

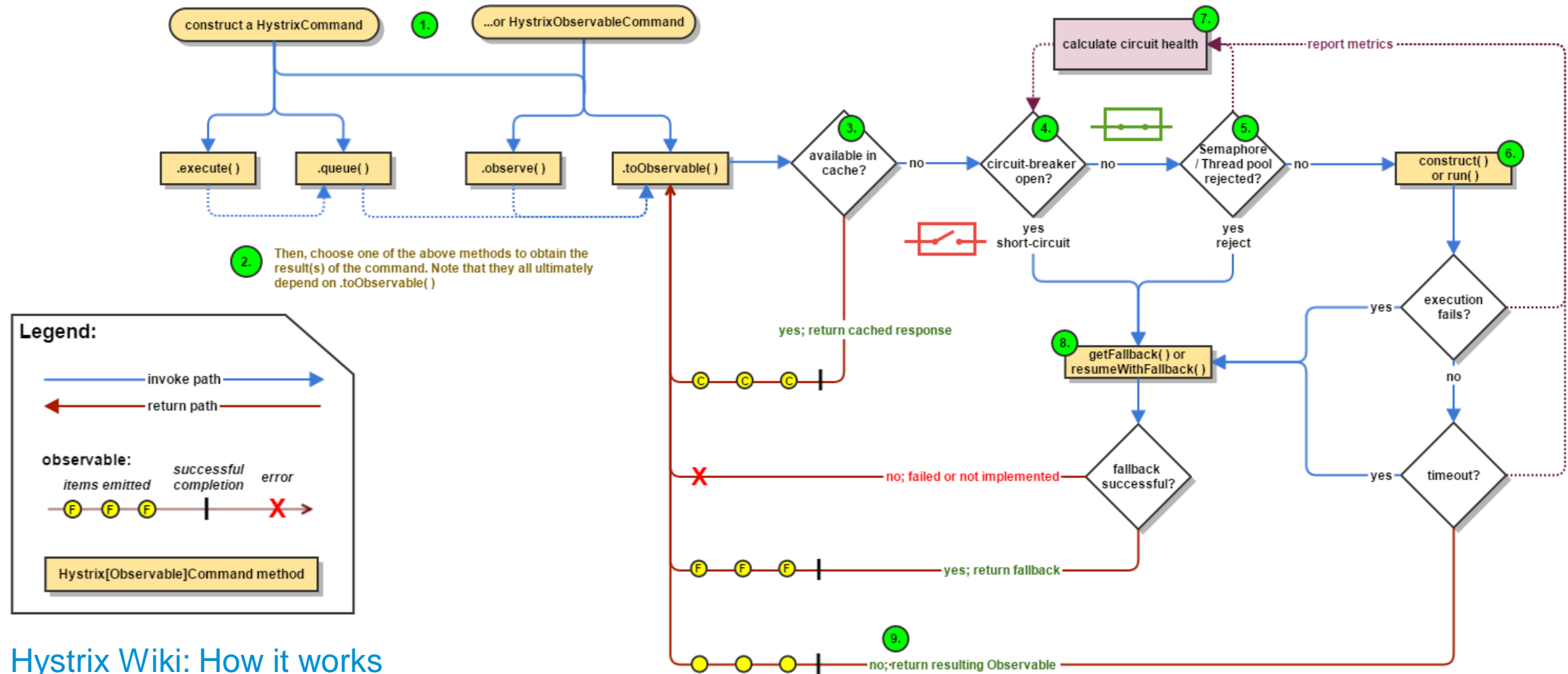


Week 4: Service-to-Service Communication

## Unit 5: Making the Communication More Resilient

# Making the Communication More Resilient

## Hystrix flowchart



[Hystrix Wiki: How it works](#)

# Making the Communication More Resilient

## Hystrix fallback

```
public class MyCommand extends HystrixCommand<String> {  
  
    @Override  
    protected String getFallback() {  
        if (isResponseTimedOut()) {  
            logger.warn("execution timed out");  
        }  
        if (isFailedExecution()) {  
            logger.error("execution failed: {}", getFailedExecutionException().getMessage());  
        }  
        return "fallback value";  
    }  
}
```

Note: Fallback logic is performed when a request fails, times out, or is rejected (thread pool is full).

# Making the Communication More Resilient

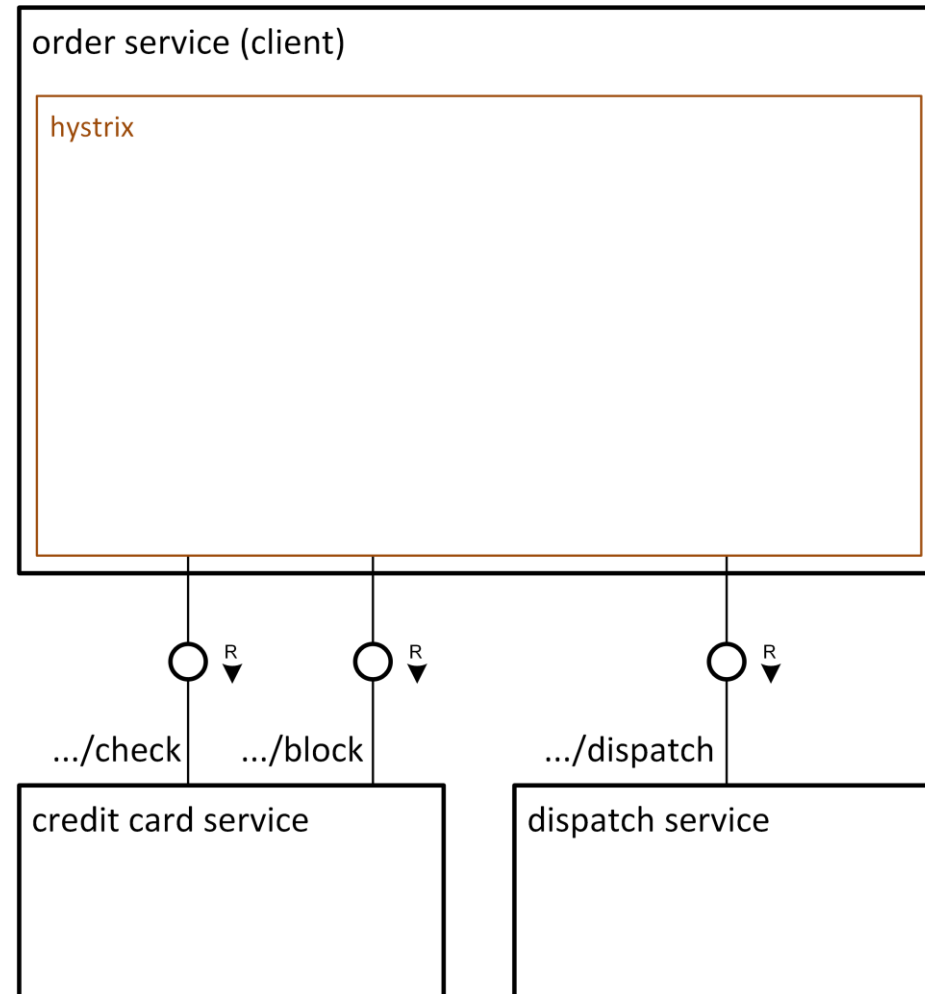
Hystrix configuration – Some examples

- **hystrix.threadpool.default.coreSize**  
Maximum number of concurrently executed threads per command (group) (default: 10)
  - **hystrix.command.\*.execution.isolation.thread.timeoutInMilliseconds**  
Time to wait for the run() method to complete (default: 1000)
  - **hystrix.command.\*.circuitBreaker.errorThresholdPercentage**  
Error percentage at which breaker trips open (default: 50)
  - **hystrix.command.\*.circuitBreaker.sleepWindowInMilliseconds**  
Time delay to reject requests after tripping the circuit (default: 5000)
- \* must be replaced by default or any CommandKey

[Hystrix Configuration](#)

# Making the Communication More Resilient

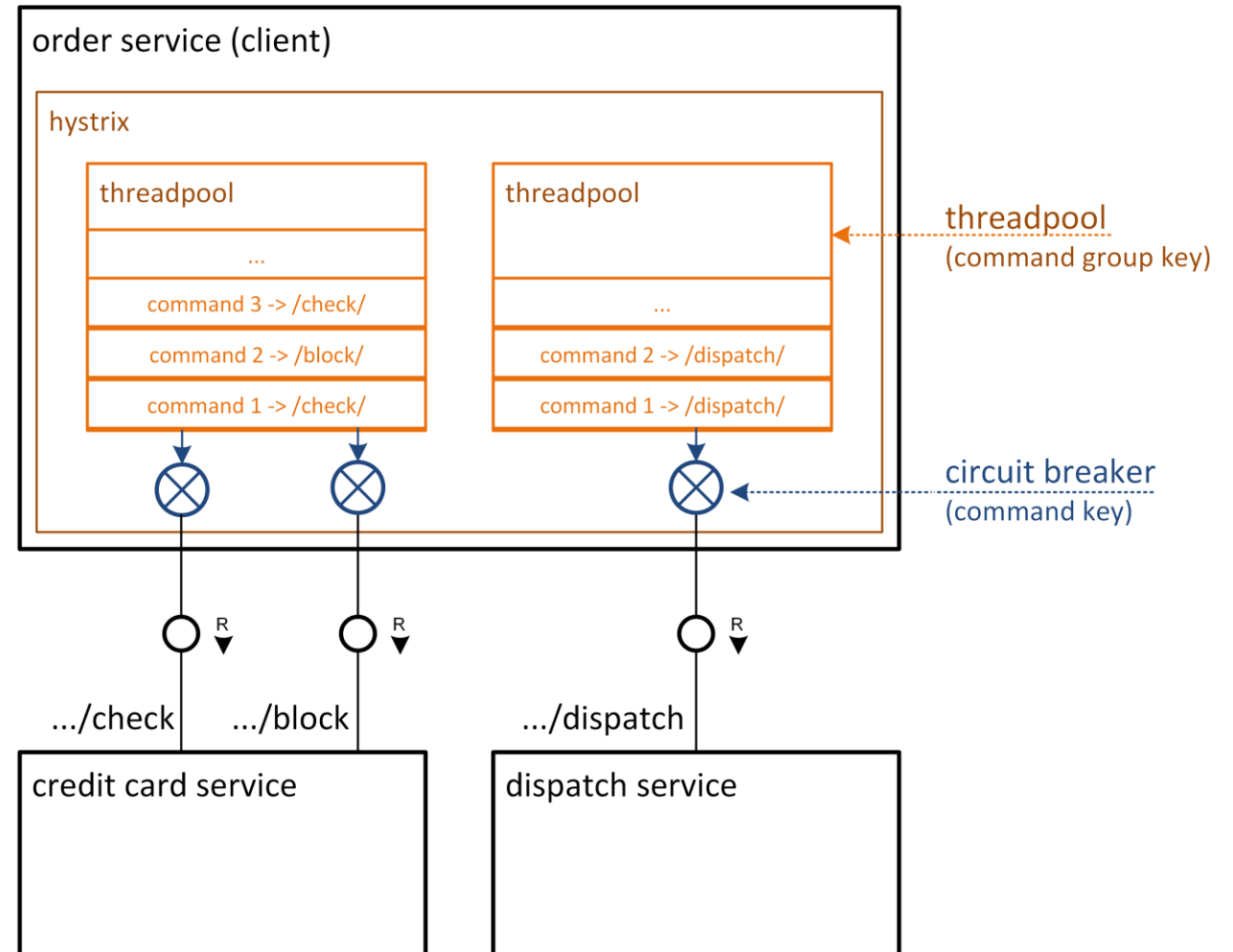
Hystrix configuration – Keys explained



# Making the Communication More Resilient

## Hystrix configuration – Keys explained

- Define CommandGroupKey per service name e.g. "CreditCard"
- Define CommandKey per logical operation name e.g. "CreditCard.BlockAmount"

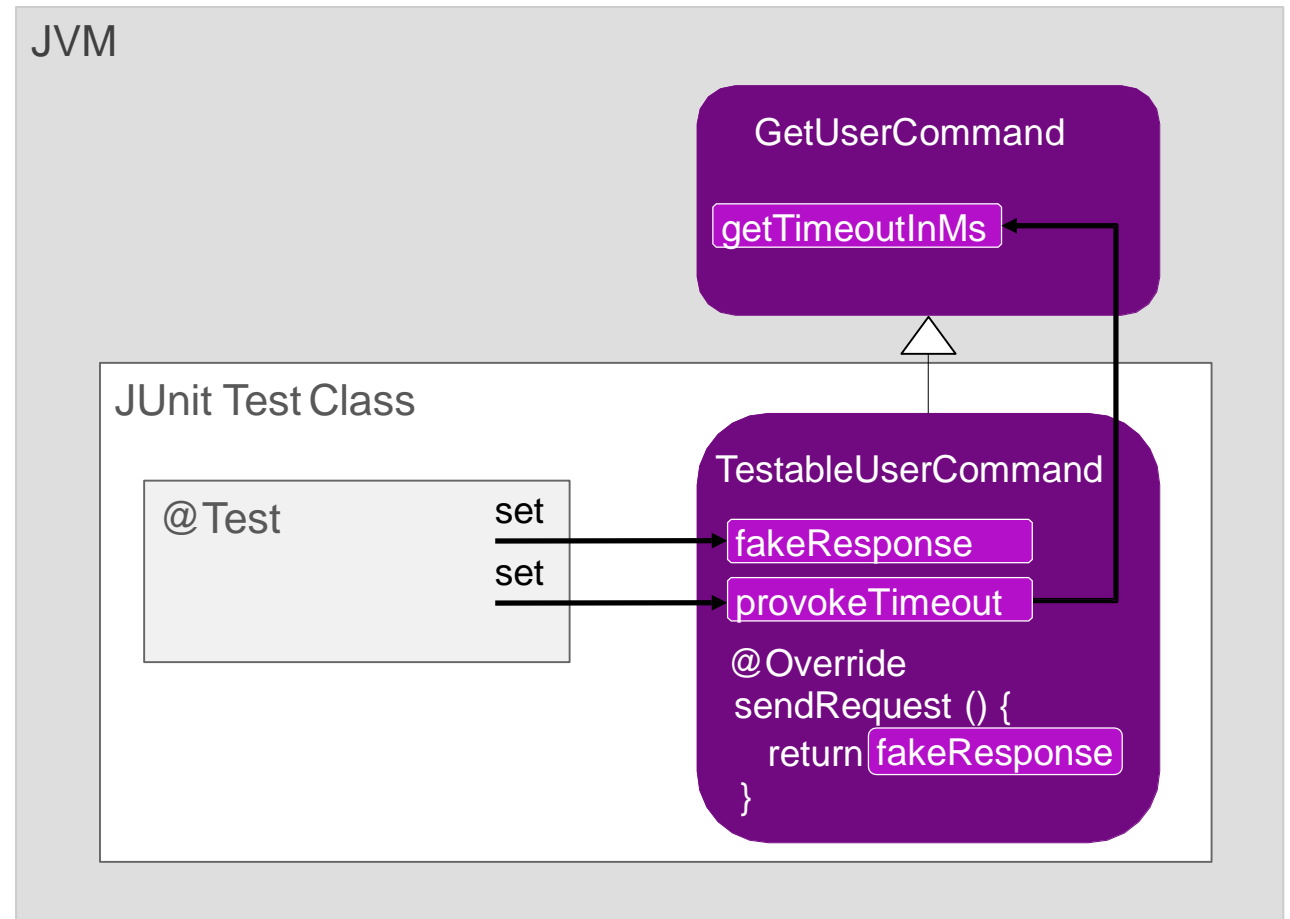


# Making the Communication More Resilient

## Exercise 18



### Exercise 18: Make the Communication More Resilient (Robust)

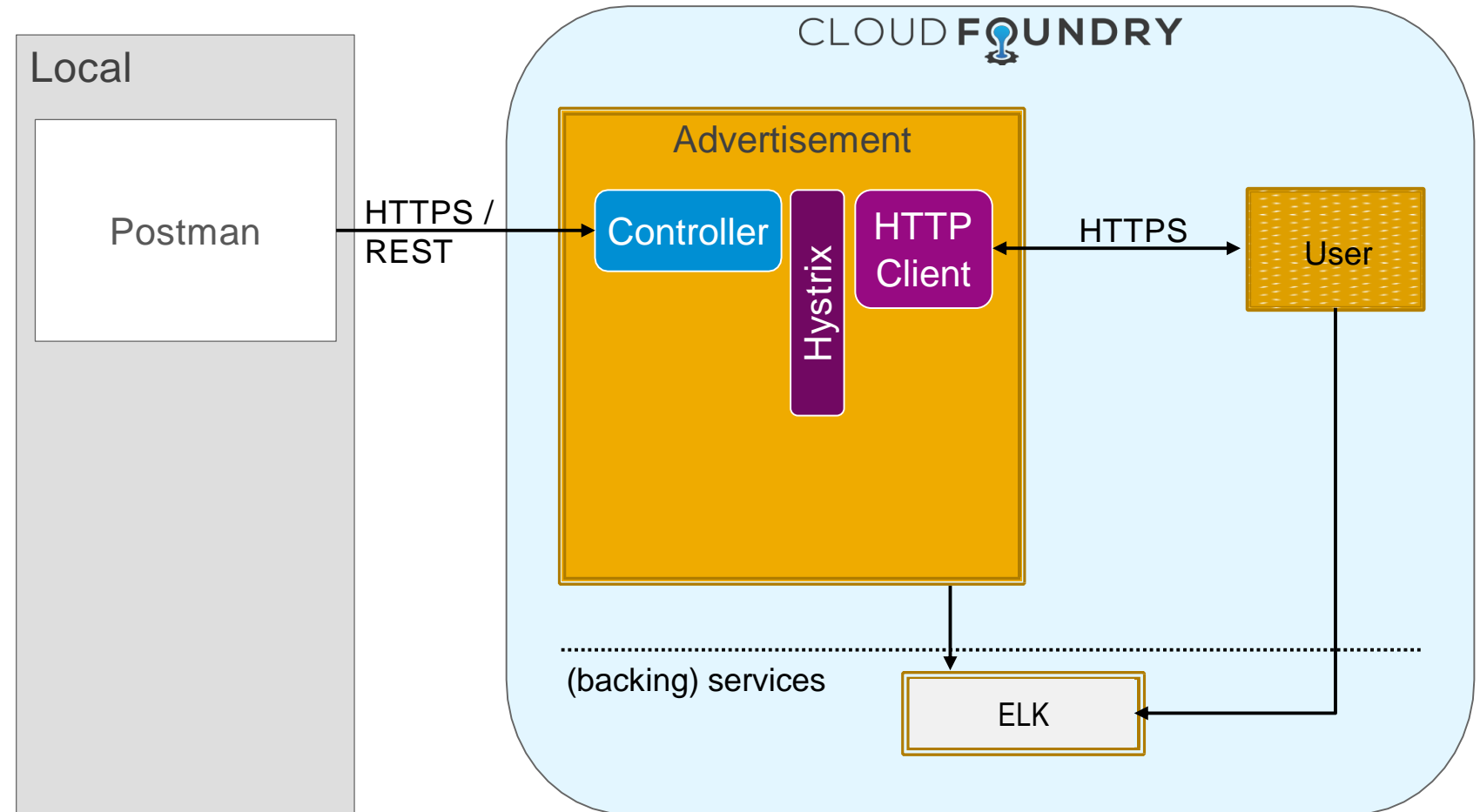


# Making the Communication More Resilient

## Exercise 19



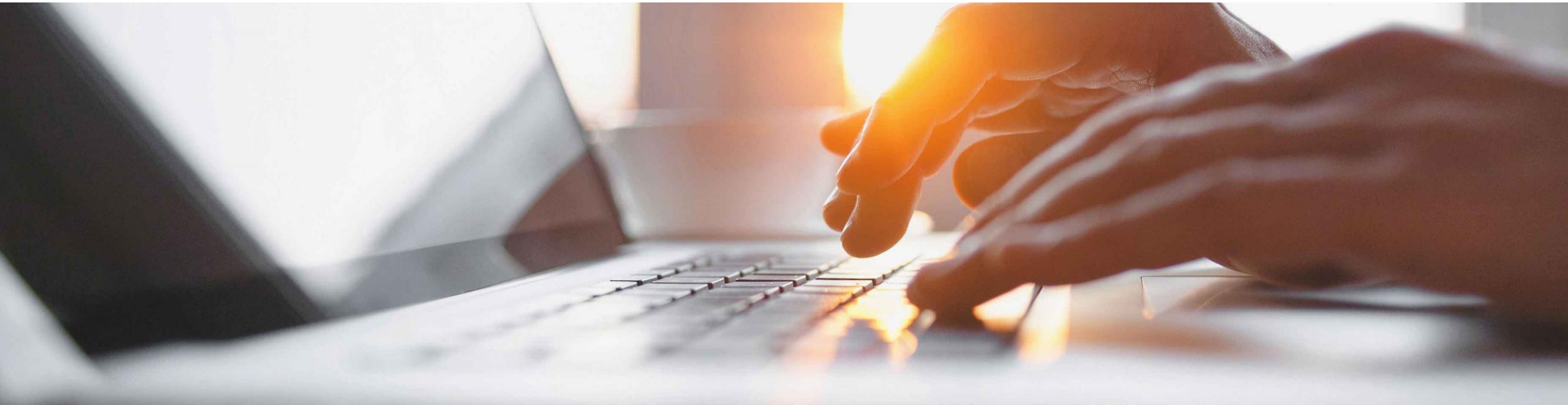
### [Optional] Exercise 19: Transfer Correlation-ID





# Making the Communication More Resilient

Review of sample solution



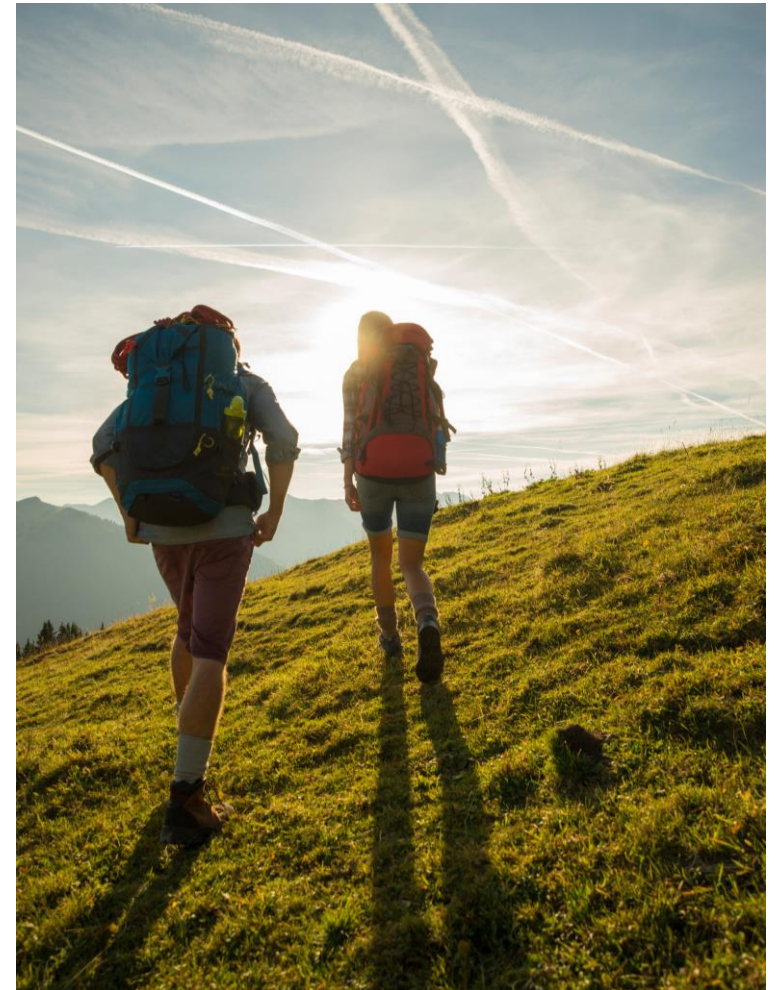
# Making the Communication More Resilient

Further reading



Additional Material

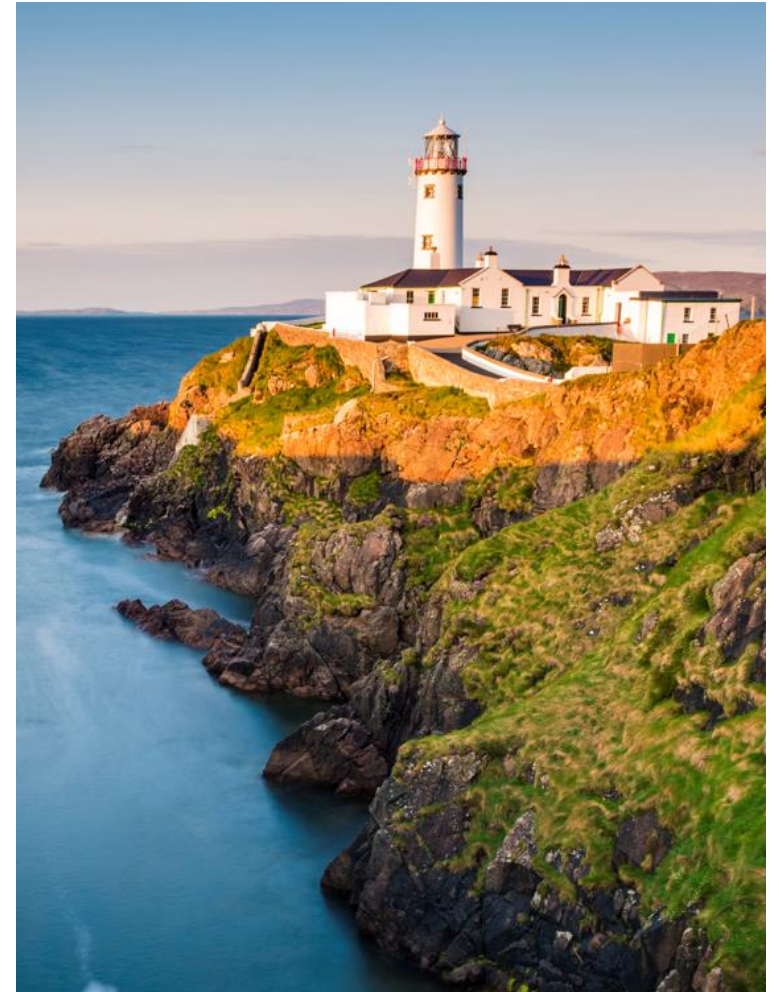
- [Hystrix Wiki: How it works](#)
- [Hystrix Configuration](#)



# Making the Communication More Resilient

What you've learned in this unit

- How Hystrix works in detail and how it can be configured
- Hystrix fallback
  - What it is
  - How it works
  - When it is performed
- How to propagate the correlation ID to the dependent service



# Thank you.

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