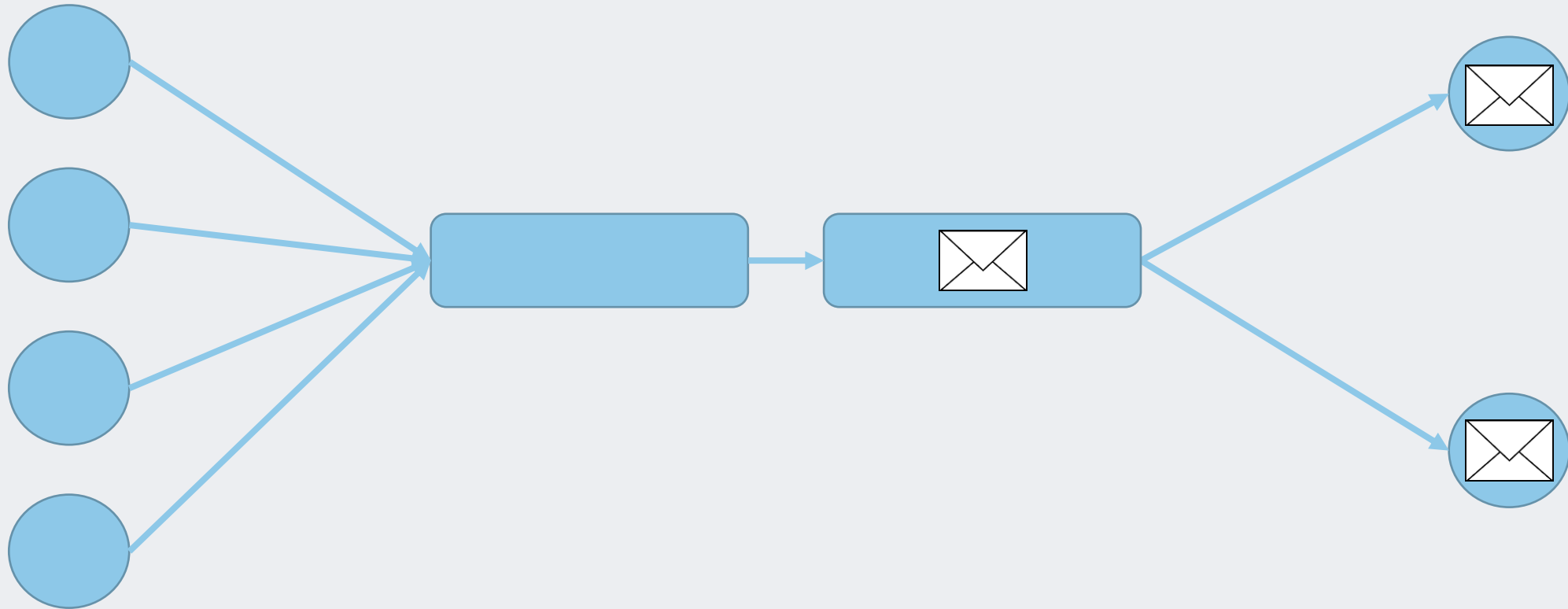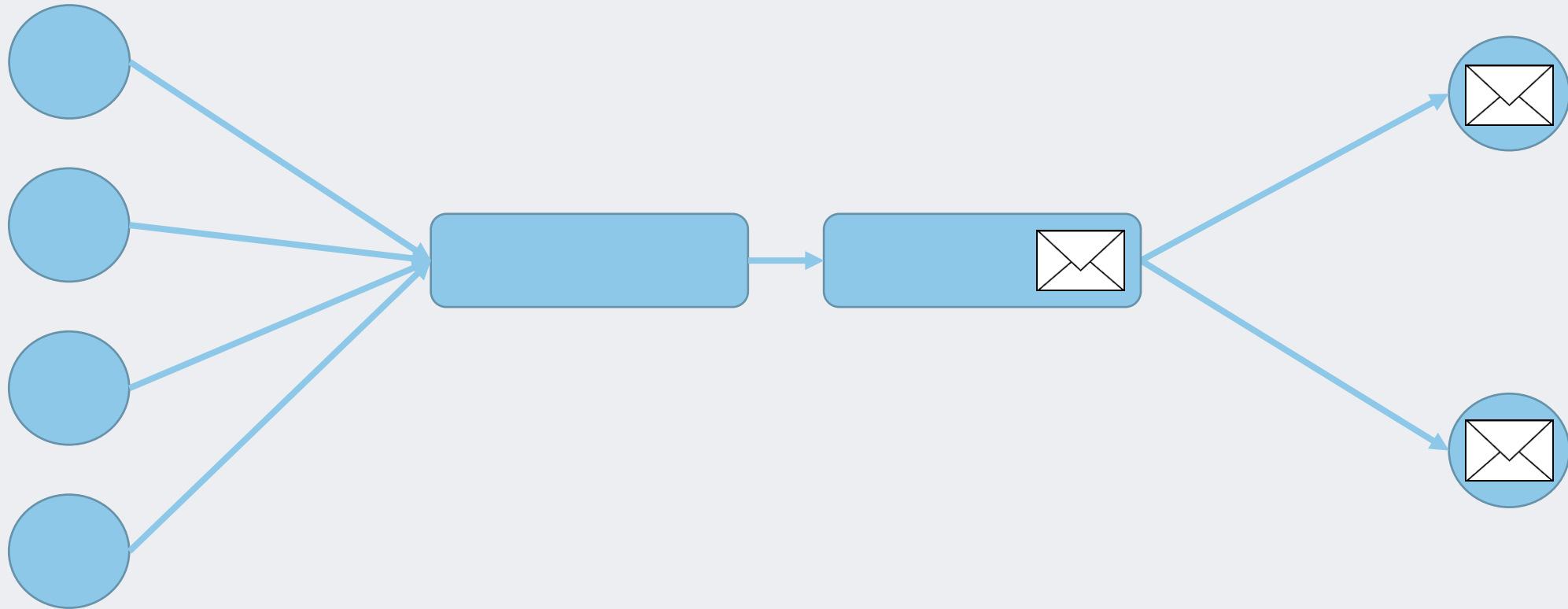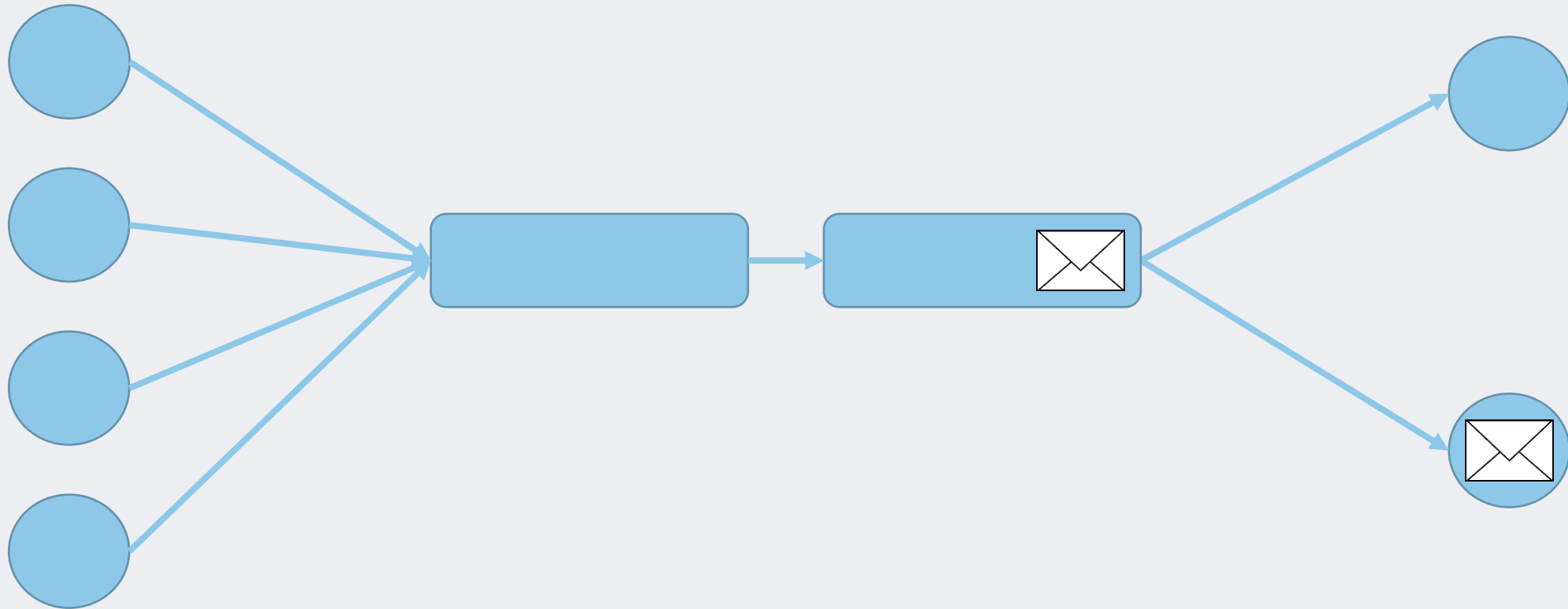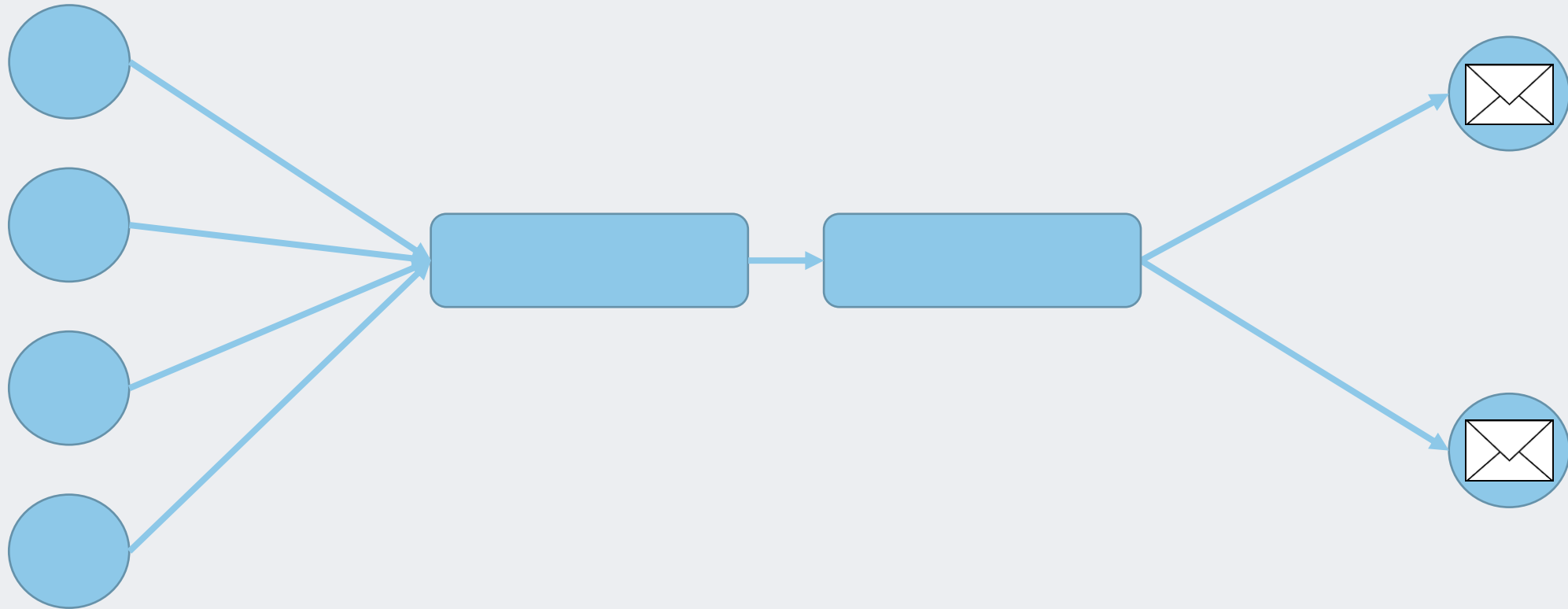# Transactional Queues

Transactional Queues

Transactional Queues

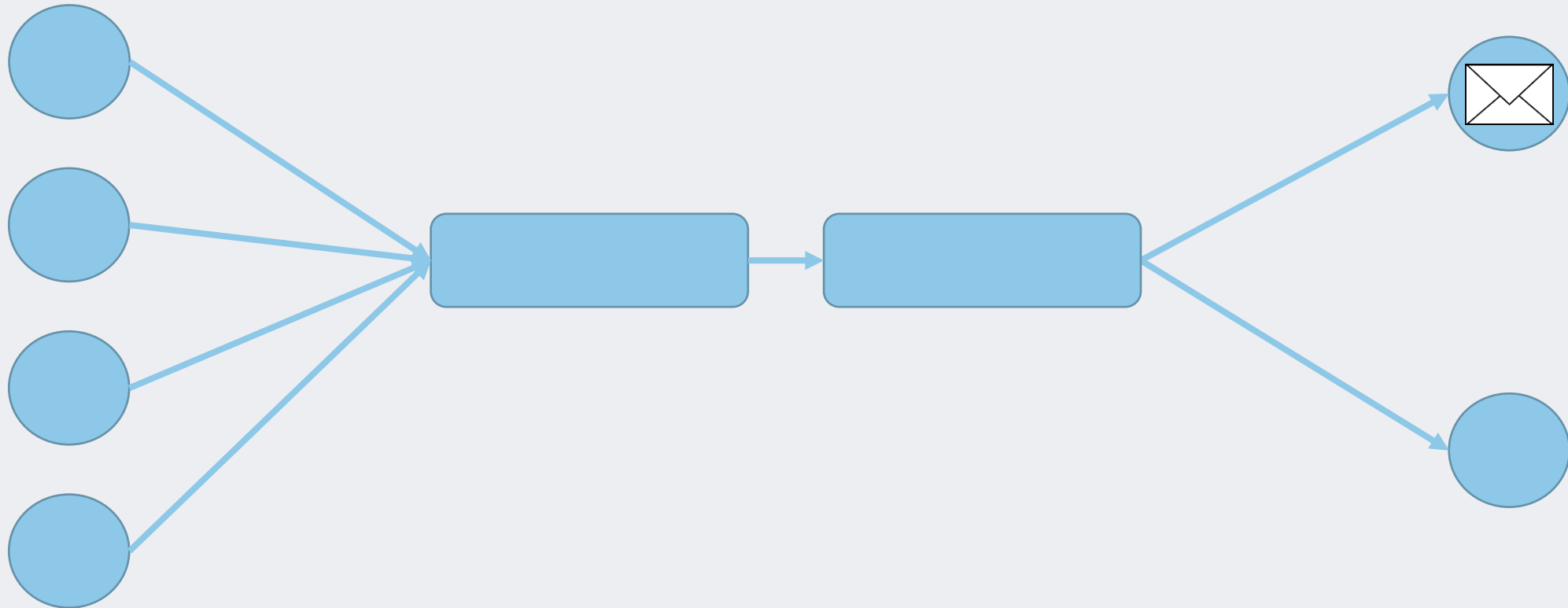# Transactional Queues

Transactional Queues

Transactional Queues

Transactional Queues
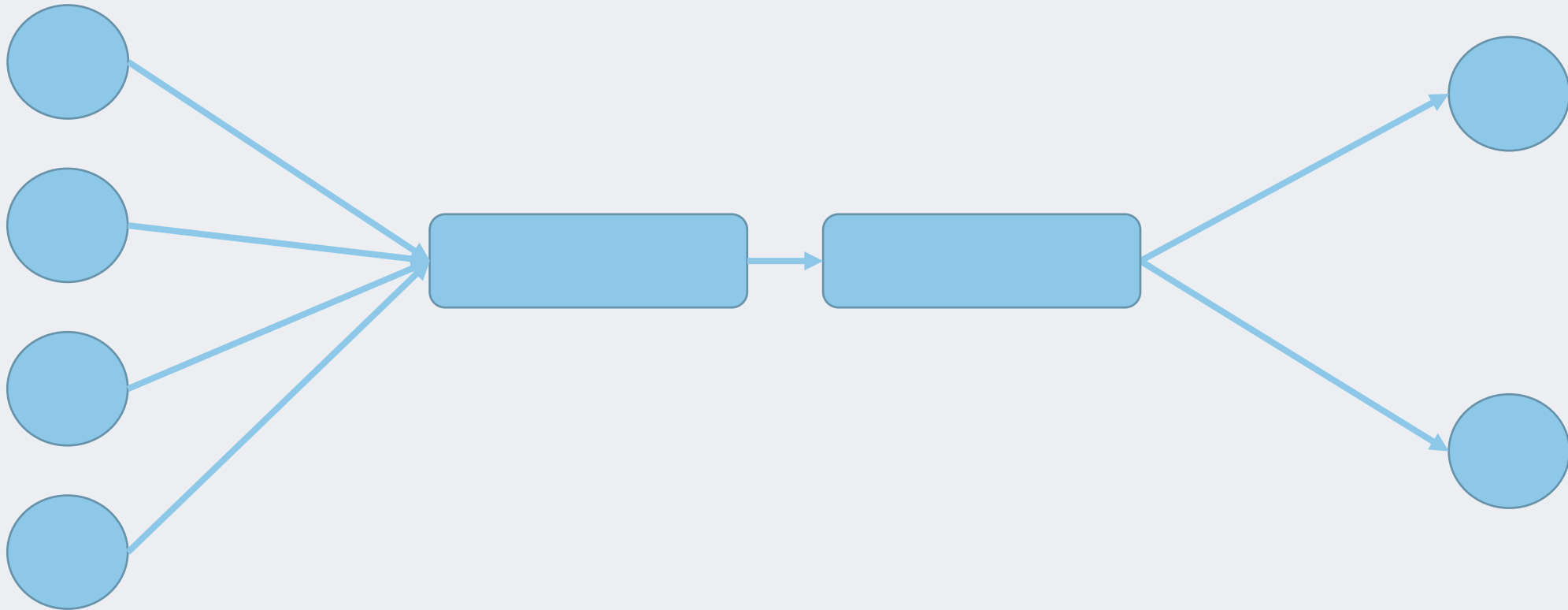
Transactional Queues

Transactional Queues

Asynchronous Request-Reply

https://docs.microsoft.com/en-us/azure/architecture/patterns/async-request-reply
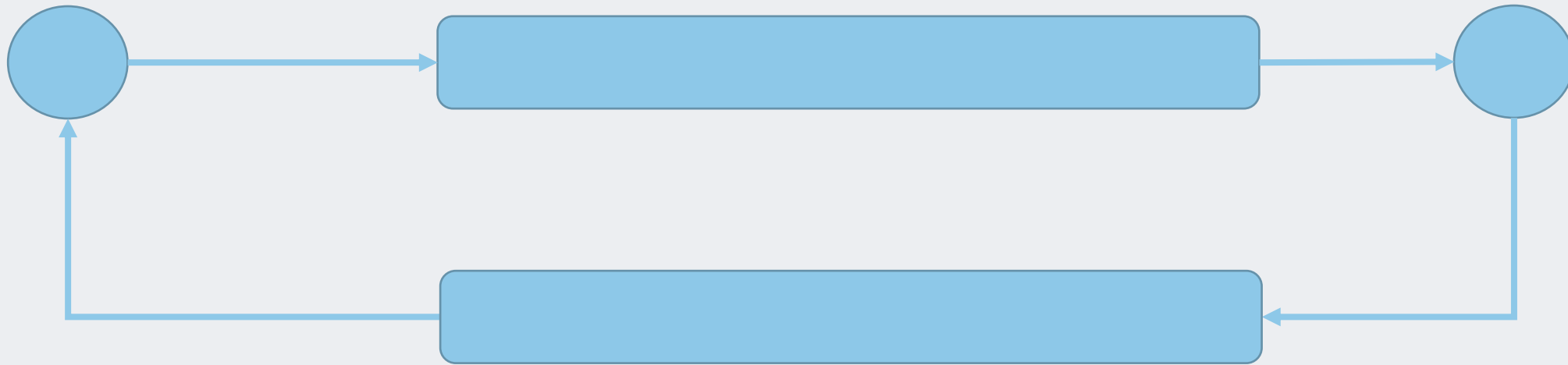
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Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply
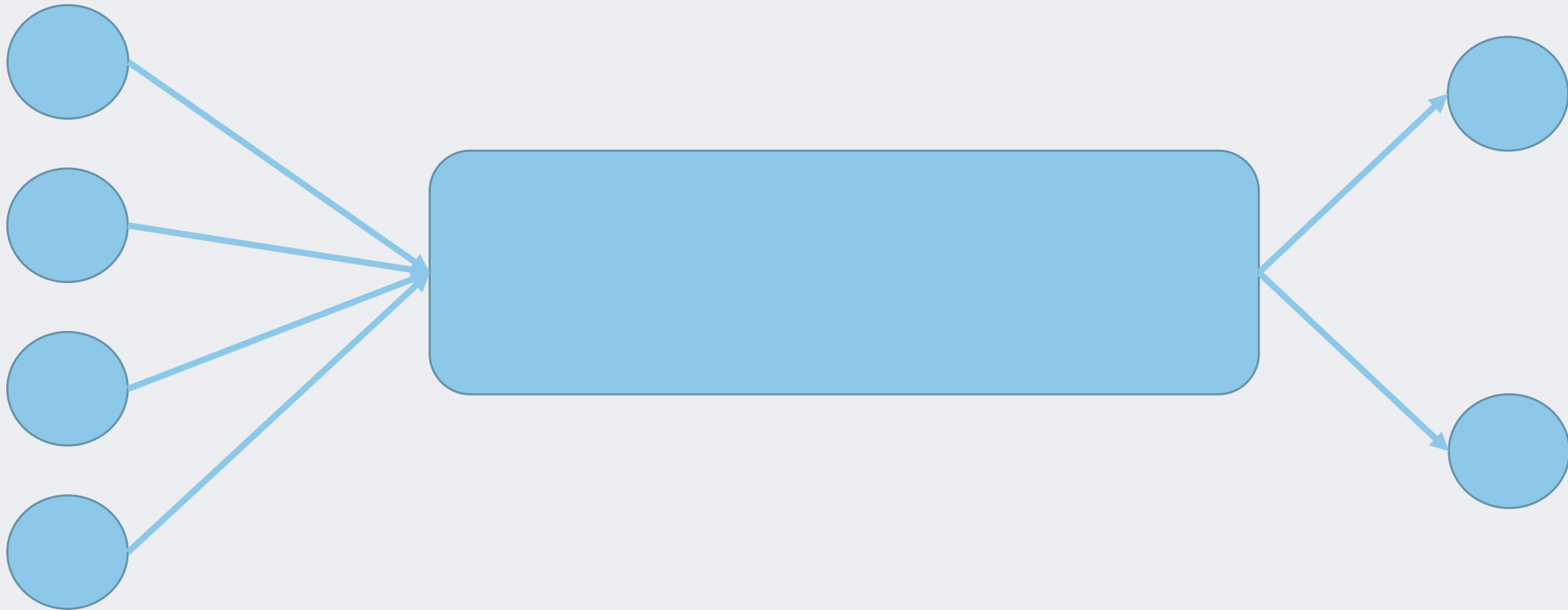
Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply

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Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply

Asynchronous Request-Reply

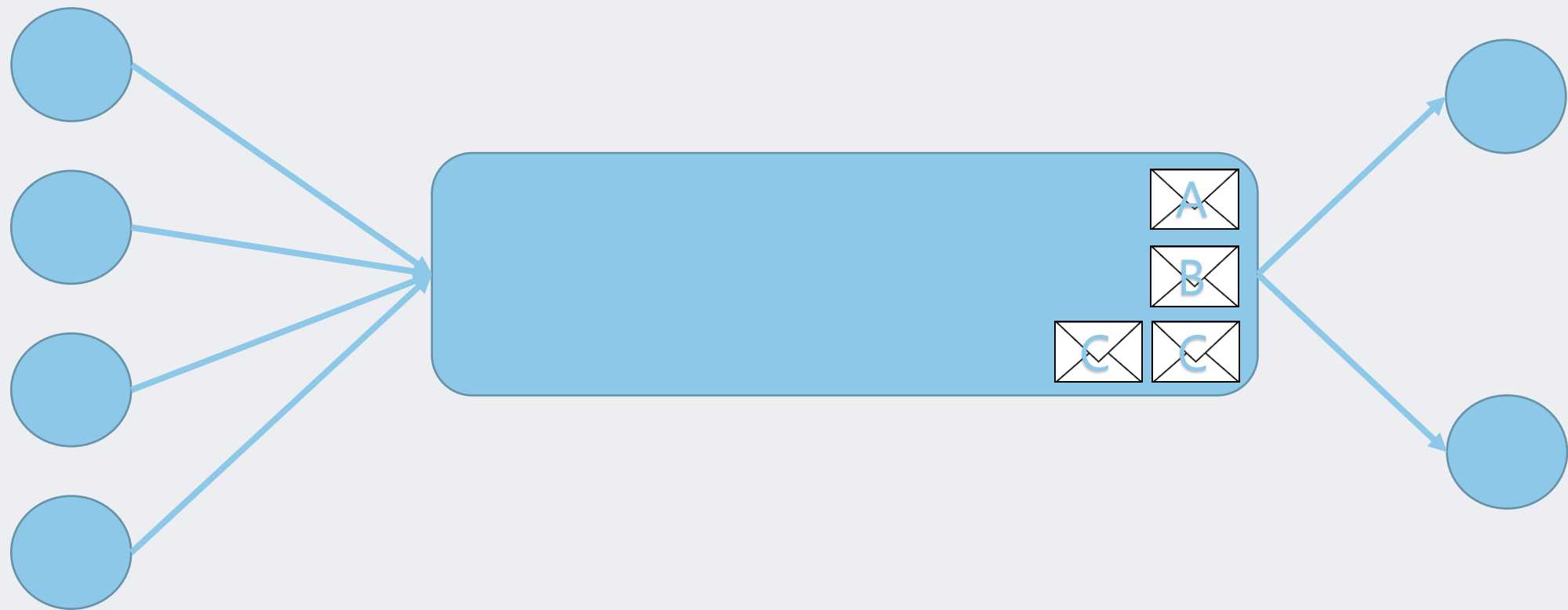# Asynchronous Request-Reply

Sequential Convoy

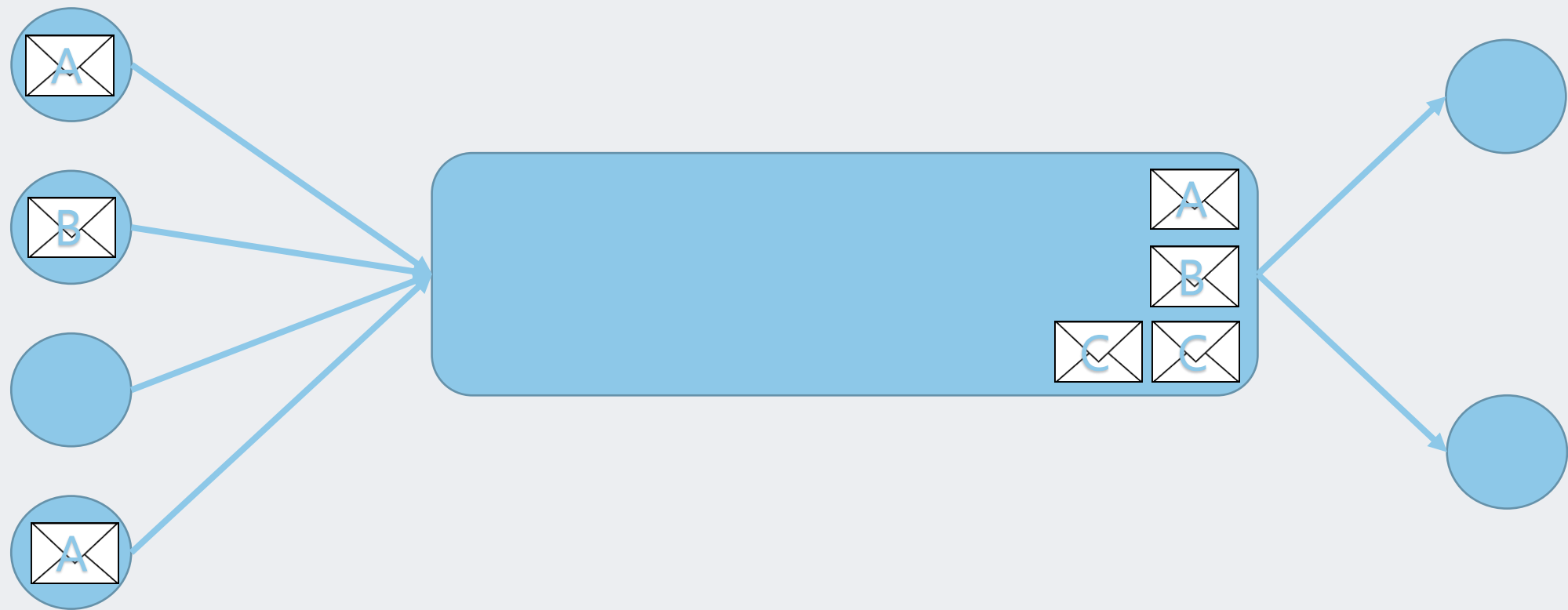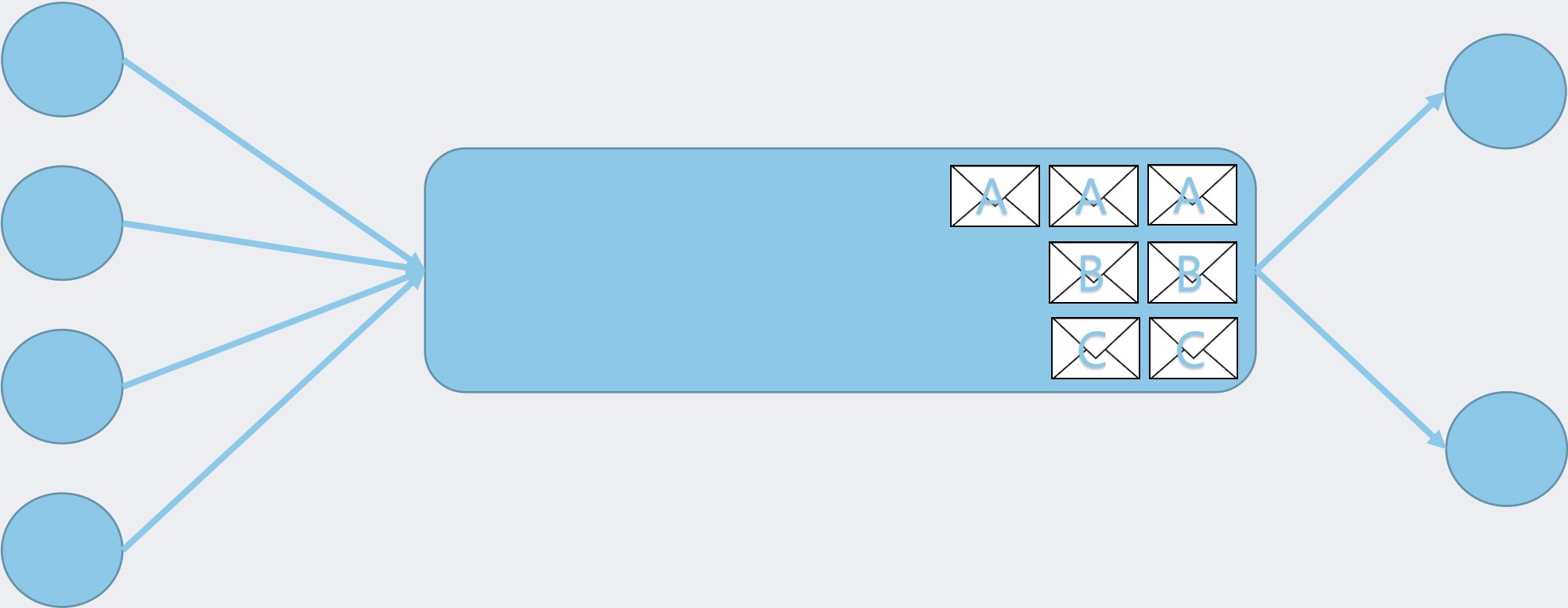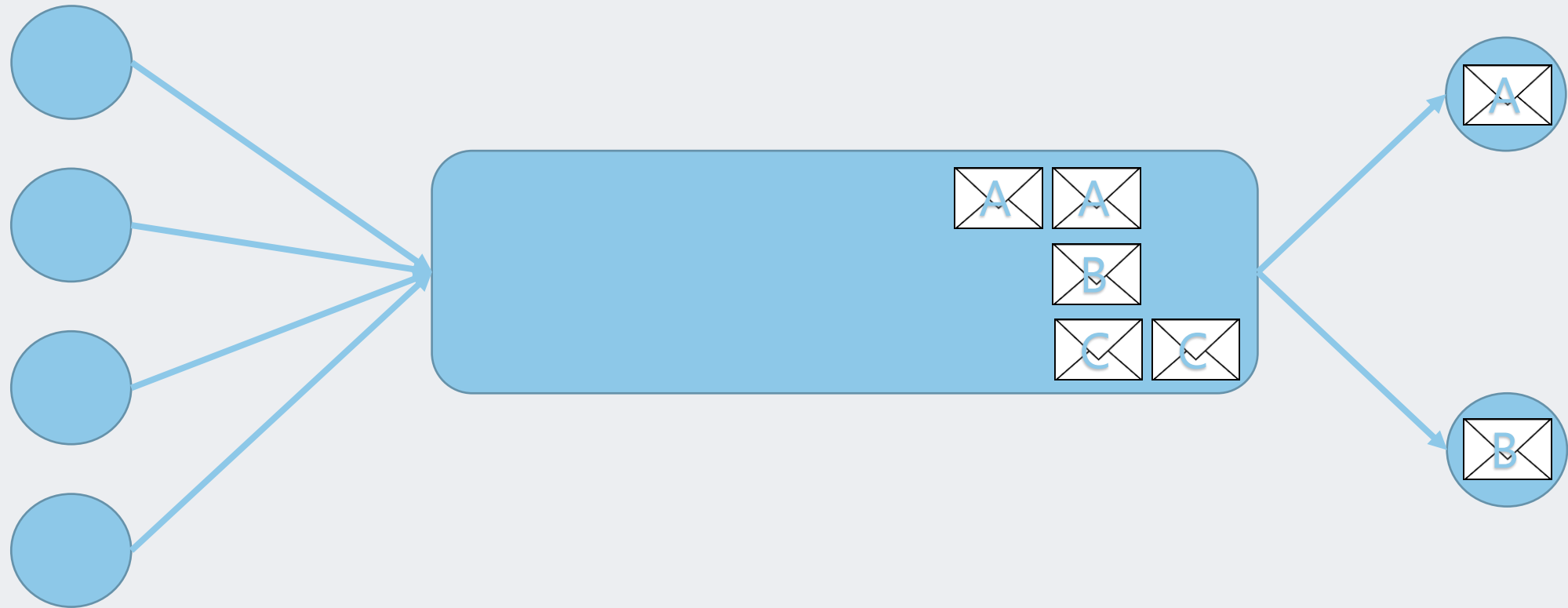https://docs.microsoft.com/en-us/azure/architecture/patterns/sequential-convoy
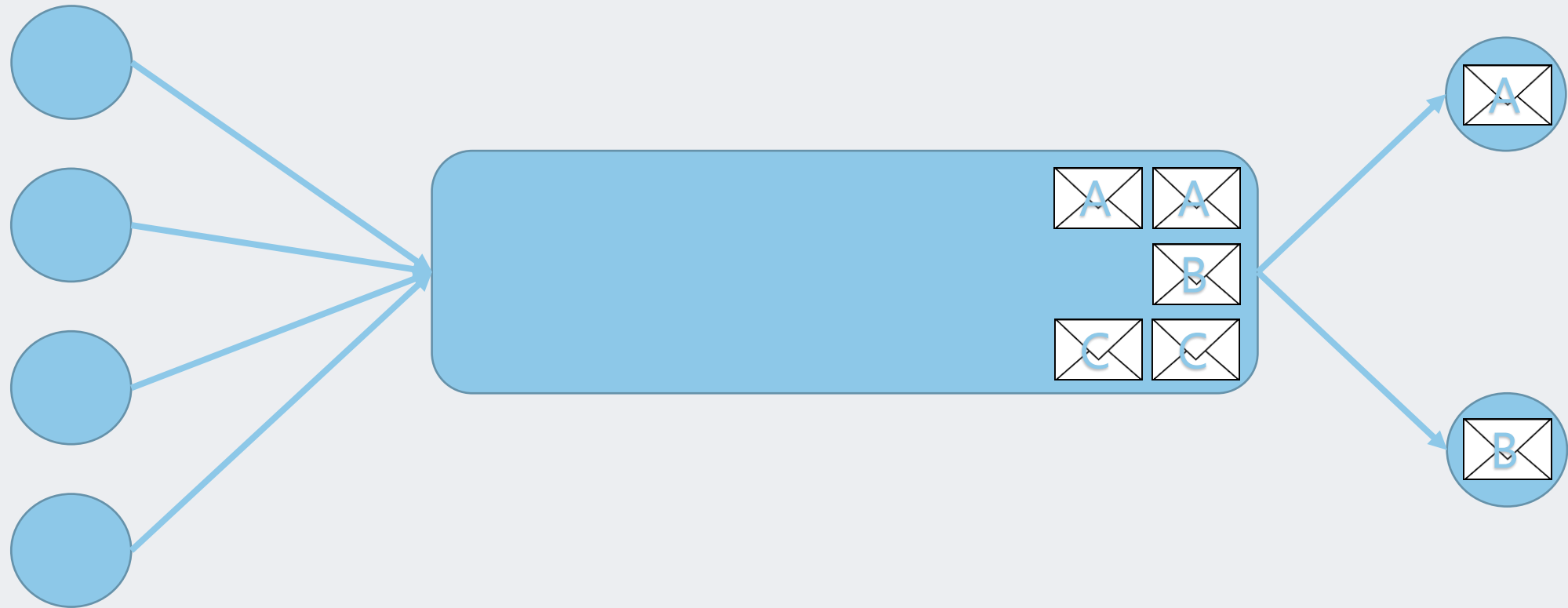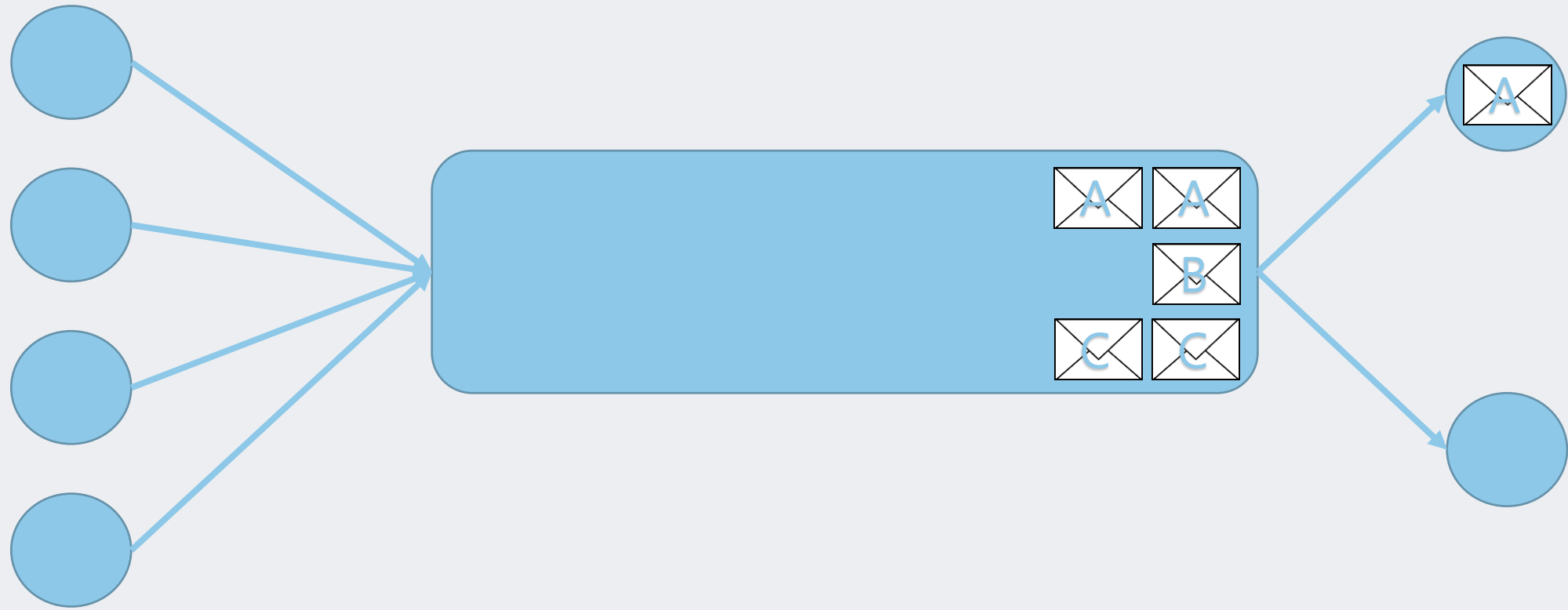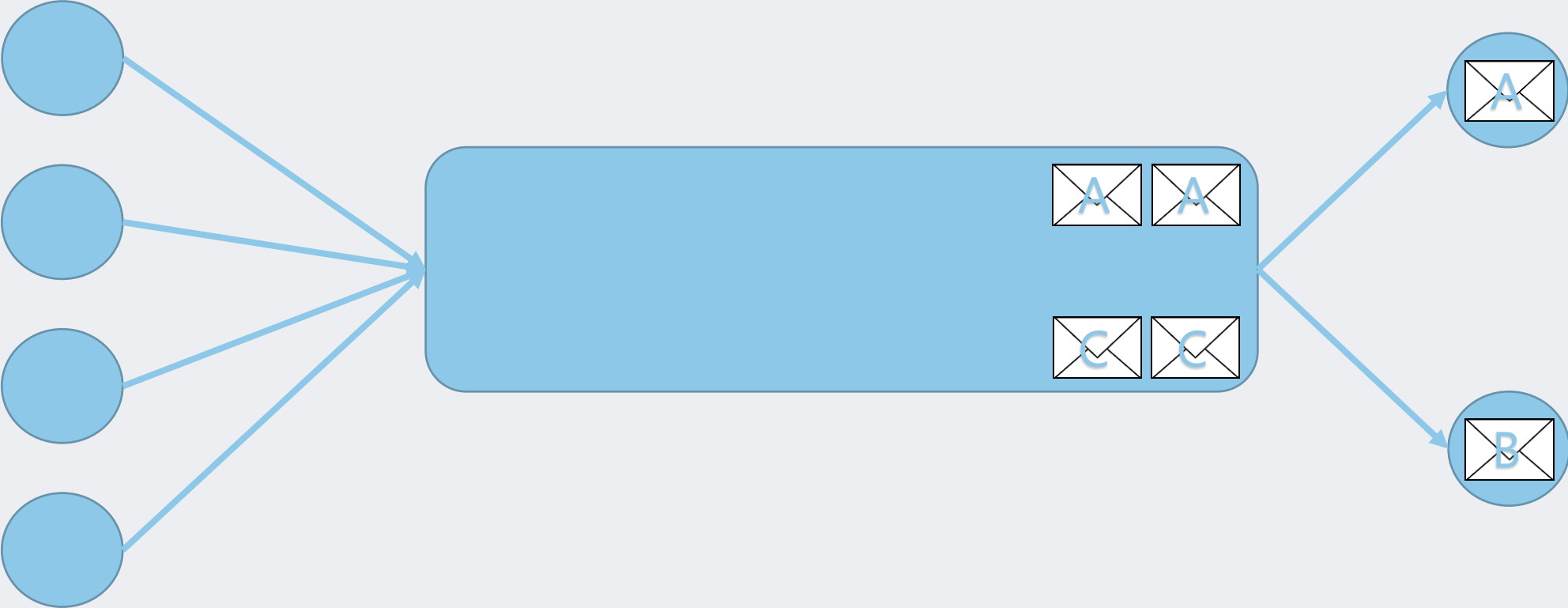
Sequential Convoy
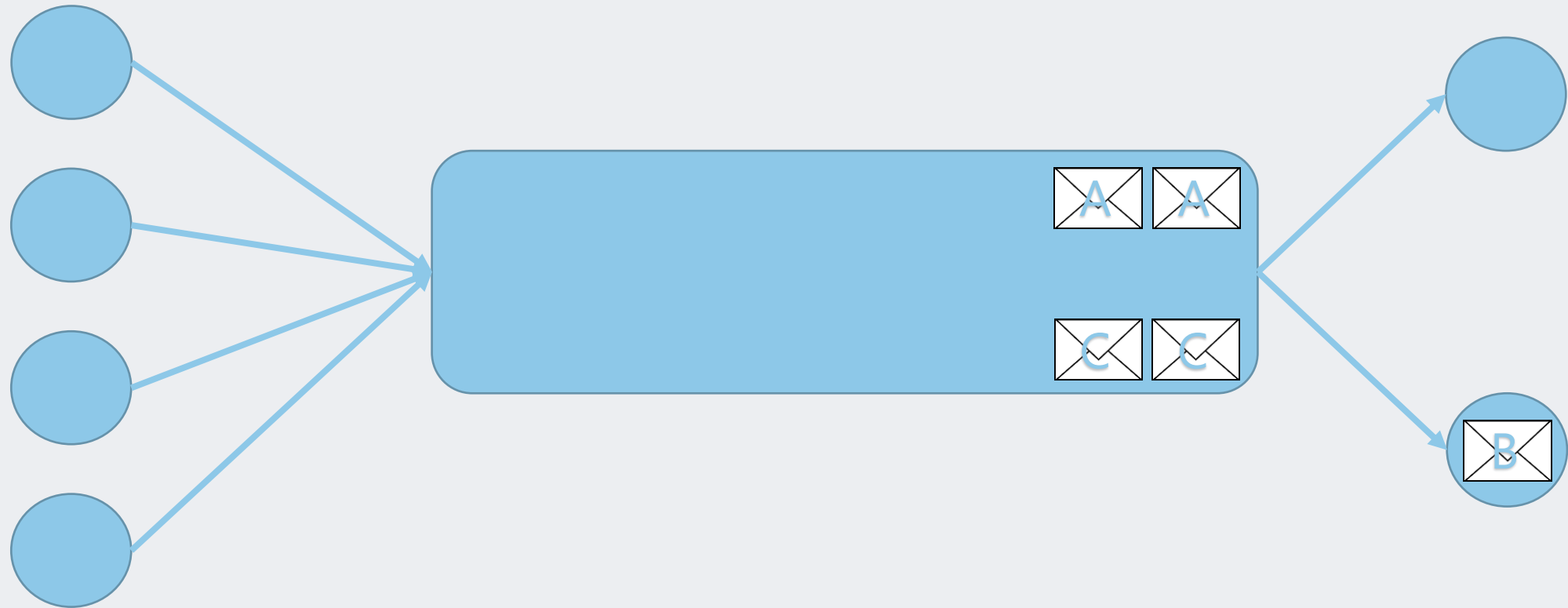
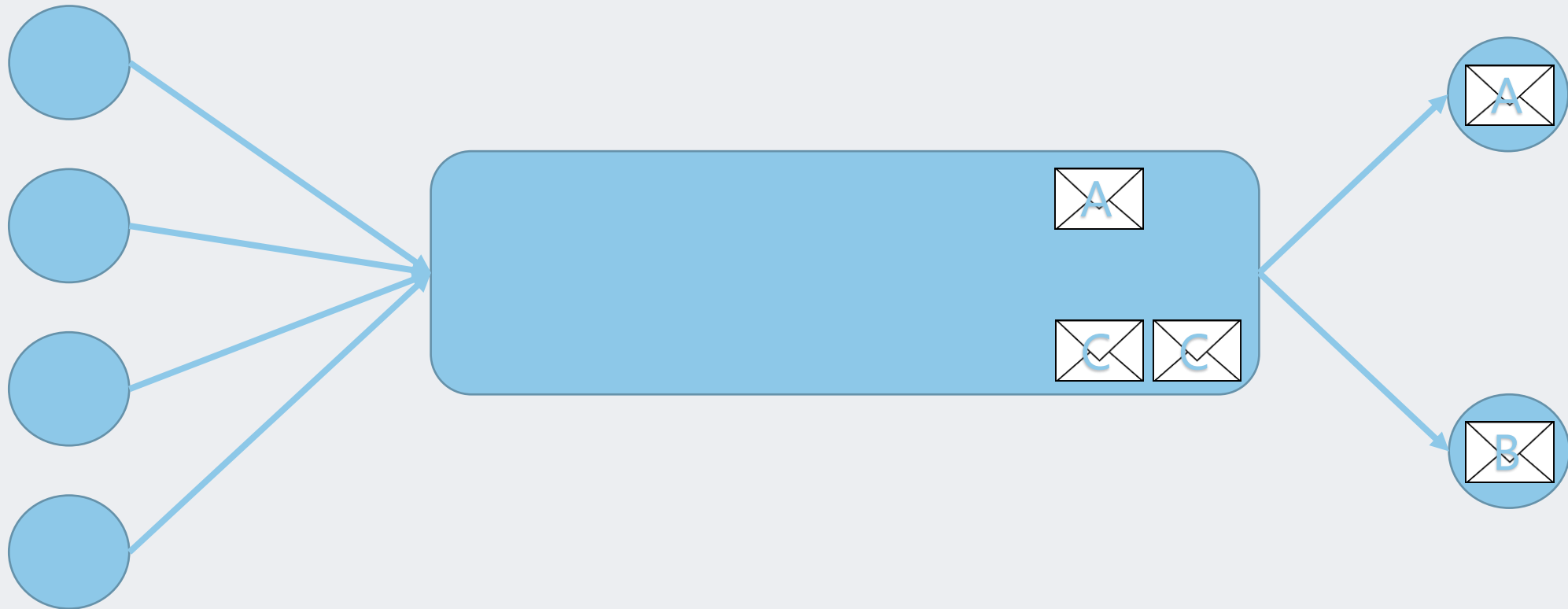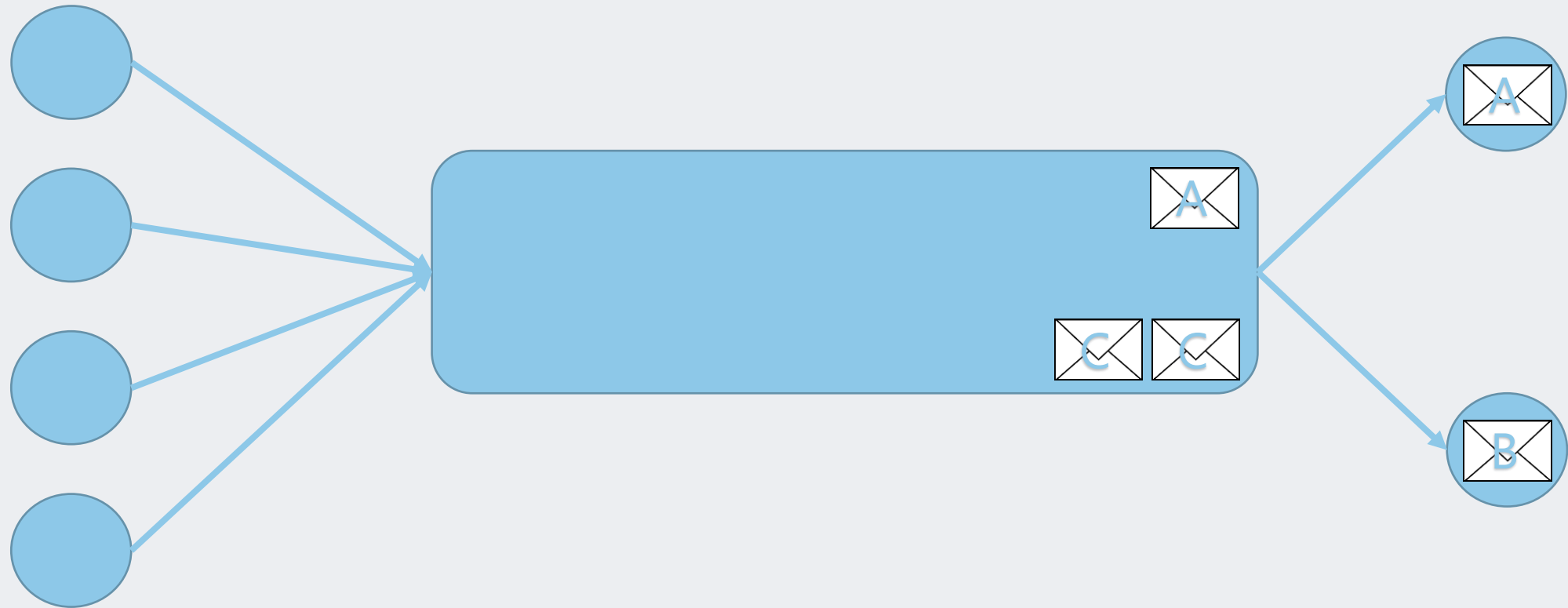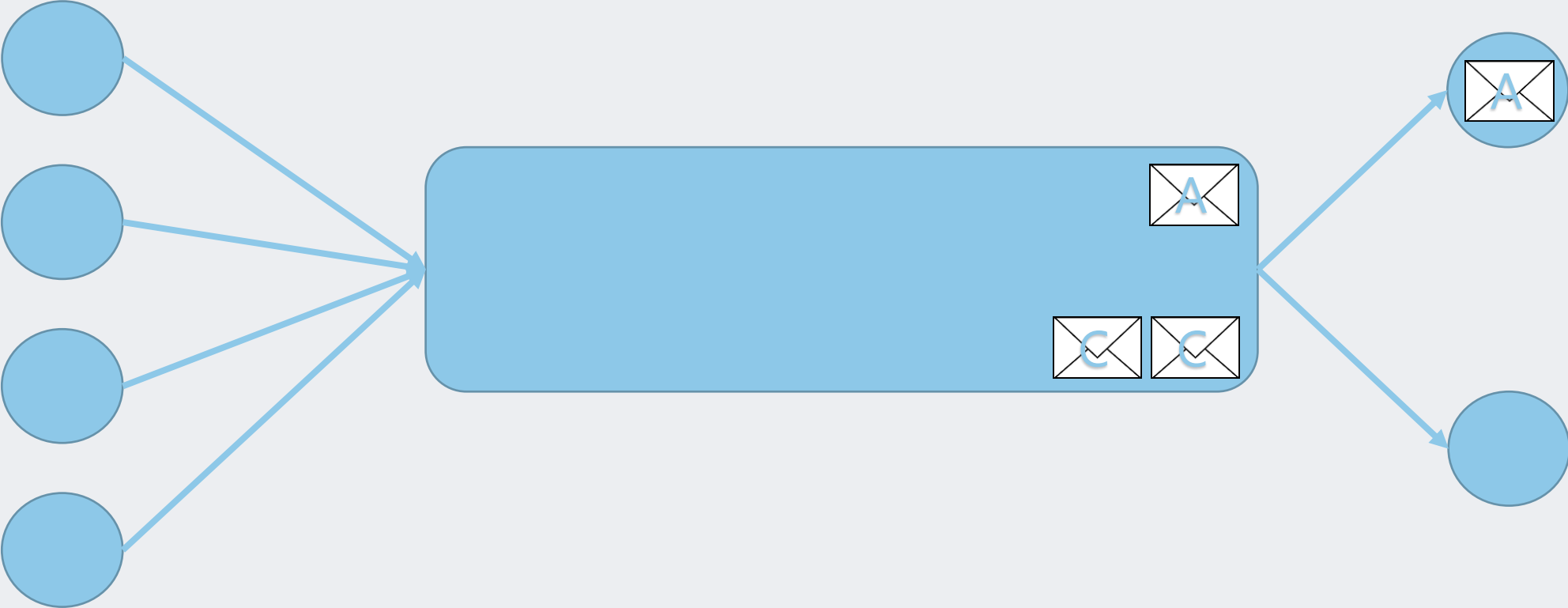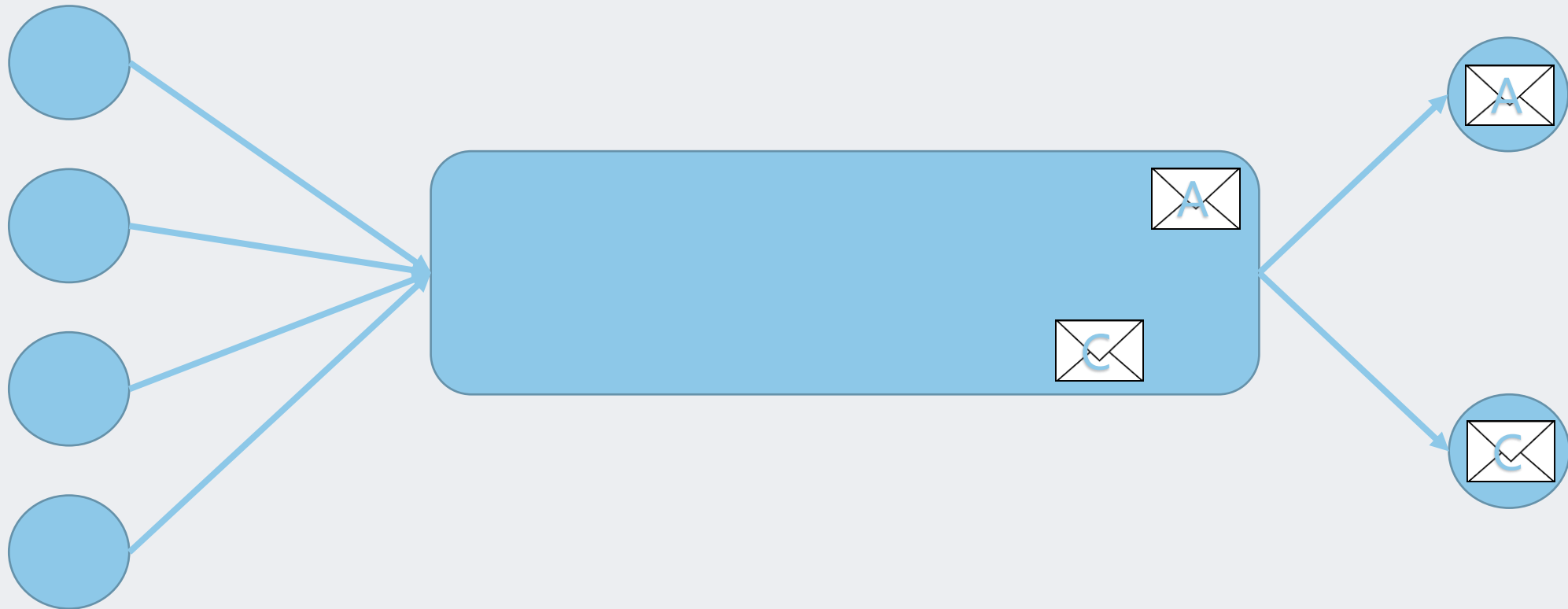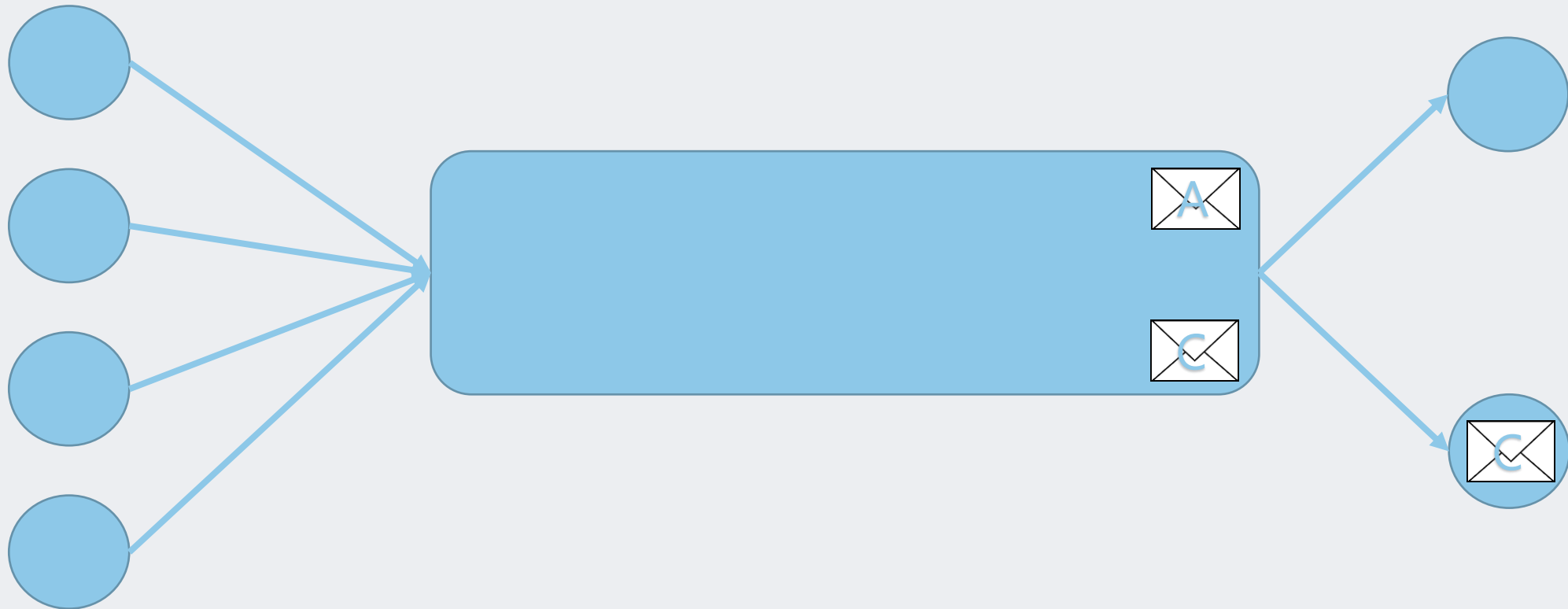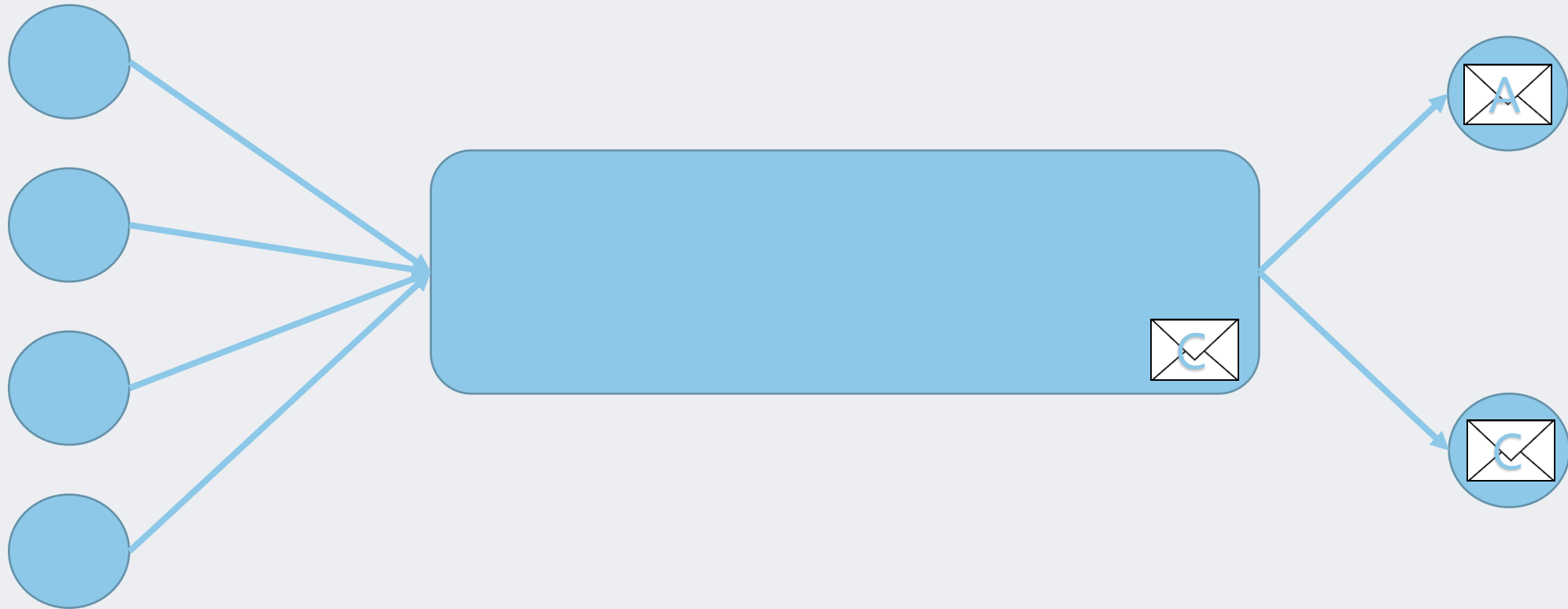# Sequential Convoy

Sequential Convoy

Sequential Convoy

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Sequential Convoy

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Sequential Convoy

Sequential Convoy

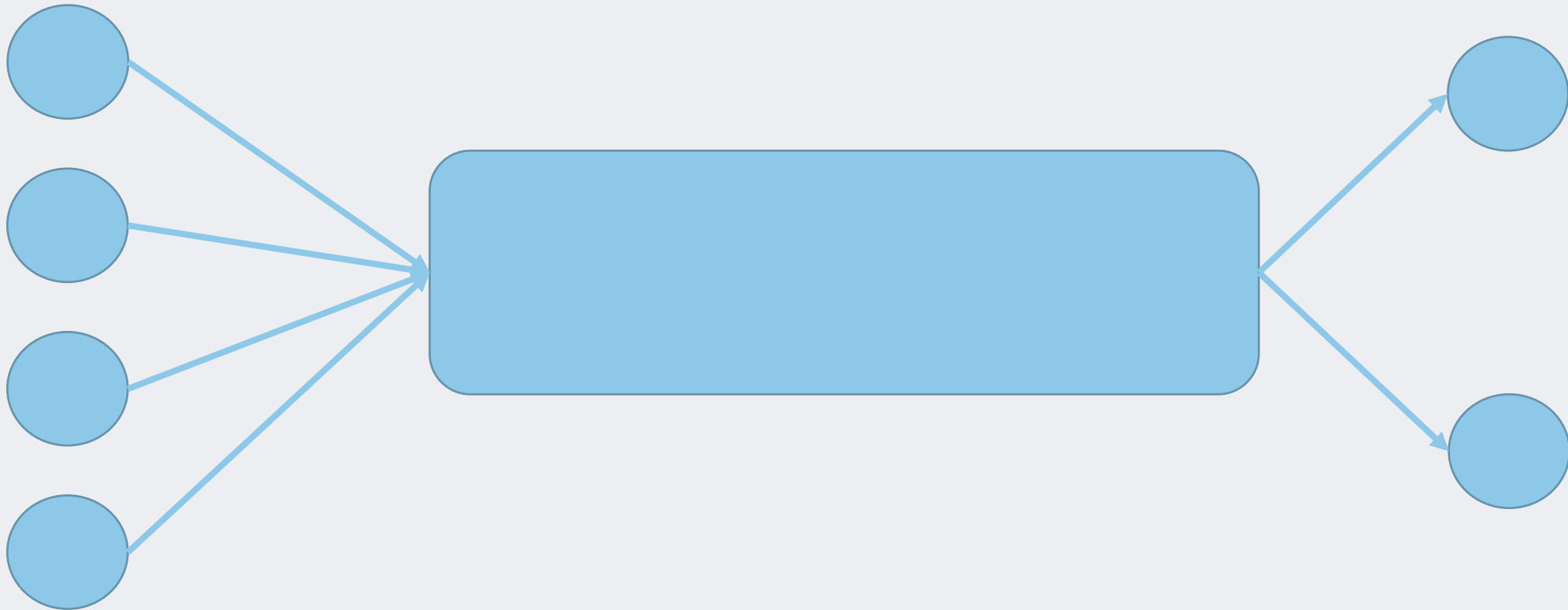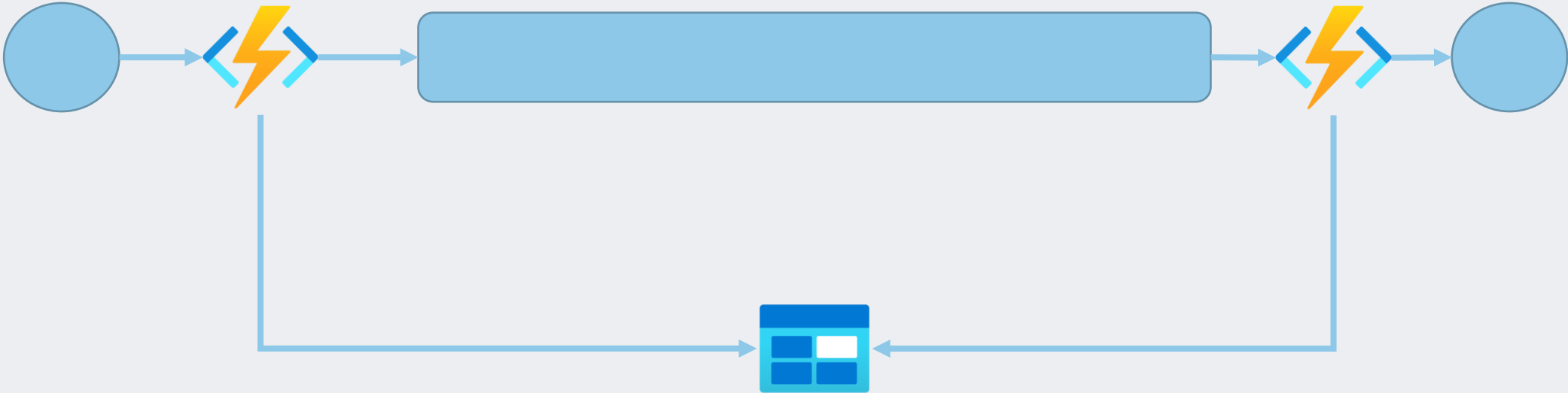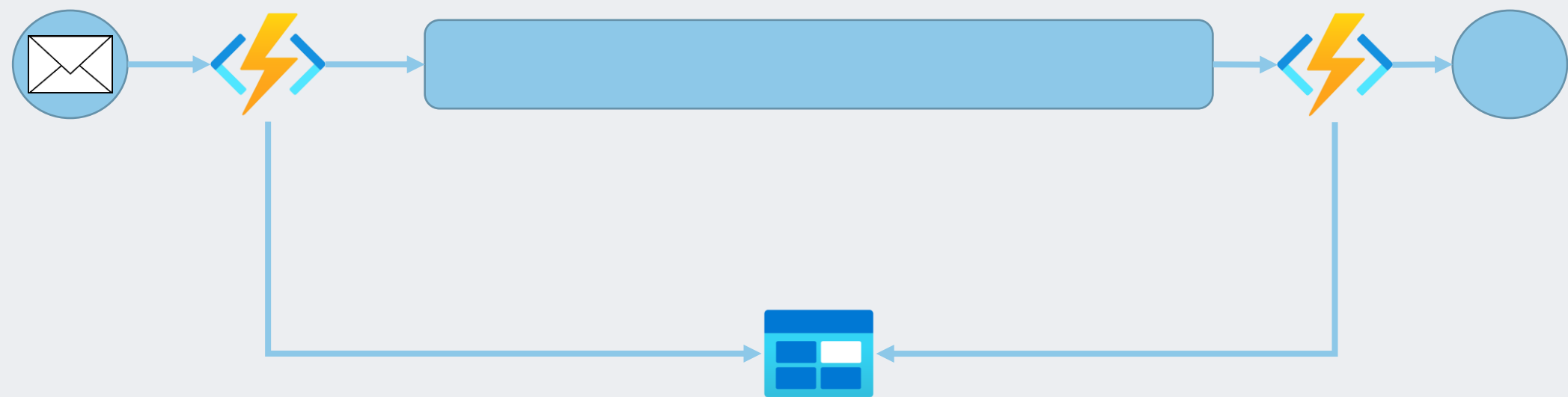# Sequential Convoy

Sequential Convoy

Sequential Convoy

Sequential Convoy

Sequential Convoy

Sequential Convoy

Claim Check
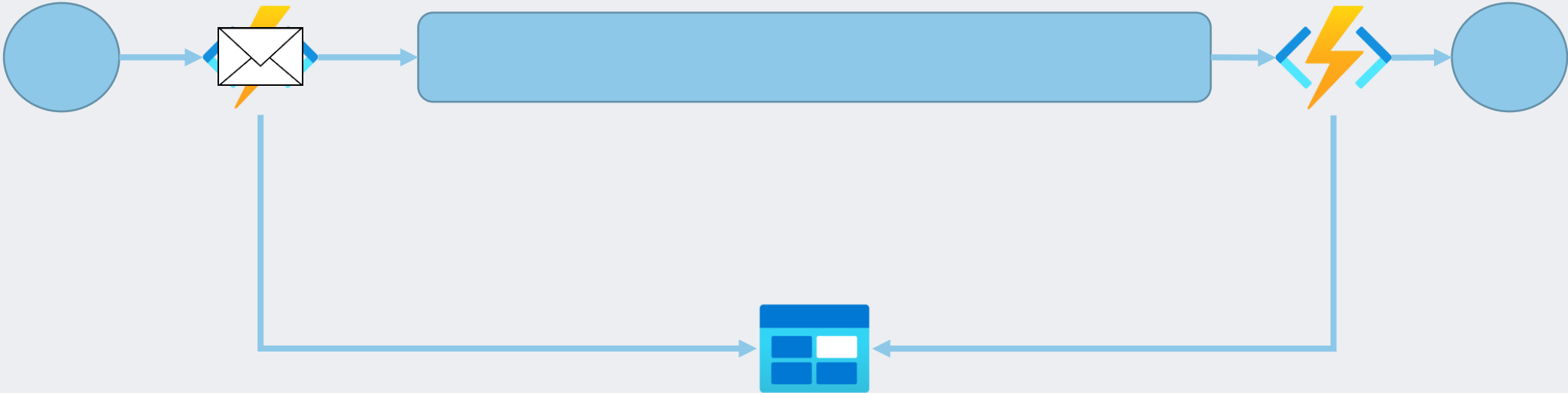
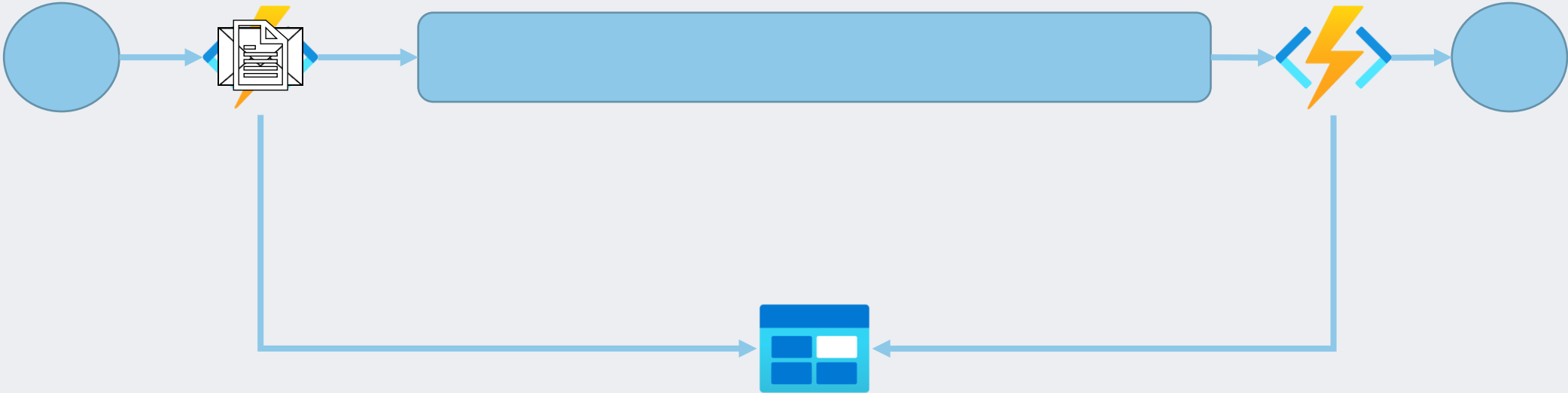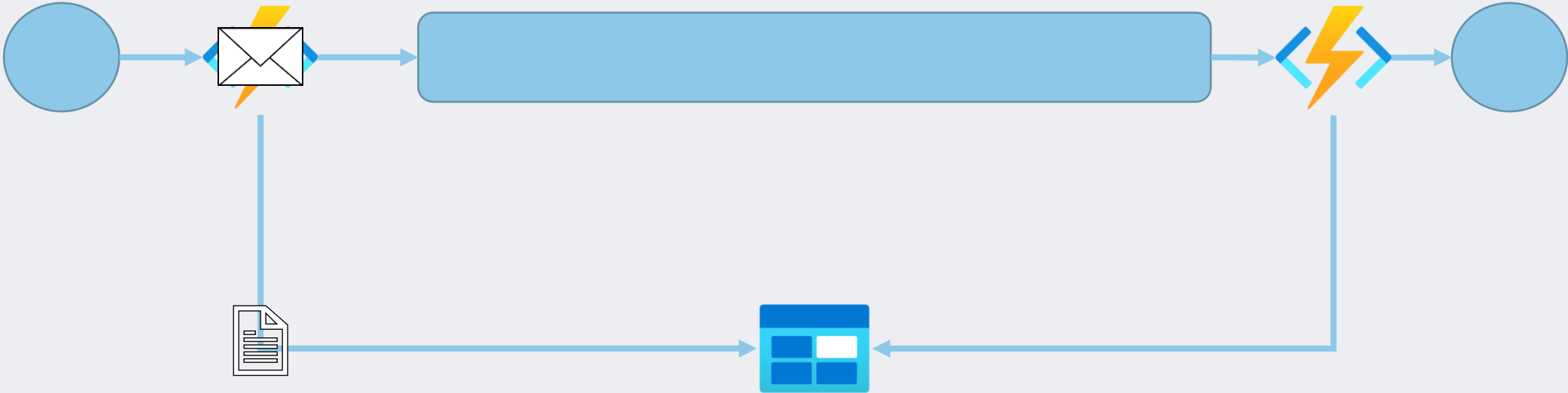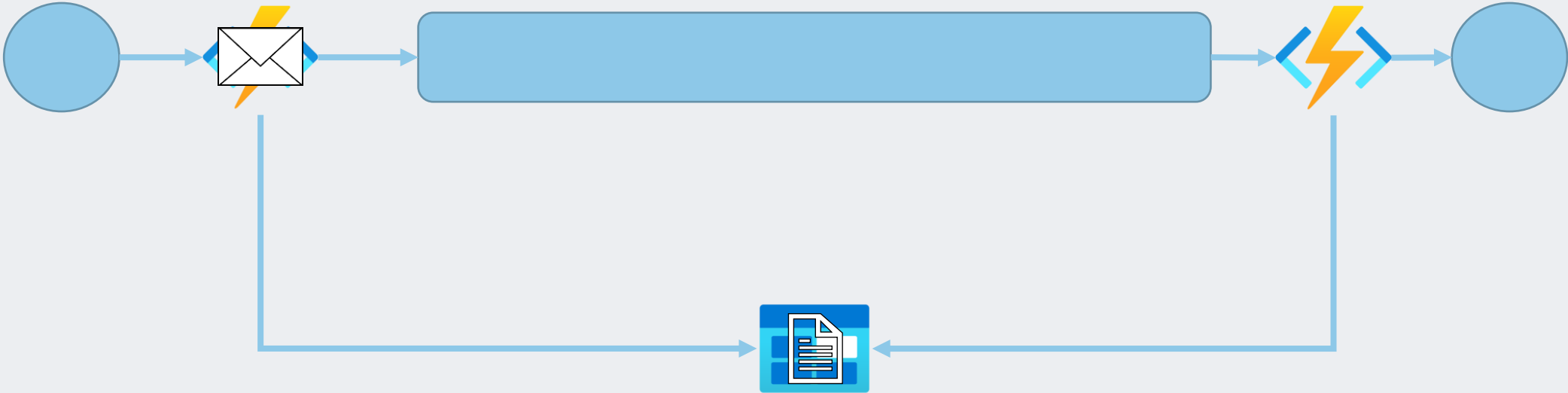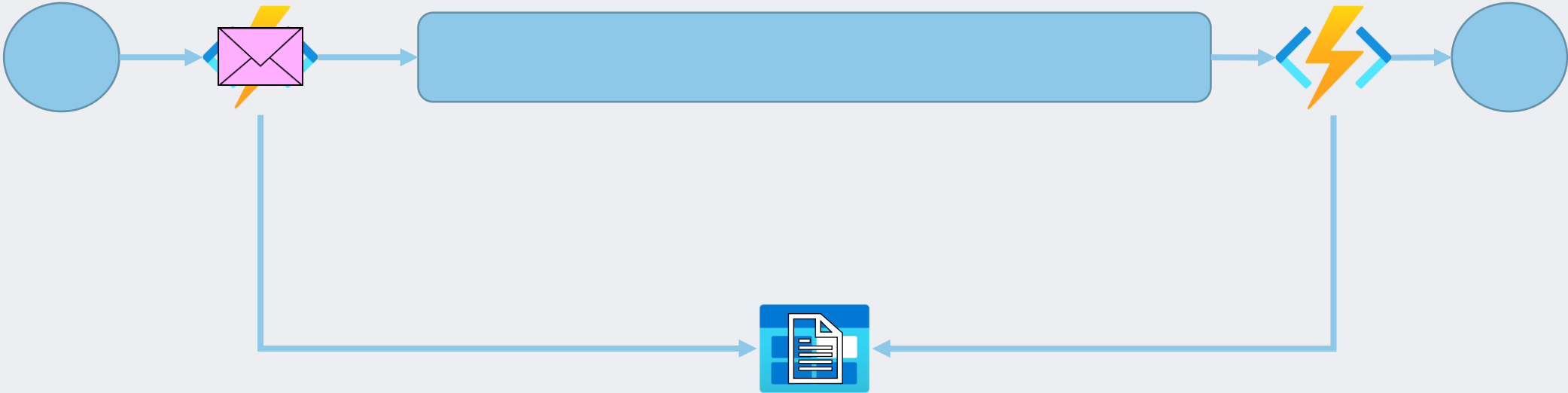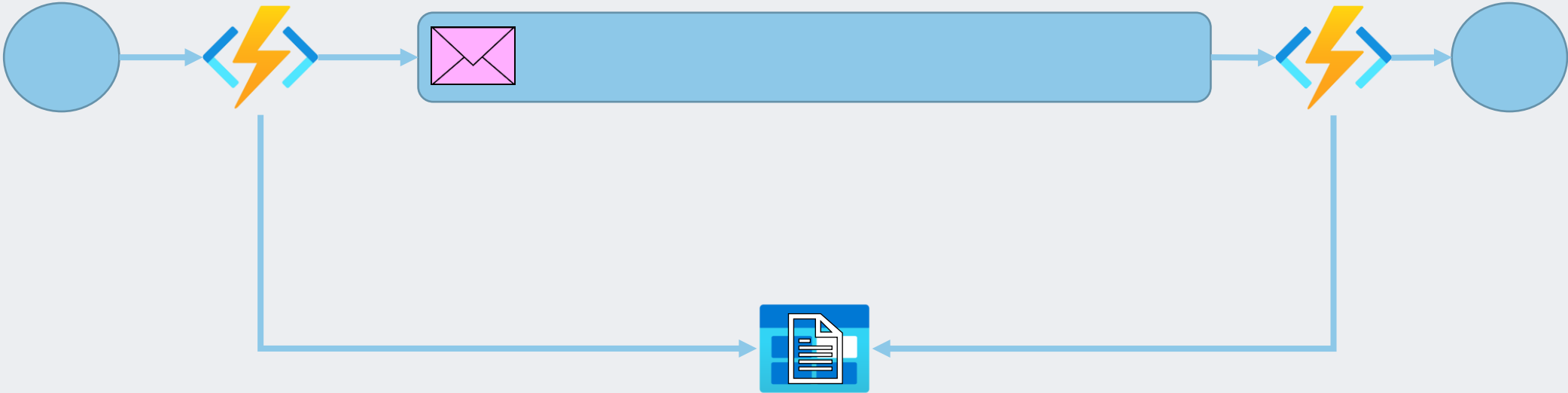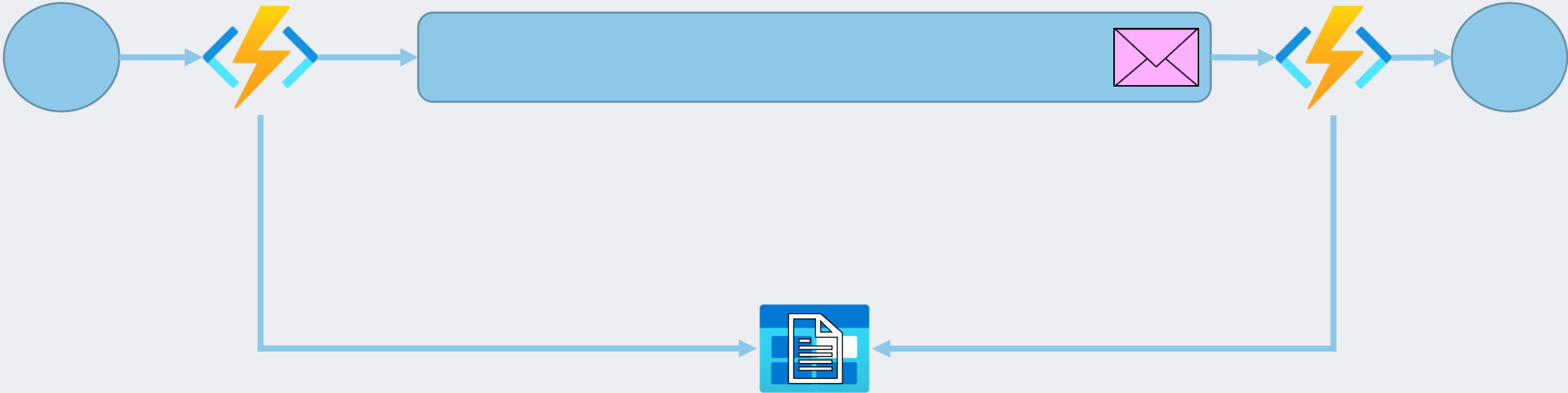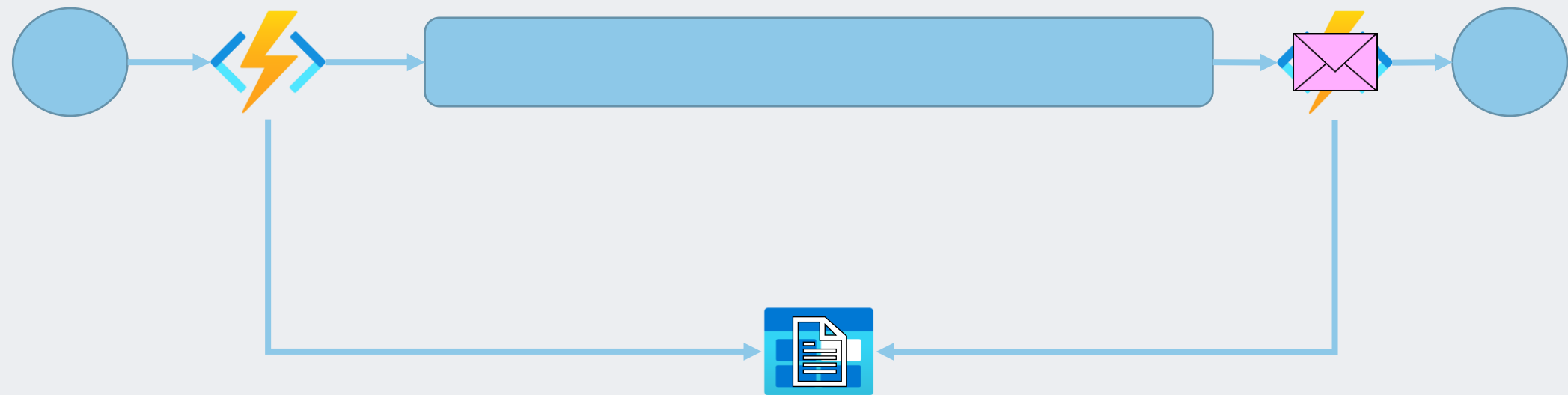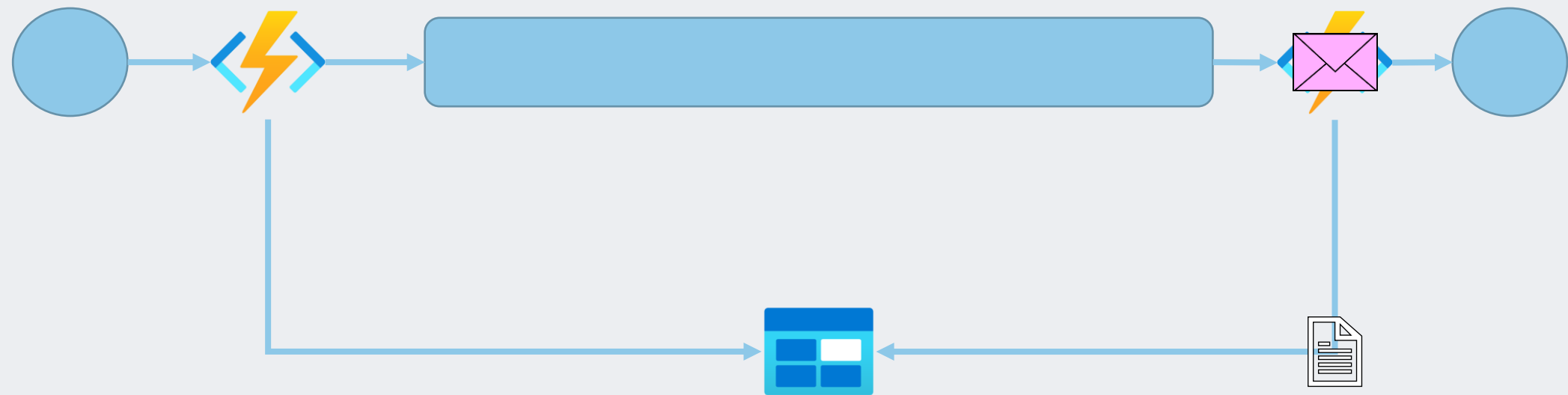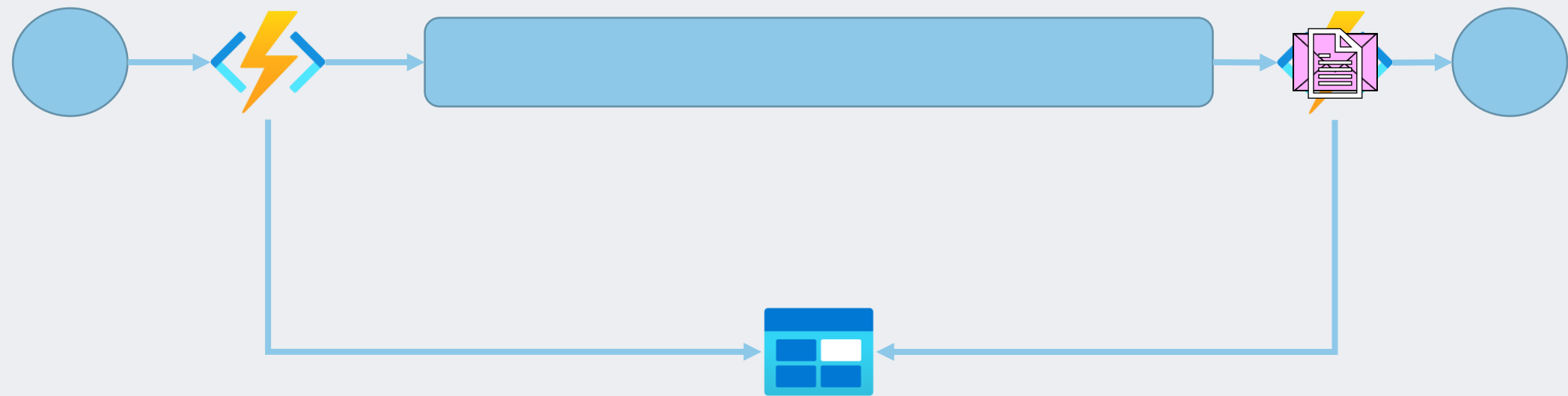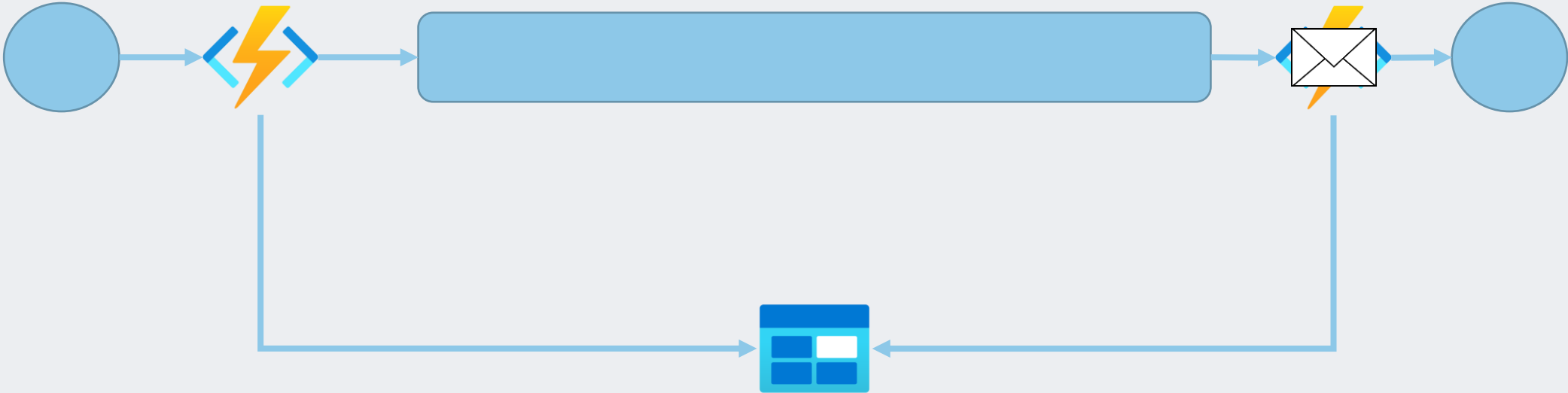https://docs.microsoft.com/en-us/azure/architecture/patterns/claim-check

Claim Check

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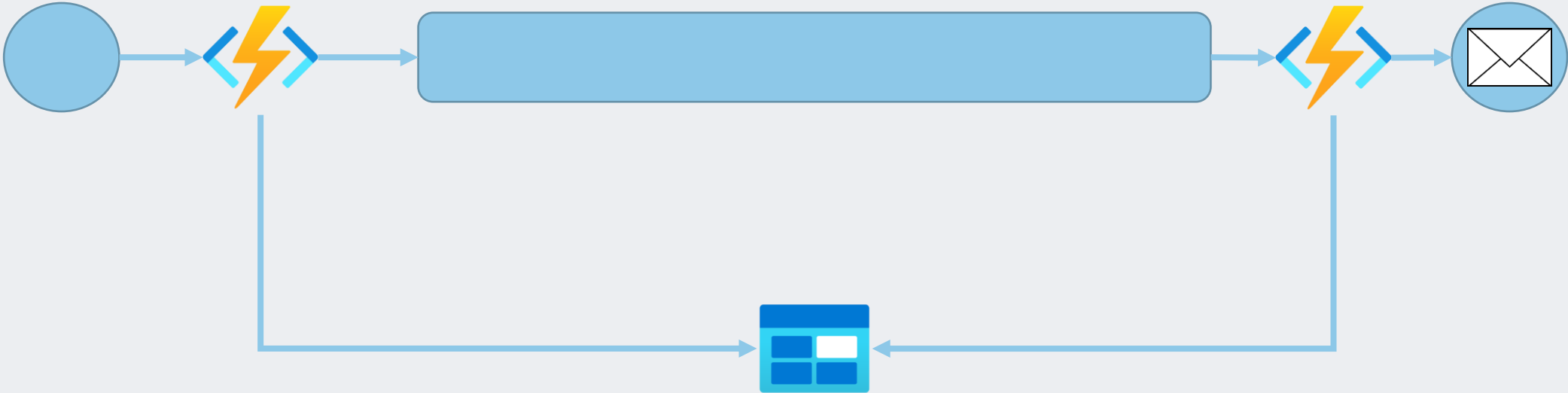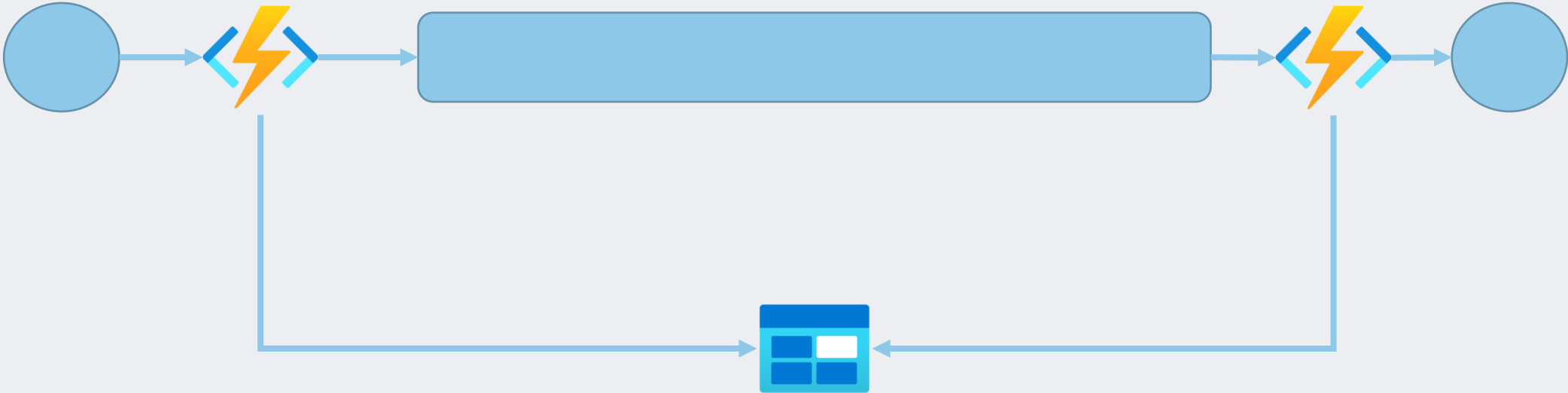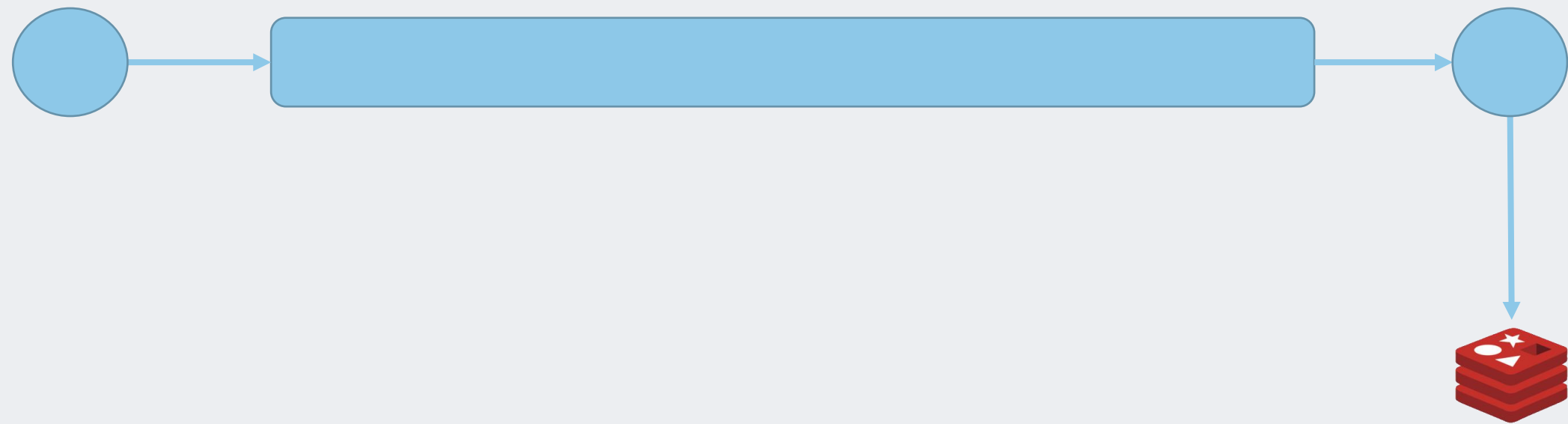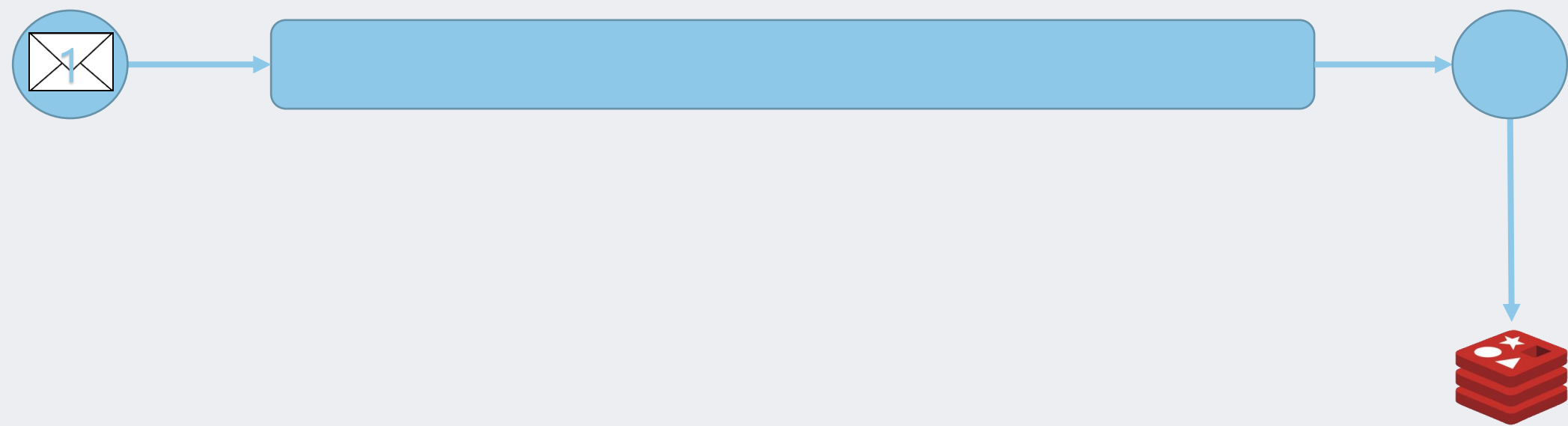# Claim Check

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Exactly Once Processing

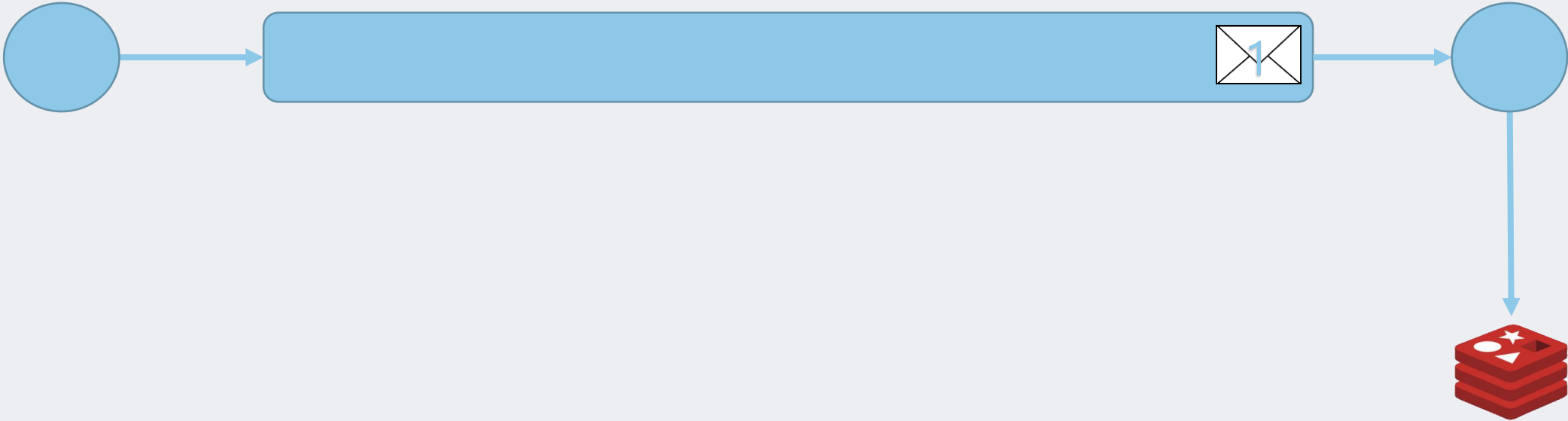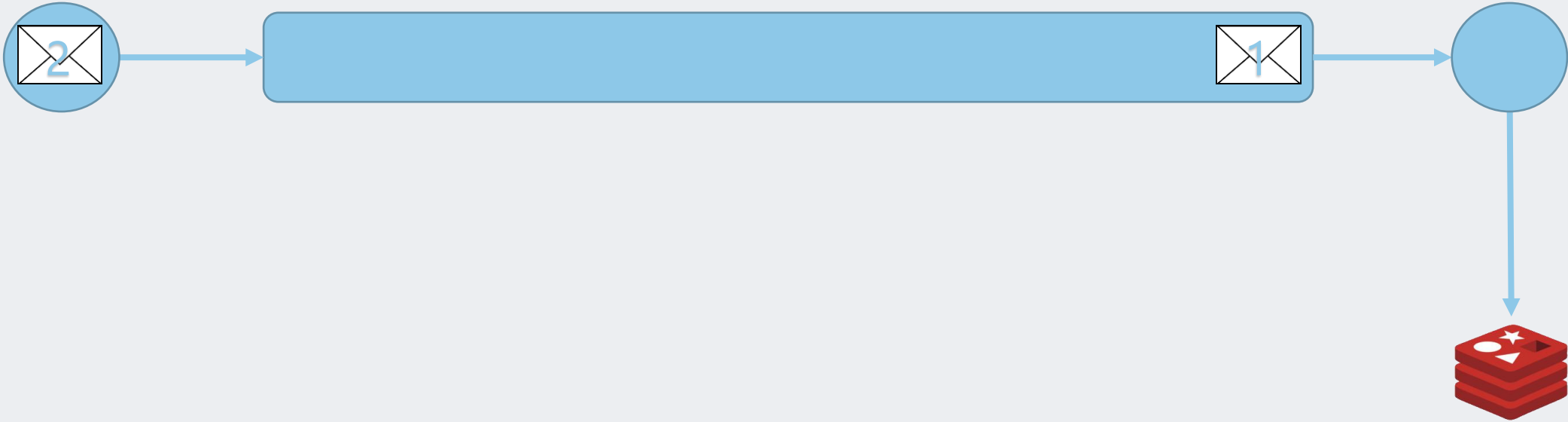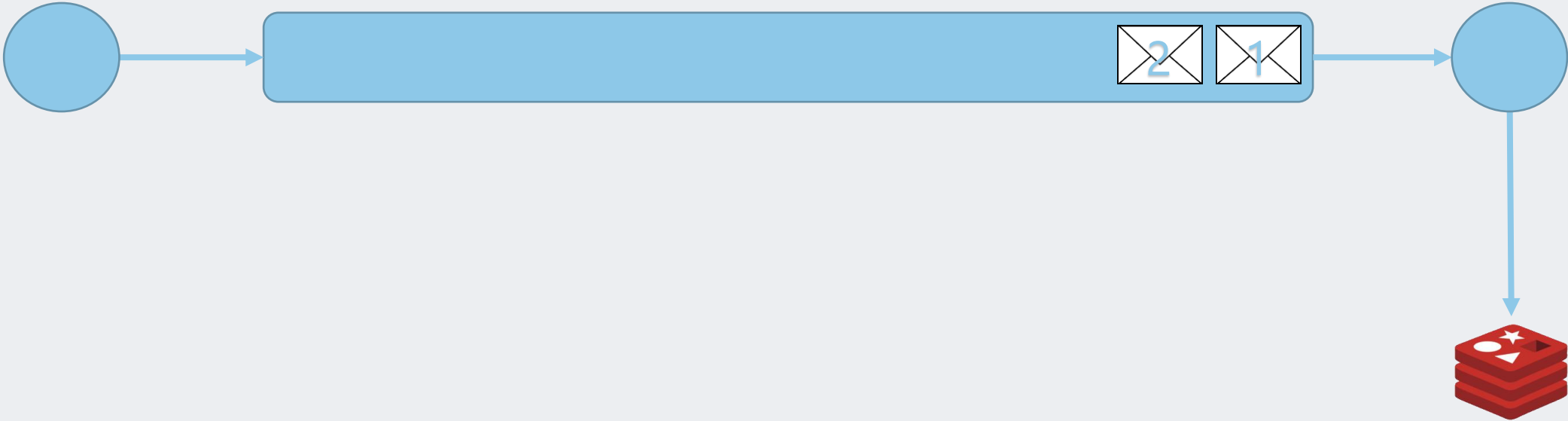https://www.cloudcomputingpatterns.org/exactly_once_delivery/

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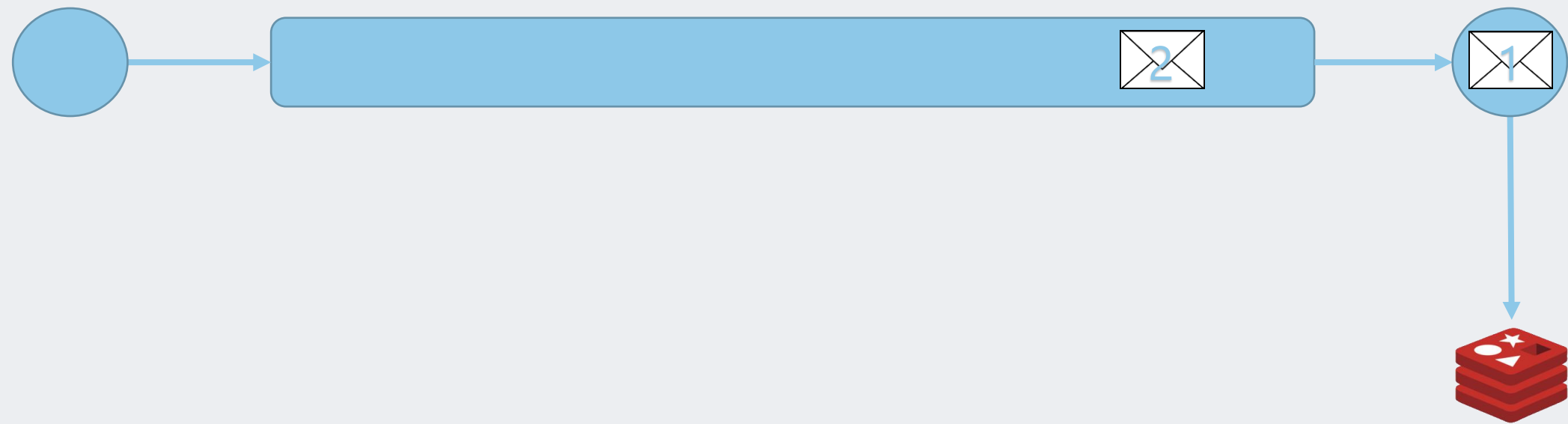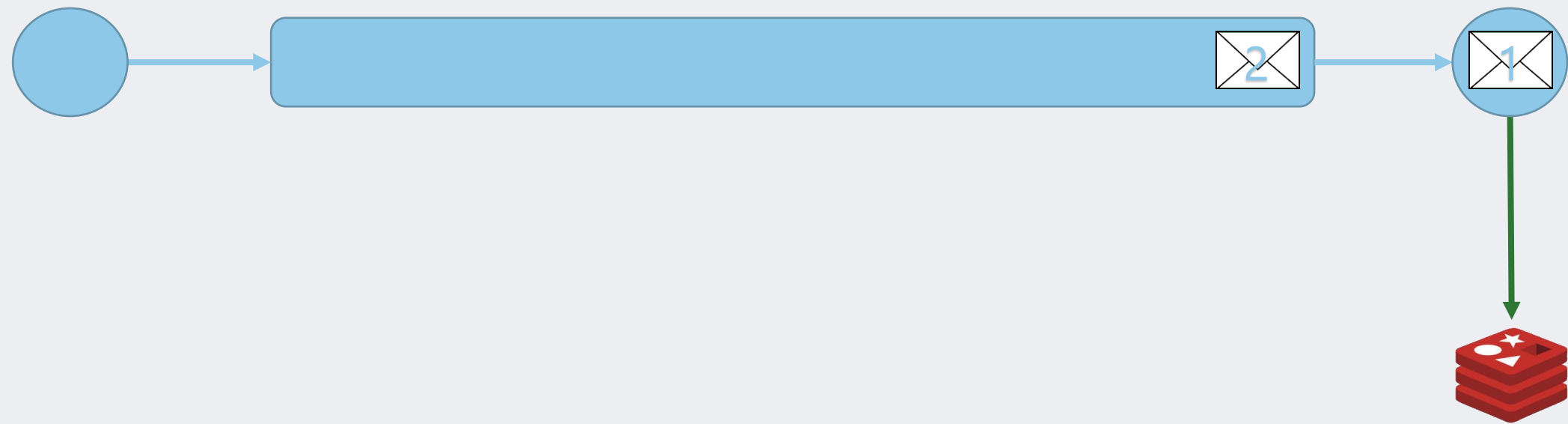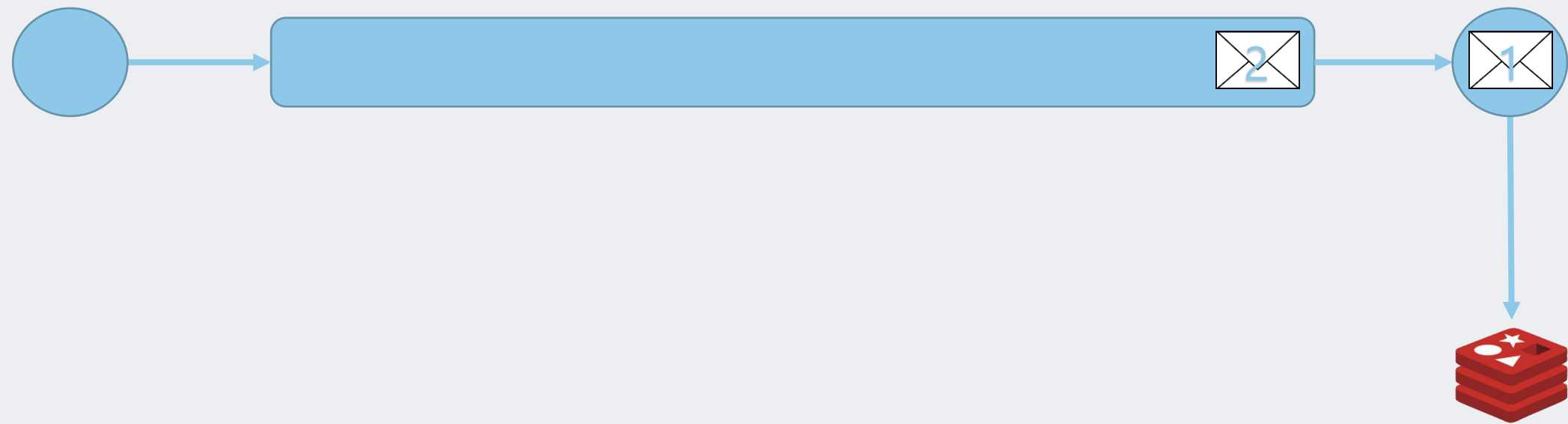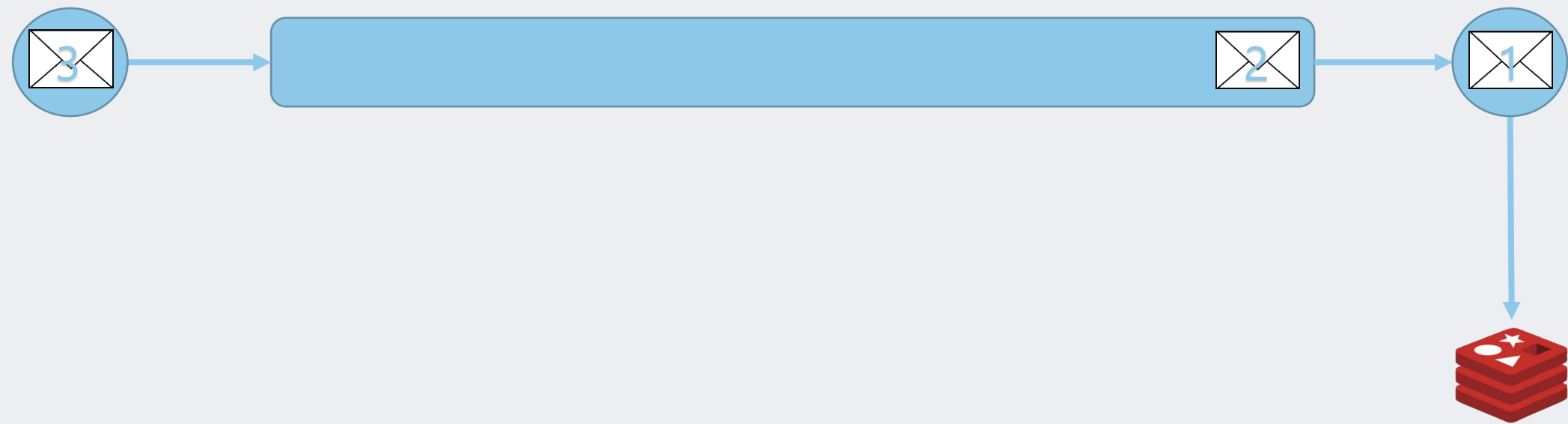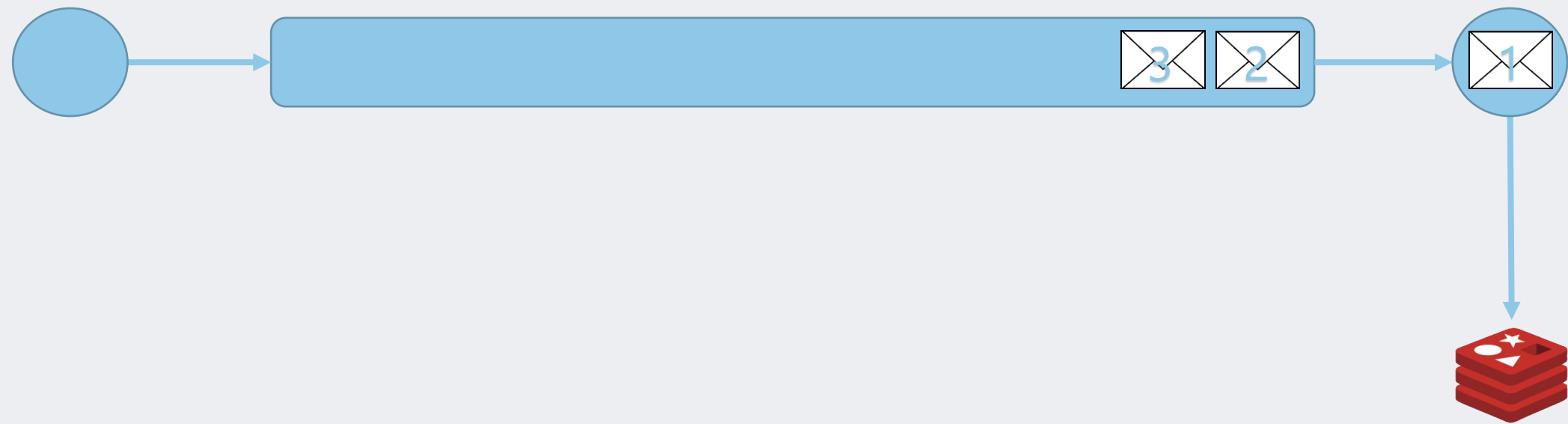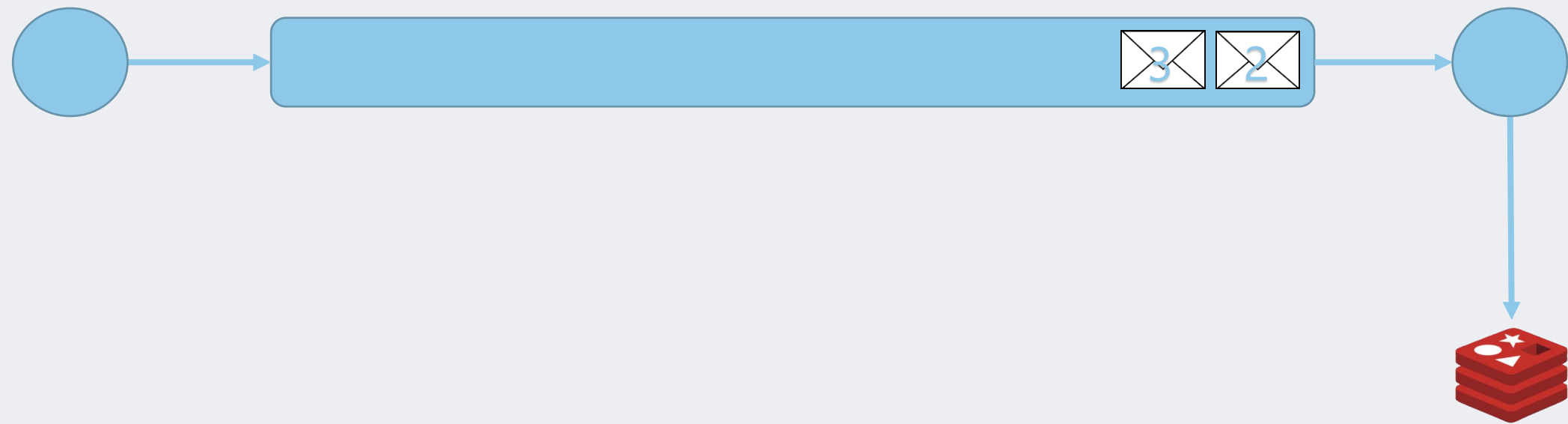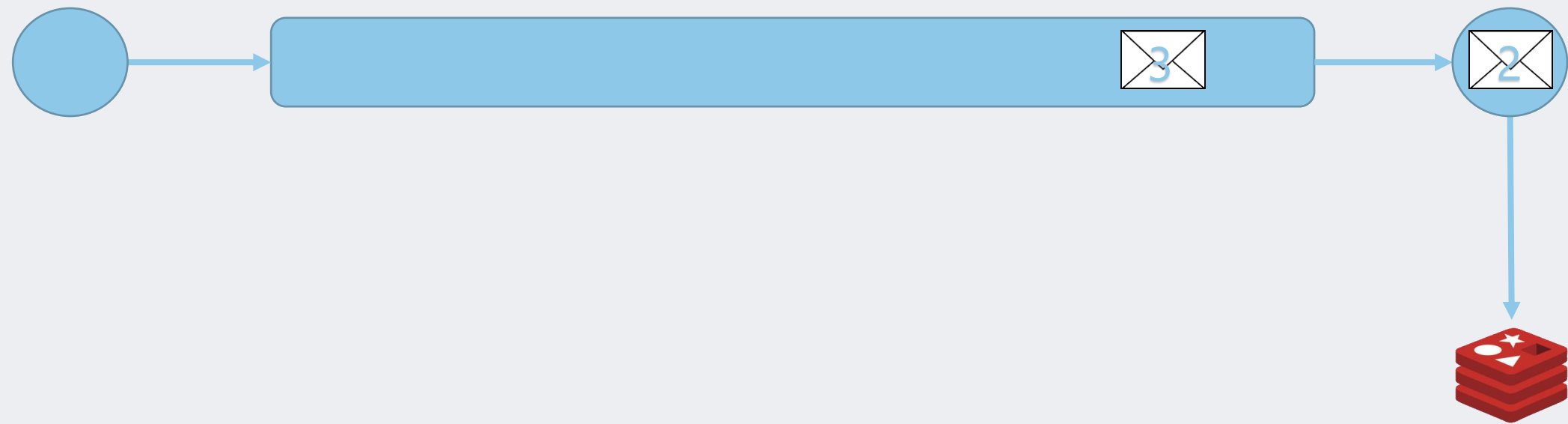
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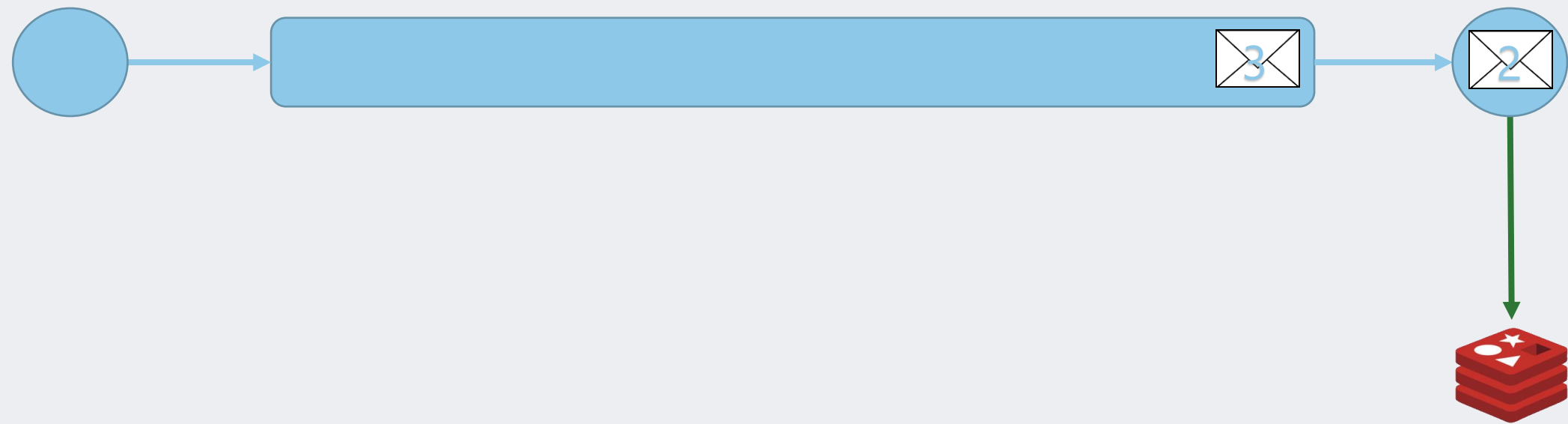# Exactly Once Processing

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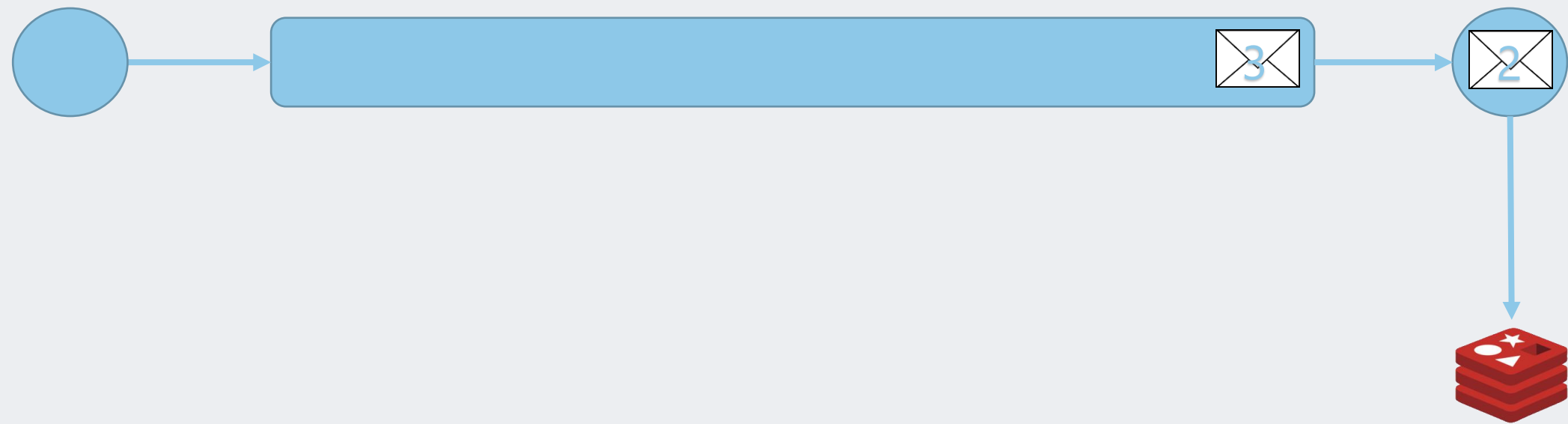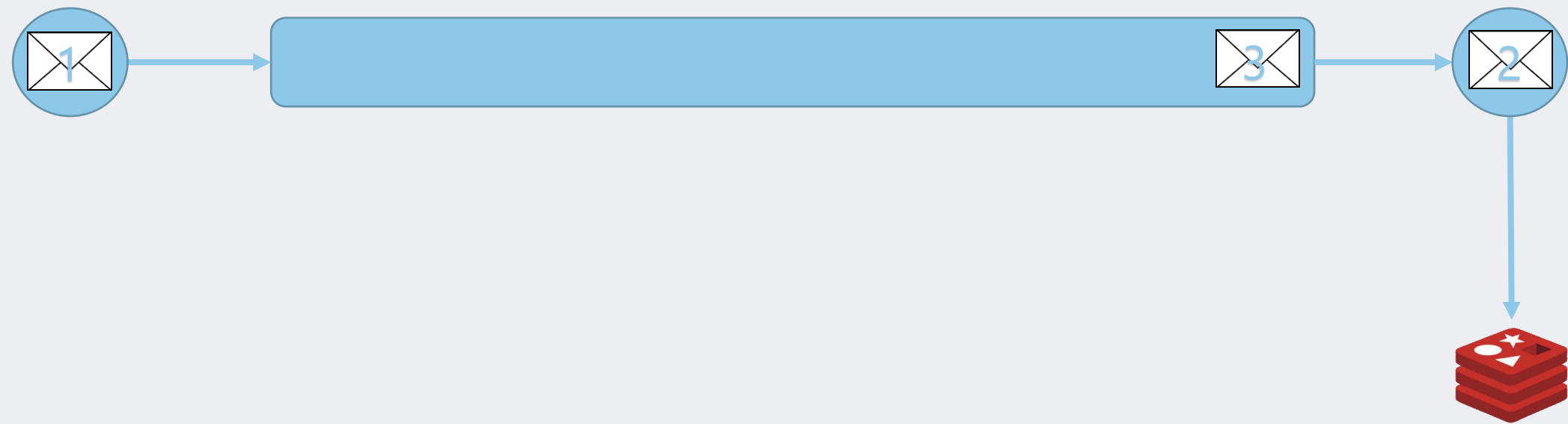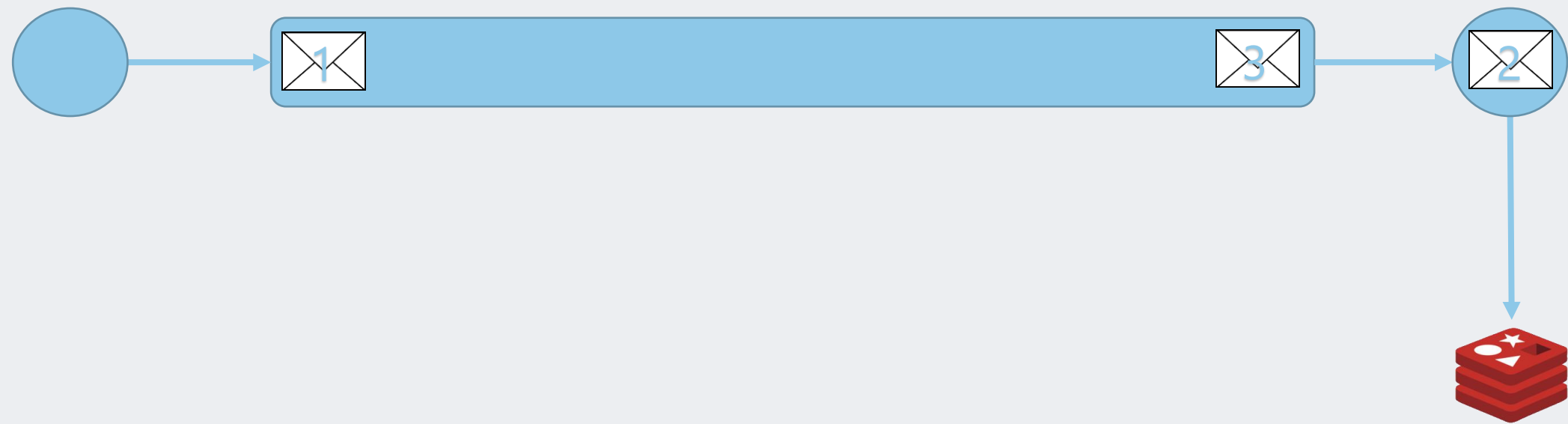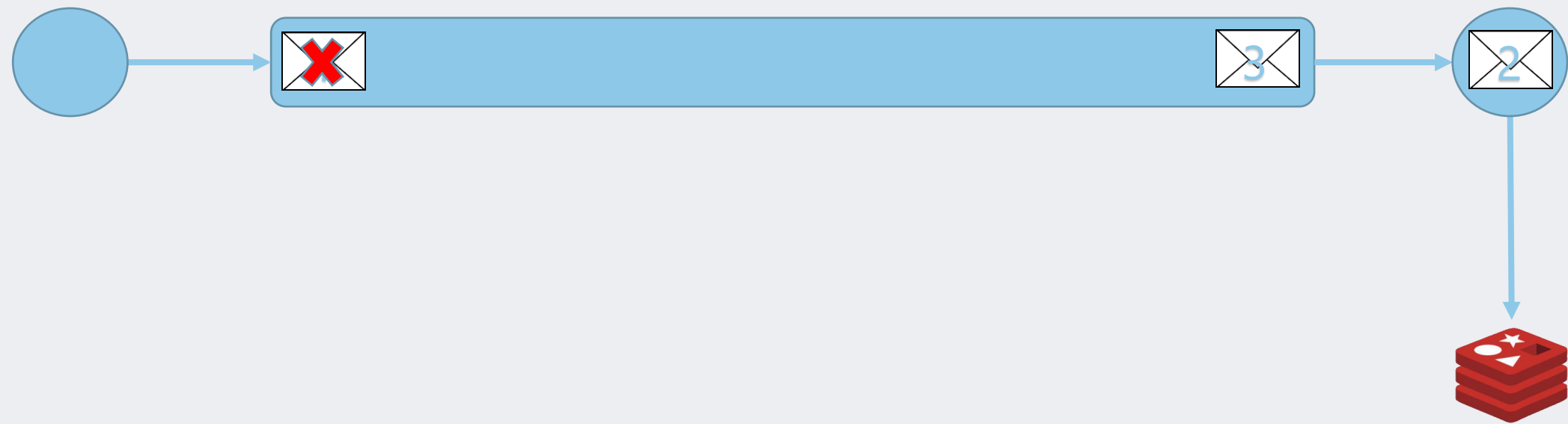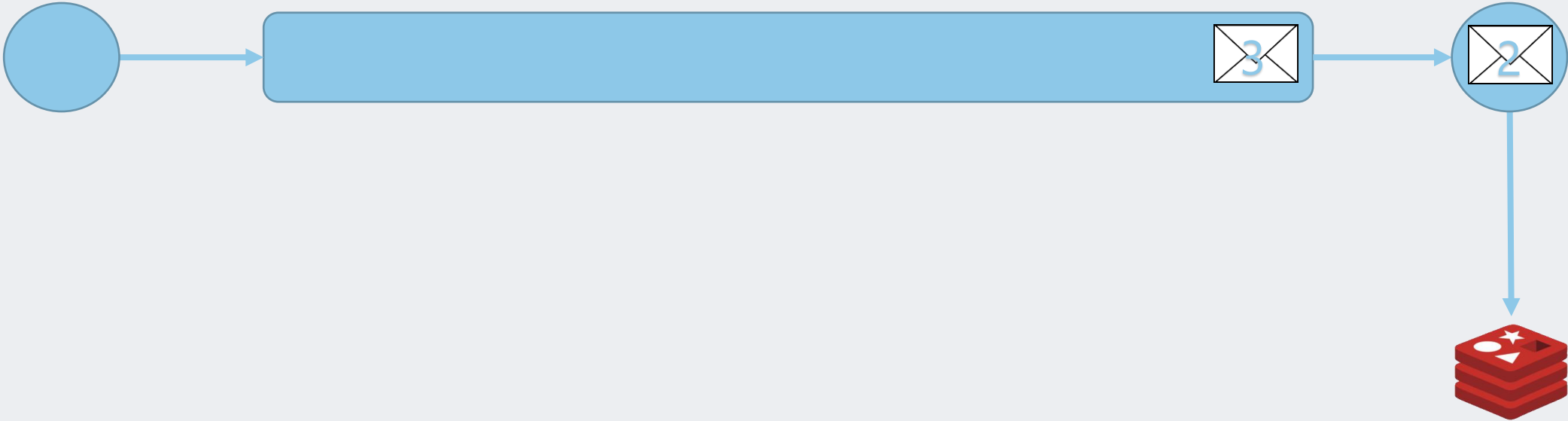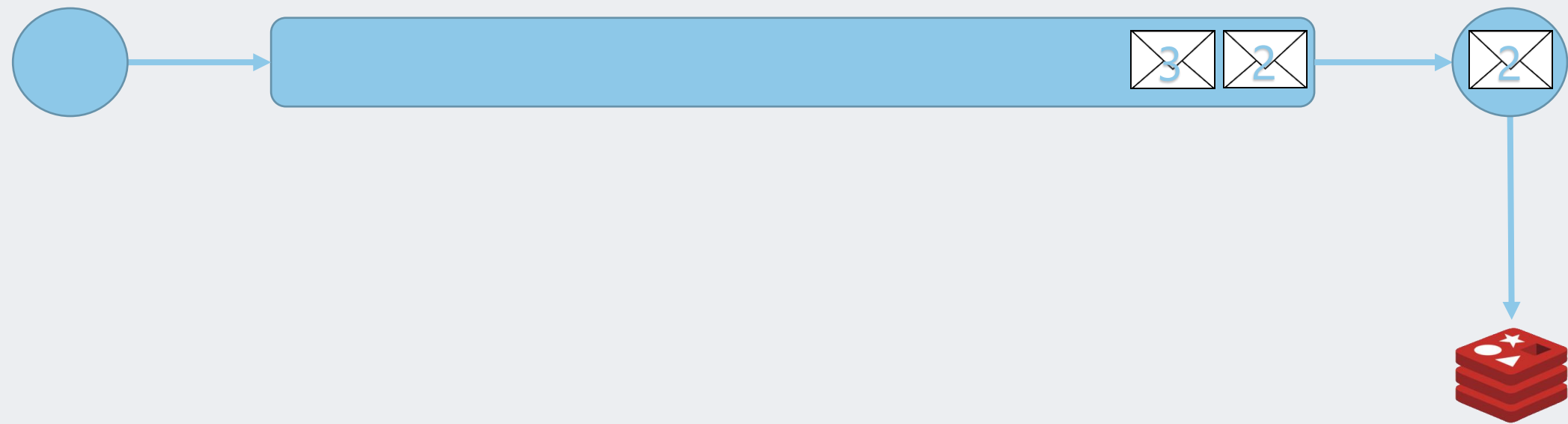
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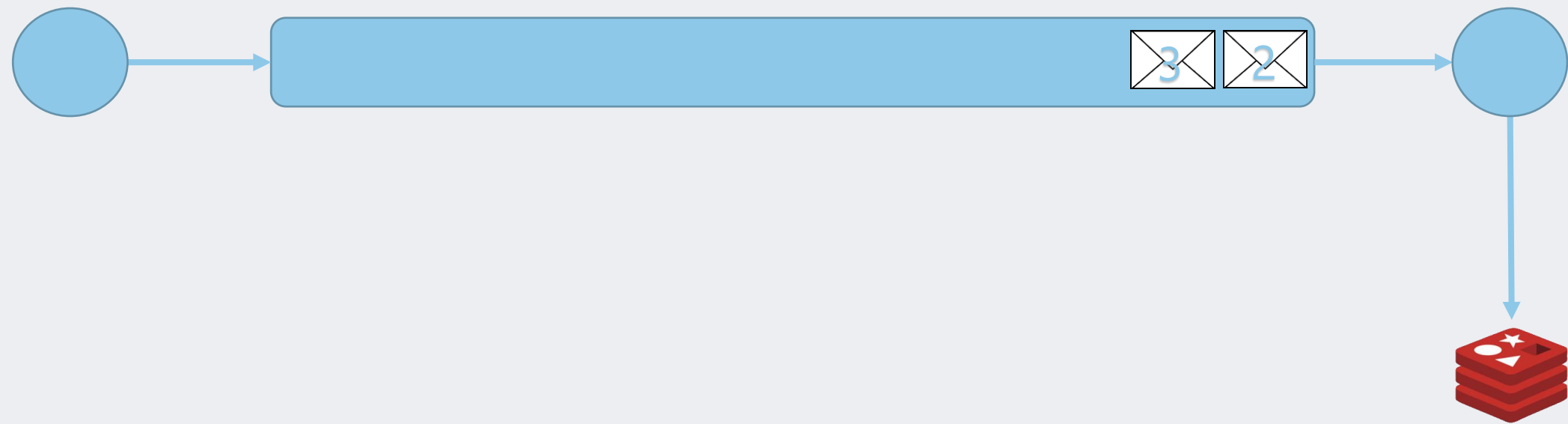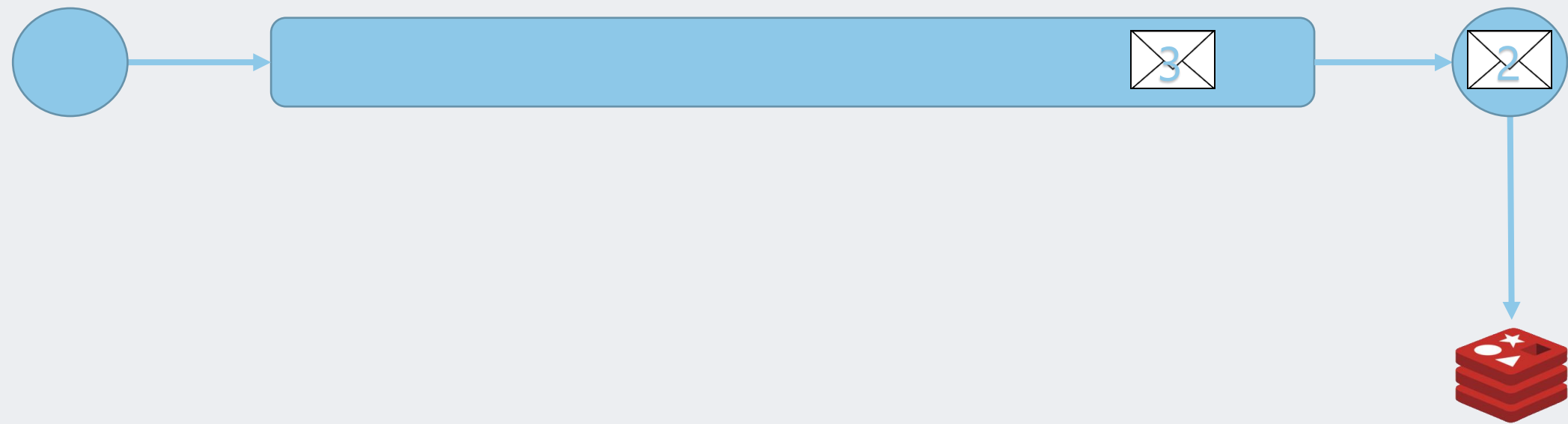
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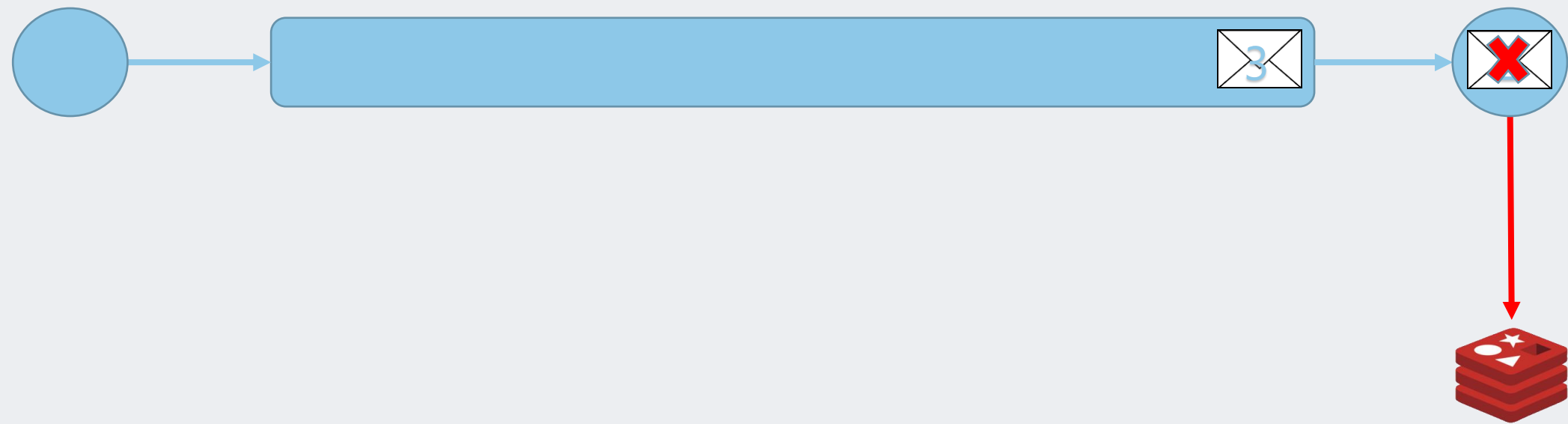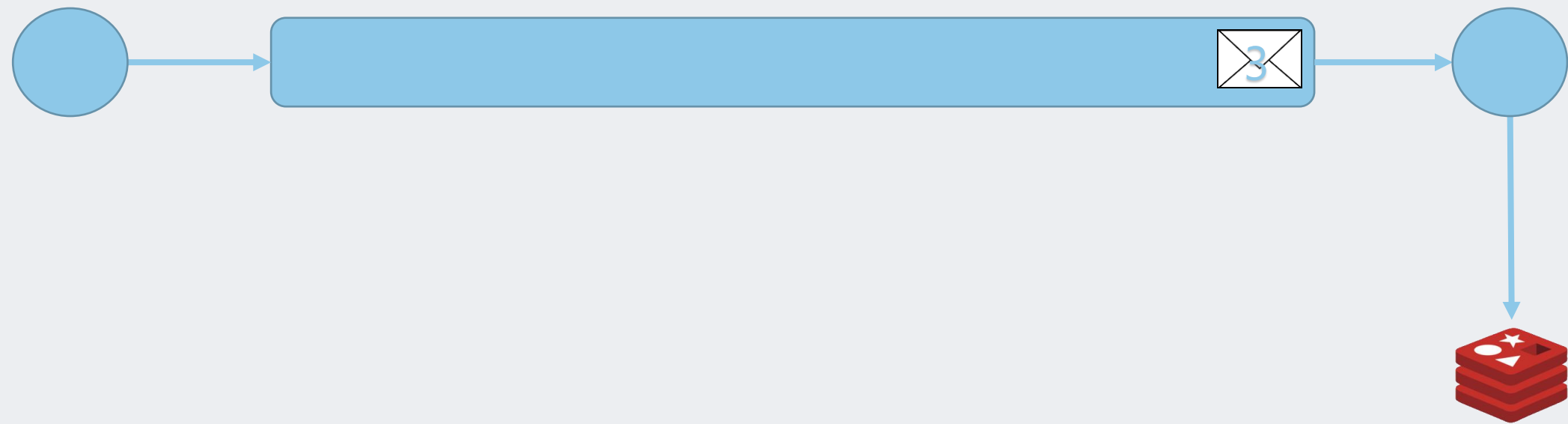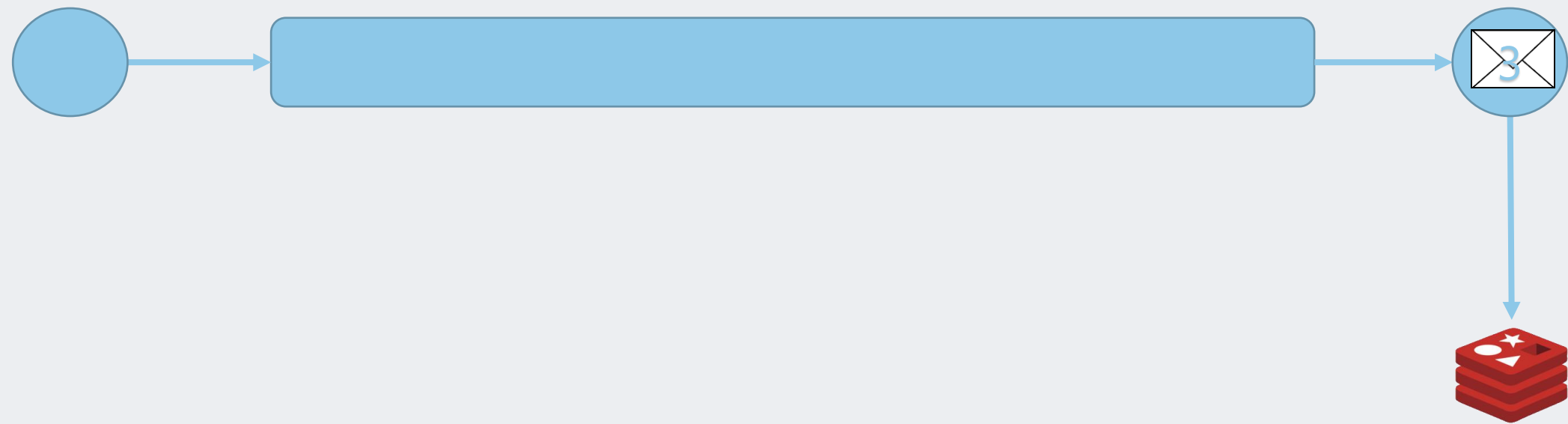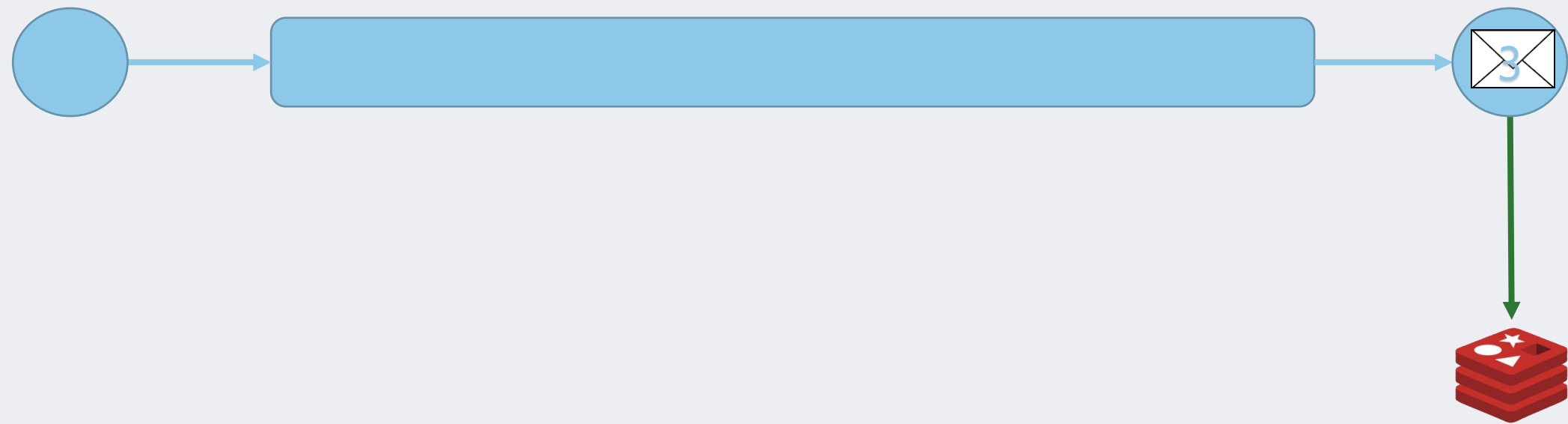# Exactly Once Processing

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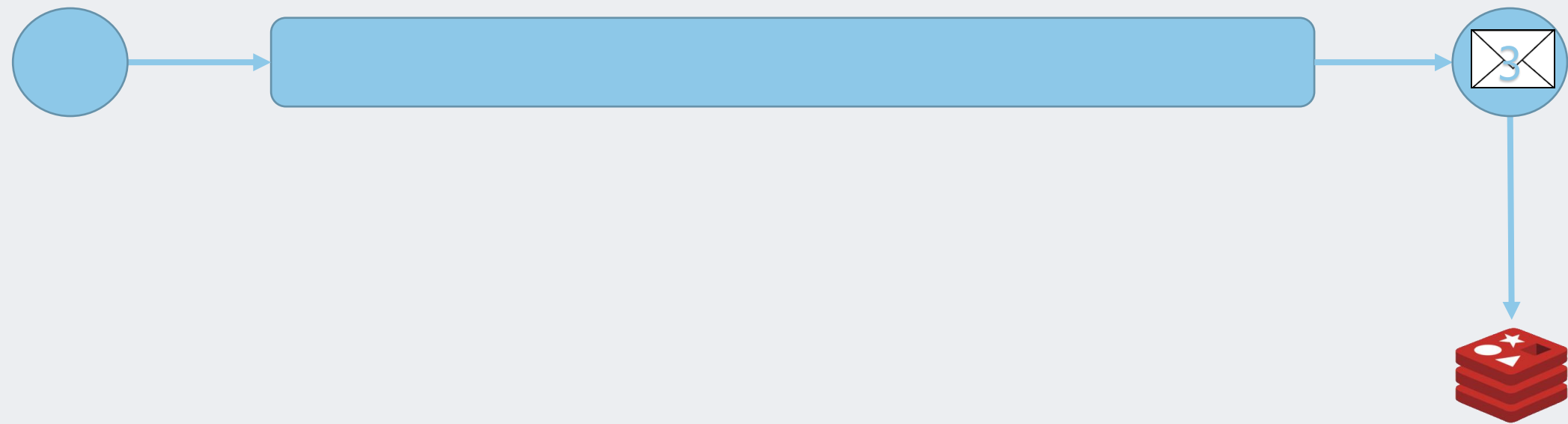
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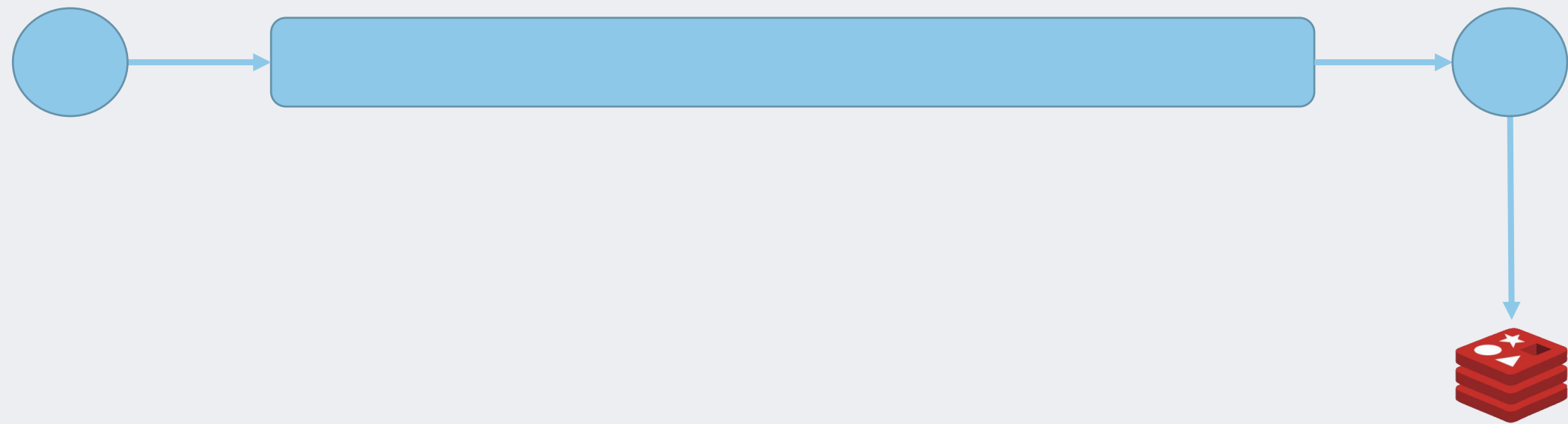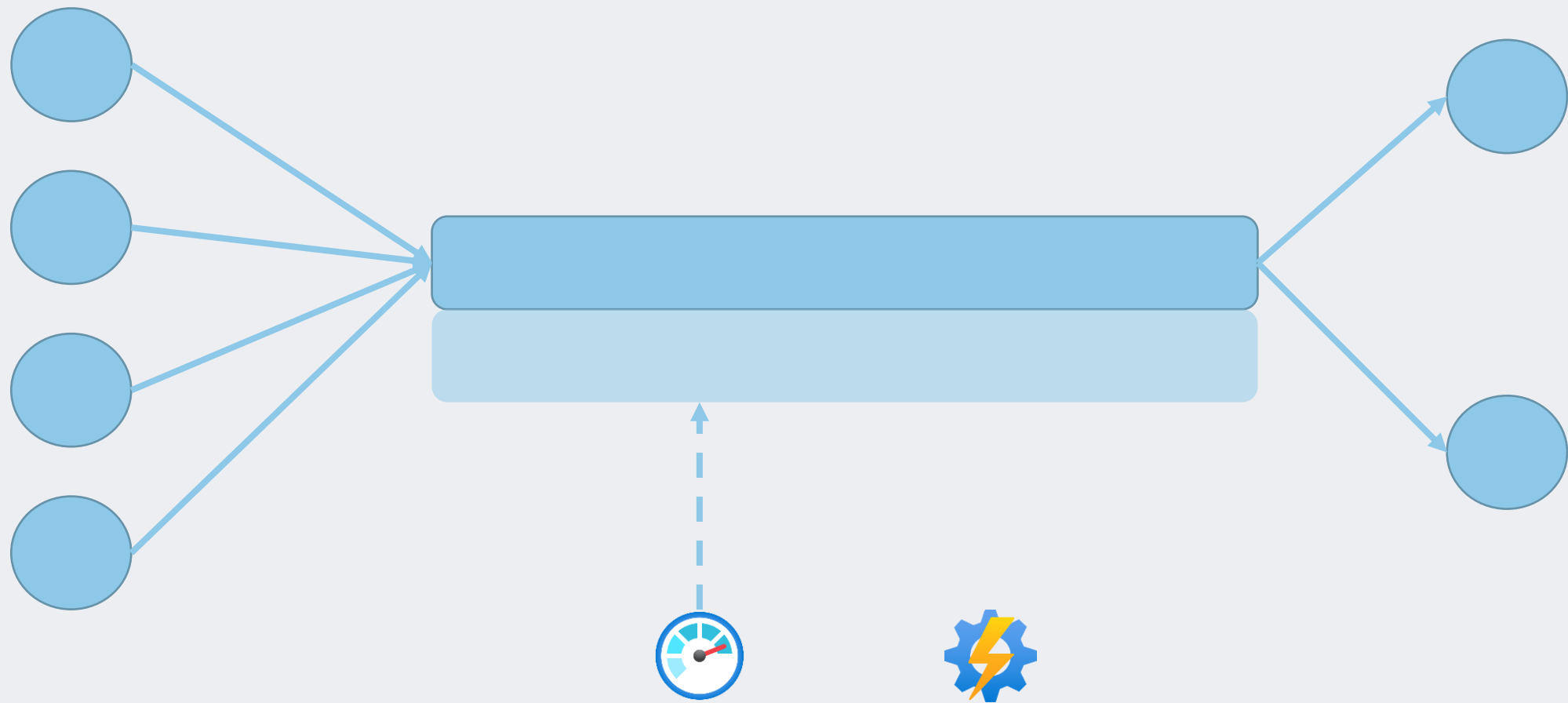
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Circuit Breaker

https://docs.microsoft.com/en-us/azure/architecture/patterns/circuit-breaker

Circuit Breaker

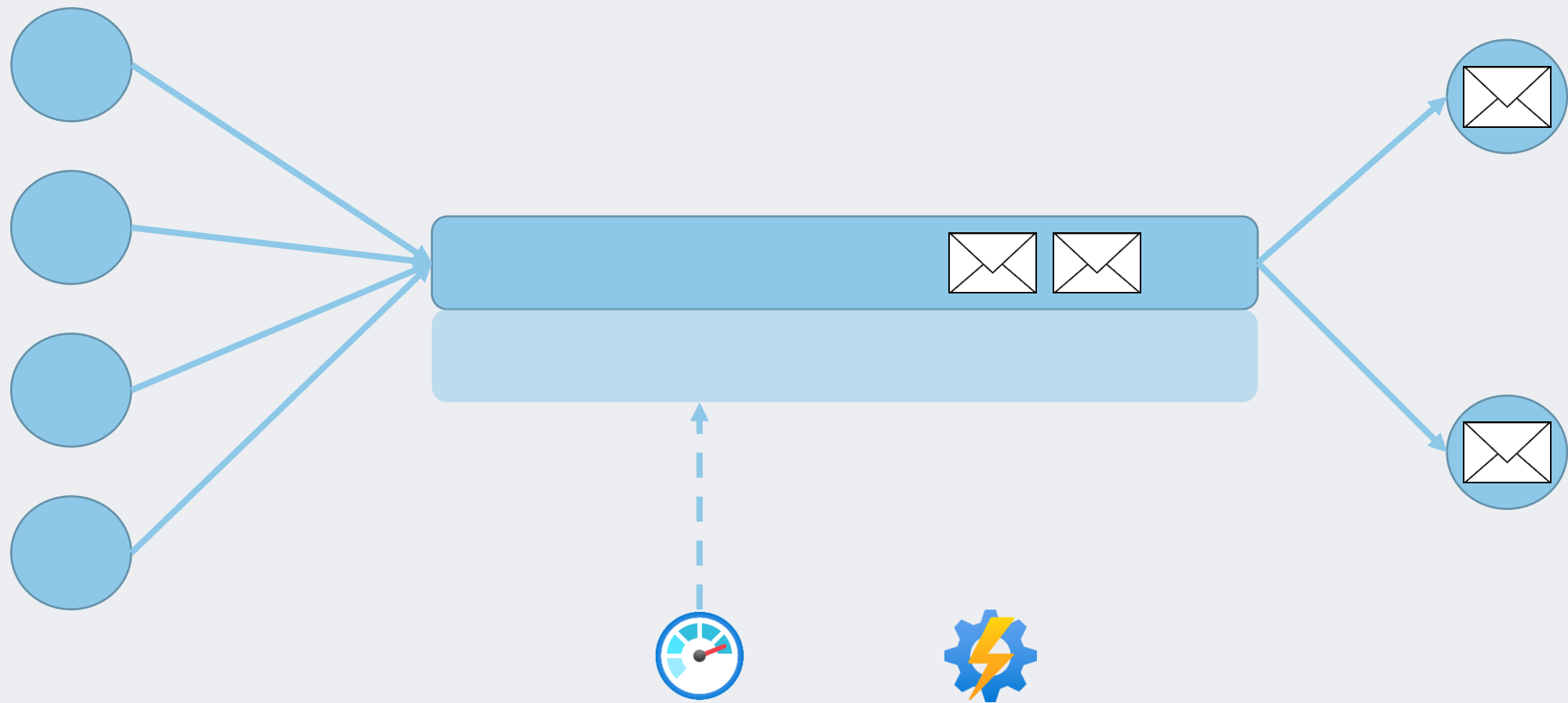@egrootenboer

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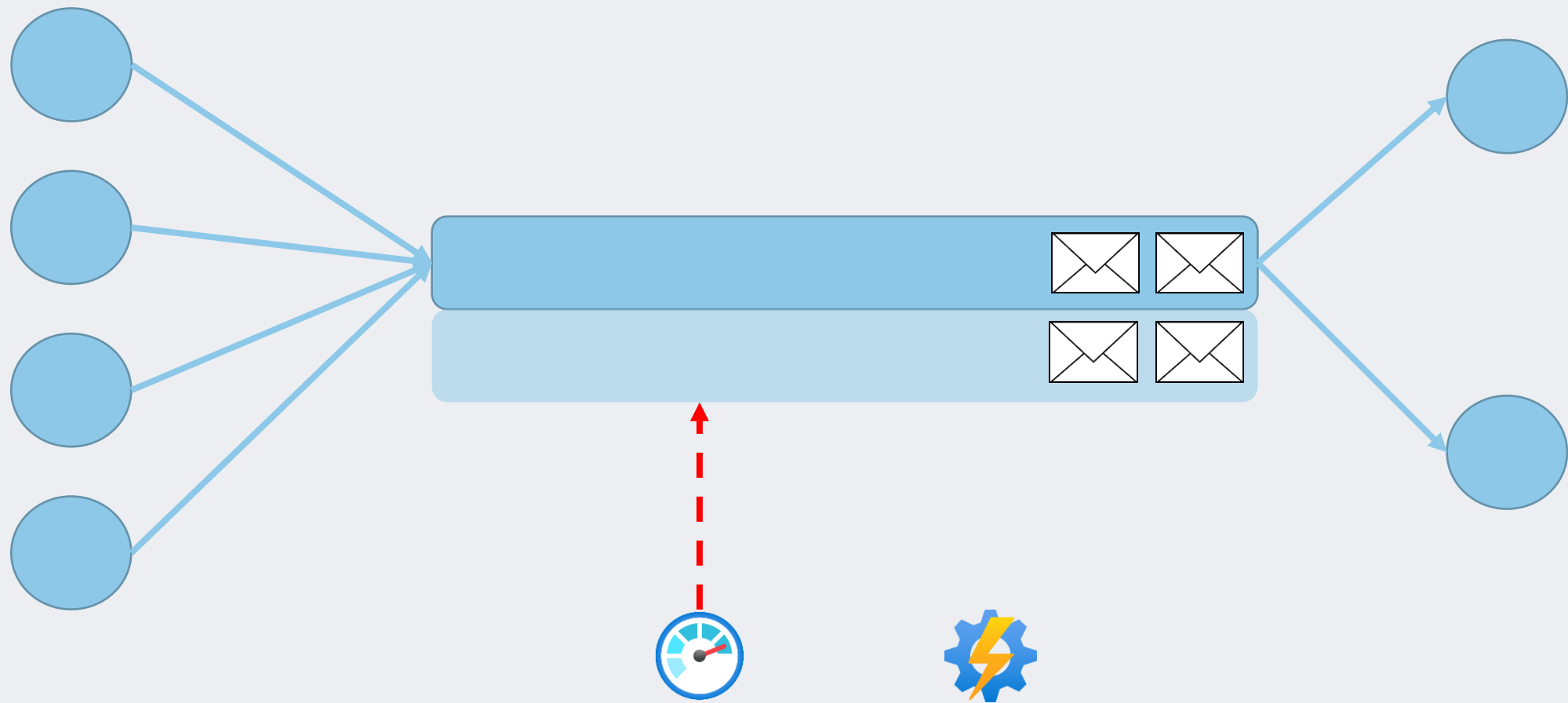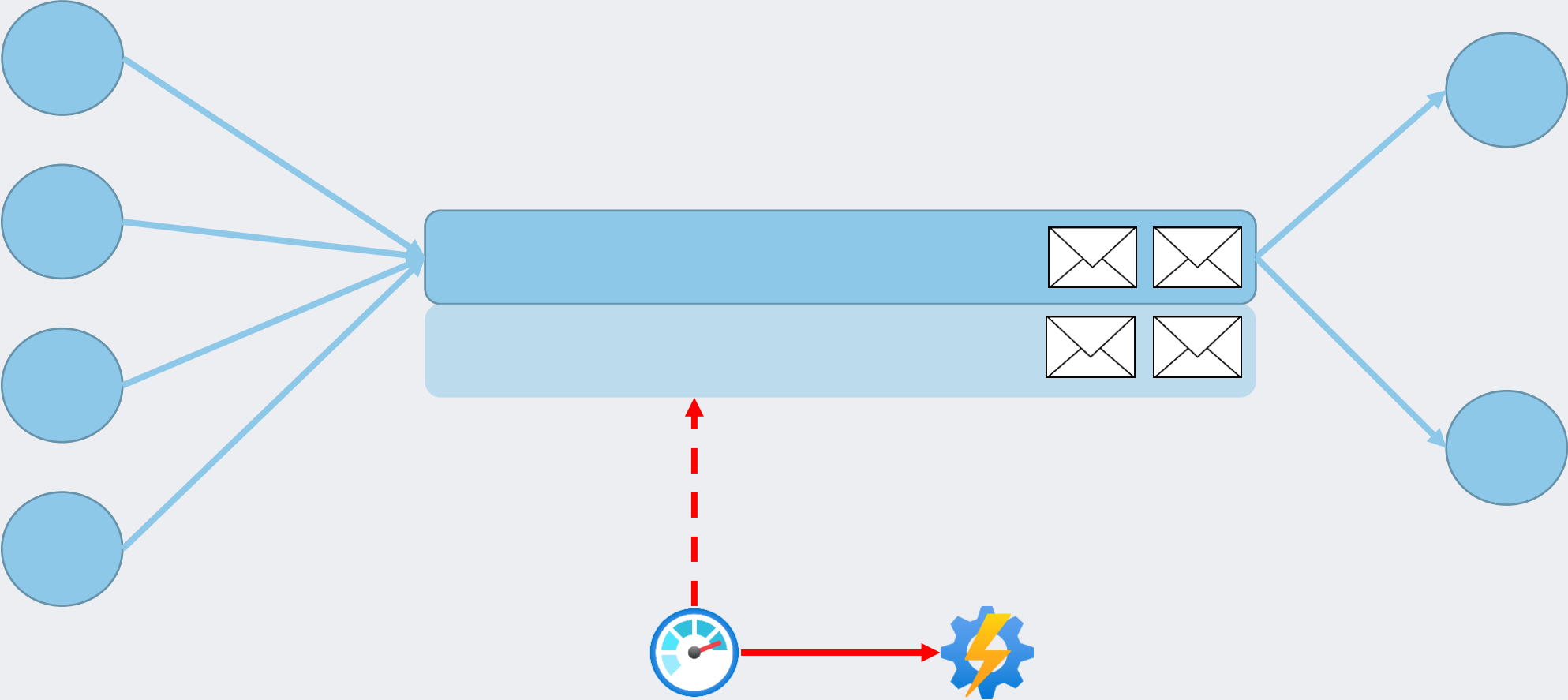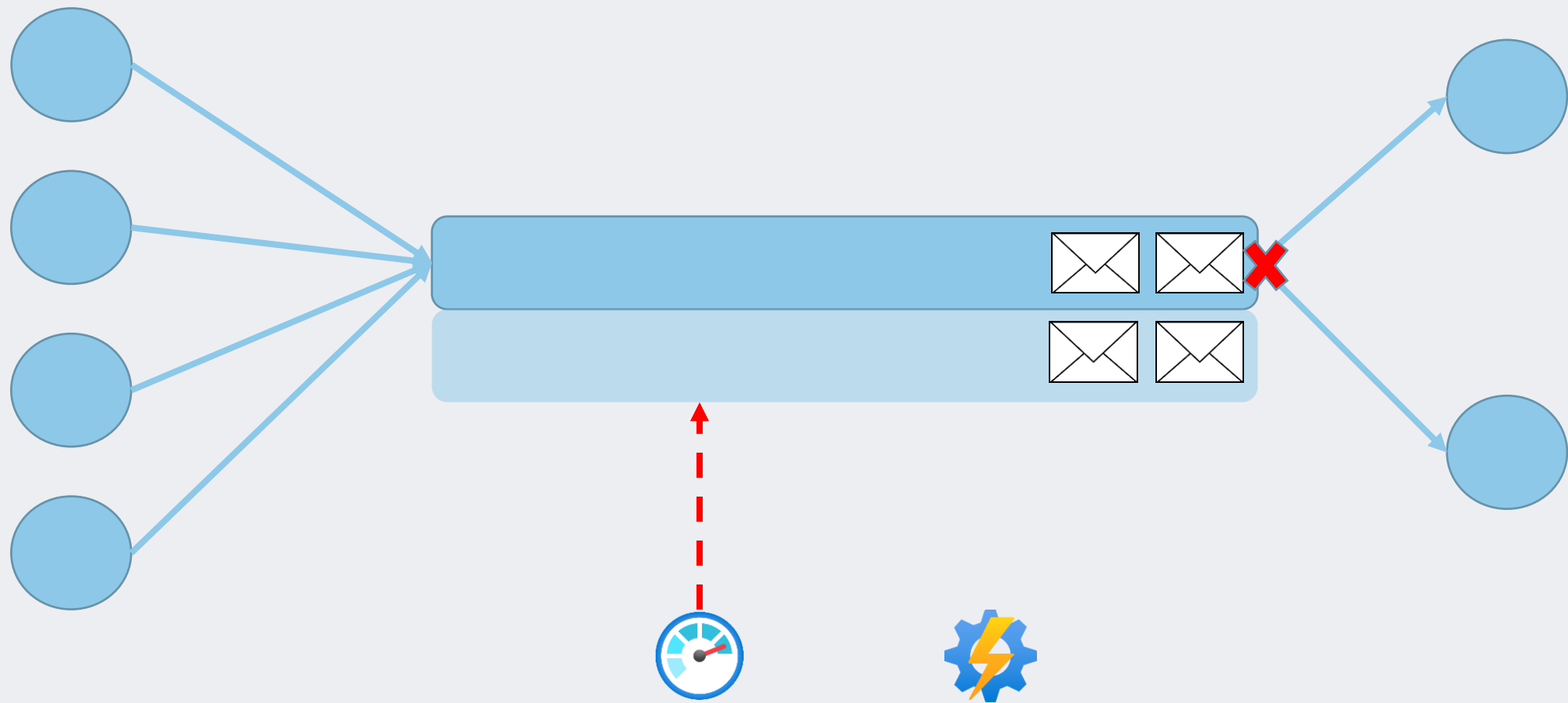# Circuit Breaker

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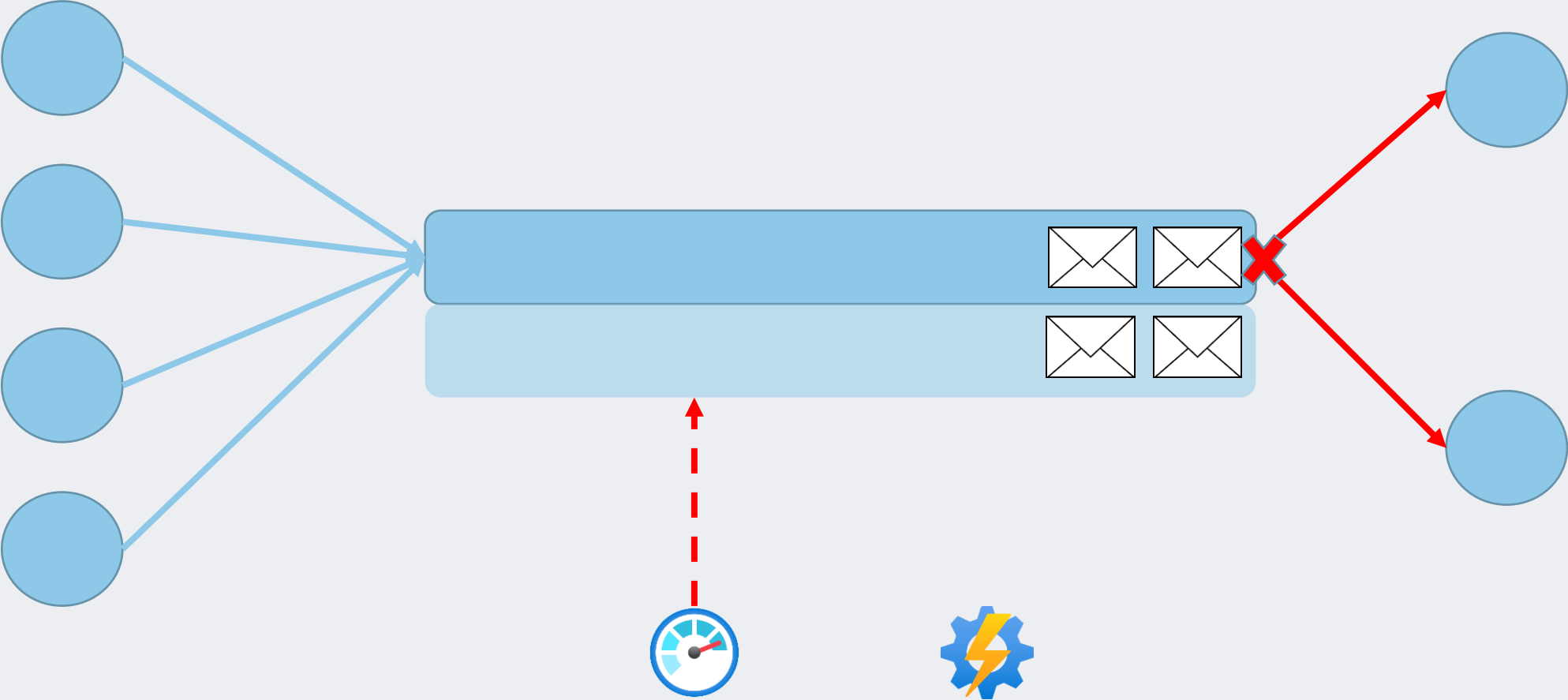# Circuit Breaker

Circuit Breaker

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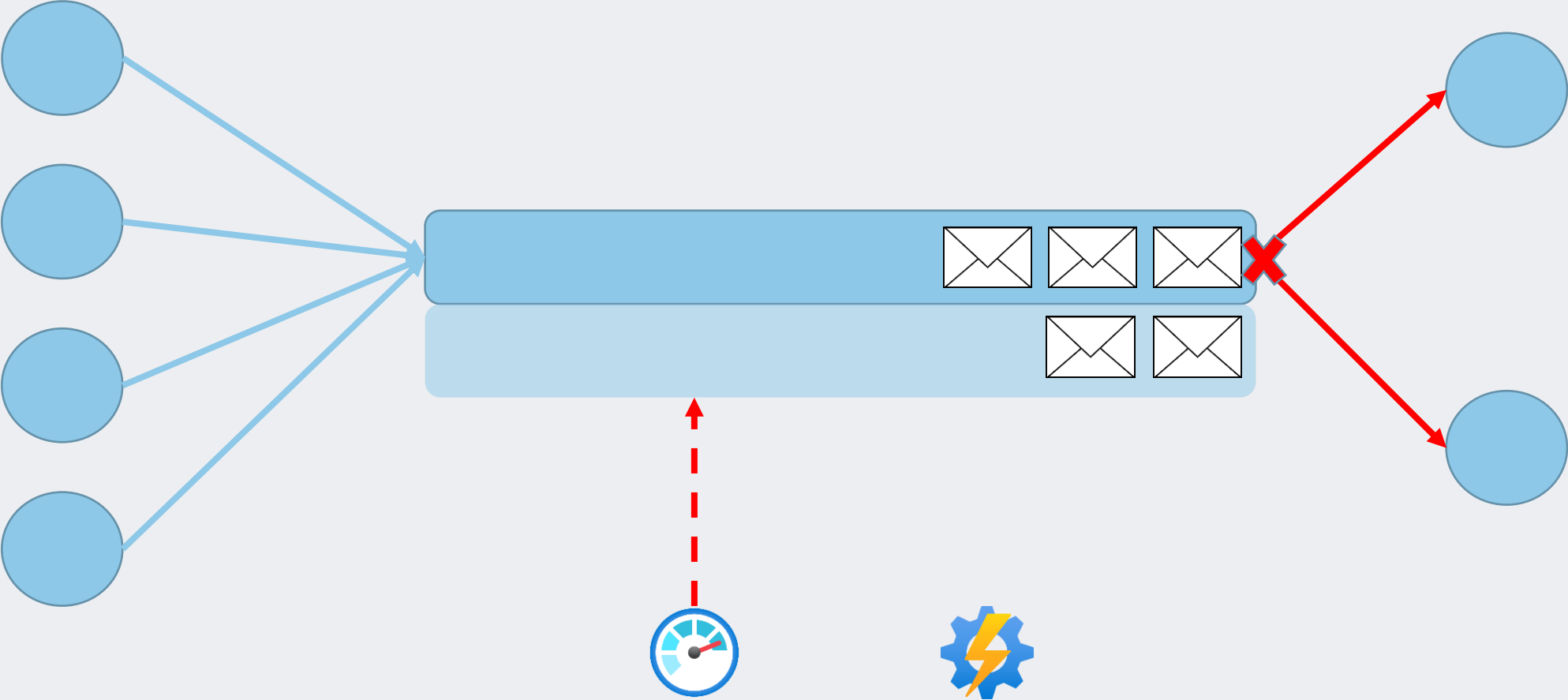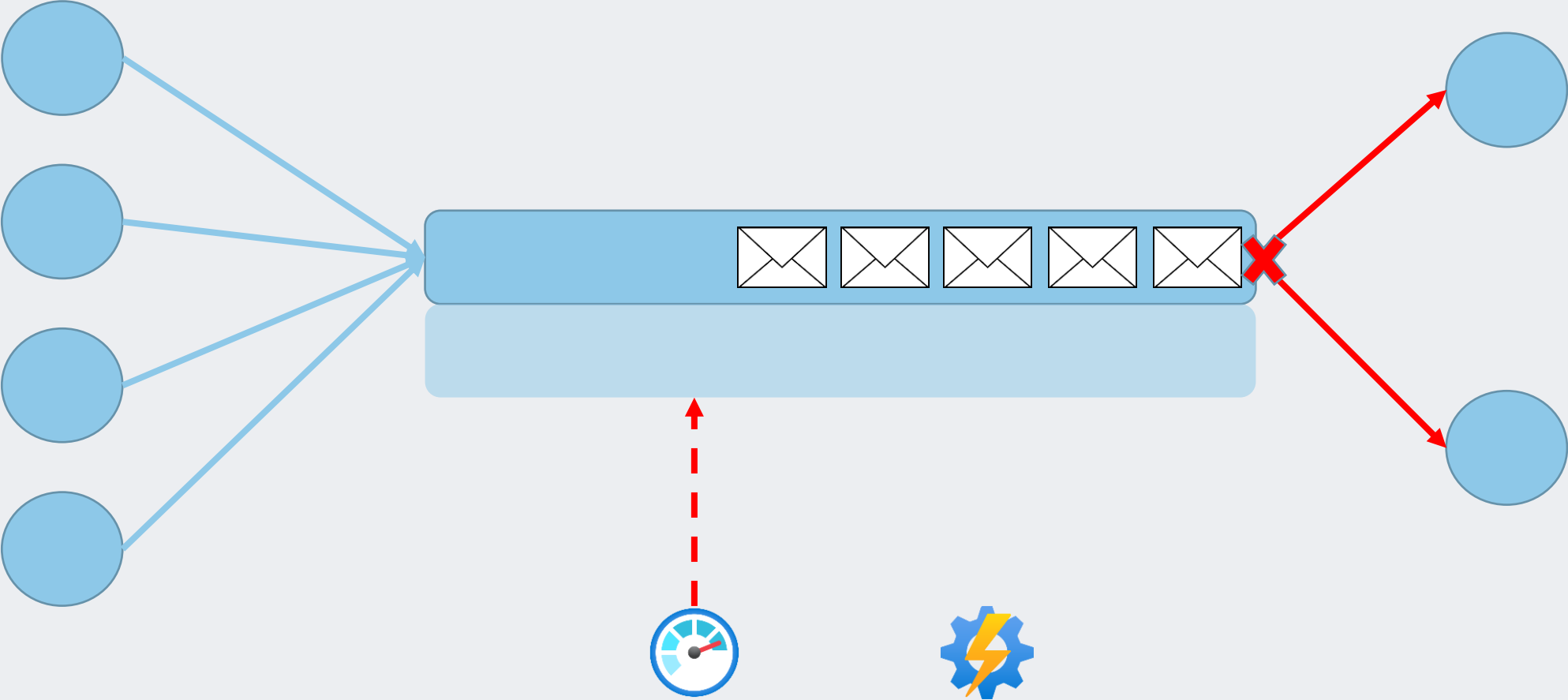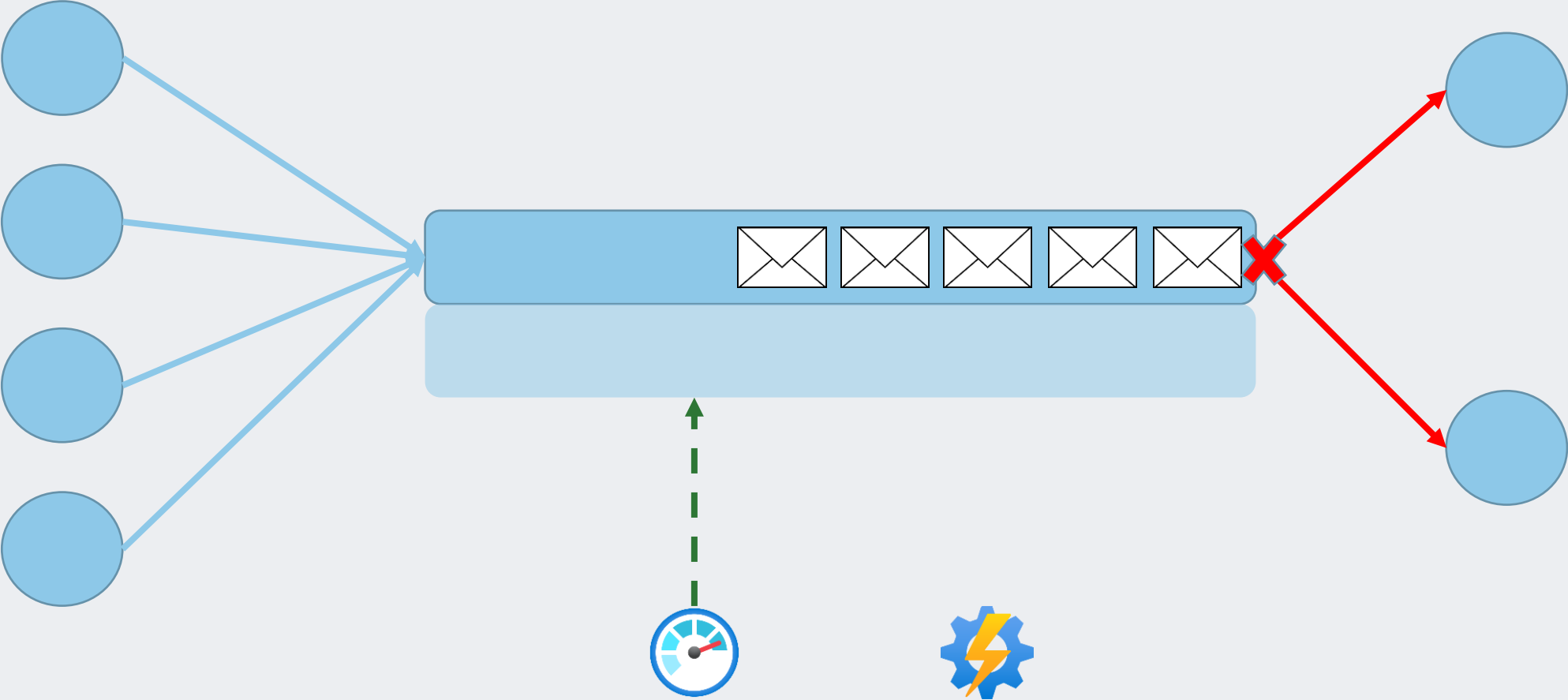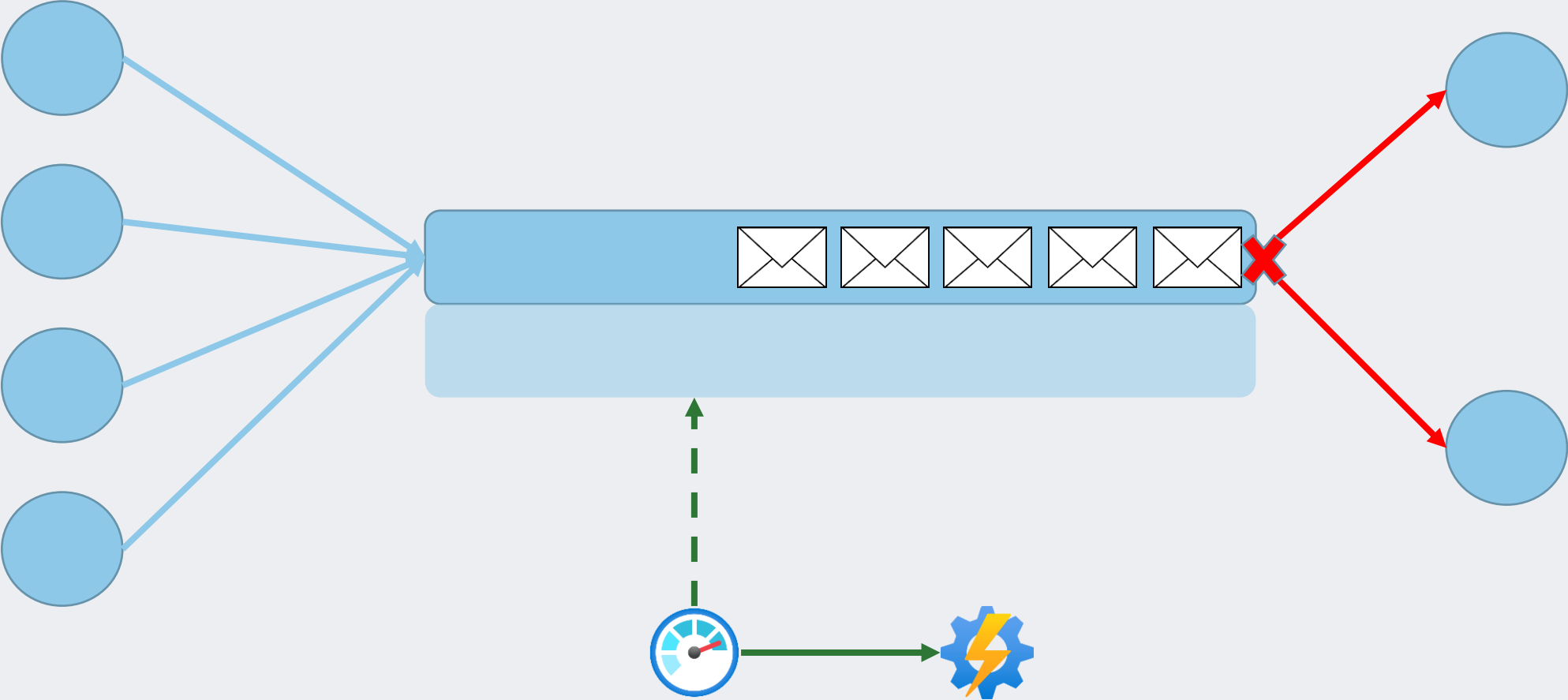# Circuit Breaker

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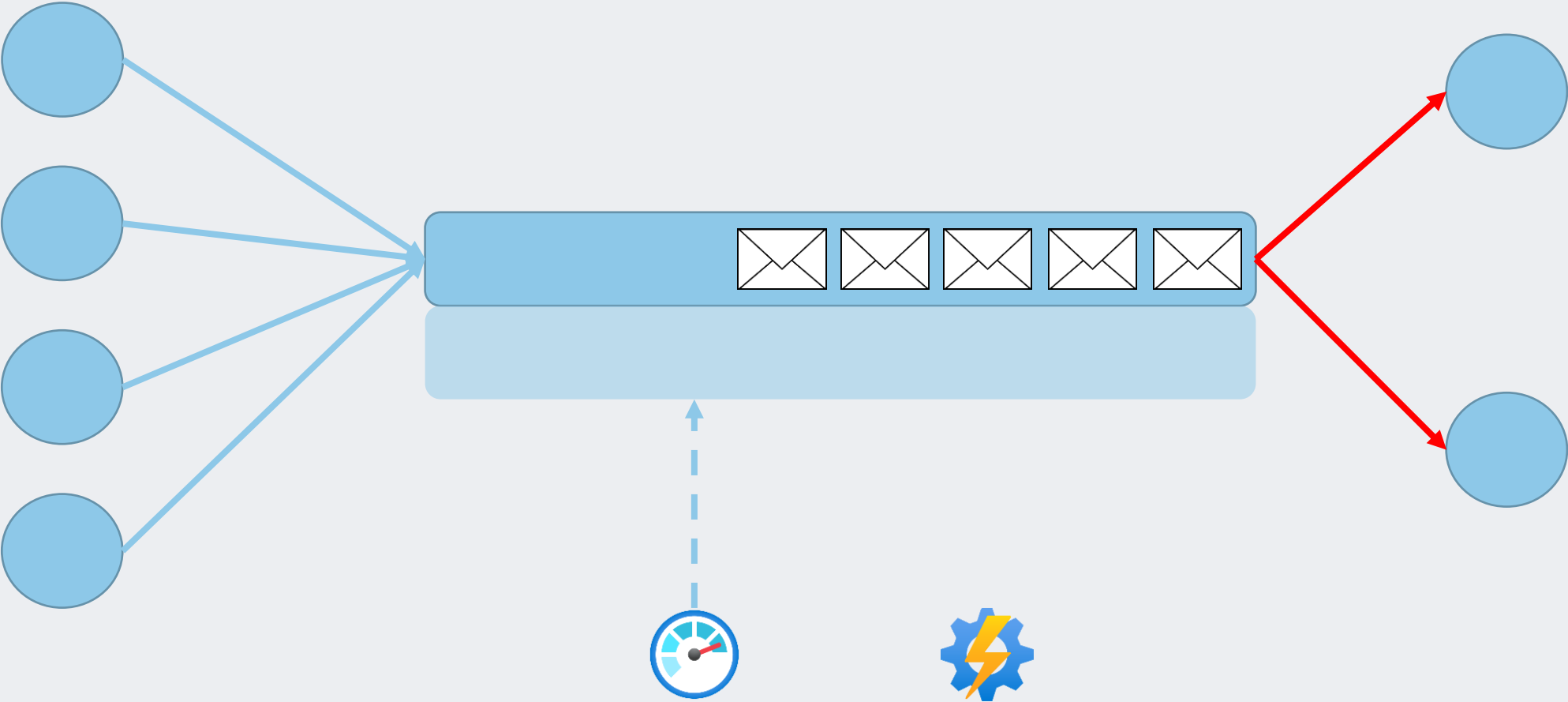# Circuit Breaker

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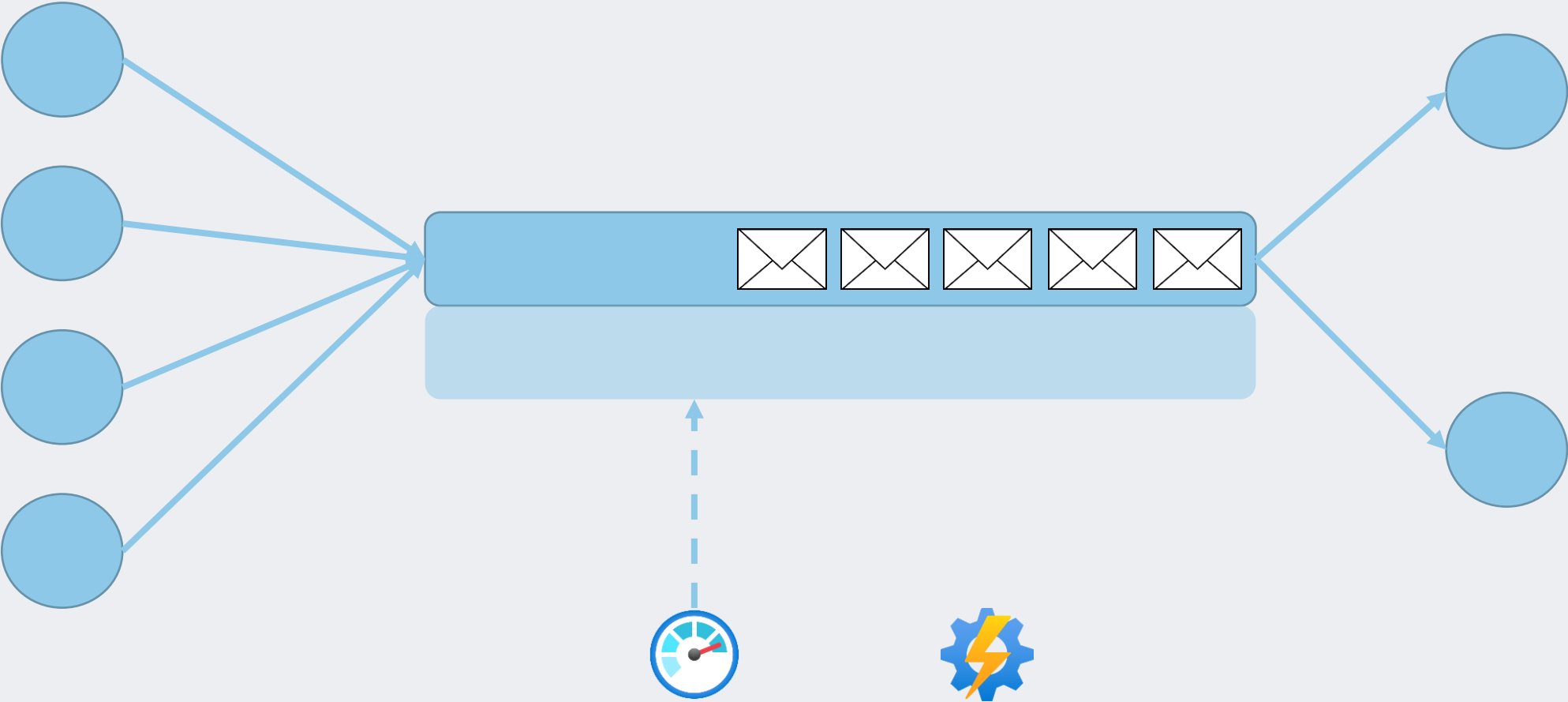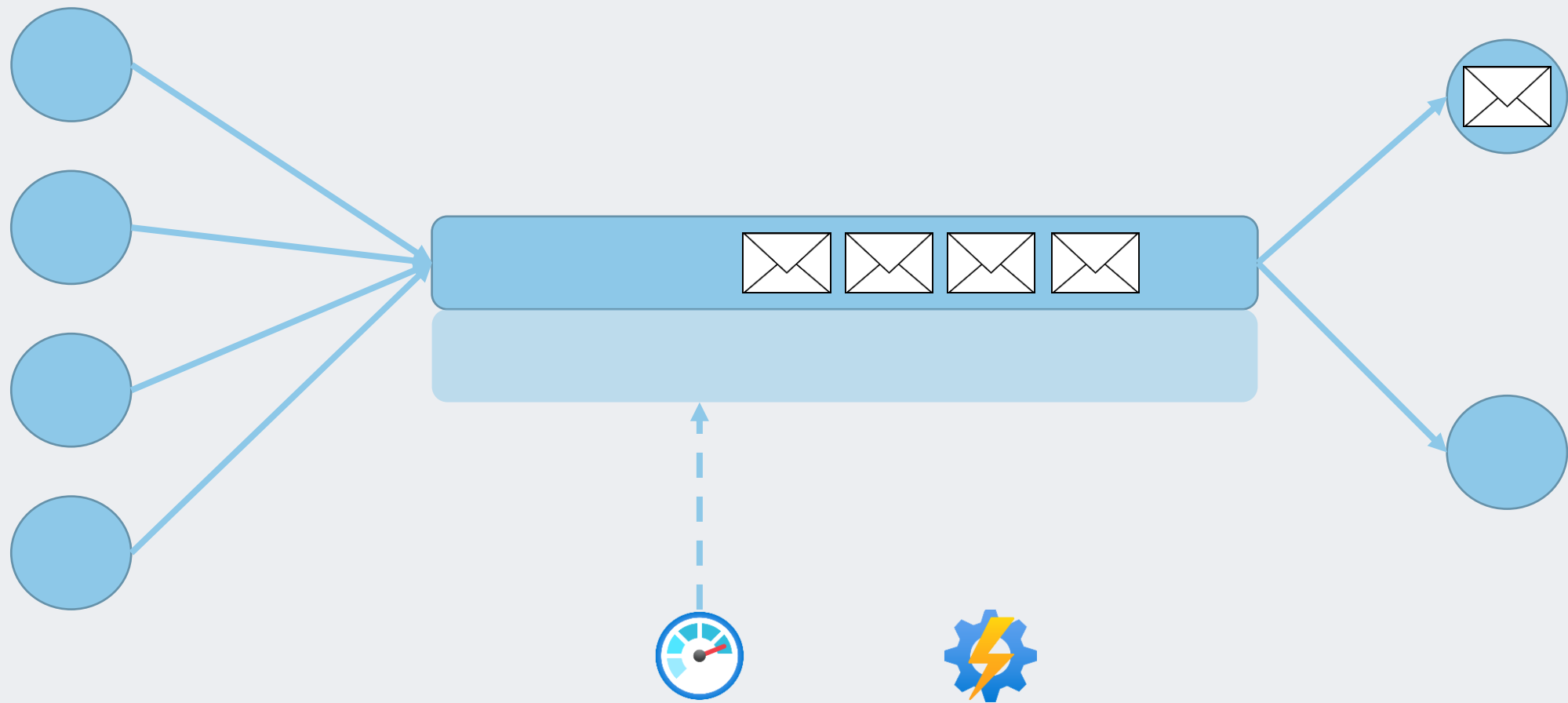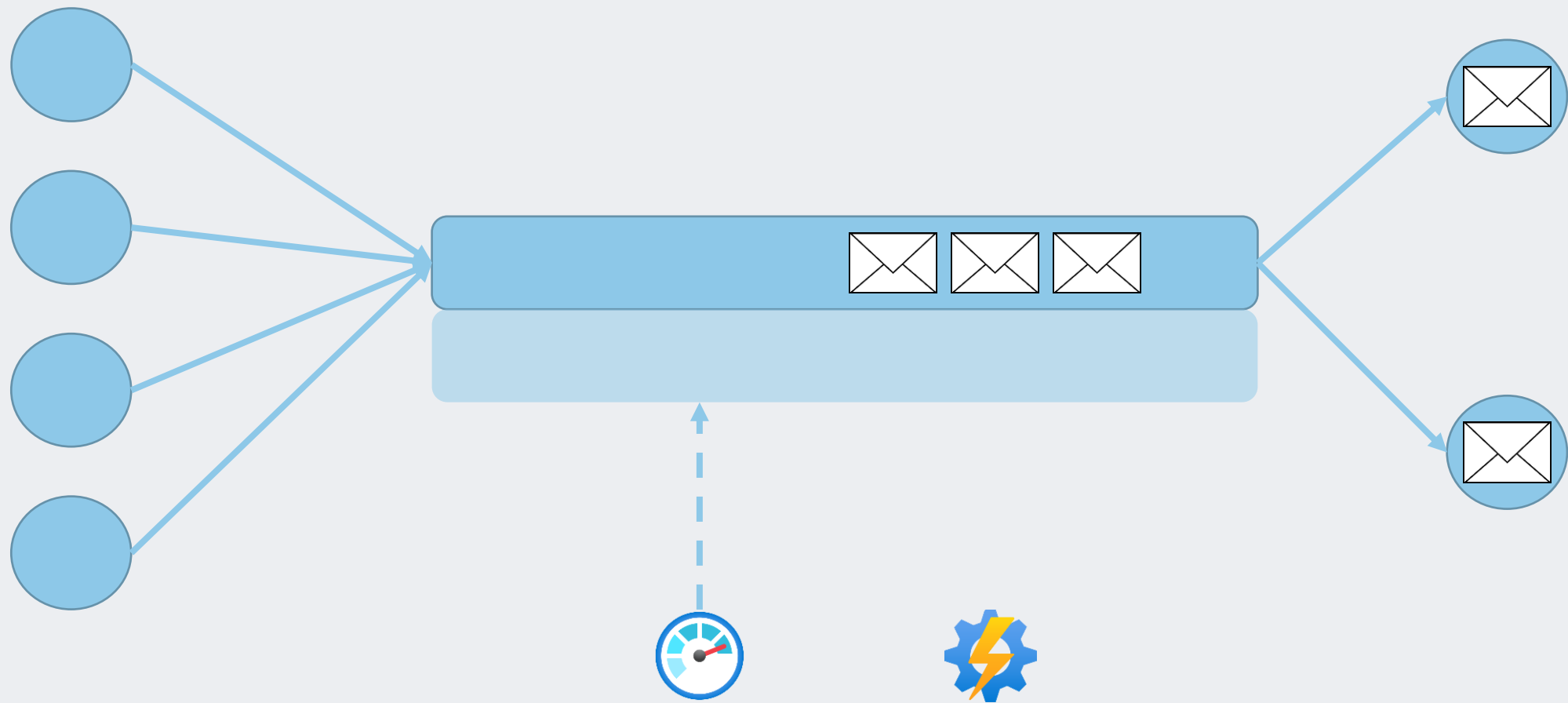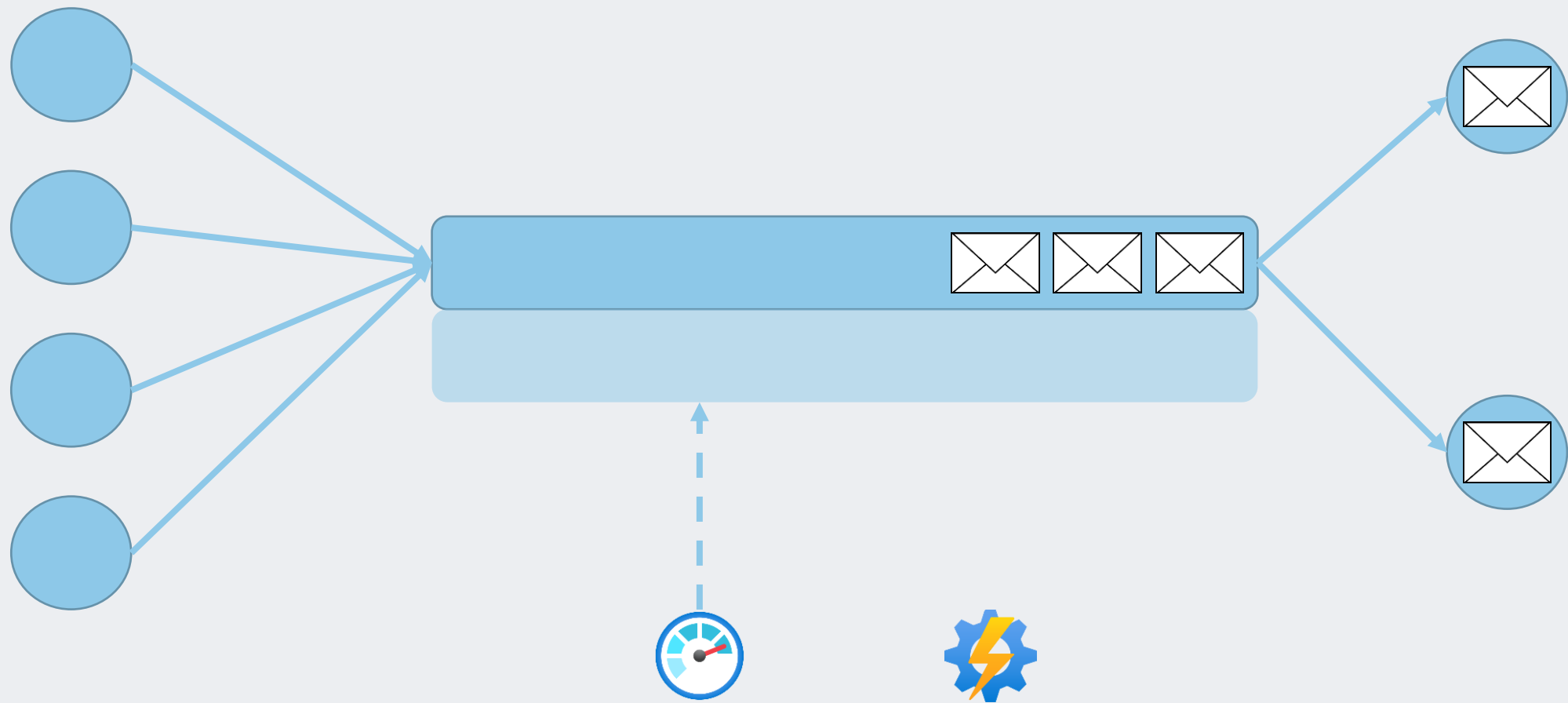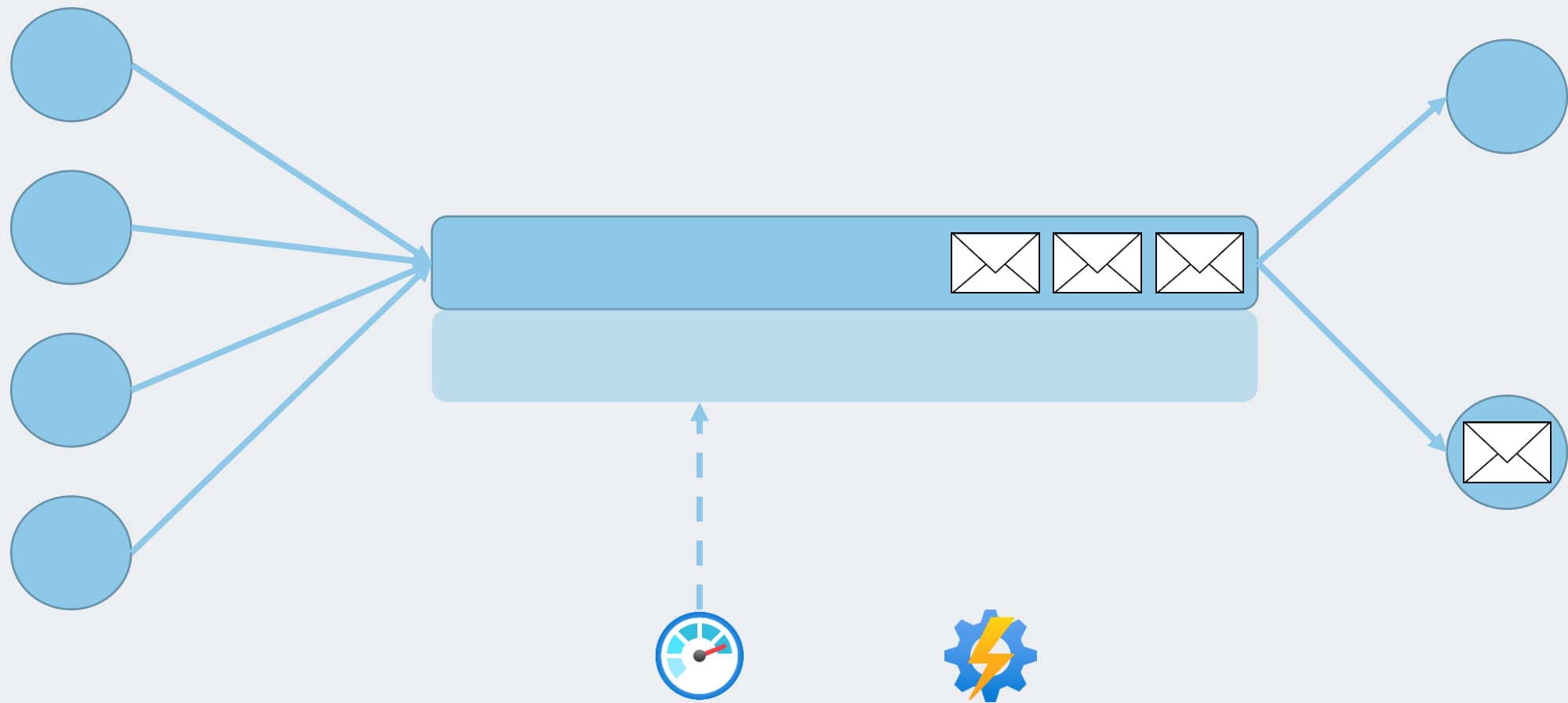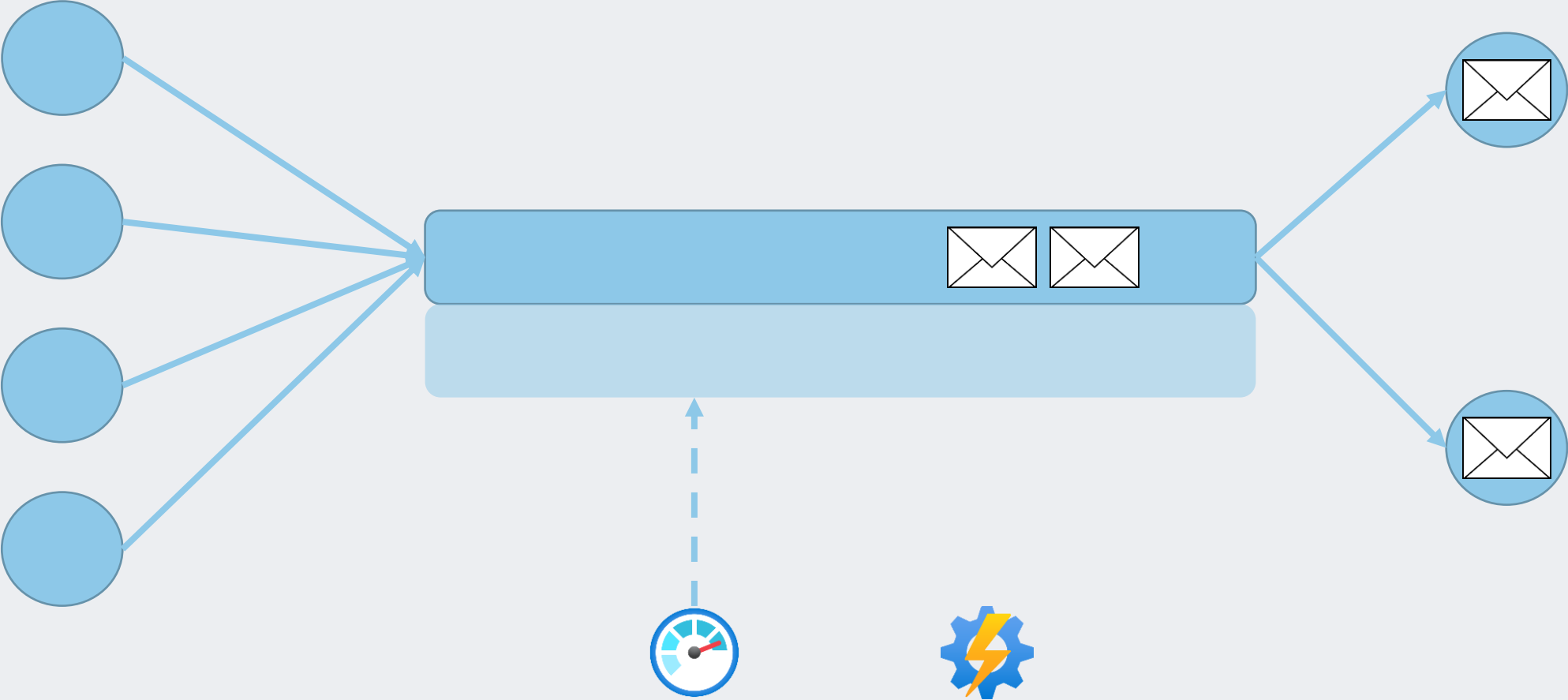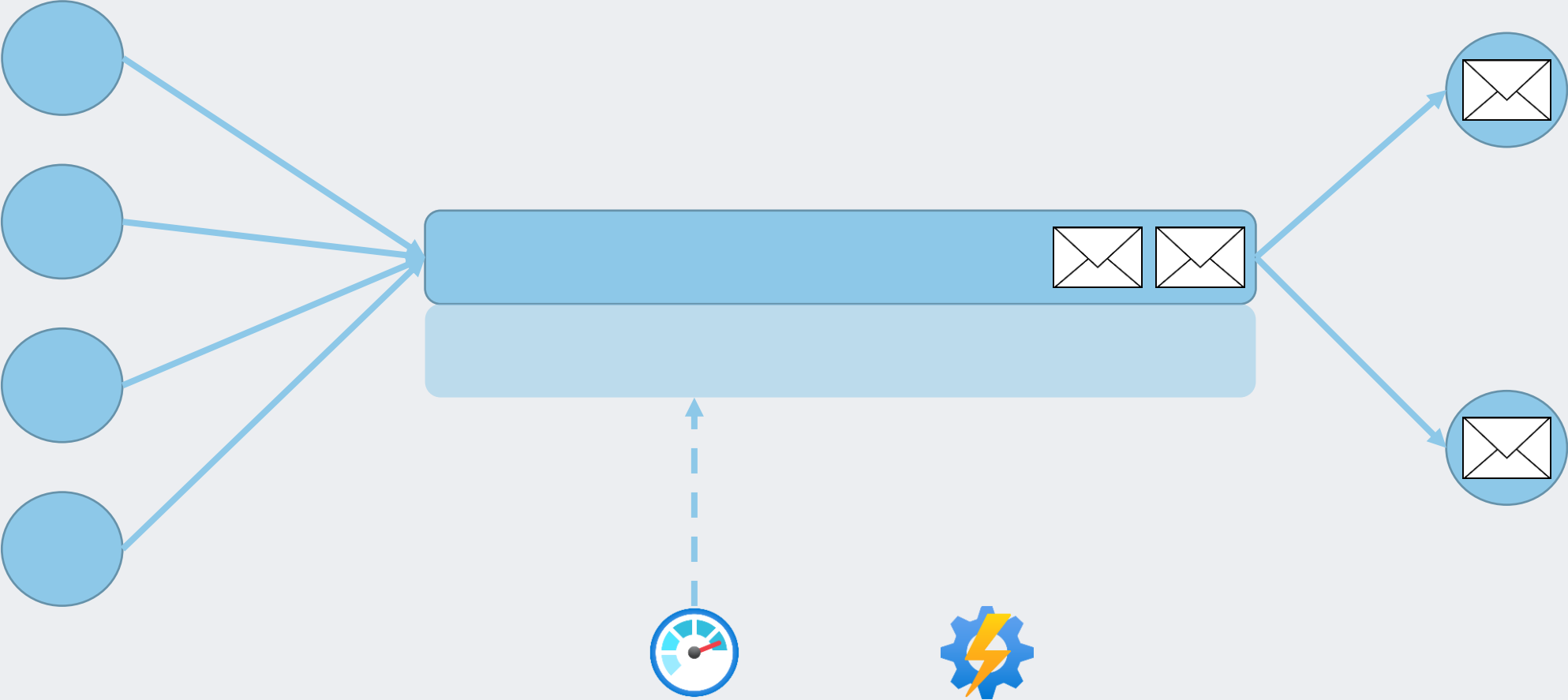

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Circuit Breaker

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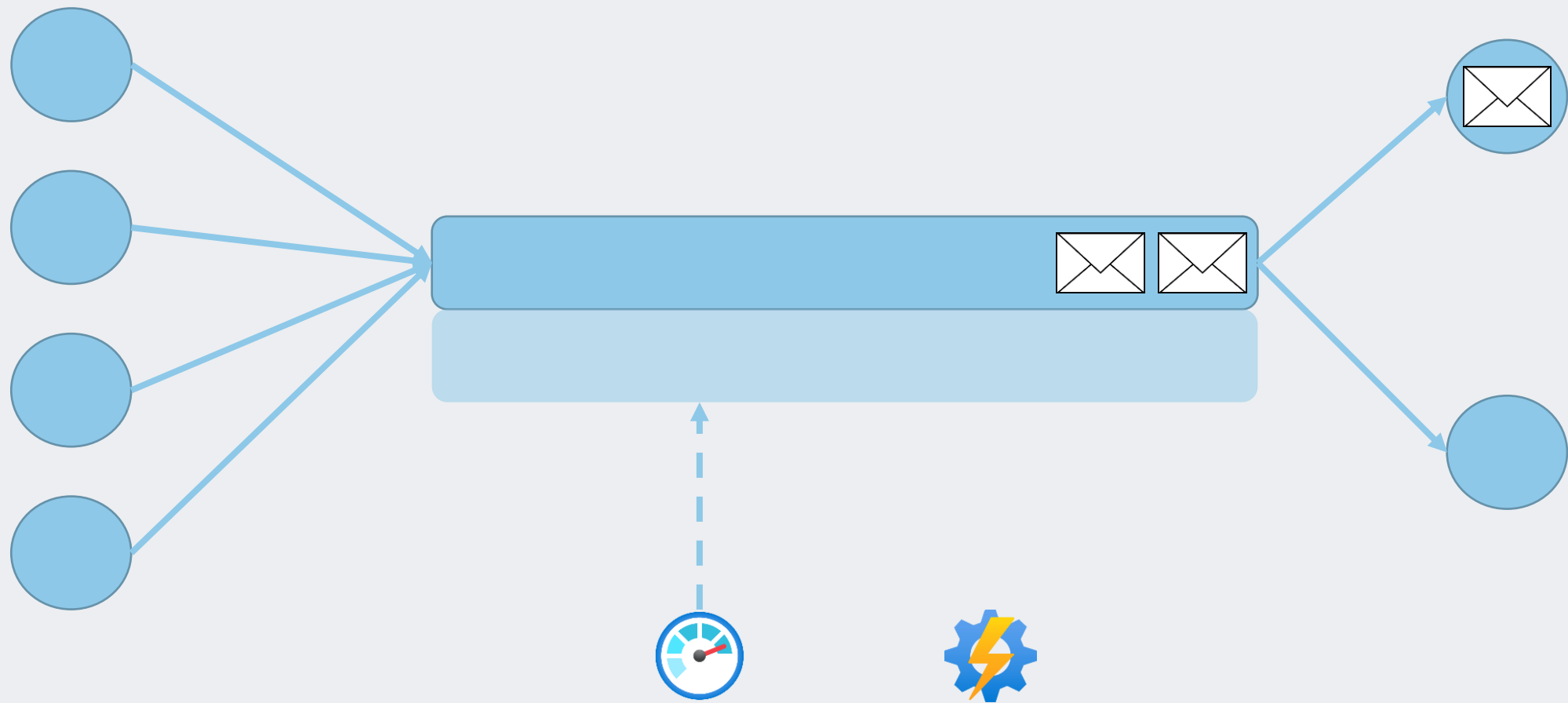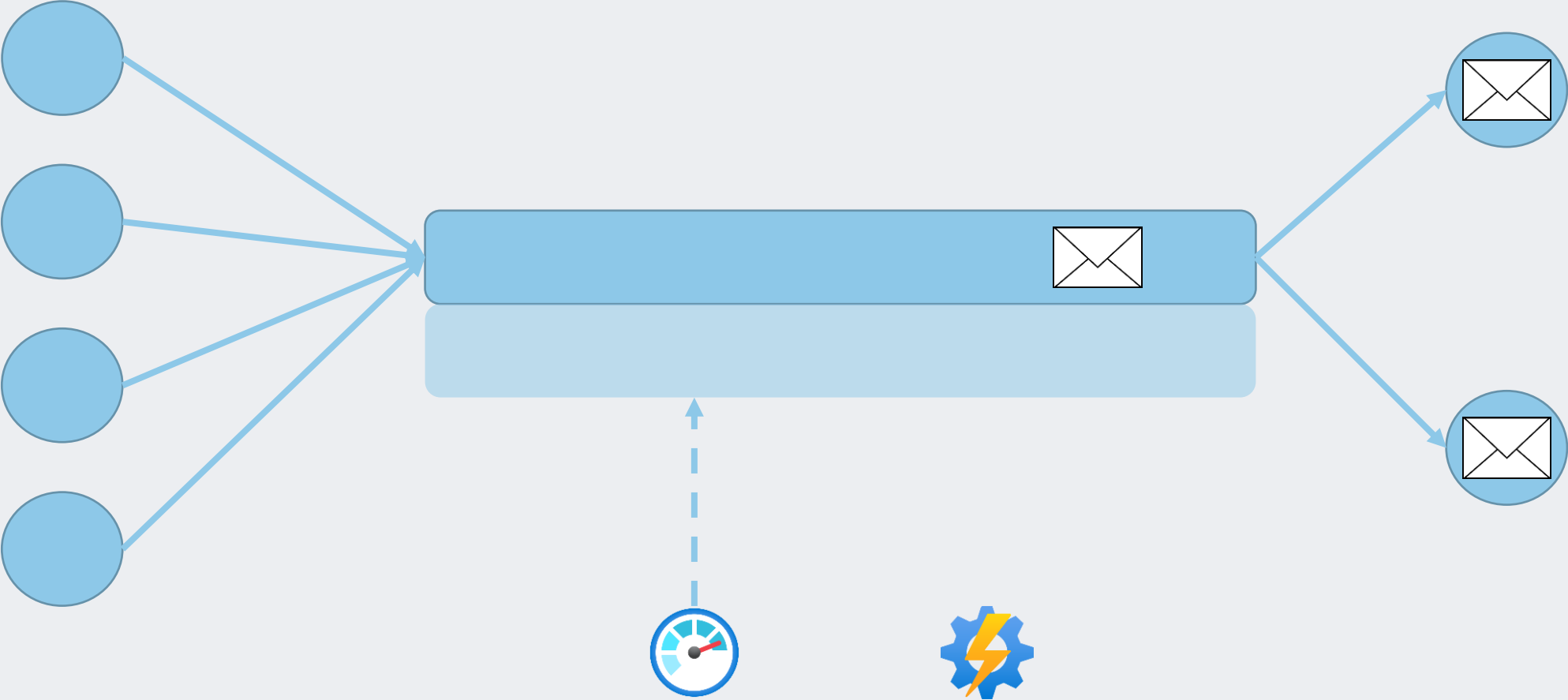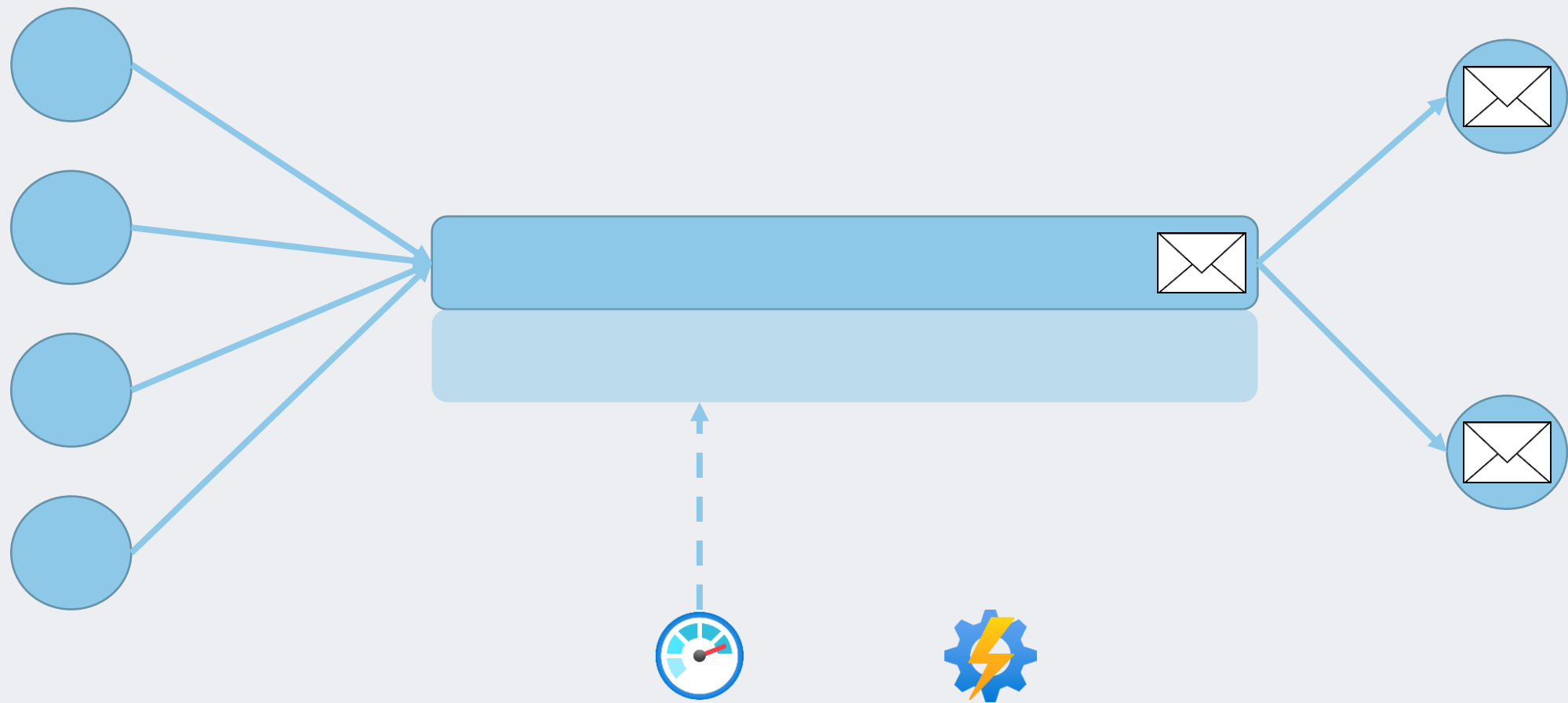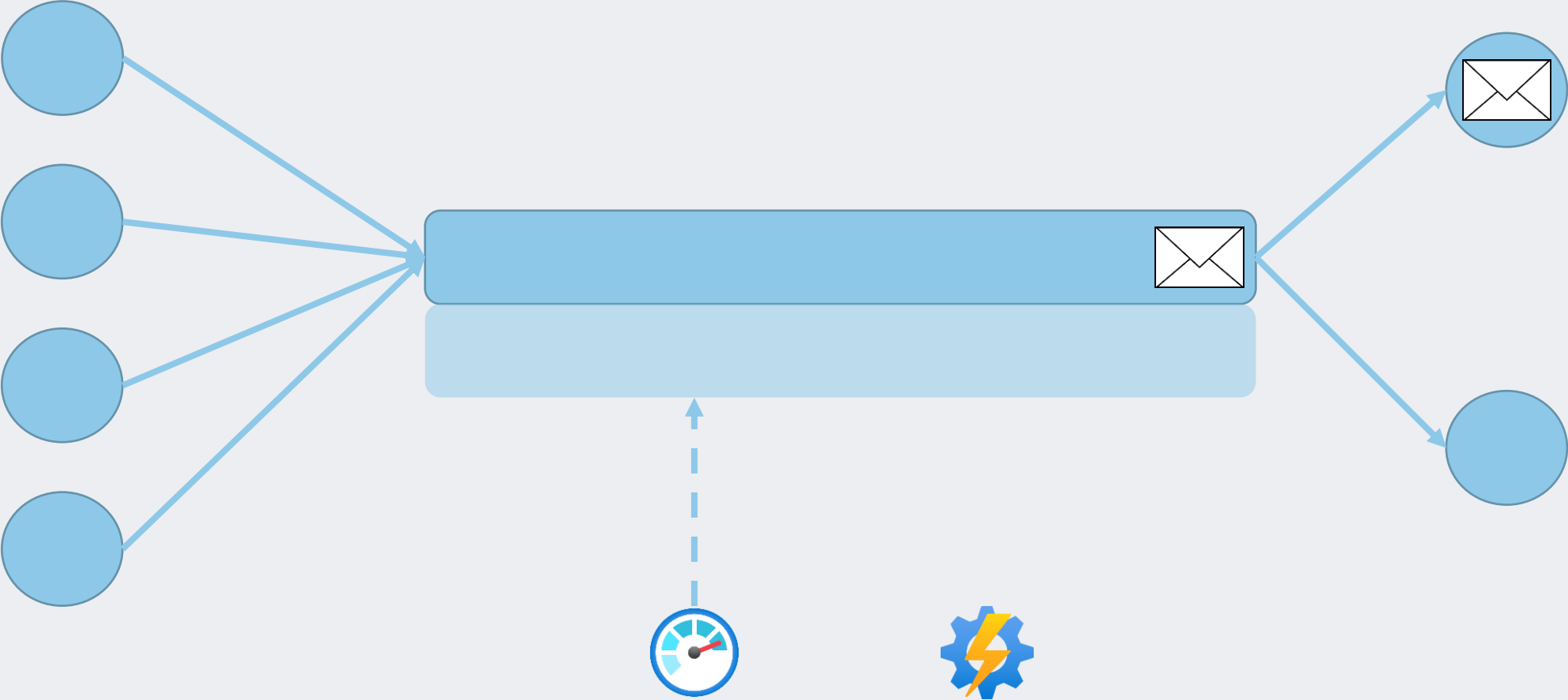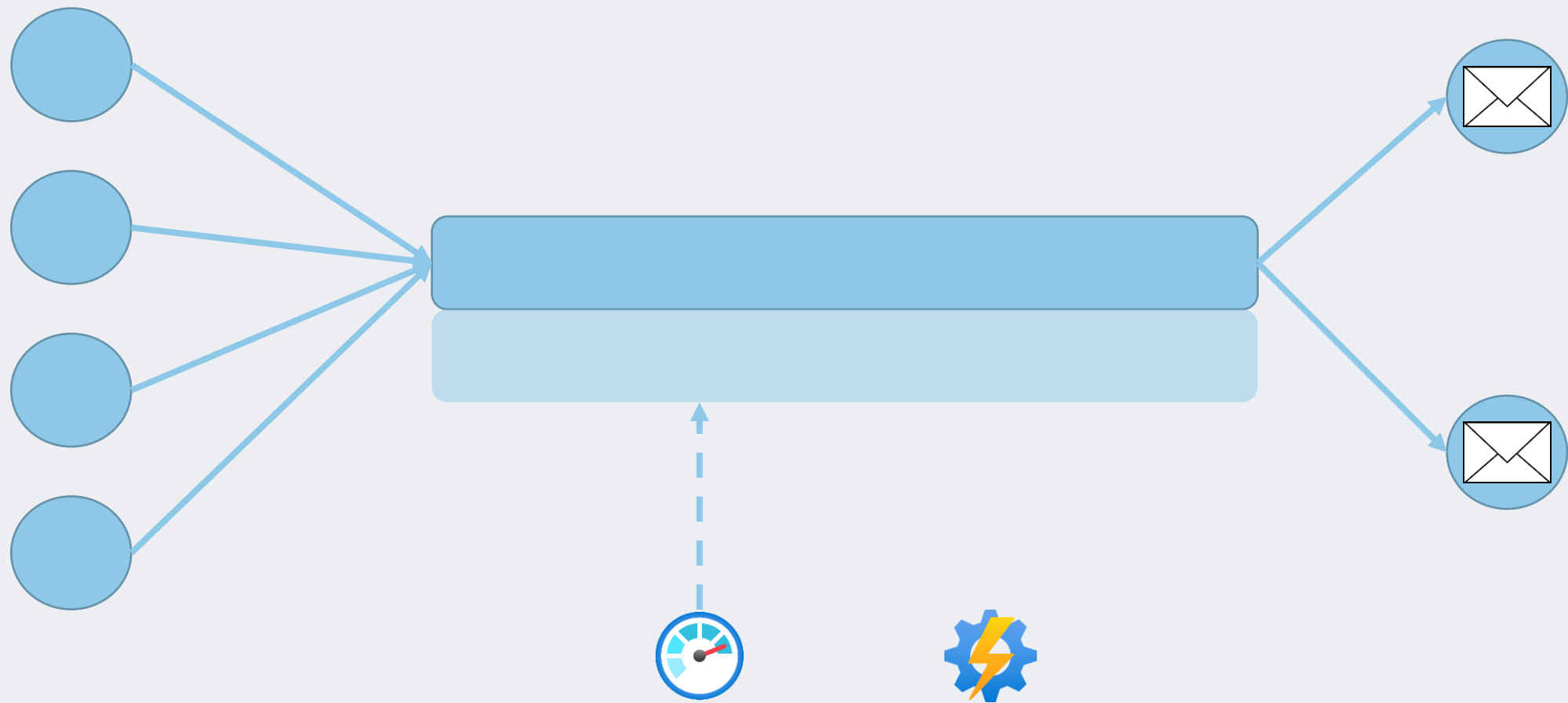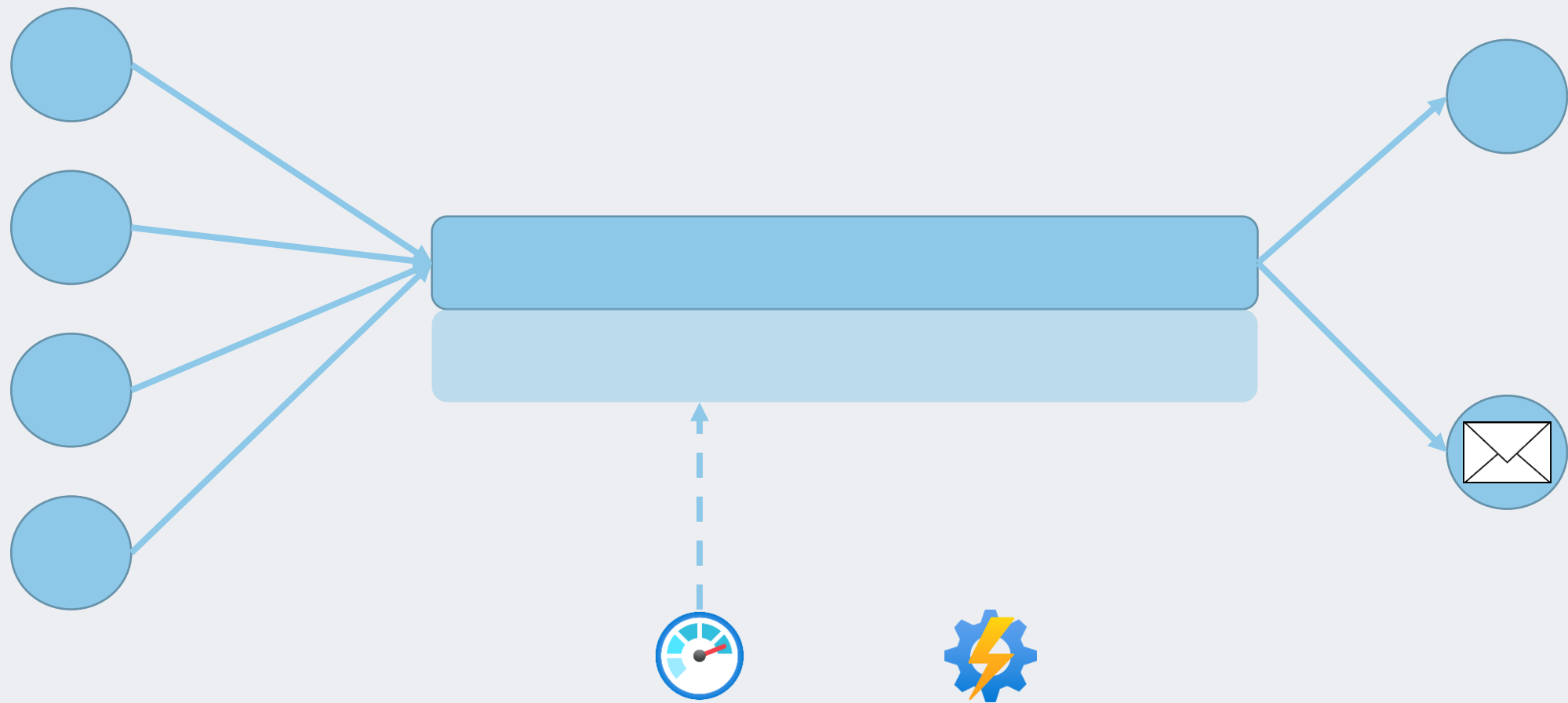

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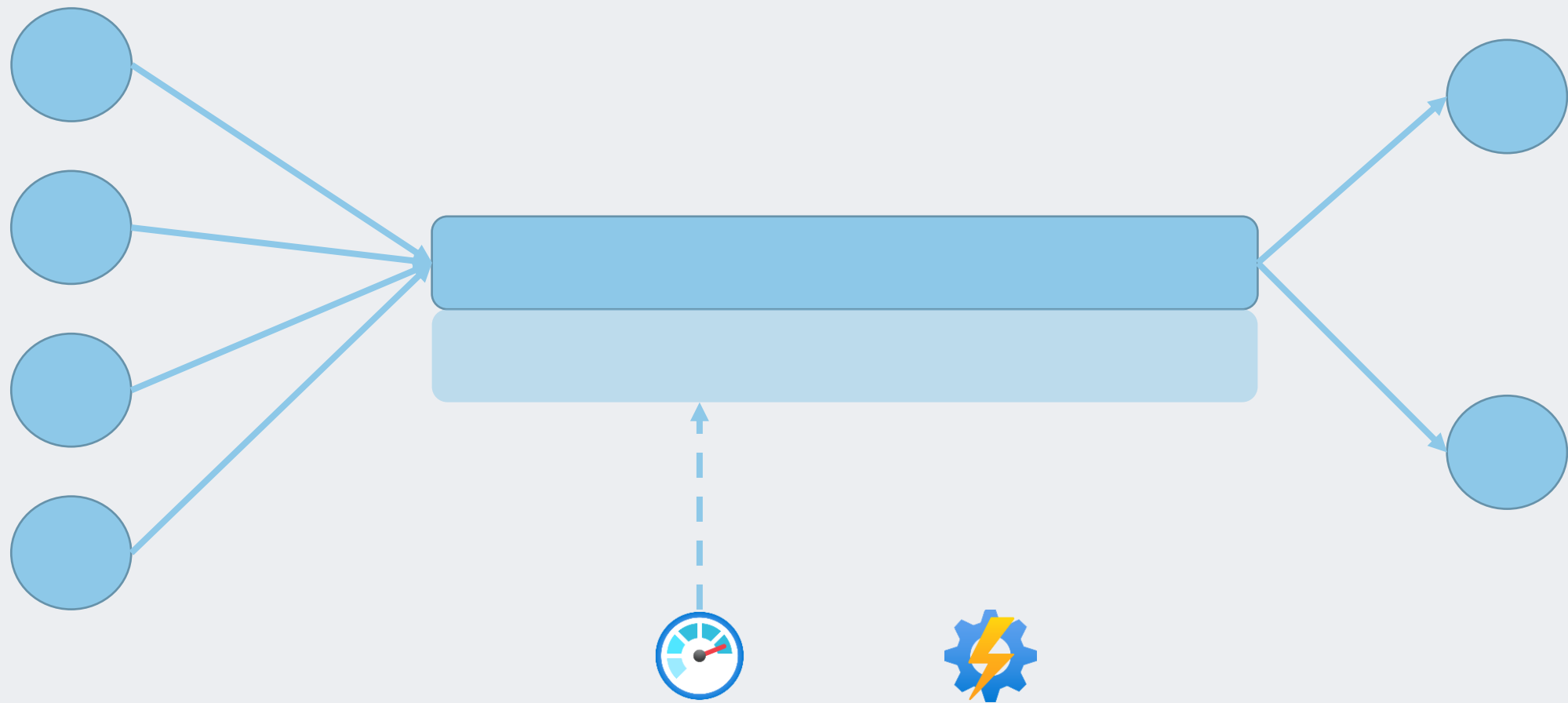
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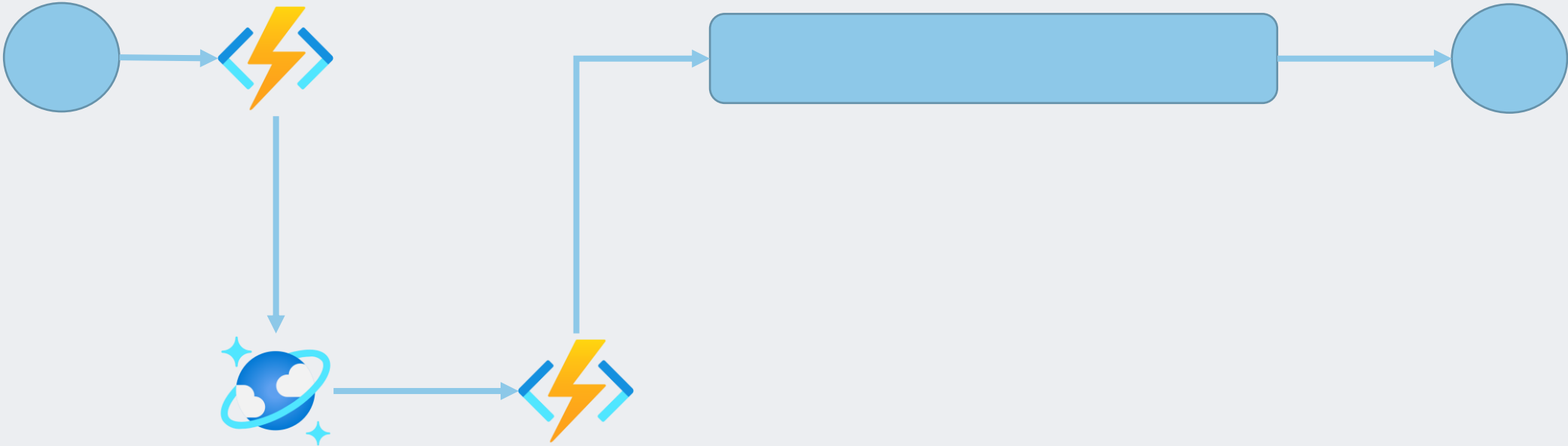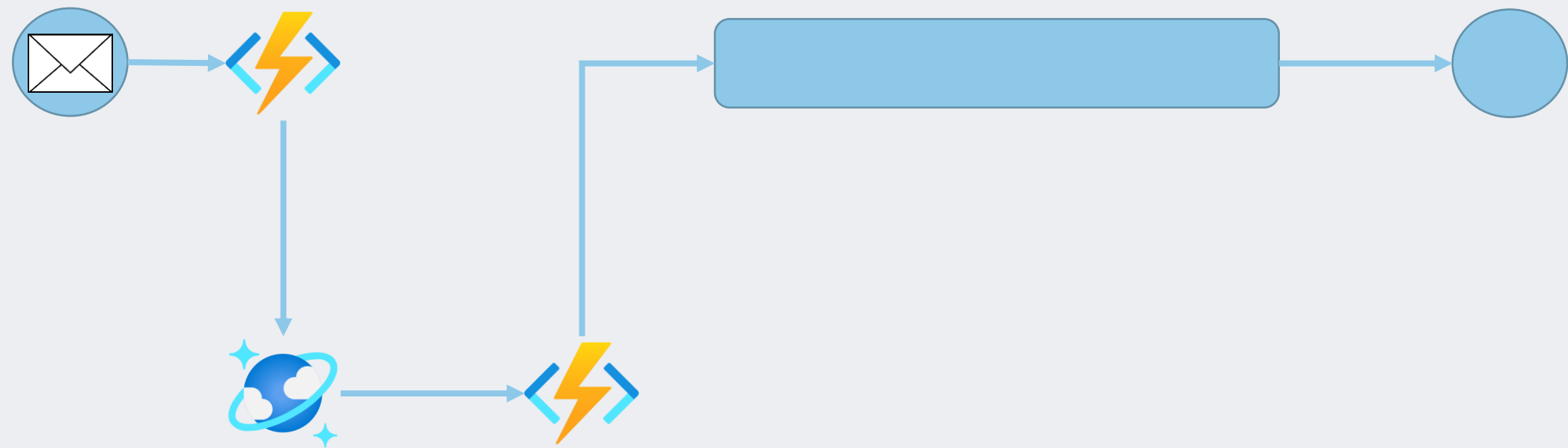

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Circuit Breaker

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Transactional Outbox

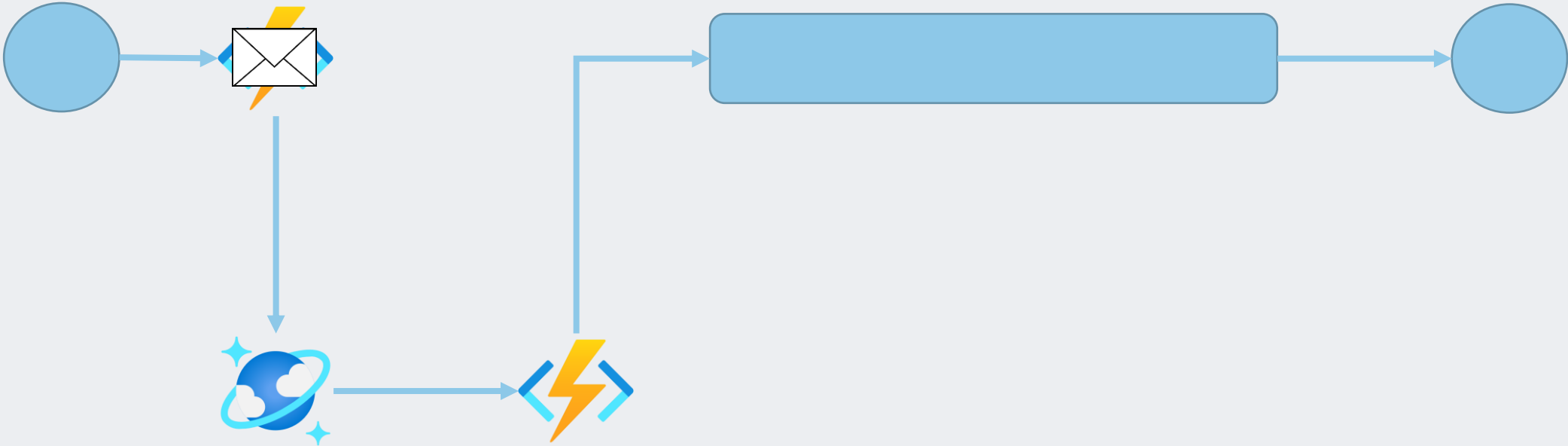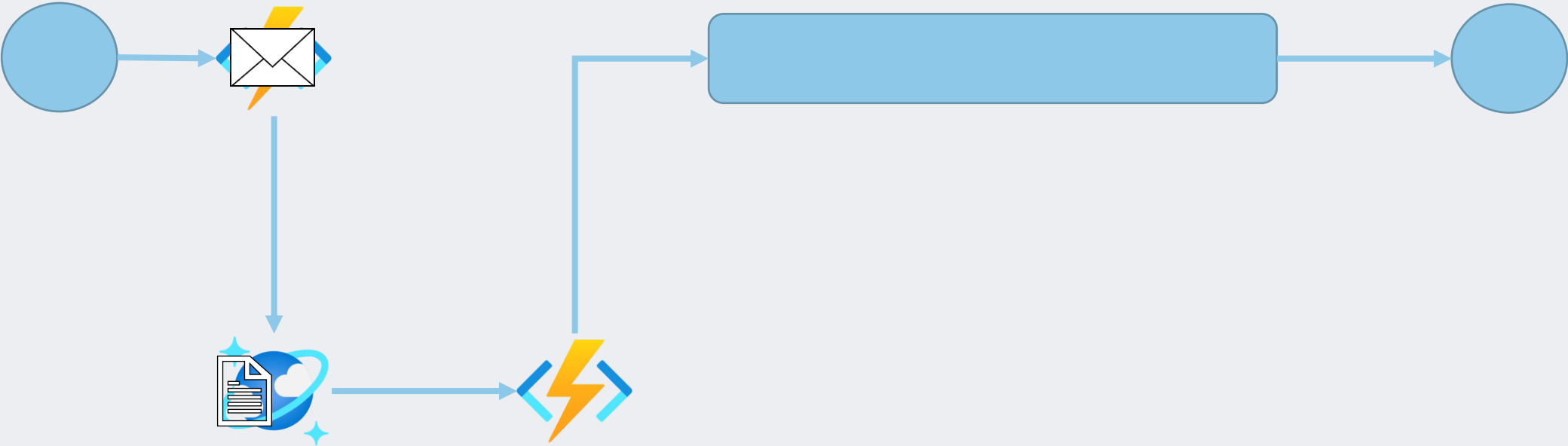https://docs.microsoft.com/en-us/azure/architecture/best-practices/transactional-outbox-cosmos
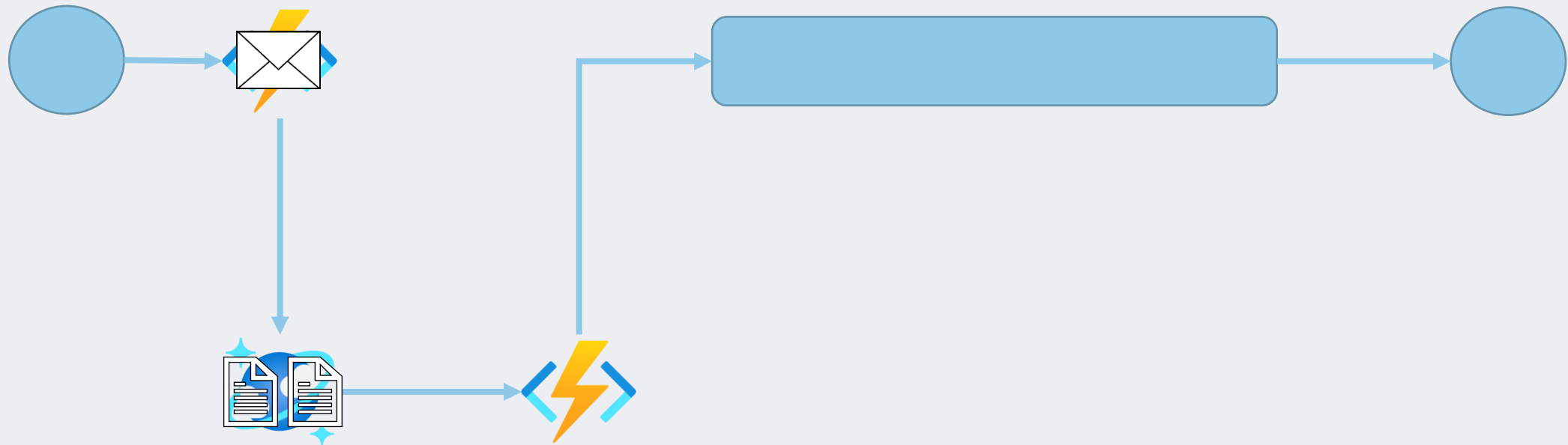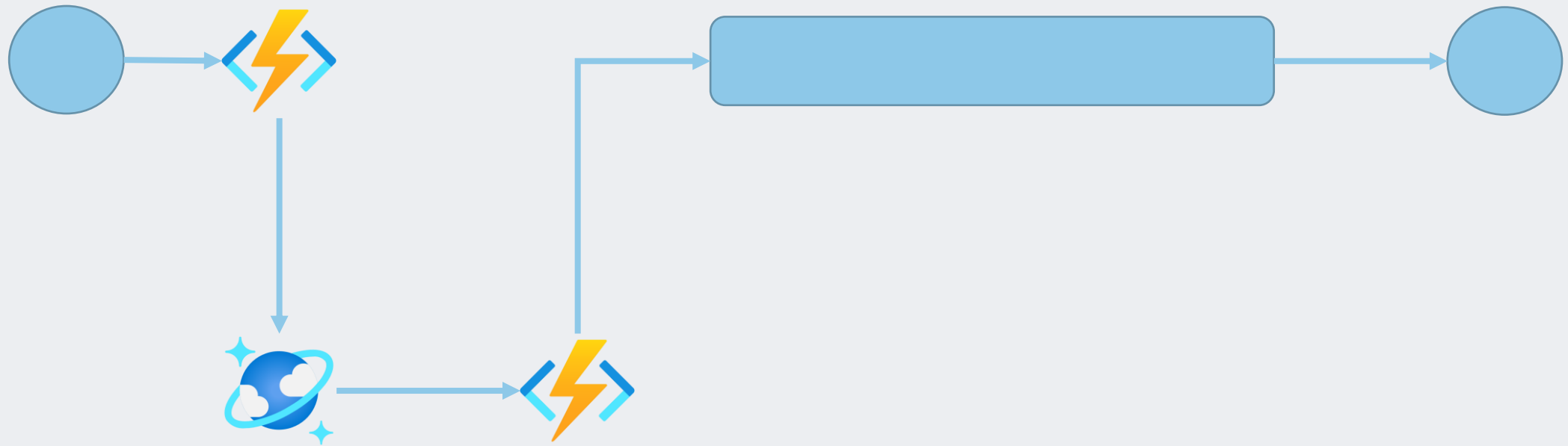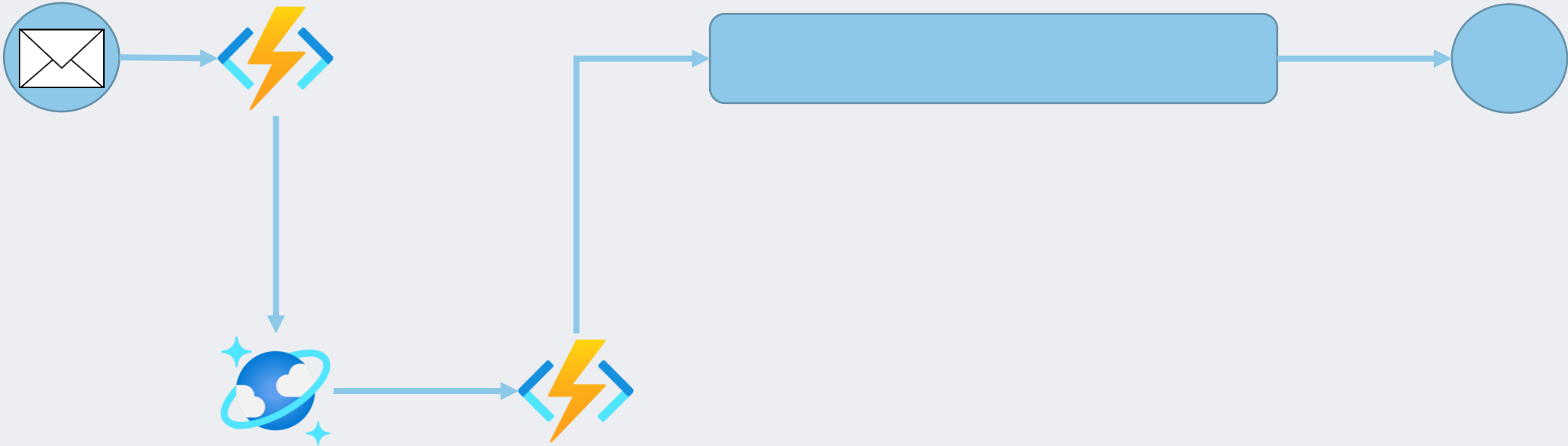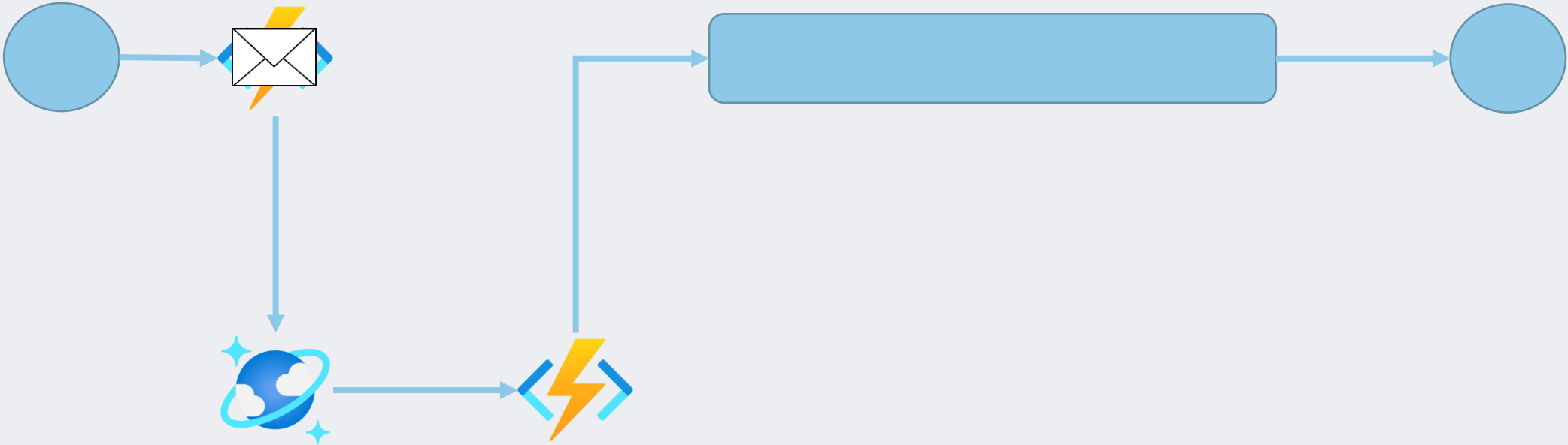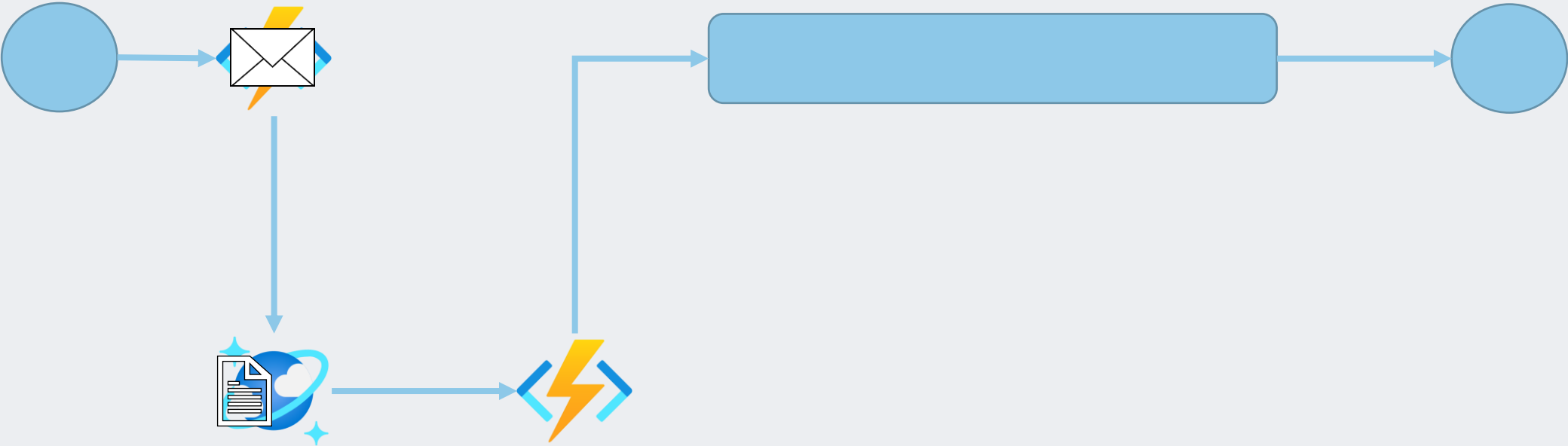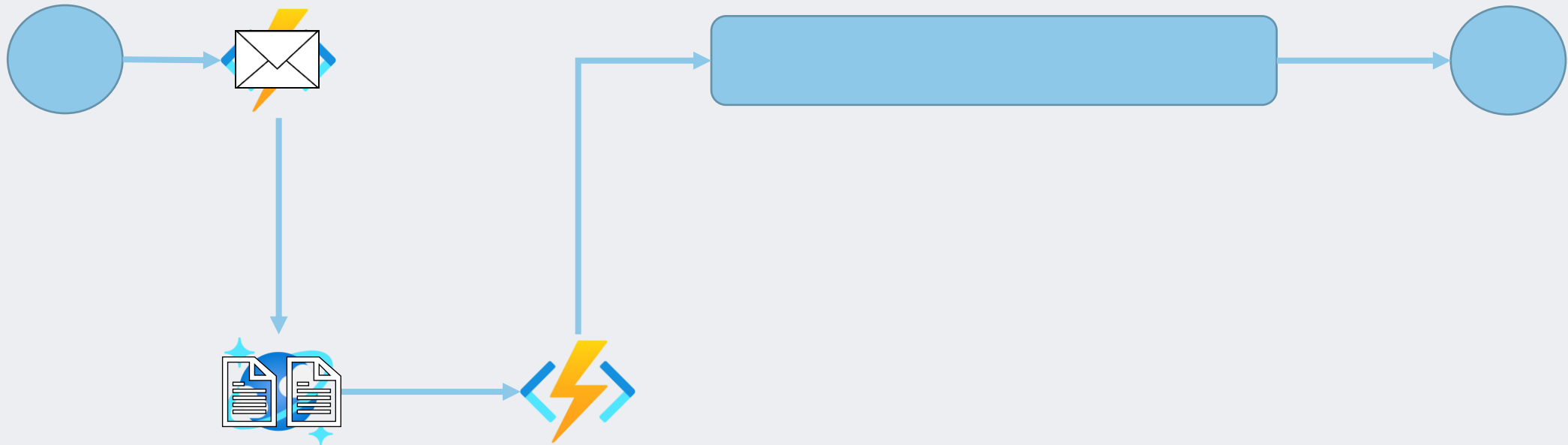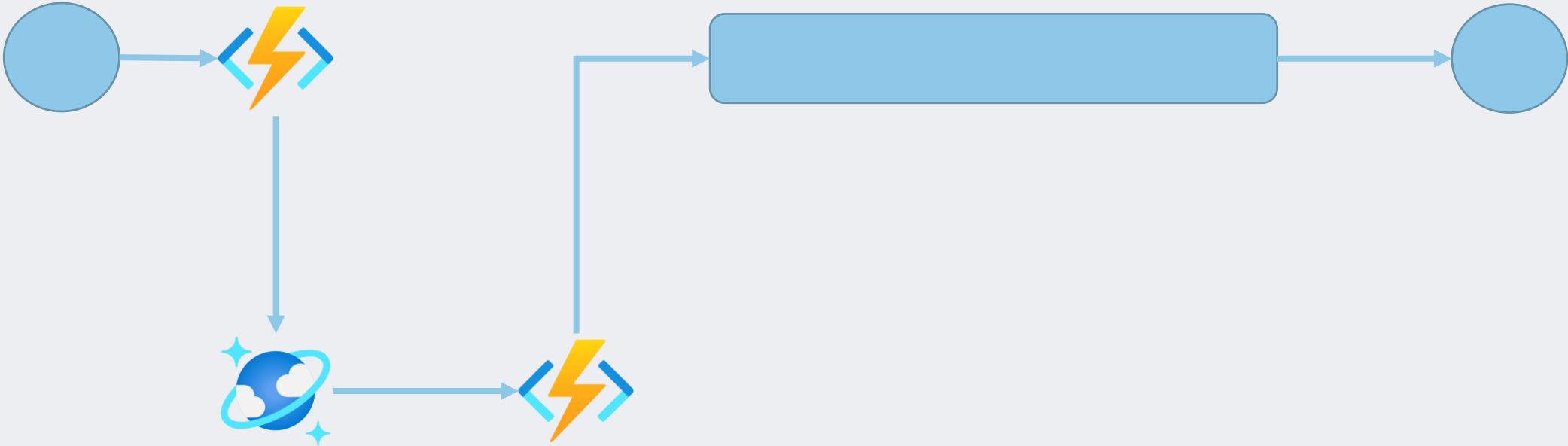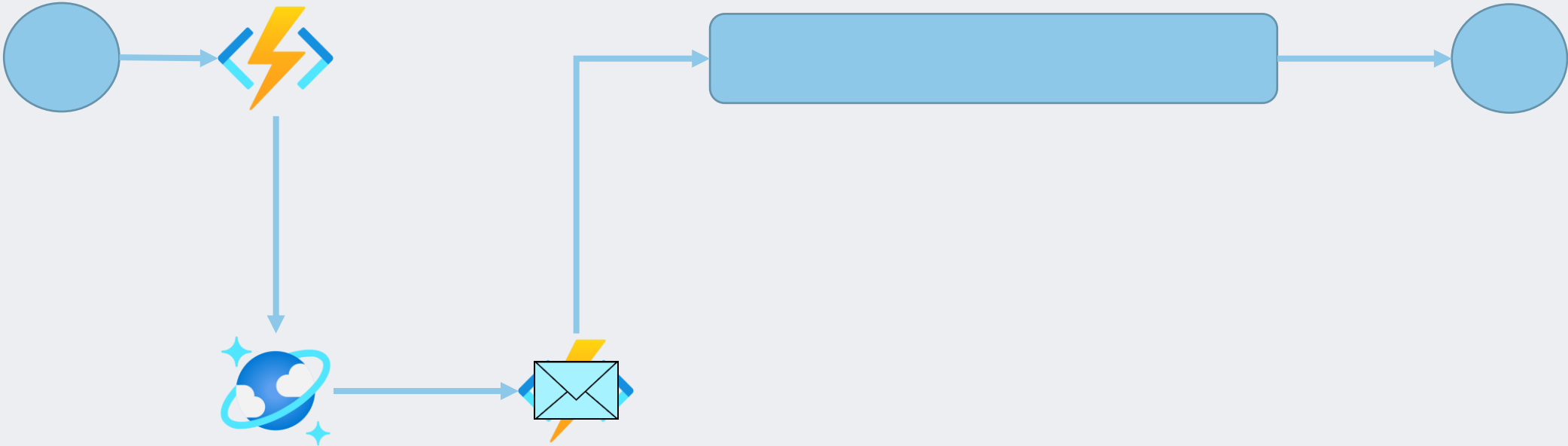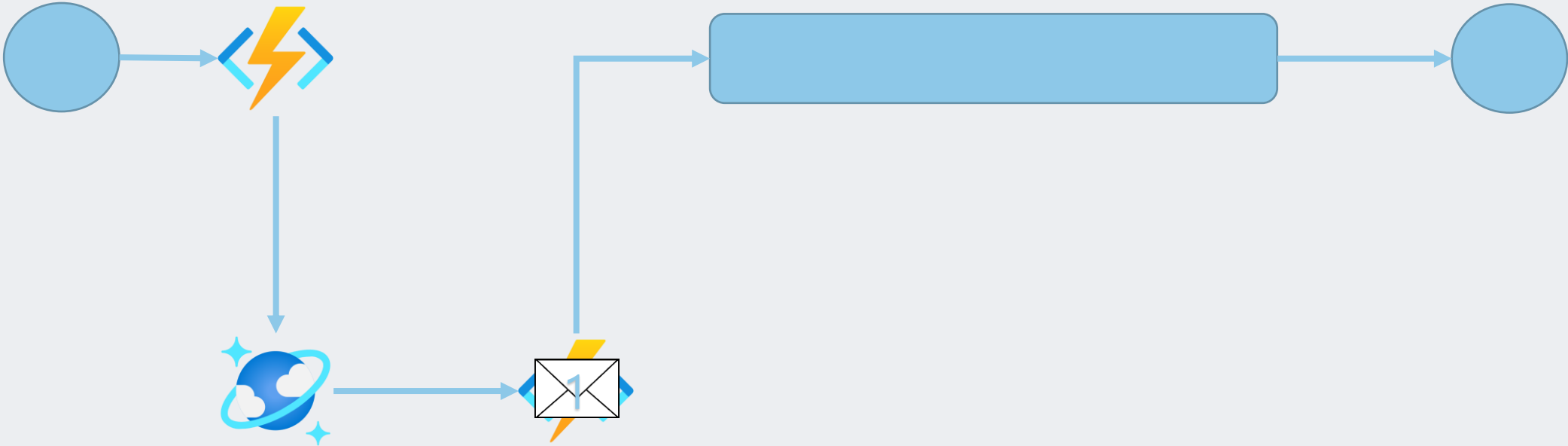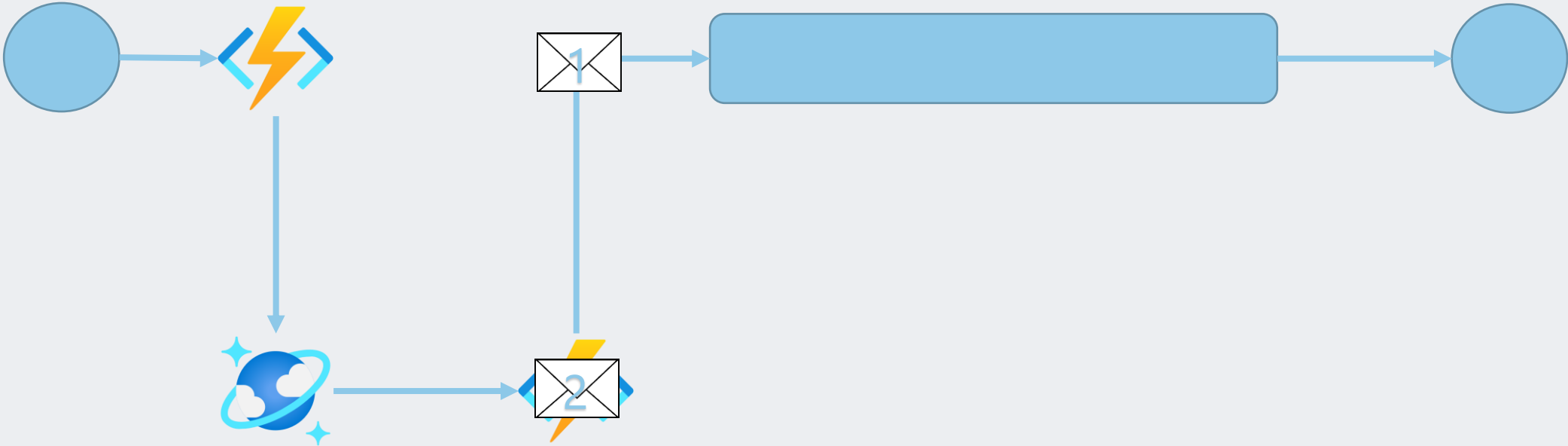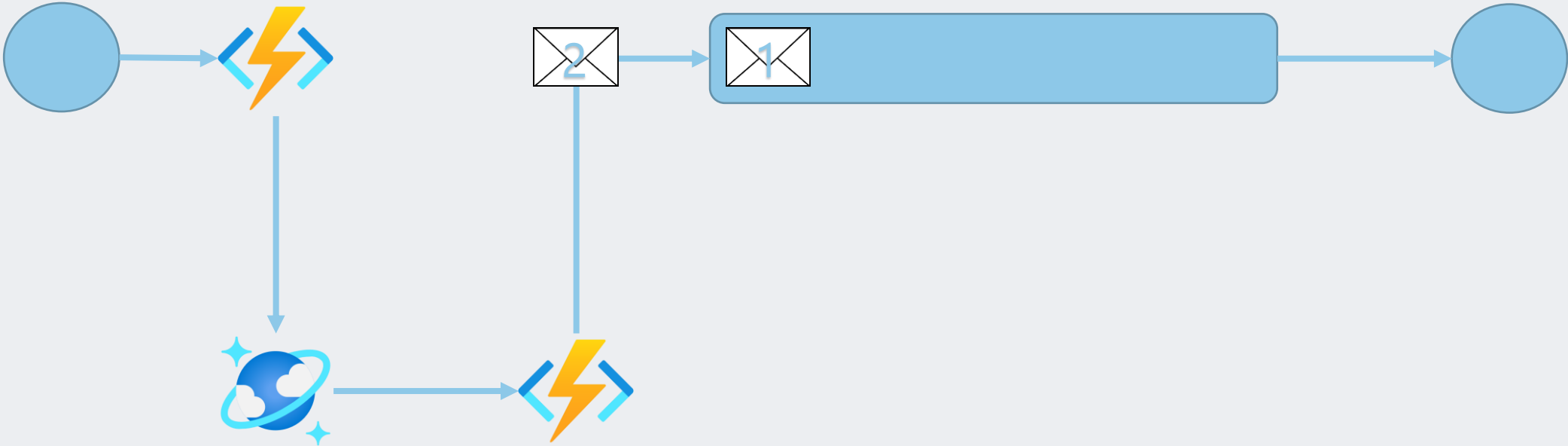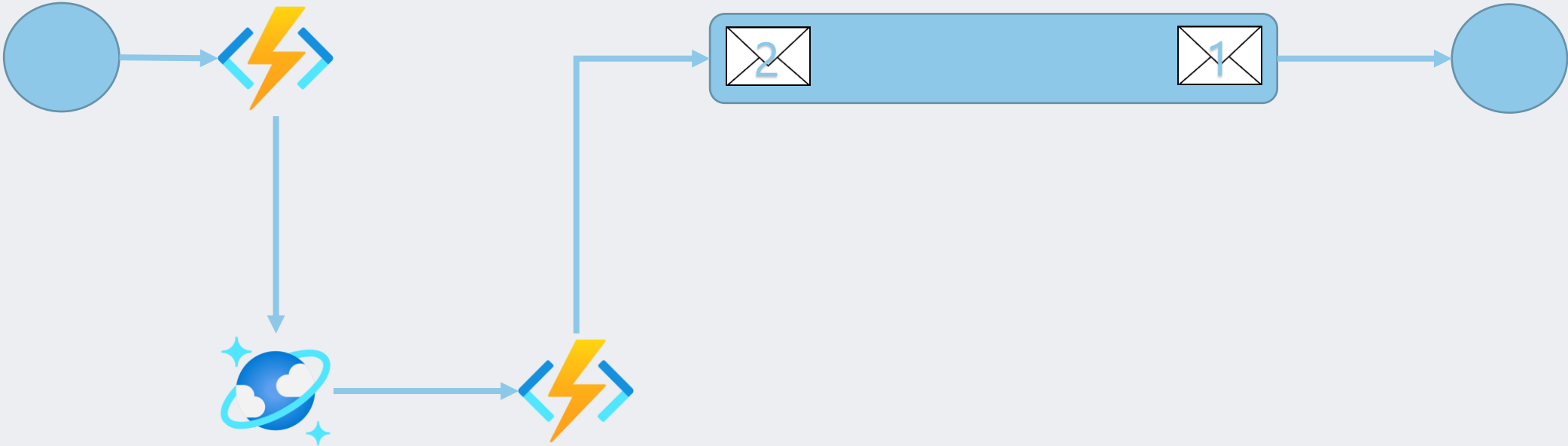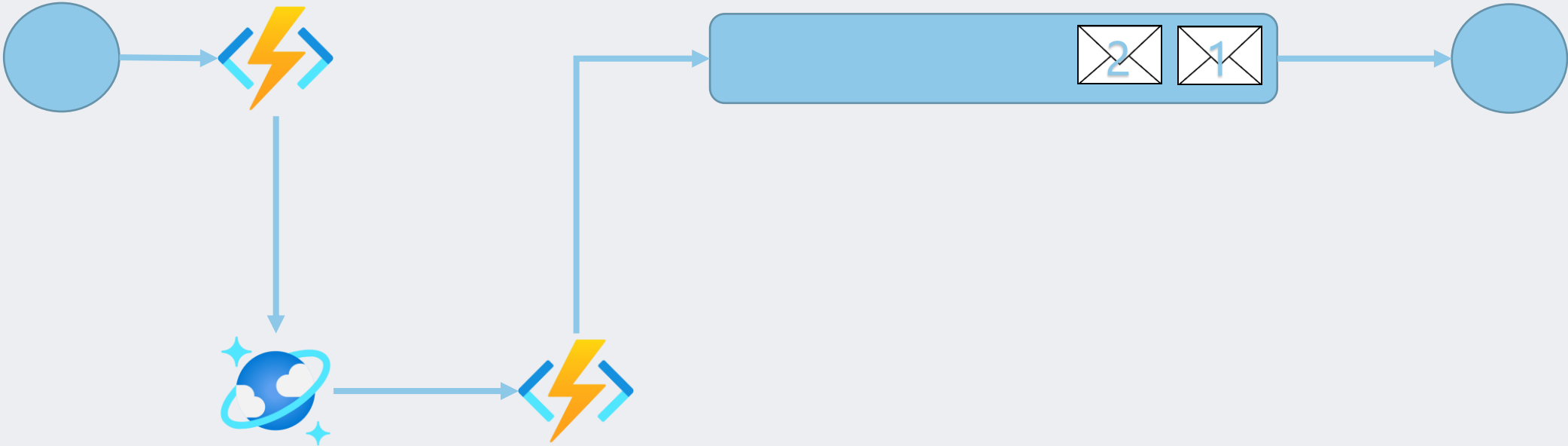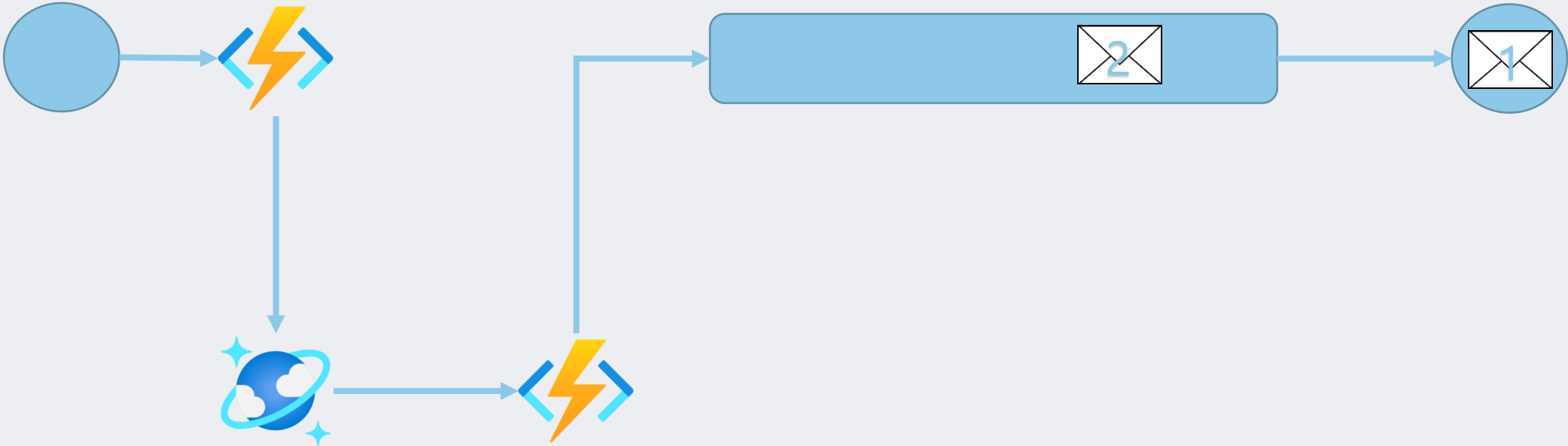
Transactional Outbox

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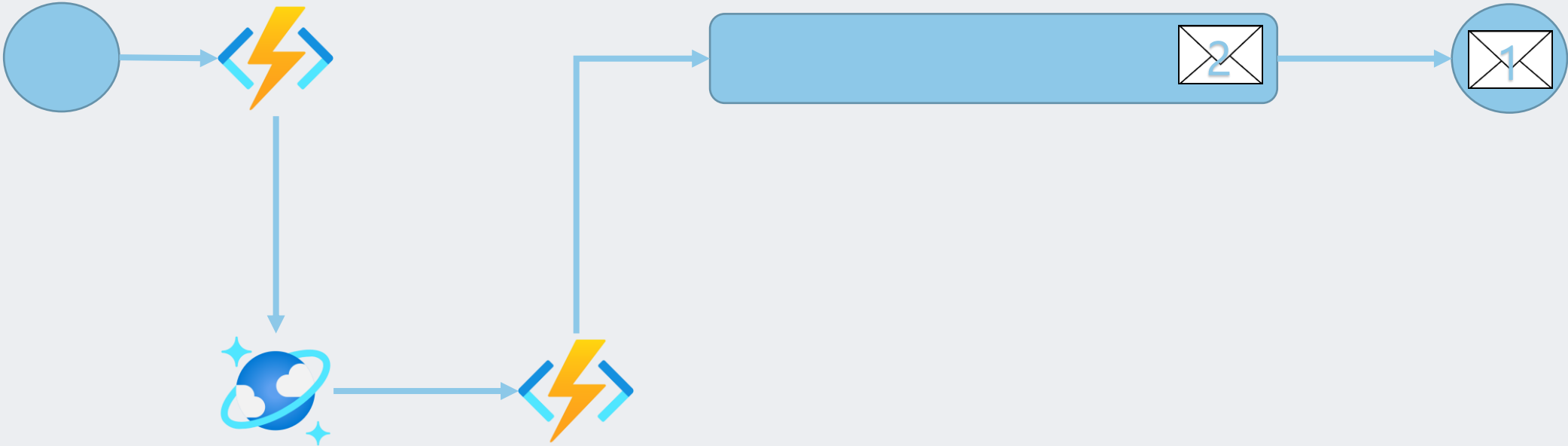
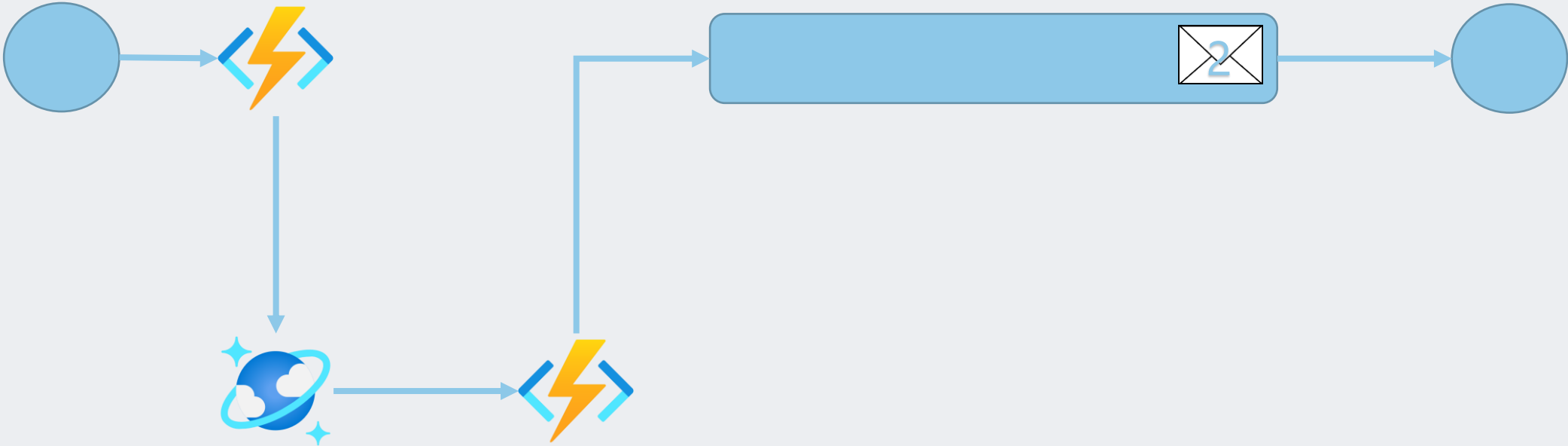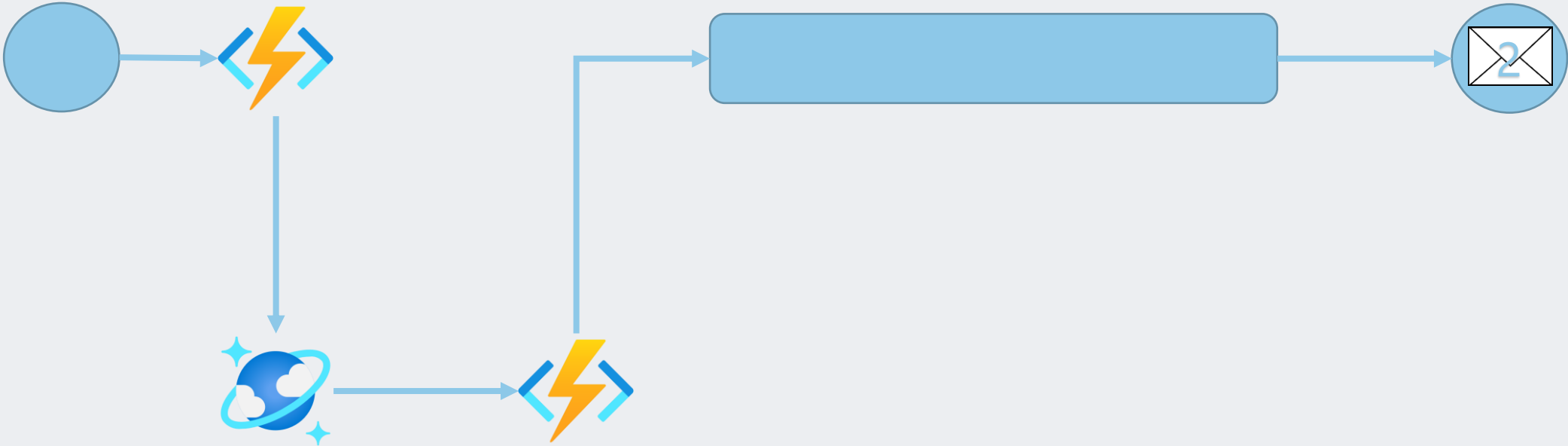# Transactional Outbox

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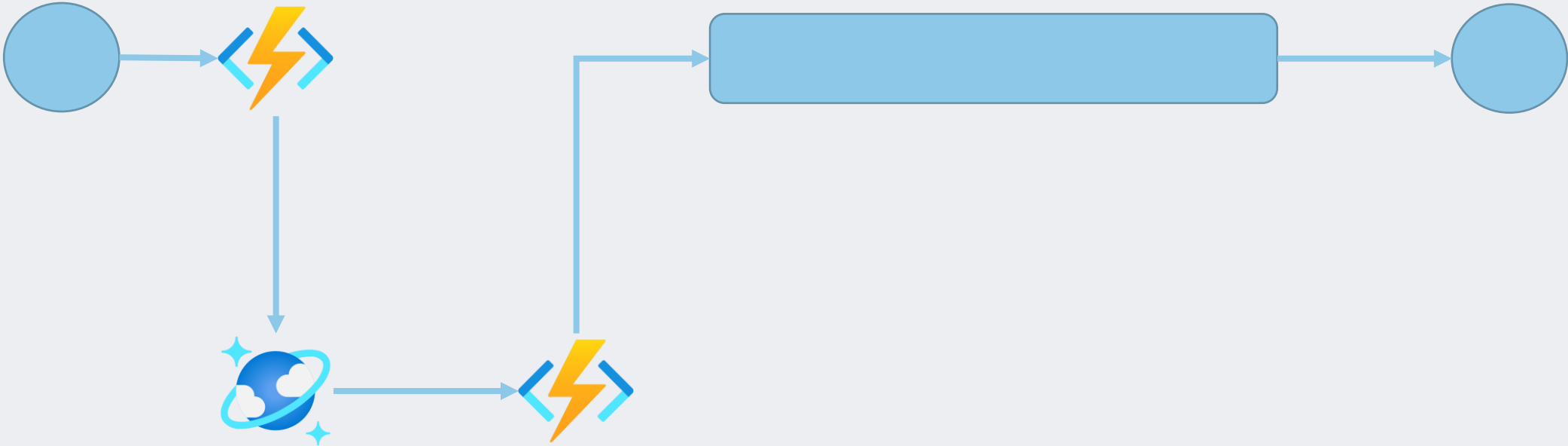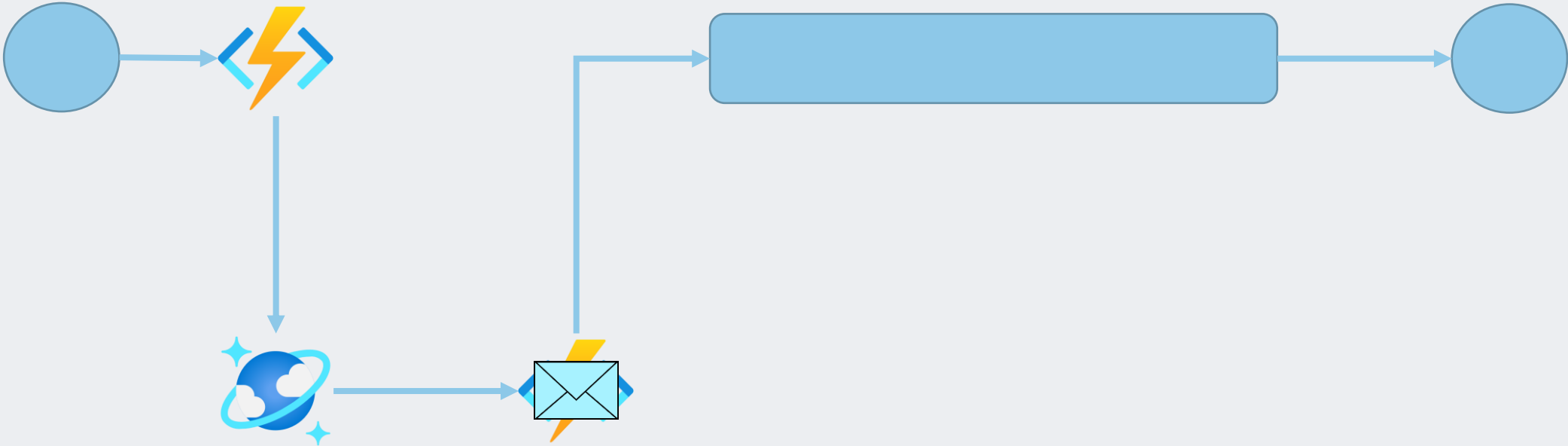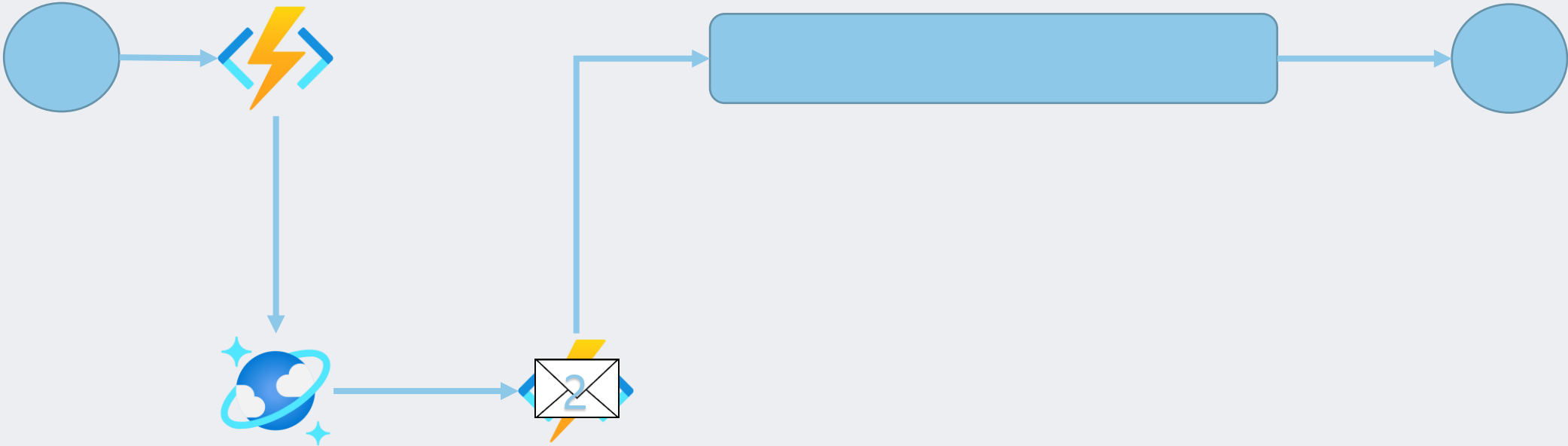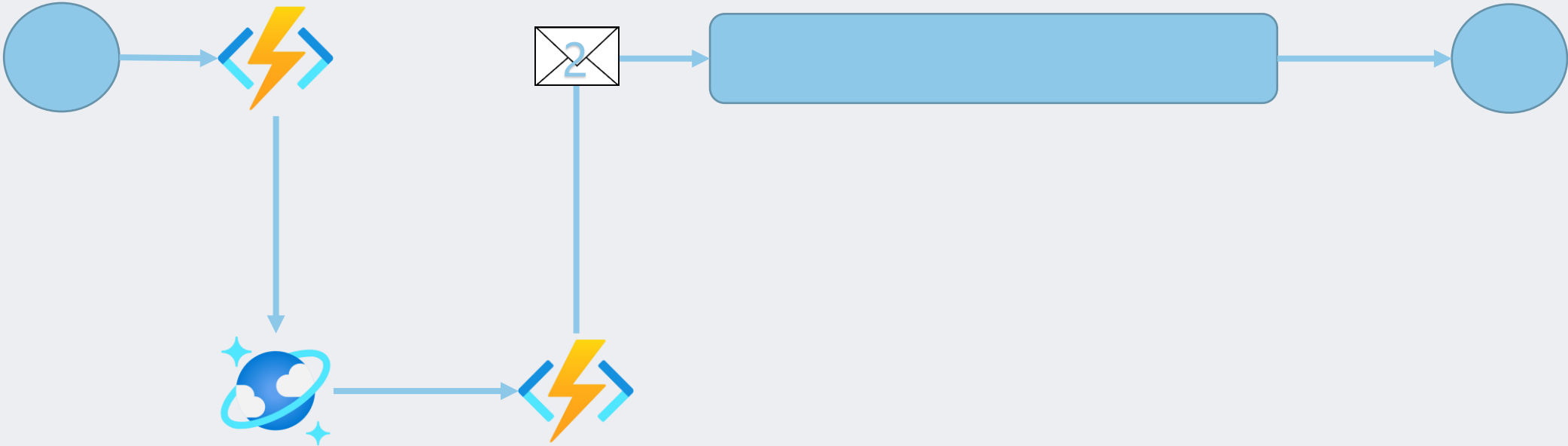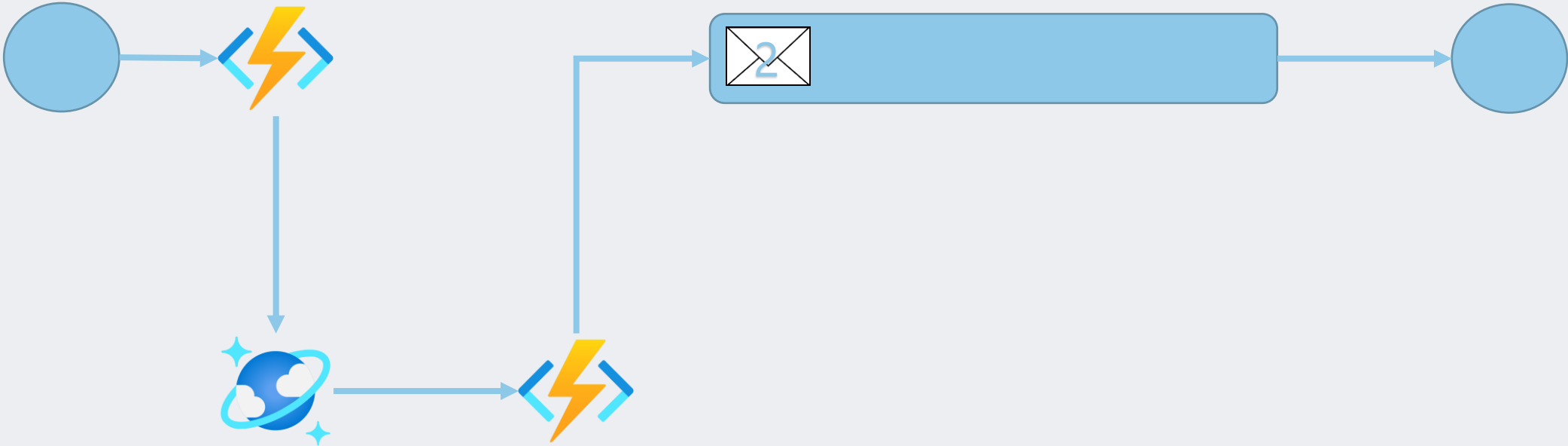
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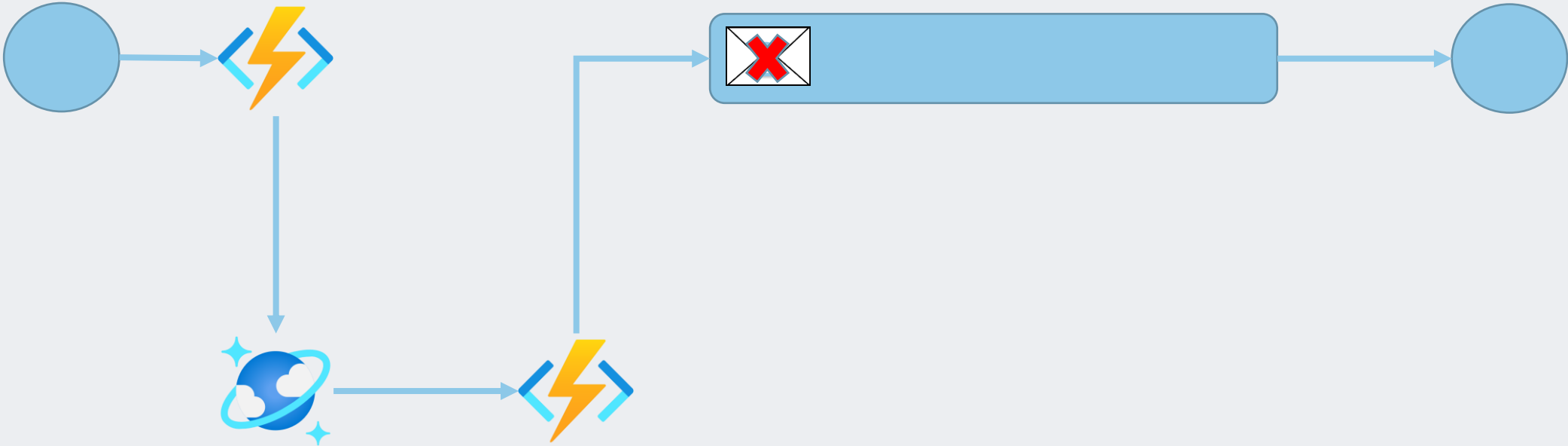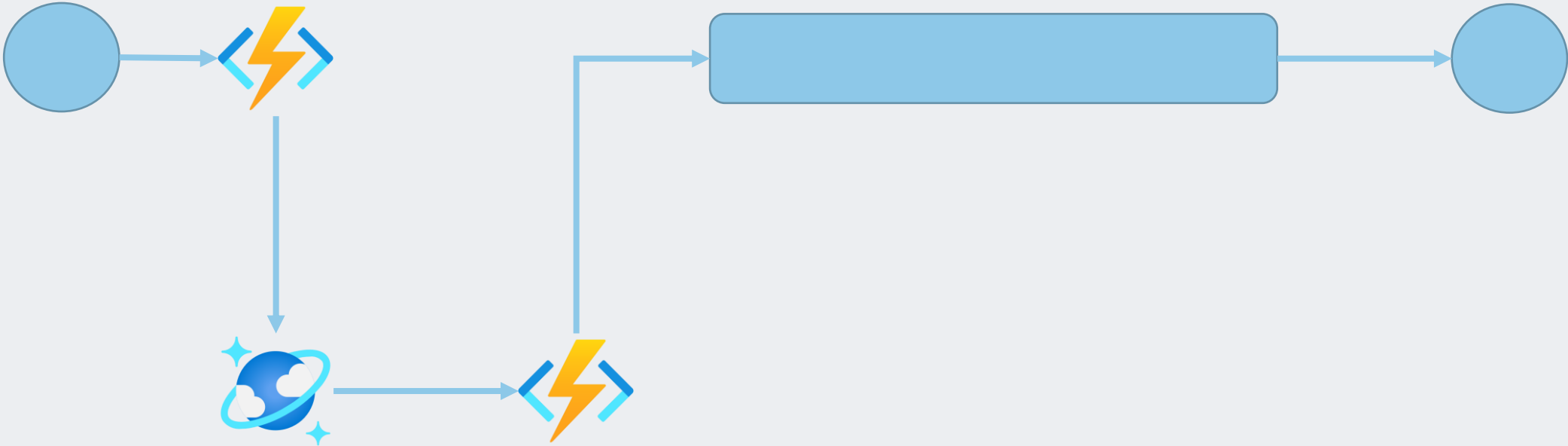
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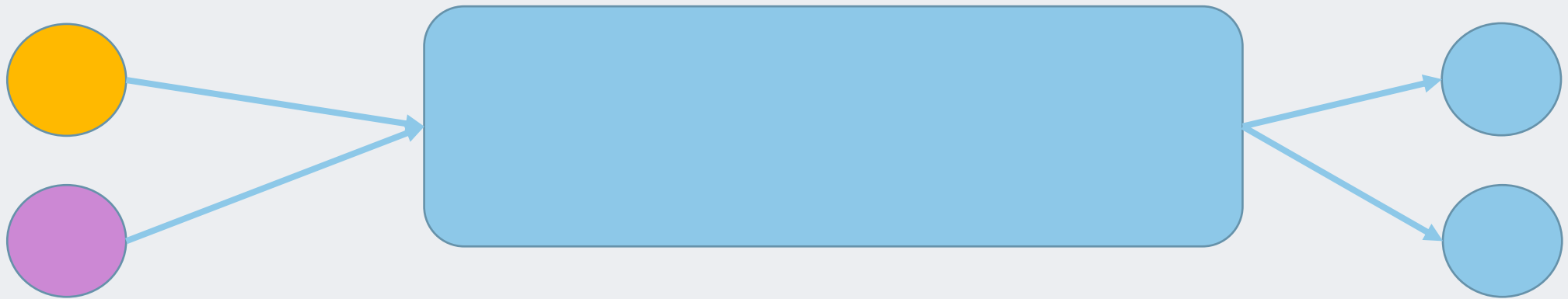
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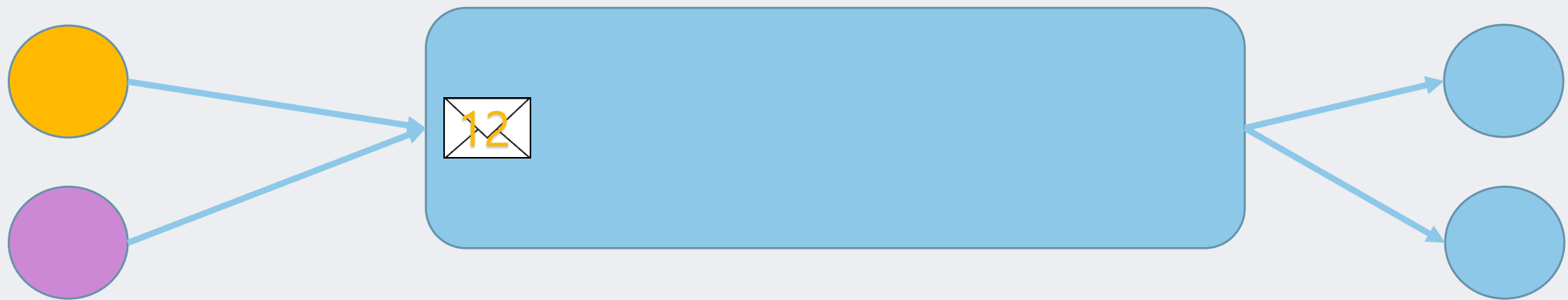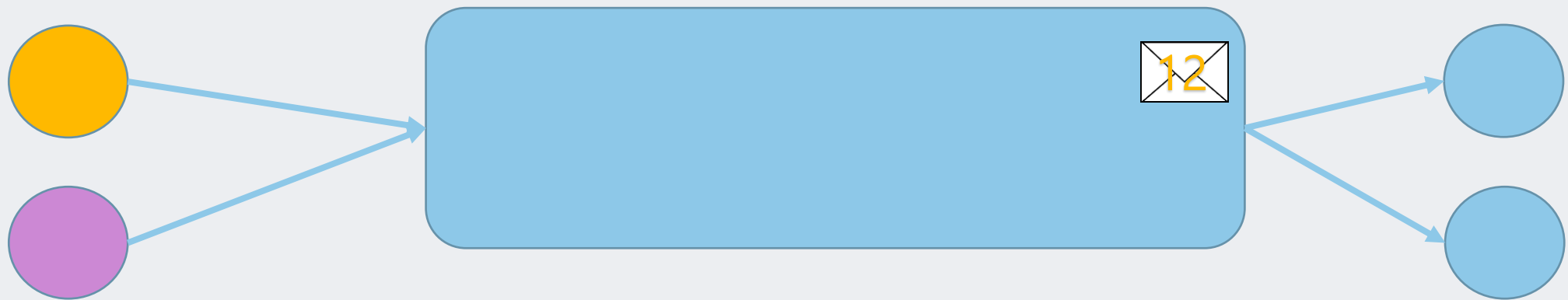
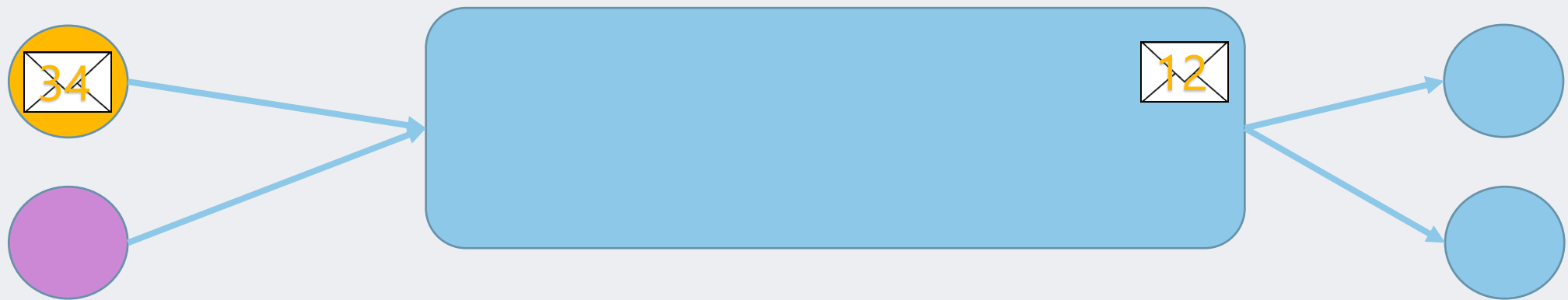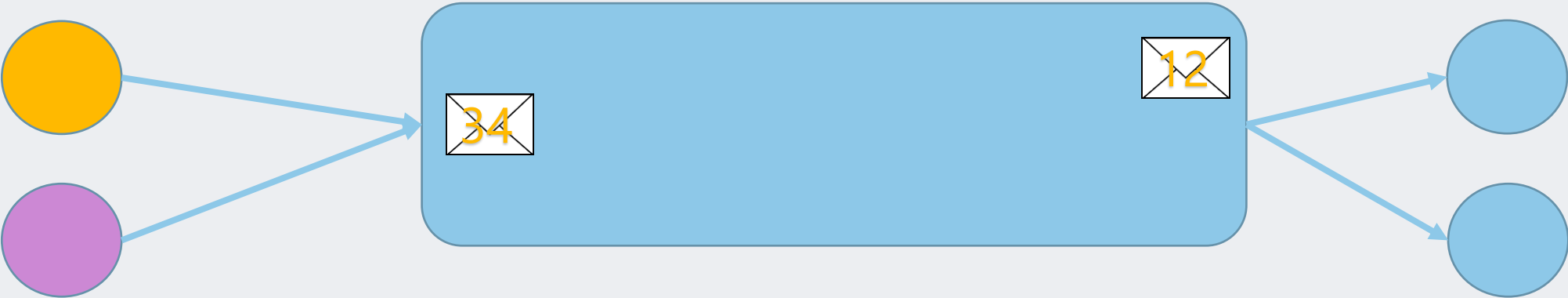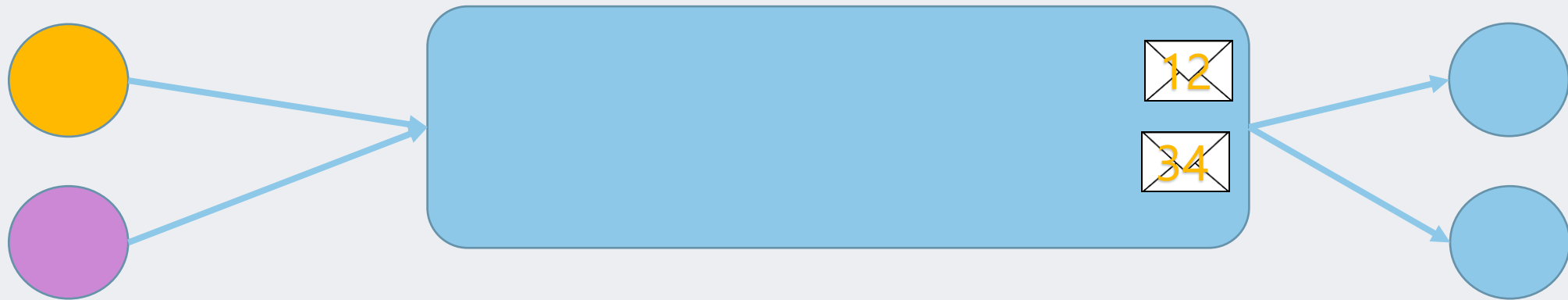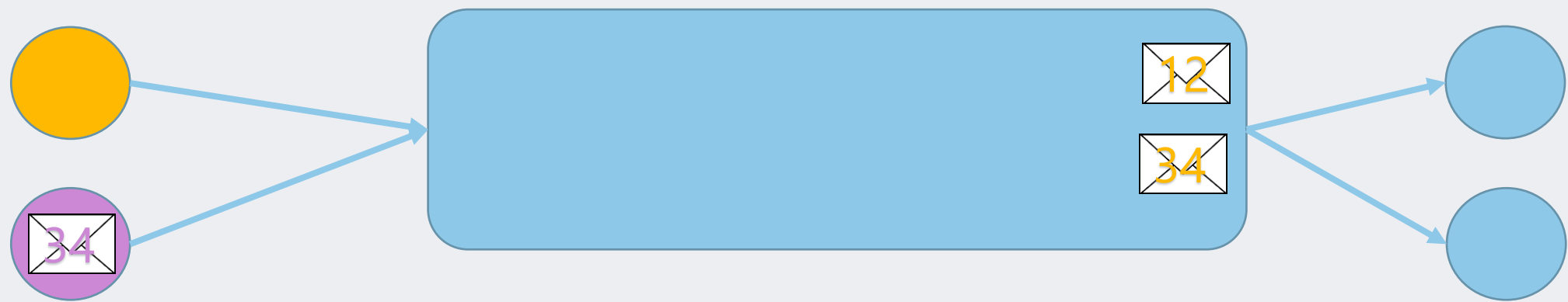# Transactional Outbox

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https://weblogs.asp.net/sfeldman/sagas-with-azure-service-bus

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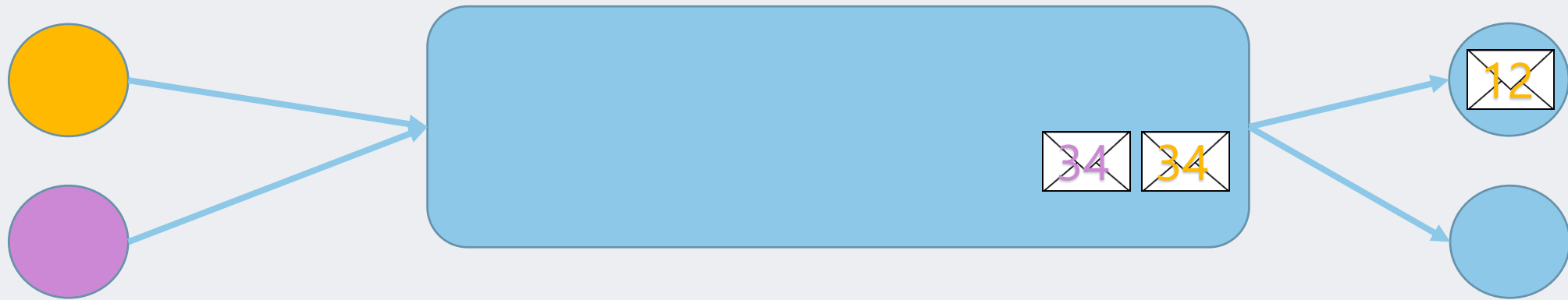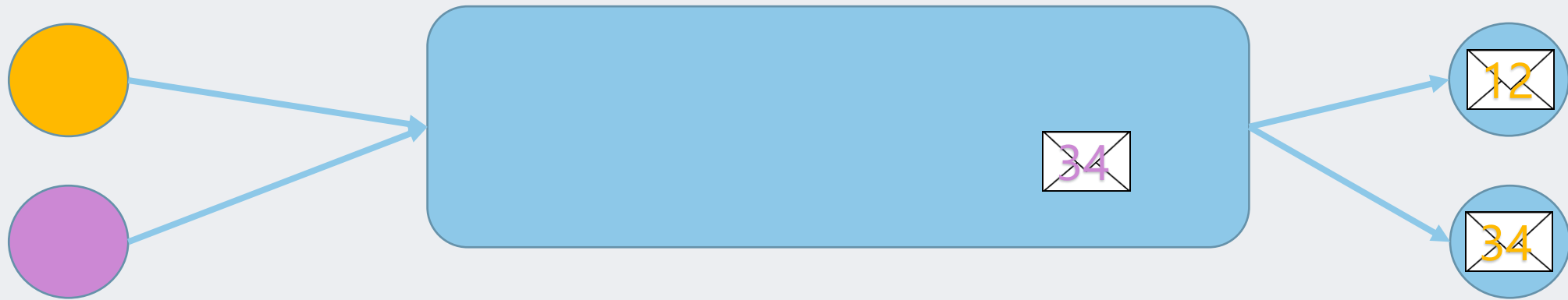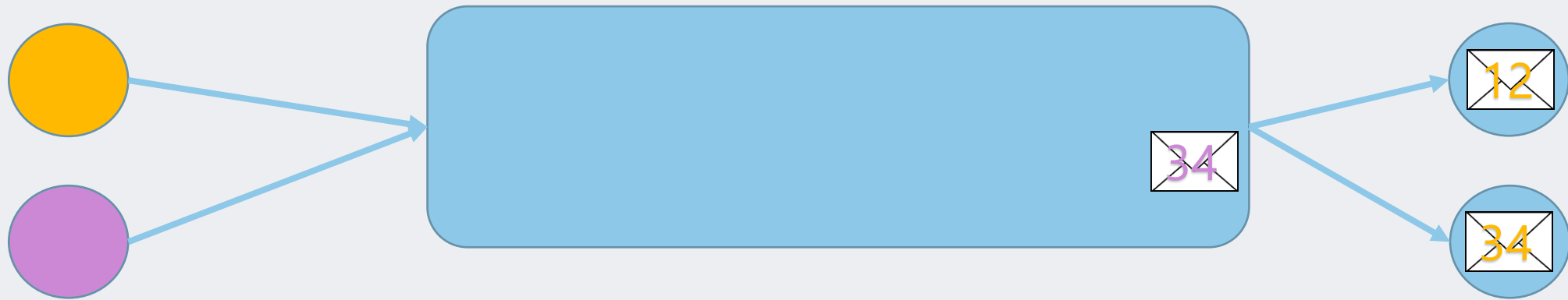
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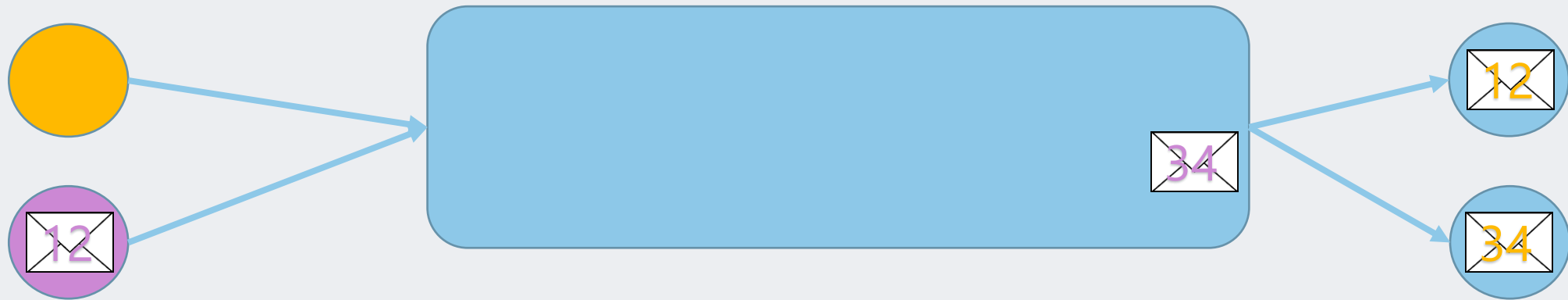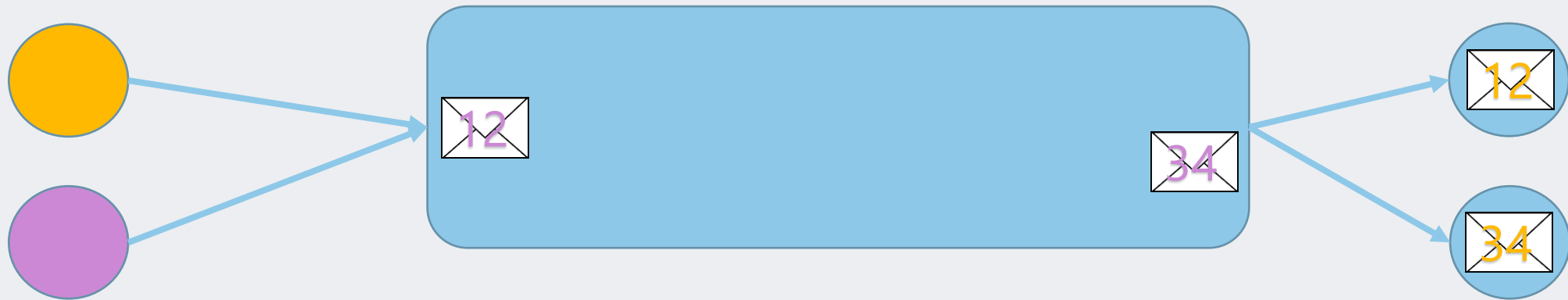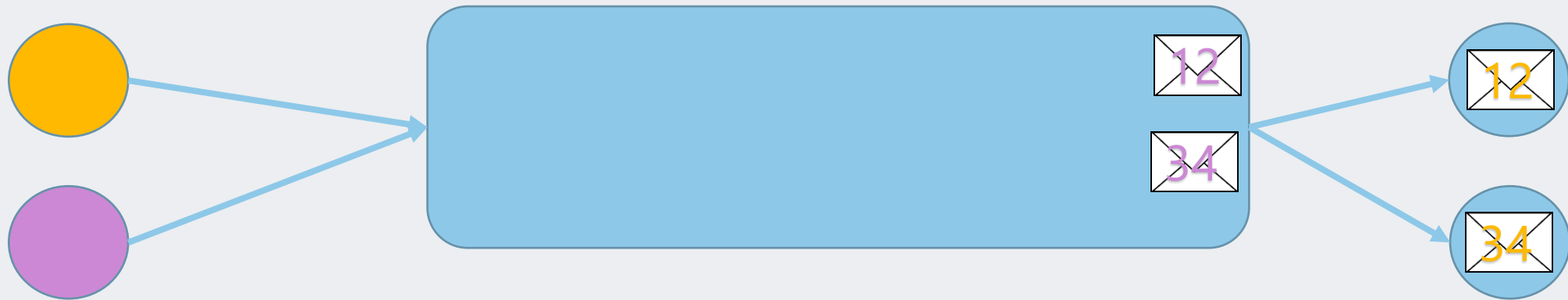# Saga

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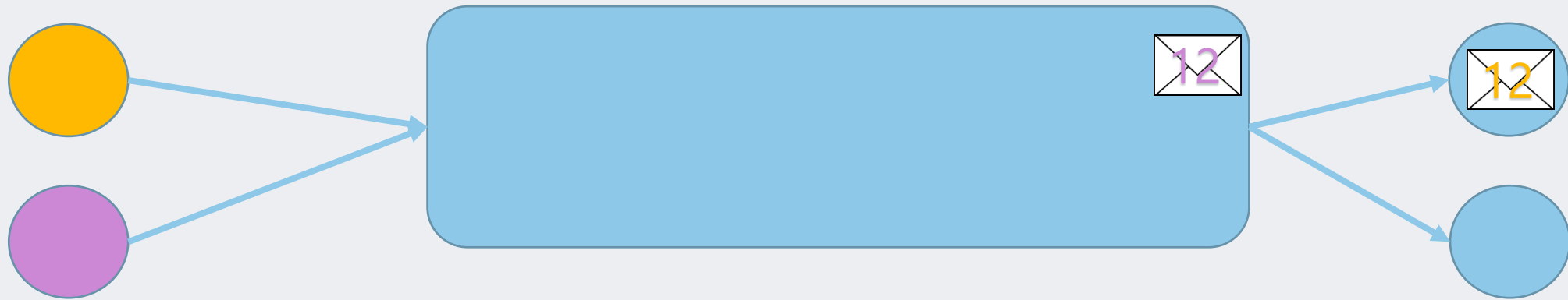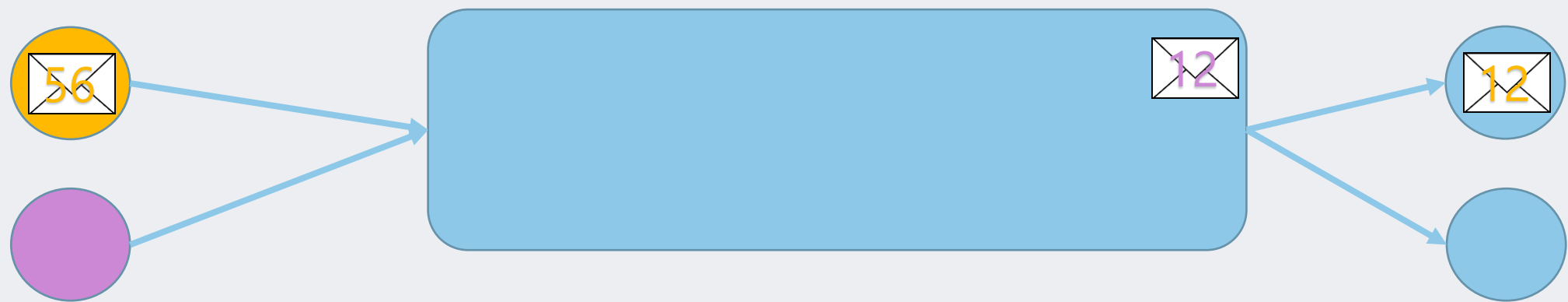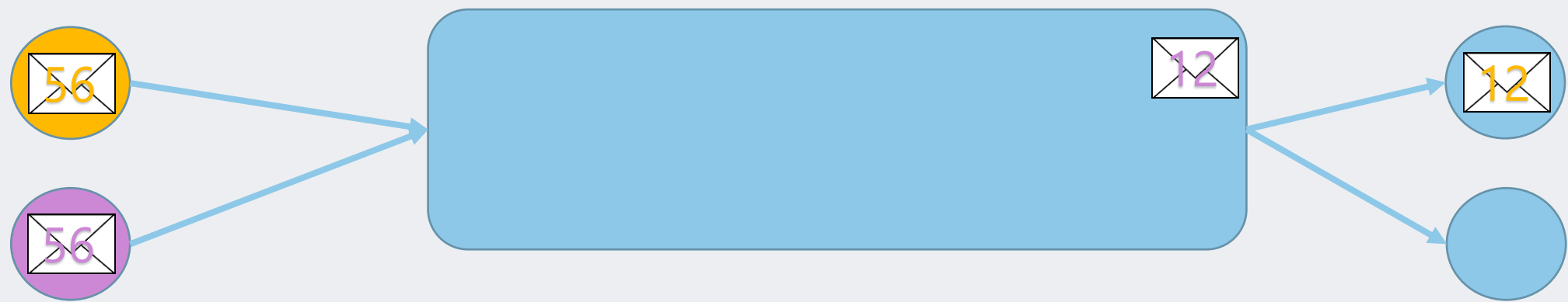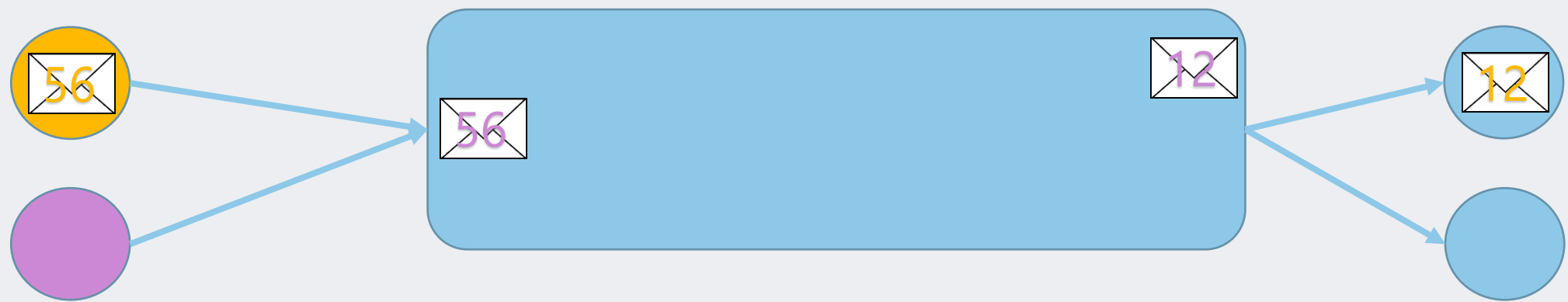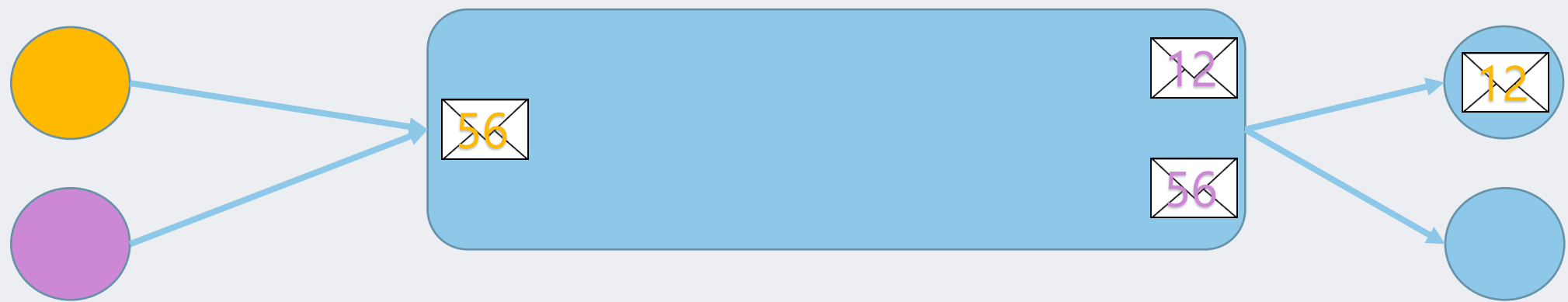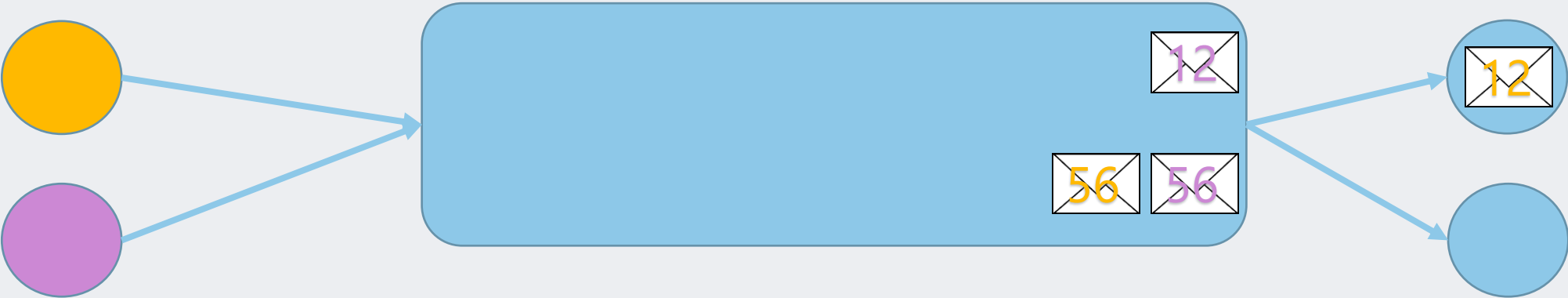
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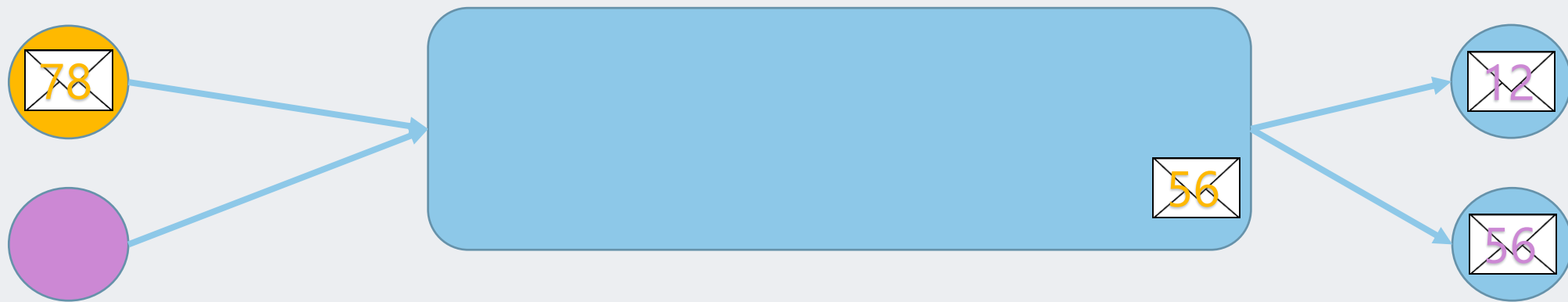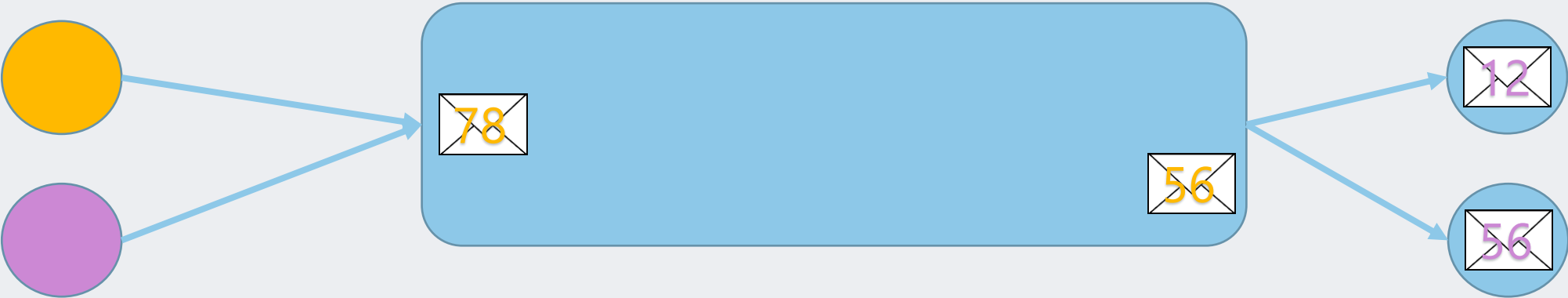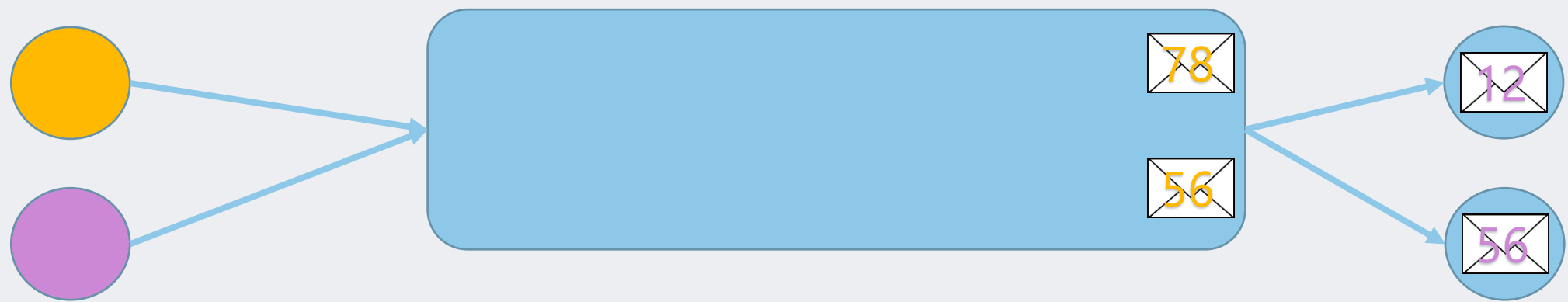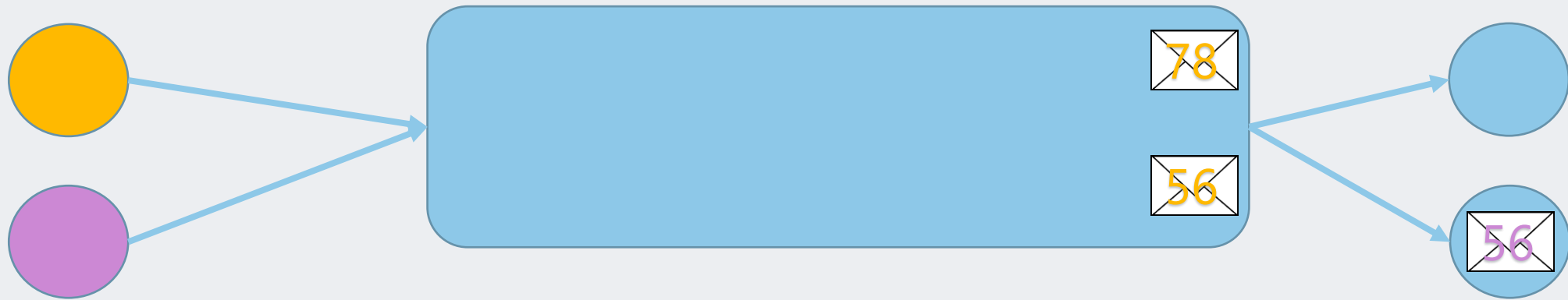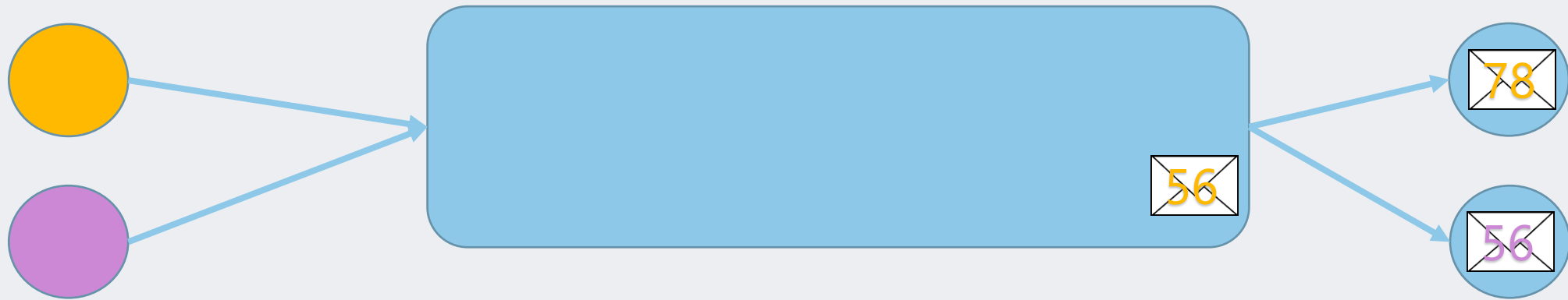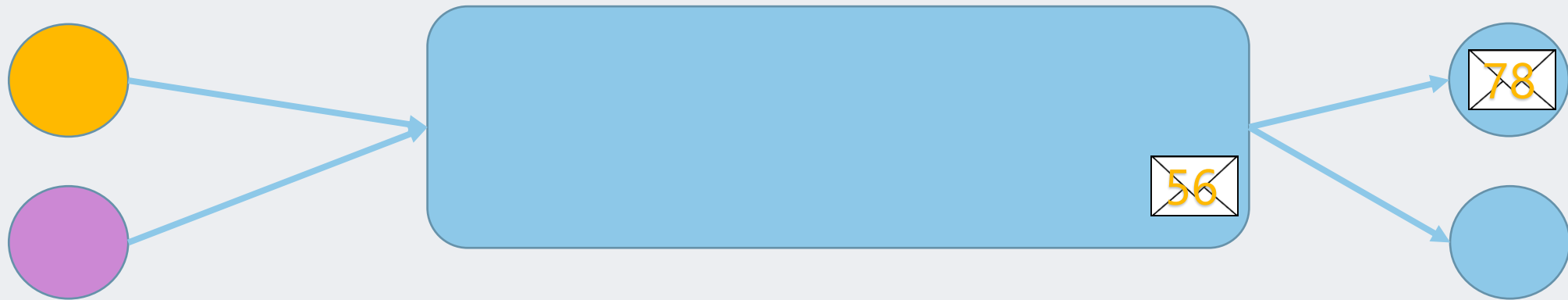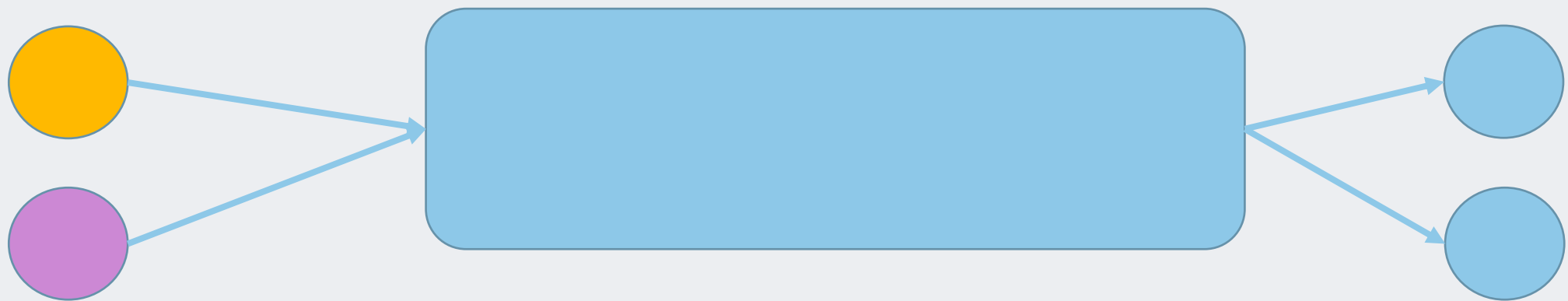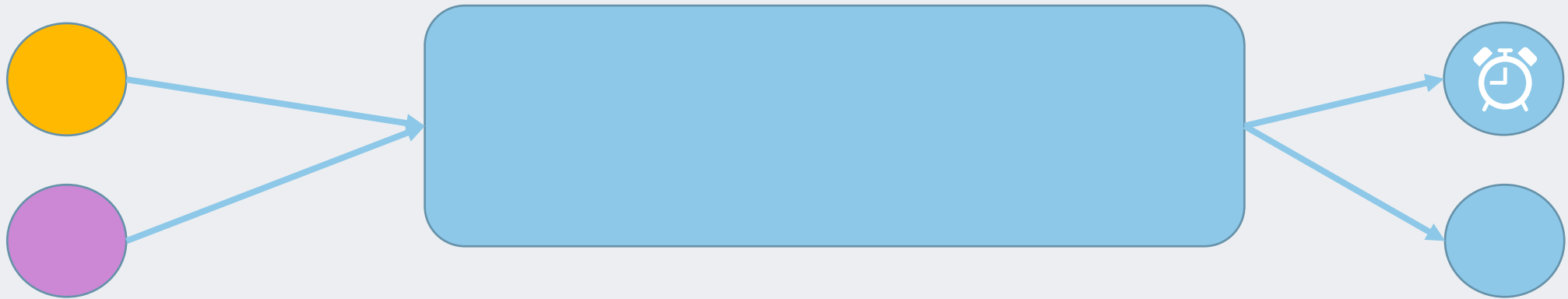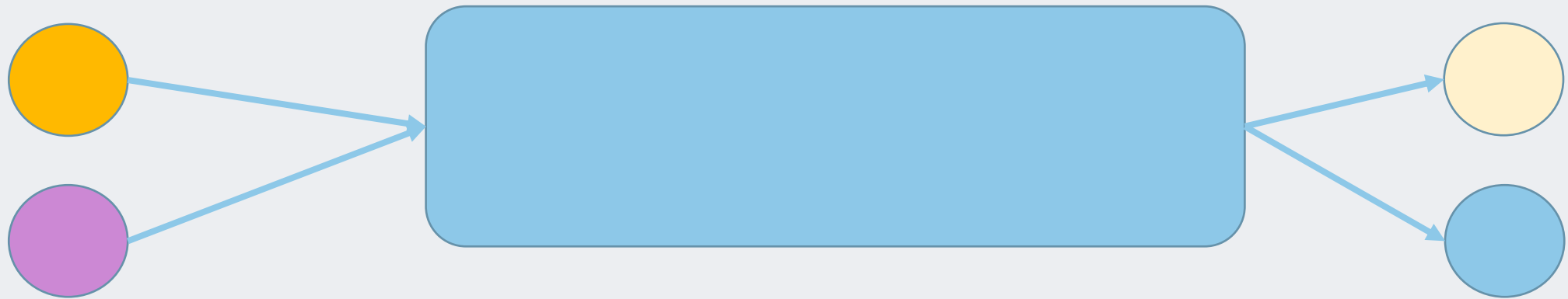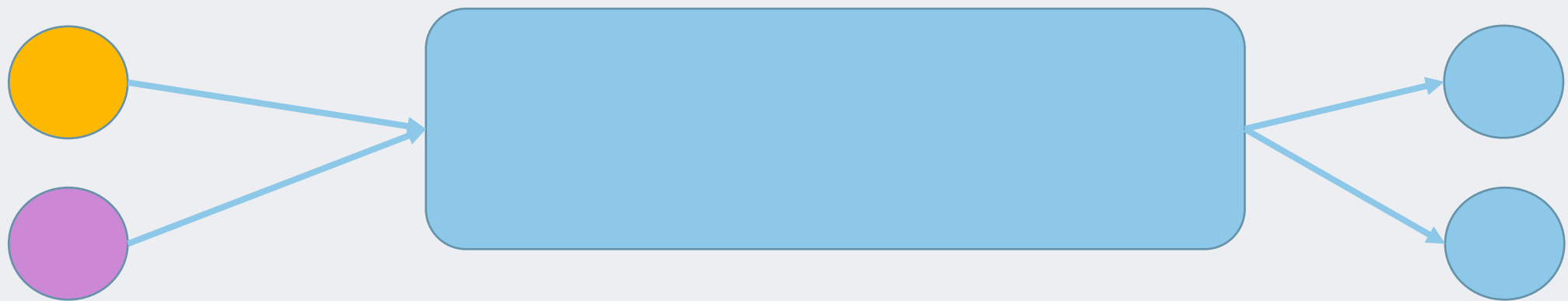
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Almost done...

@egrootenboer

Key take-aways

Messaging patterns allow to solve recurring challenges

Azure Service Bus offers a variety of features to implement these patterns

Complement with other Azure services

Thank You

🐦 @egrootenboer

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🪟 https://aka.ms/MessagingFeedbackDWX