RabbitMQ – Topic Exchange

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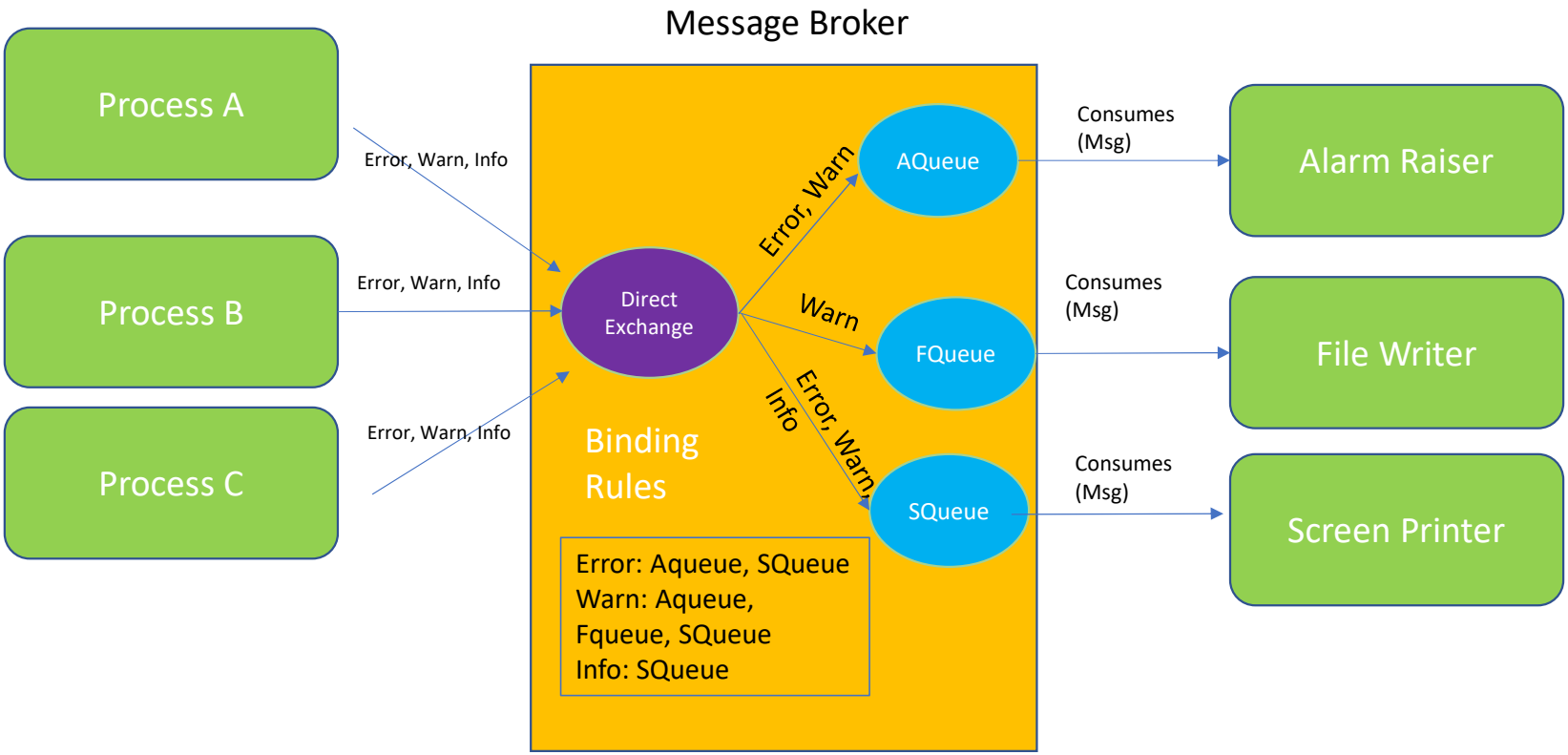
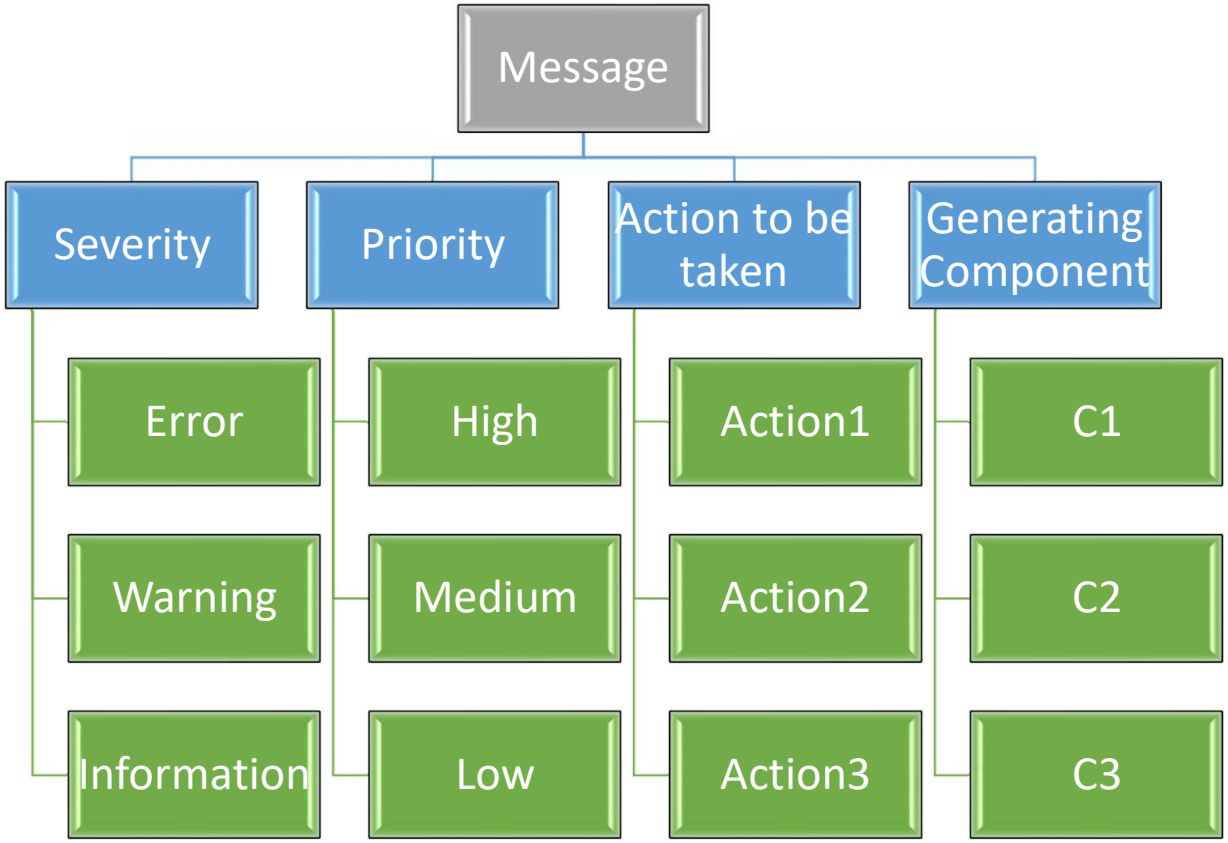
Selective Routing - Example




Message
Severity
Priority
Action to be taken
Generating Component
Error
High
Action1
C1
Warning
Medium
Action2
C2
Information
Low
Action3
C3

Routing Key

<Severity>.<Priority>.<Action>.<Component>

Examples:
E.H.A1.C1
E.H.A1.C2
E.H.A1.C3
E.M.A1.C1
….
E.L.A3.C3
W.H.A1.C1
W.H.A1.C2
….
W.L.A3.C3
…
I.L.A3.C3

Subscriber Bindings

- Errors of High Priority on which Action A1 to be taken generated by component C1
  - E.H.A1.C1
- Errors of High Priority on which Action A1 to be taken generated by any component
  - E.H.A1.C1
  - E.H.A1.C2
  - E.H.A1.C3
    - What if a new component is added later?
- Errors of High Priority
  - Too Many combinations i.e. too many bindings
- All Errors
  - Way too many combinations i.e. far larger count of bindings

Solution – Binding Rule Syntax

* - Match One Word

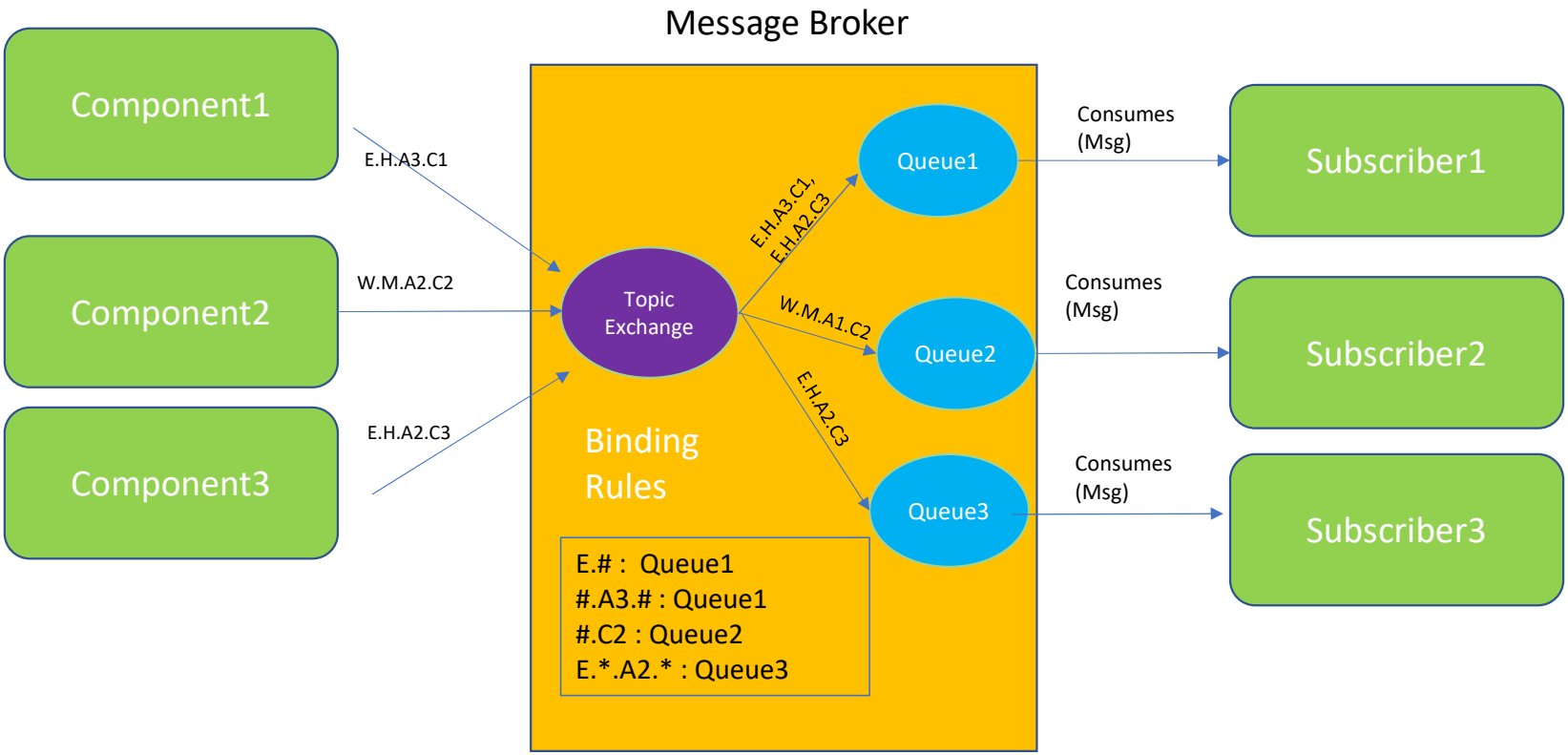
-- Match 0 or more words

Requirement	Binding Rule
Any Error	E.#
Any High Priority	*.H.#
Any A3 event	*.*.A3.* *.*.A3.# #.A3.#
Any event from component C2	#.C2
Any High Priority Error	E.H.#
Any Warning from component C3	W.#.C3
Any High Priority Error from component C2	E.H.*.C2
Any medium priority warning for which Action A2 needs to be taken	W.M.A2.*
Any High Priority Information coming from C3 for which action A2 needs to be taken	I.H.A2.C3

Additionally…

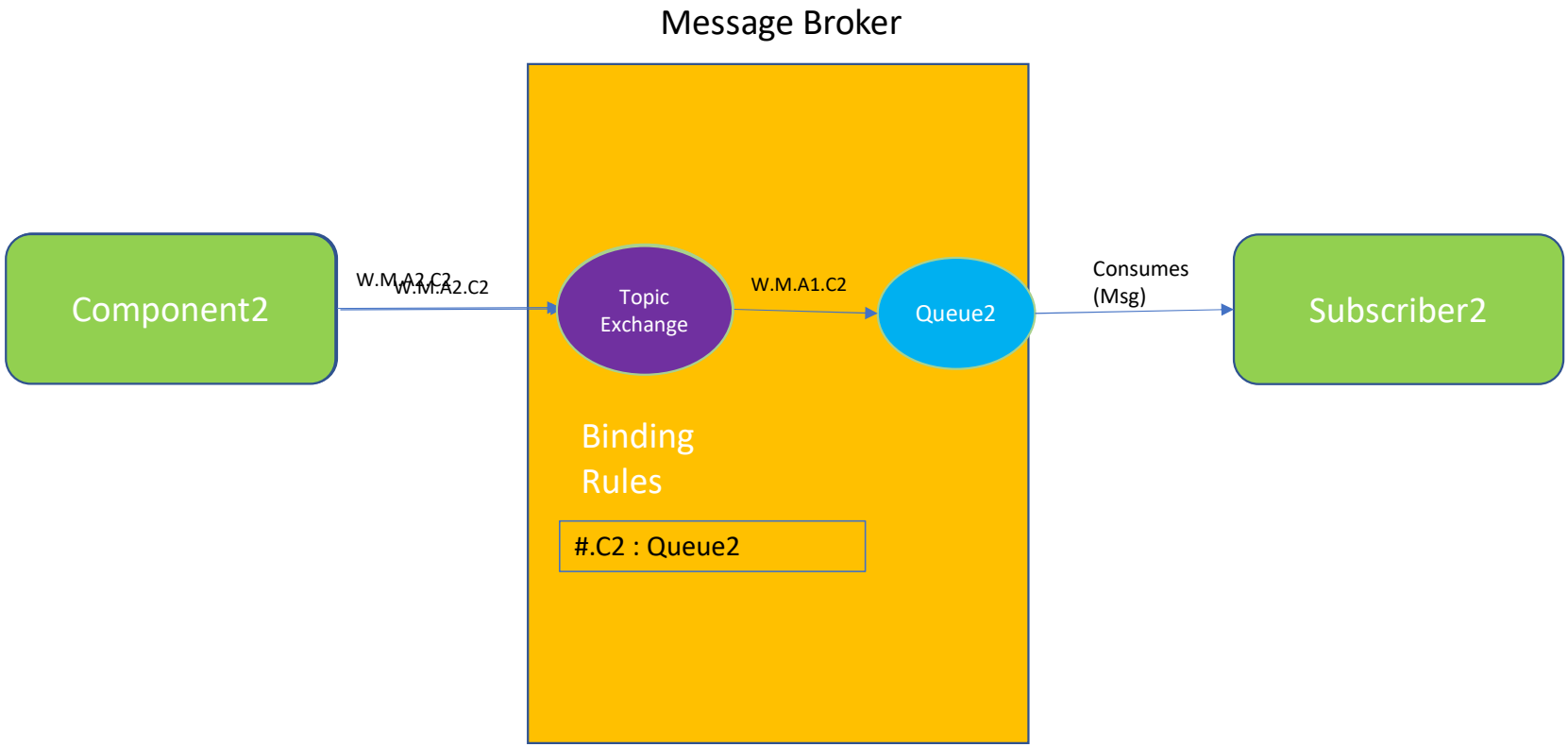
- One subscriber can use multiple bindings to attach its queue with the exchange
- If more than one rule matches for a message to a subscriber, the message is delivered to the subscriber only once.
- Multiple subscribers can use same binding to attach their queue with the exchange
- Multiple subscribers can get attached to the same queue, if the queue is not exclusive to a channel
- Any message for which the routing key does not match to any binding rule, is discarded by the exchange

Topic Exchange



Steps

- Publisher
  - Create a connection, say CN
  - Create a channel in CN, say CH
  - Create a Topic Exchange
  - Publish the message
  - Close the connection
    - Automatically closes the channel

- Subscriber
  - Create a connection say CN
  - Create a channel in CN, say CH
  - Create the topic exchange (will not affect if exchange is already there)
  - Create the queue, if it does not exist already and associate it with the channel CH
  - Bind the queue with the exchange for the required Routing Key(s)
  - Associate a call-back function with the message queue
  - Start consuming the messages

An Important Point