

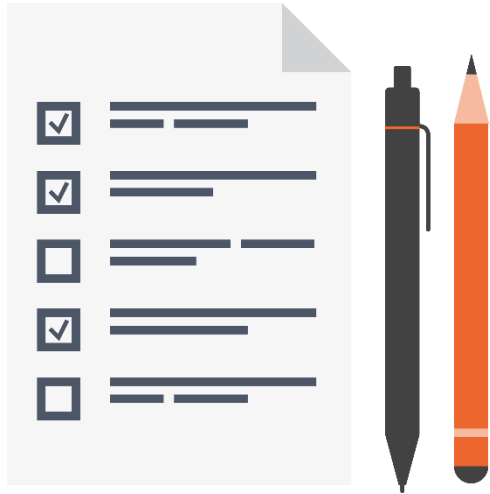
Regulating Message Processing with Stashing



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Overview



Overview of message stashing

Example use cases

Akka.NET stashing API

Modified demo application

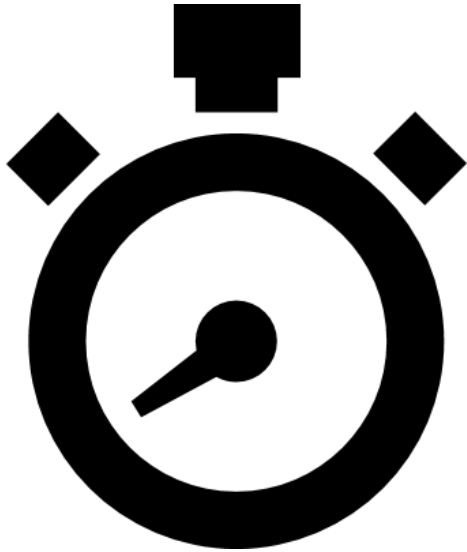
Adding a message stash

Periodically unstash messages

Message Stashing

An actor can stash away the message that it is currently processing if it either should not or cannot process the message at the present time. At a future point in time the stashed message can be retrieved and processed.

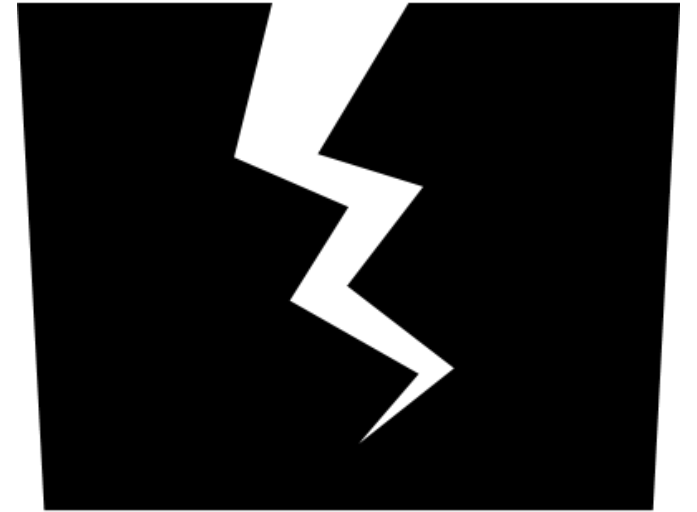
Example Use Cases



Responsiveness

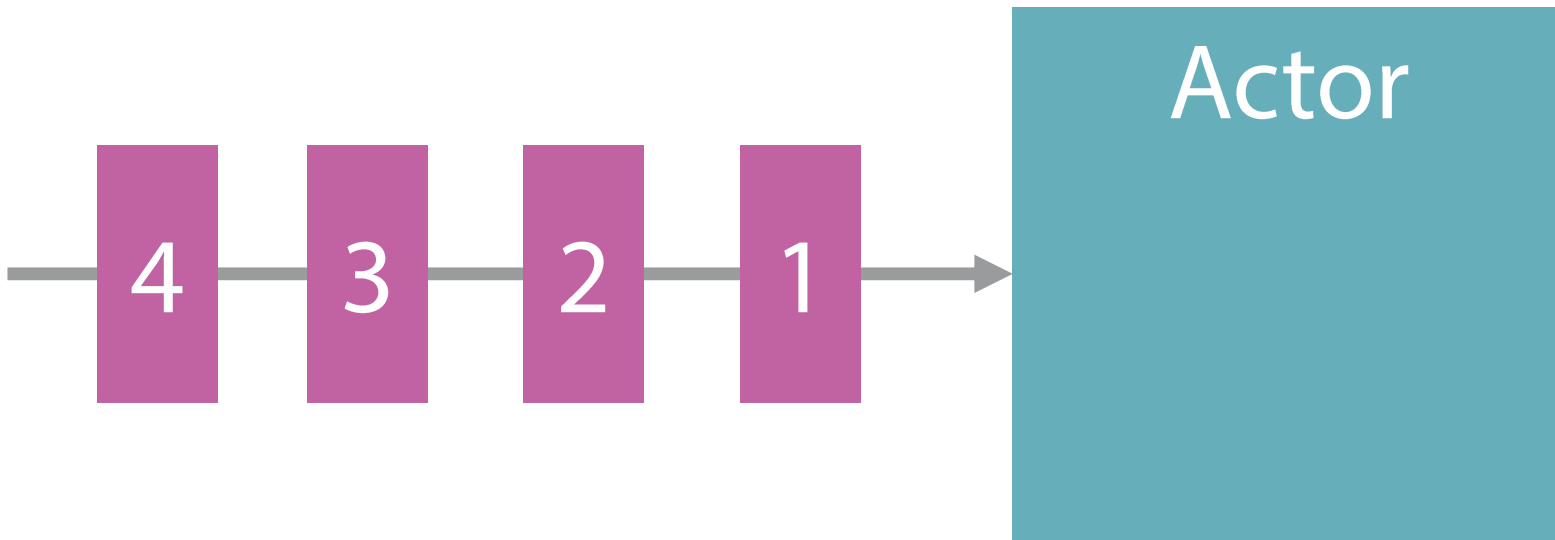


Operating Costs

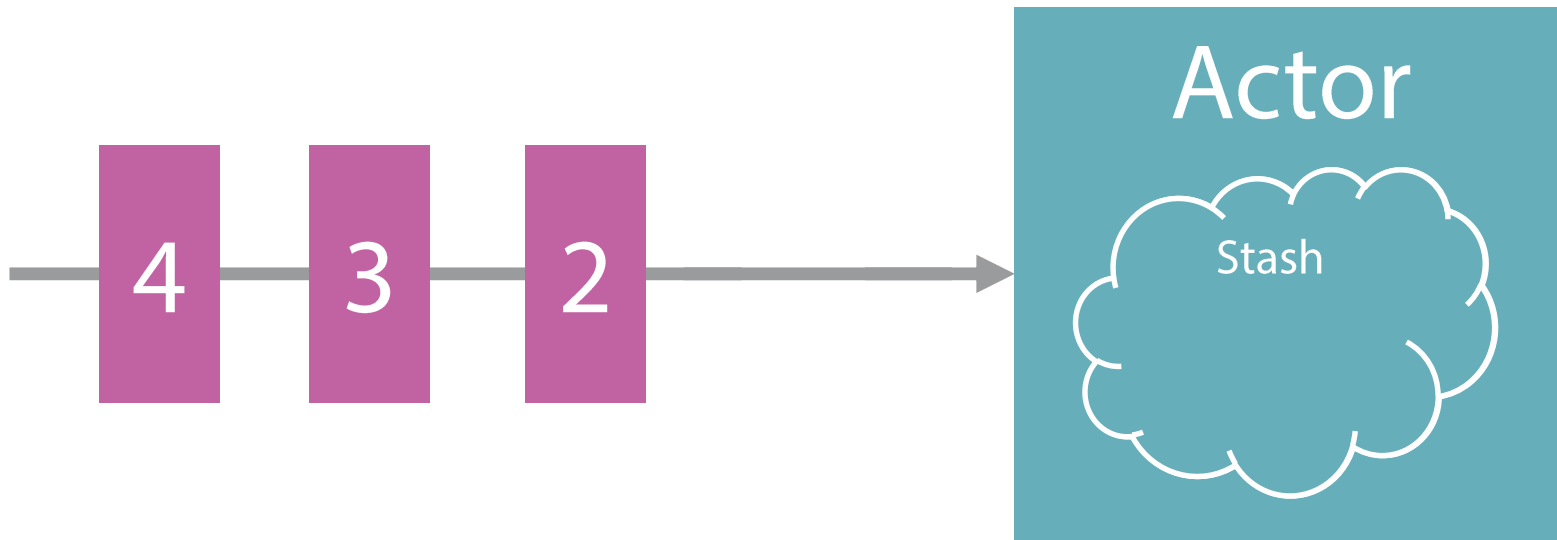


Resilience

Overview of Stashing



Overview of Stashing



Multiple messages can be stored in the stash but the same message can only be stashed once

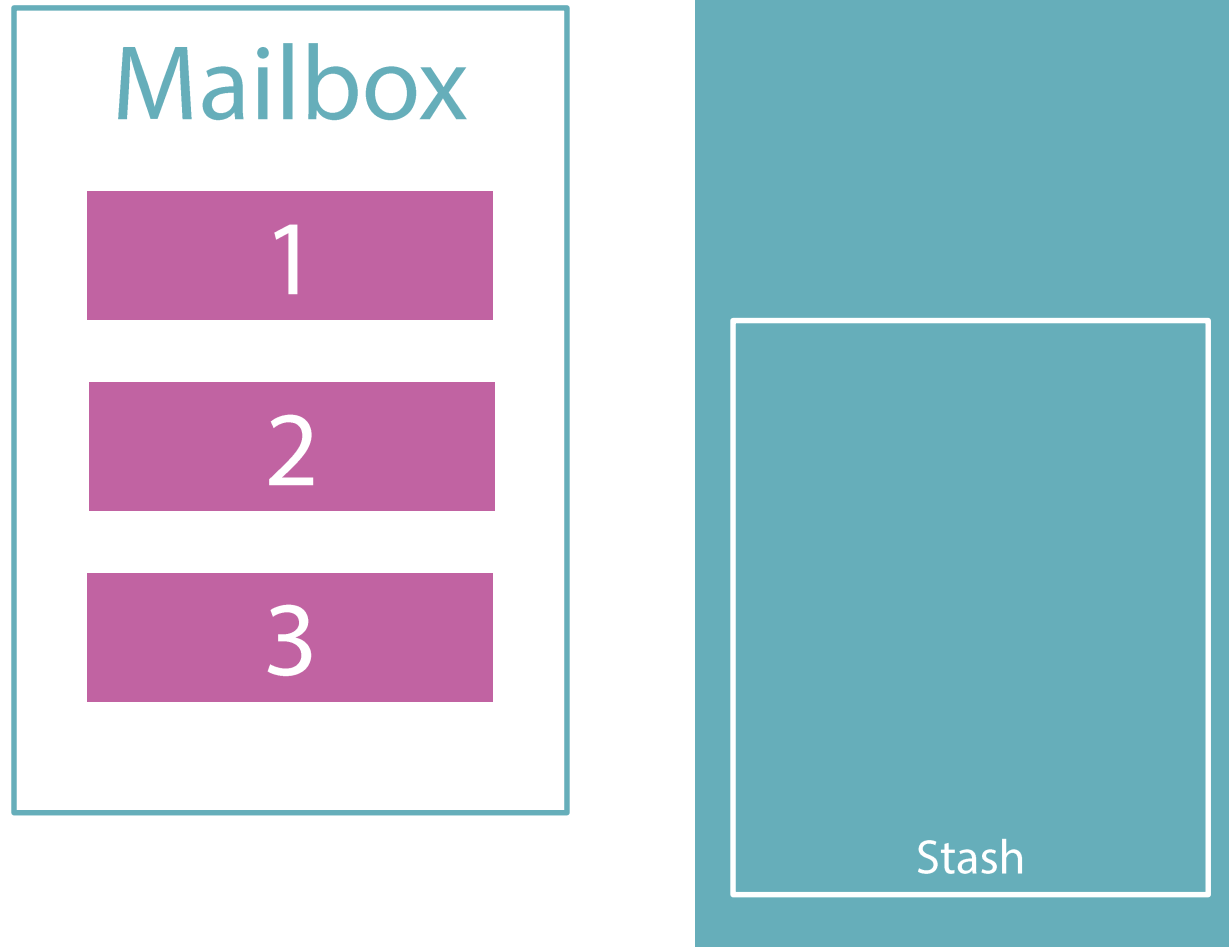
Akka.NET Stashing API

Stash()

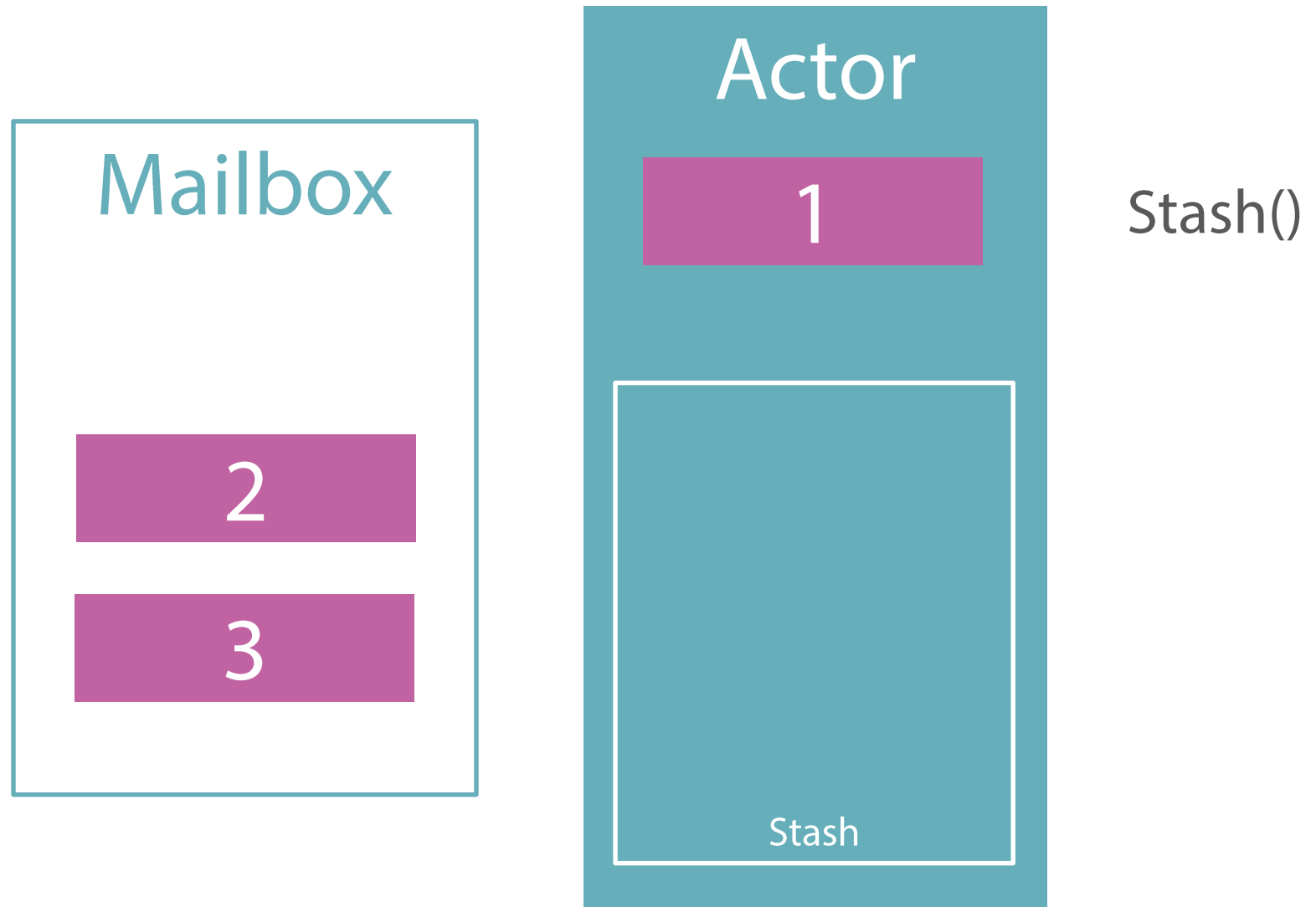
Unstash()

UnstashAll()

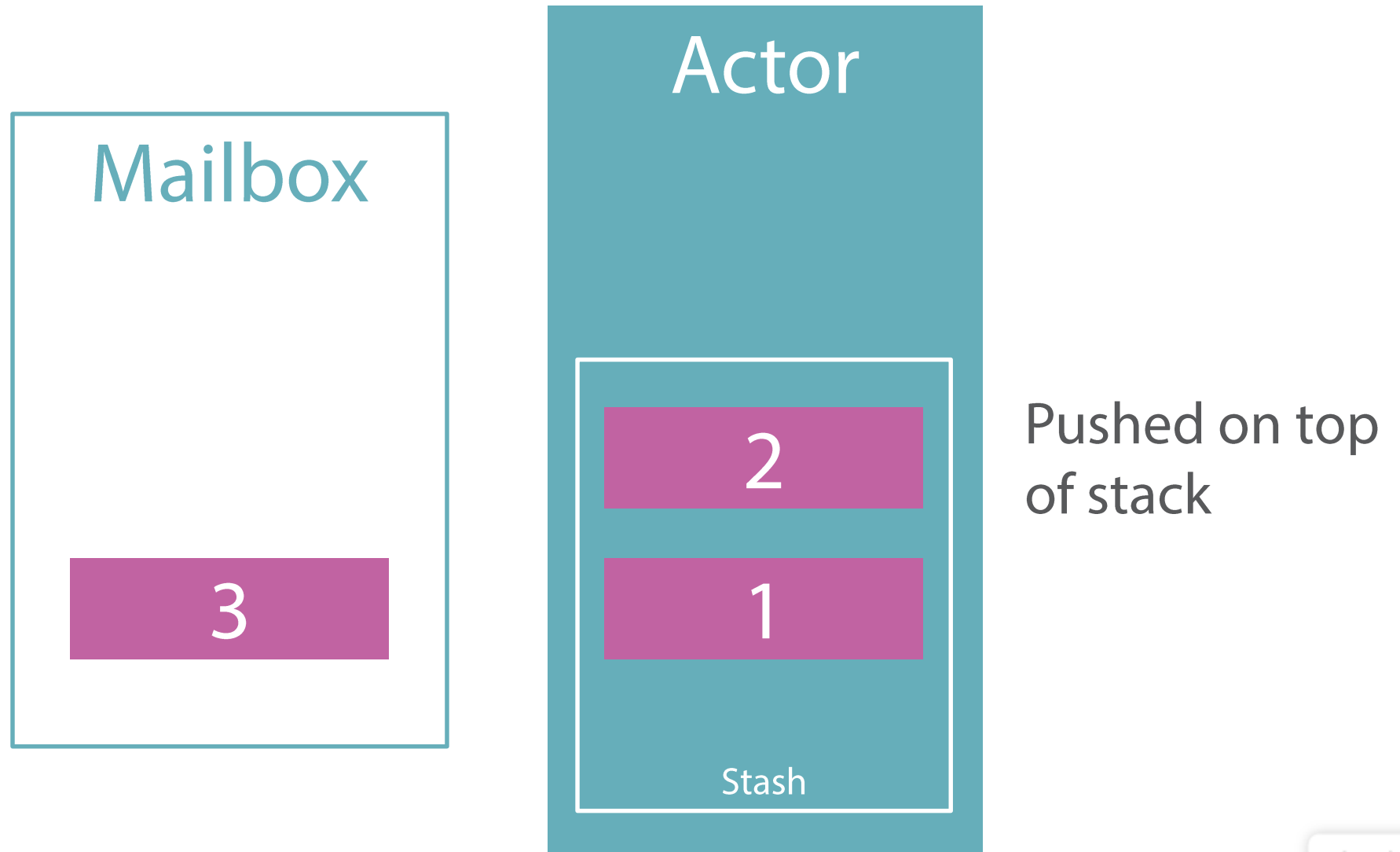
Akka.NET Stashing API



Akka.NET Stashing API

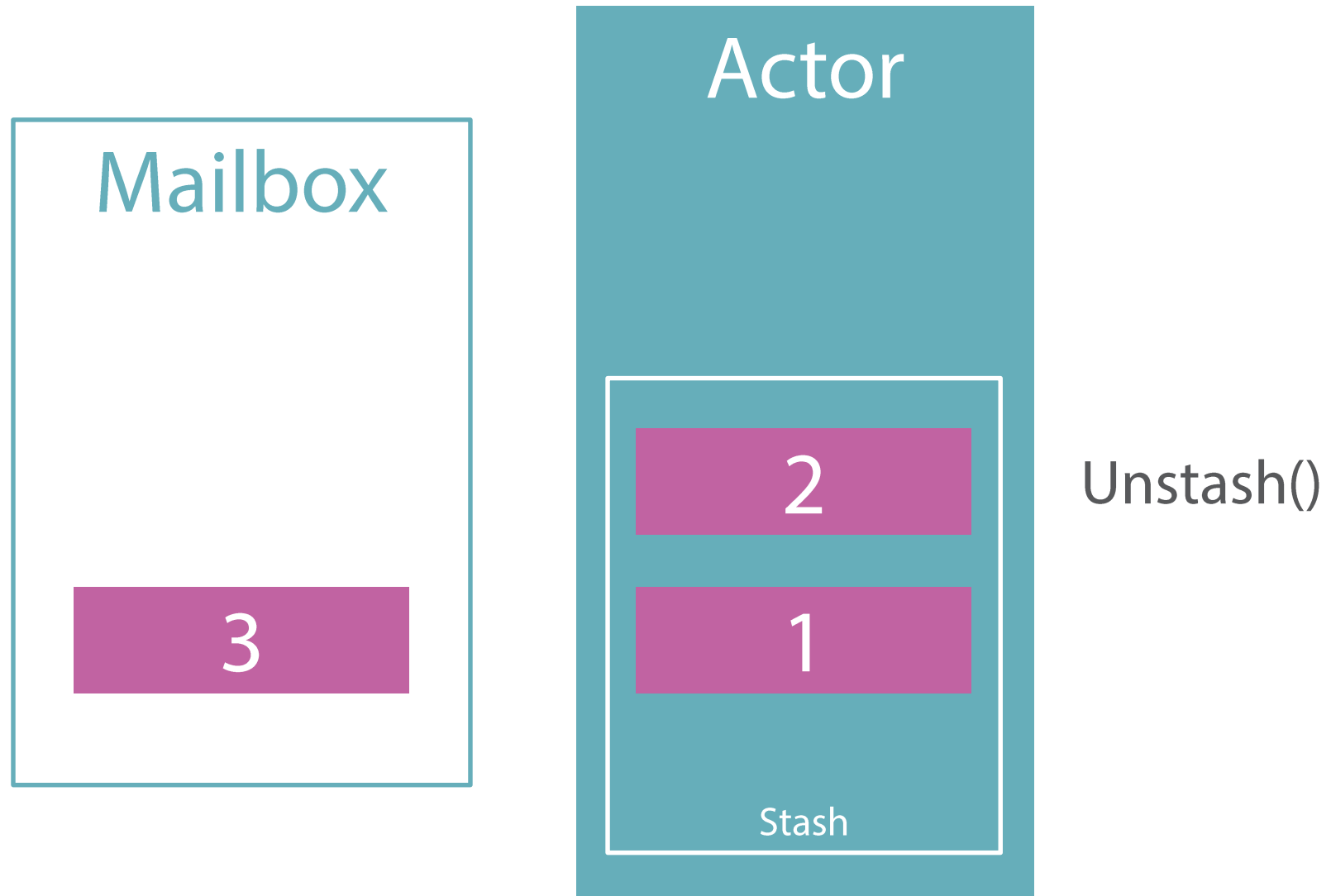


Akka.NET Stashing API

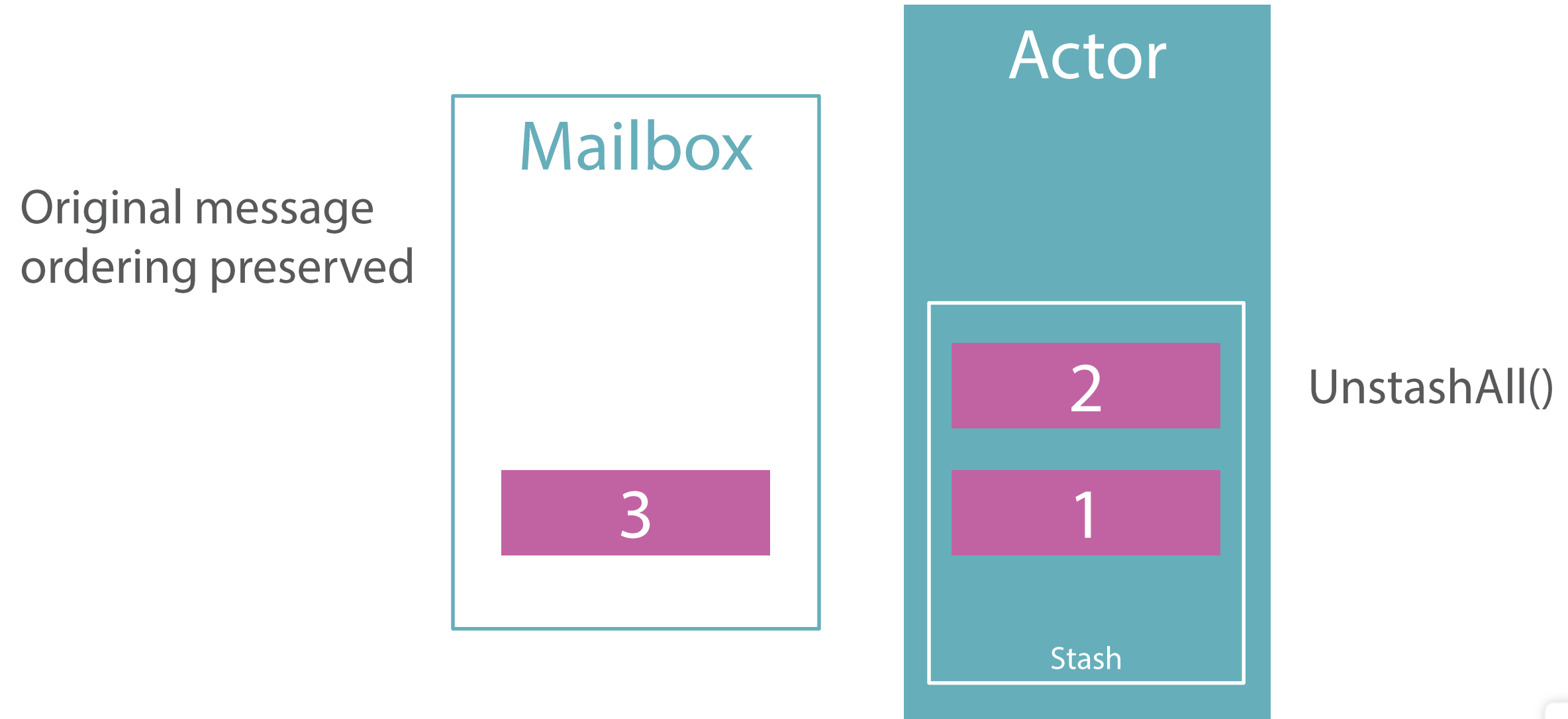


Akka.NET Stashing API

Unstashed
message
jumps ahead of
“normal”
messages

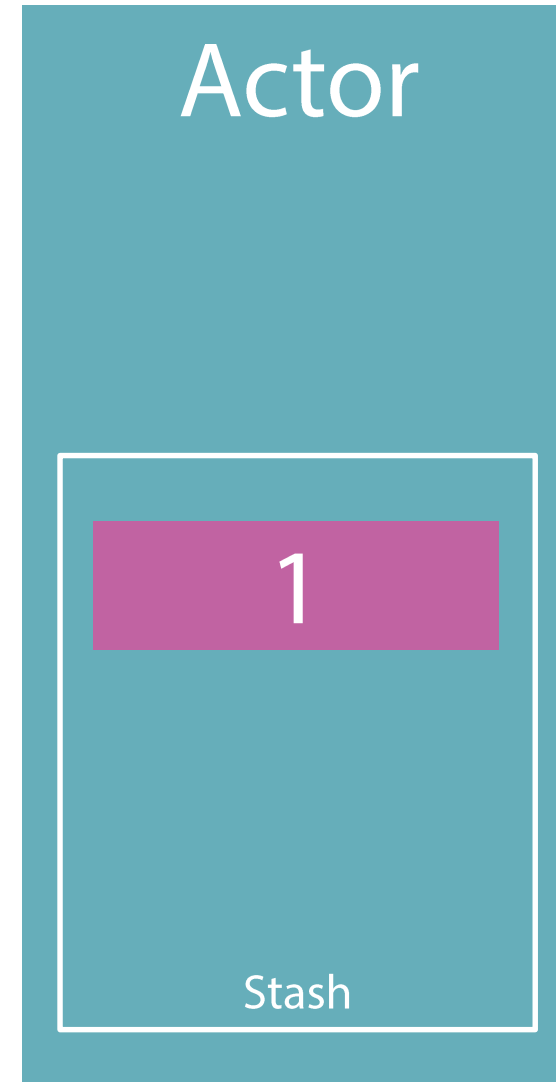
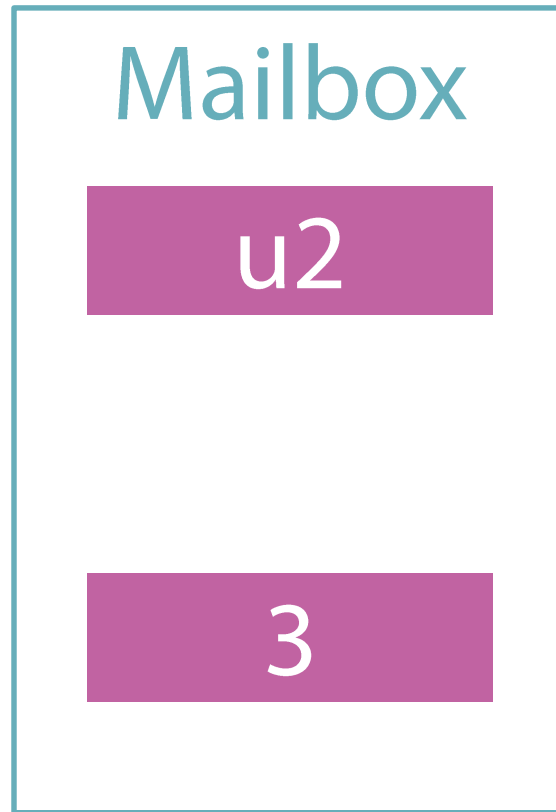


Akka.NET Stashing API



Akka.NET Stashing API

Before “normal”
messages but
after already
unstashed

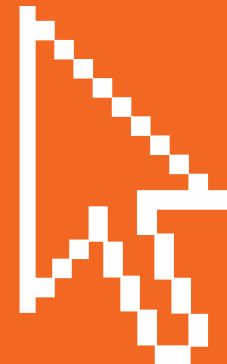


Unstash()

Running with No Stash

Modified demo application

Run and observe delays



Adding a Message Stash

Improve message throughput for low value messages during peak hours

Add stashing support

Stash high value messages during peak

Let low value be processed during peak



Unstashing Messages

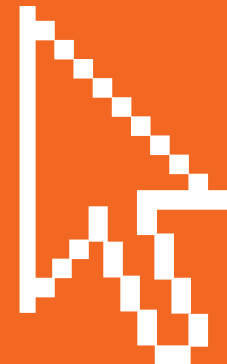
Periodically tell payment actor to
unstash messages if not in peak time

ProcessStashedPaymentsMessage

Create a schedule

Handle ProcessStashedPayments

UnstashAll() if not in peak time



Summary



Overview of message stashing

Example use cases

Stash() Unstash() UnstashAll()

Modified demo application

IWithUnboundedStash

```
public IStash Stash { get; set; }
```

Periodically check and unstash messages

Next:

Increasing Asynchronous Message Throughput