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# Spring Cloud Load Balancing - Retry

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# Client Load Balancing Fault Tolerance

- Ribbon allows for transient failures and retry
- Retry for GETs by default
- Retry configurable for select or all requests, but require Idempotence
- Spring Cloud Netflix leverages Spring Retry (required dependency)
- Use in combination of HTTP client socket timeouts.

See here for more information:

<http://cloud.spring.io/spring-cloud-static/spring-cloud-netflix/1.4.0.RELEASE/single/spring-cloud-netflix.html#retrying-failed-requests>

# Client Load Balancing Limitations

- Retry occurs at the load balancer / HTTP client level.
- Higher level exceptions are not visible to Ribbon client, therefore not handled.

```
ProjectInfo projectInfo  
    = restTemplate.getForObject(someEndpoint,  
                                ProjectInfo.class)
```

# Client Load Balancing Limitations - Continued

- Exception handling revisited: Can Ribbon retry protect exceptions in this code?

```
ProjectInfo projectInfo  
    = restTemplate.getForObject(someEndpoint,  
                                ProjectInfo.class)
```

# Client Load Balancing Limitations - Continued

- Low level socket exceptions through the HTTP client are handled
- High level RestTemplate marshalling exceptions are not.
- Consider using Spring Retry project explicitly for higher level projects: <https://github.com/spring-projects/spring-retry>
- Spring Retry support upcoming in Spring Incubator: <https://github.com/spring-cloud-incubator/spring-cloud-circuitbreaker>

# Client Load Balancing Retries and Hystrix Timeouts

- Ribbon provides for transient failure retry
- Incorrectly configuring retry intervals may induce Hystrix timeouts
- Factor in Ribbon retry and/or socket timeout tuning with Hystrix timeout in mind
- Will discuss more in *Timeouts* lesson

See here for more details:

[https://cloud.spring.io/spring-cloud-static/spring-cloud-netflix/2.1.2.RELEASE/single/spring-cloud-netflix.html#\\_hystrix\\_timeouts\\_and\\_ribbon\\_clients](https://cloud.spring.io/spring-cloud-static/spring-cloud-netflix/2.1.2.RELEASE/single/spring-cloud-netflix.html#_hystrix_timeouts_and_ribbon_clients)