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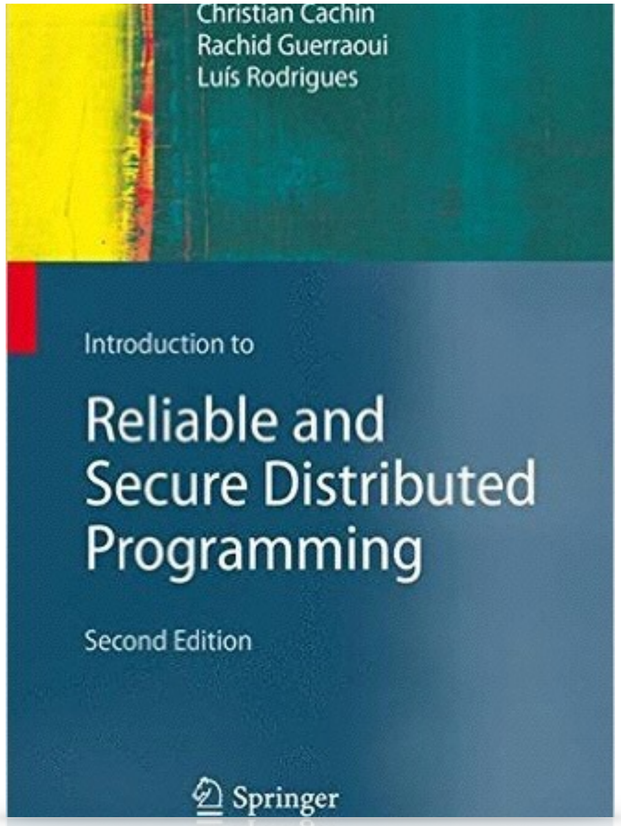
The Kompics Component Model
Background

- A framework for building distributed systems
- Inspired by this book
- Composing protocols from reusable, concurrent, reactive *components*



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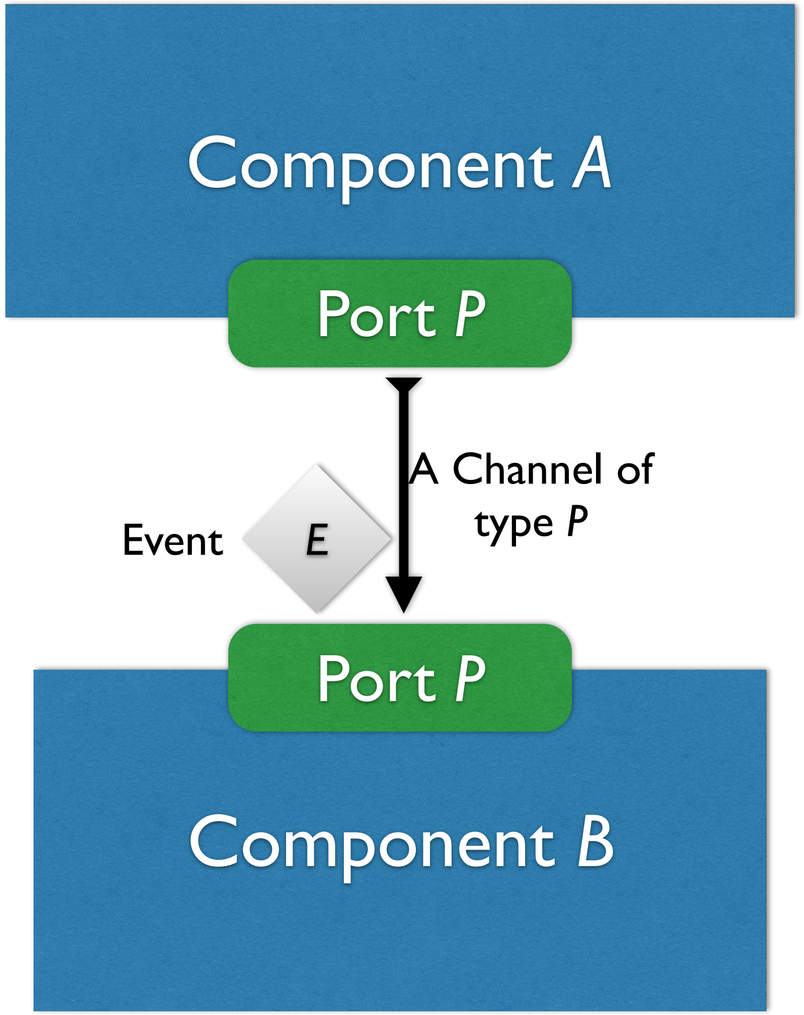
The Kompics Component Model
Ports and Channels

- *Event*-based communication between components (message-passing concurrency)
- *Port types* form "APIs" by specifying which events may be *triggered* on their instances (p*orts*) (and which way).
- Ports are connected by bidirectional *channels*.
- Channels forward events in FIFO order with exactly-once semantics.
- Components either *provide* or *require* a port.



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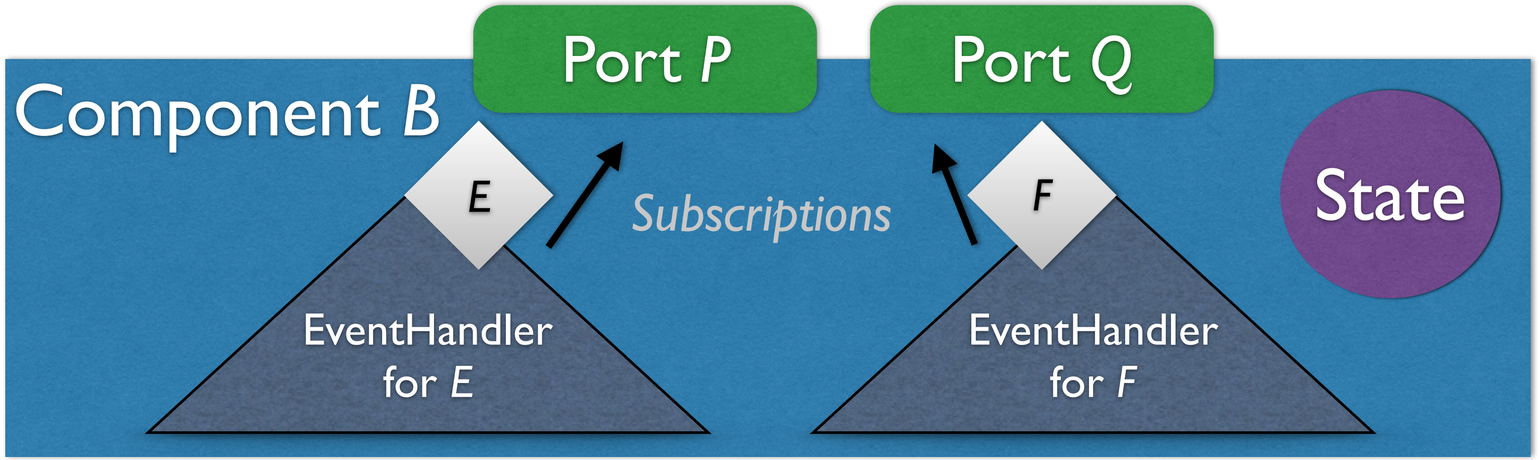
The Kompics Component Model
Handlers and Subscriptions



- Components can have multiple Ports of either type.
- Components have *internal state*.
- Events are processed by *Handlers* which match a single event type (and its subtypes).
- A Handler must be subscribed to a port to receive events.

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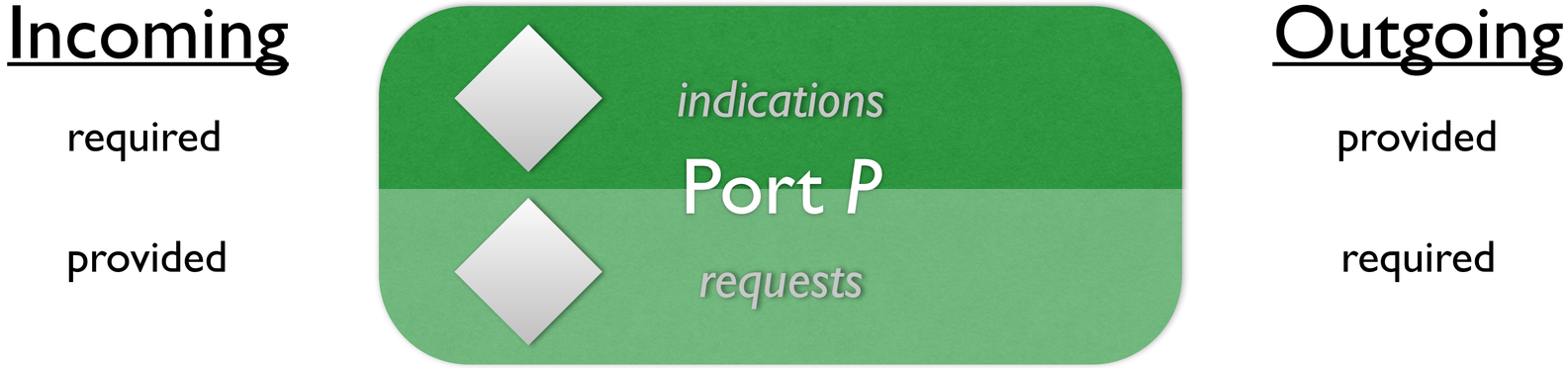
The Kompics Component Model
Port Types and Directions



- Each port type defines which events may be pass through it.
- It also defines the *direction* they may pass: *indication* or *request*
- An event must be **trigged** in **outgoing** direction.
- A Handler must be **subscribed** to a port that passes **incoming** events of its type.

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The Kompics Component Model

Composition