

Software Design

Design Patterns

(Part 5)

Quote of the day...

They have computers, and they may have other weapons of mass destruction.

Janet Reno

Overview of Software Design Thread

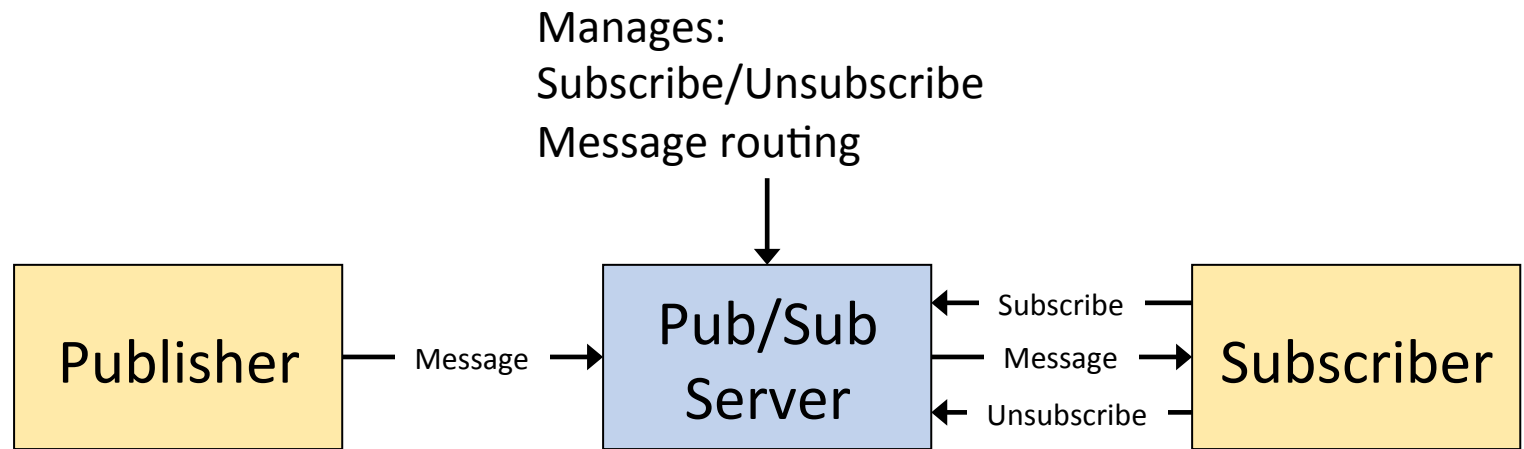
- Introduction
- Design Principles
- Software Design Methodologies
- **Design Patterns**
- Dependency Injection
- Testing & Test Design
- Design Activities
- Case Study

Overview of this Topic

- Message bus patterns

Publish/Subscribe

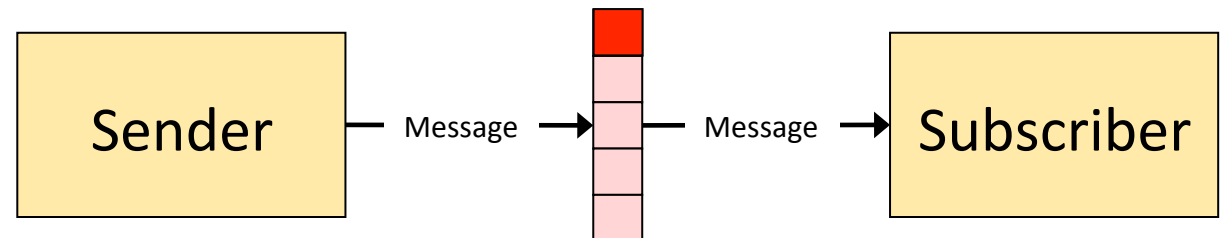
- Publisher message => multiple (unknown) subscribers
- Subscribers free to subscribe/unsubscribe
- Can be topic-based
- Common use cases:
 - Notifications
 - Events
 - Monitors
- Demo...



Message Queues

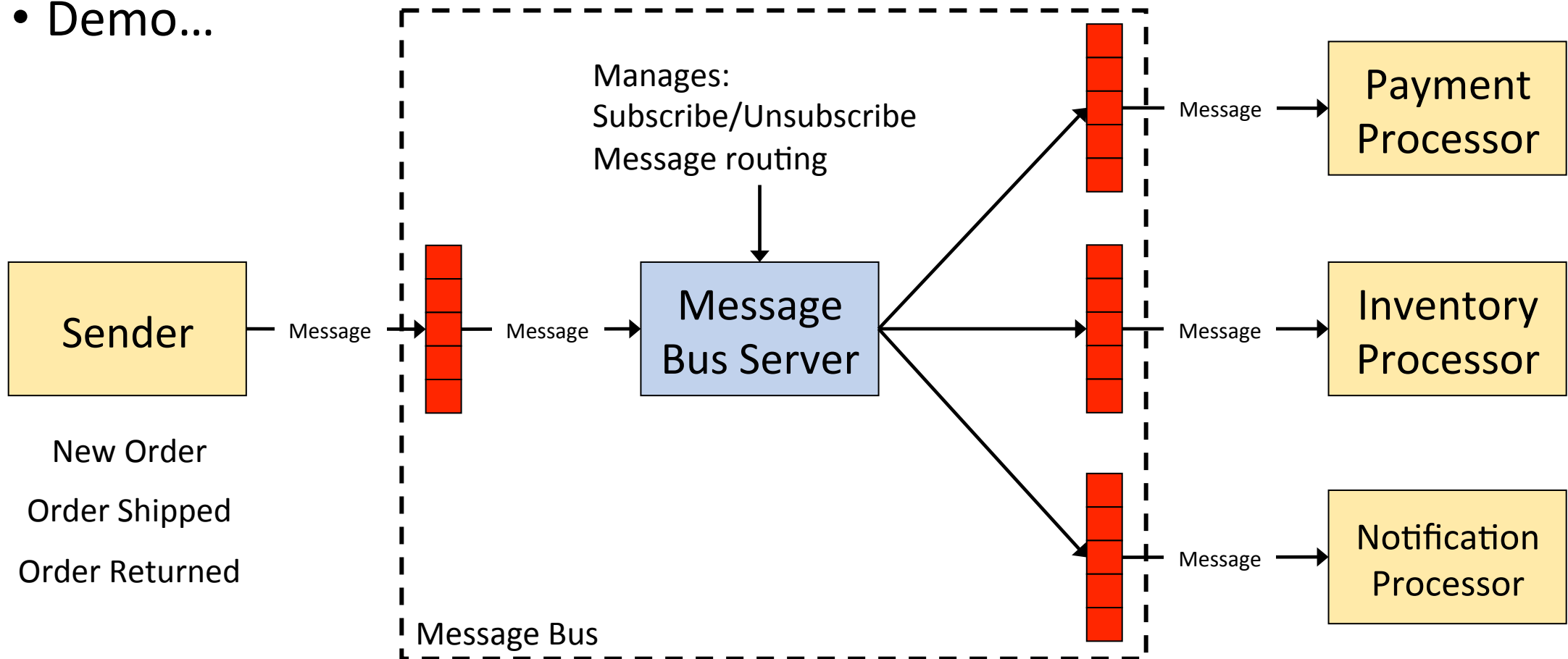
- Enable exchange of asynchronous durable messages between systems
- Some message queues support transactions
- Single queue can contain multiple topics
- Messages processed by a single system
- Common use-cases:
 - Notifications
 - Unreliable third party integrations

- Demo...



Message Bus

- Combines Publish/Subscribe and Message Queues
- Demo...



Message Queues and Message Bus

- Enables scaling of individual services
- Enables extension of system (adding new message clients)
- Ideal for message-based and event-based systems
- Integration of asynchronous services on separate timelines
- Great tools for decoupling parts of your system
- Minimizes impact of unreliable subsystems

Sample code...

- <https://github.com/dnsdurham/MessageBusPatterns>

Questions?
Thoughts?
Comments?