



链滴

# SpringCloud Alibaba 微服务实战十二 - 网关限流

作者: [jianzh5](#)

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<p>导读：通过前面的章节我们在微服务层做了限流，并且集成了 SpringCloud Gateway，本章主要内容是将限流功能从微服务迁移到网关层。</p>

## 

<p>Springcloud Gateway 原生限流主要基于过滤器实现，我们可以直接使用内置的过滤器 <code>equestRateLimiterGatewayFilterFactory</code>，目前 <code>RequestRateLimiterGatewayFilterFactory</code> 的实现依赖于 <code>Redis</code>，所以我们还要引入 <code>spring-boot-starter-data-redis-reactive</code>。</p>

### 

```
<pre><code class="language-xml highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;dependency&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">&lt;groupId&gt;</span>org.springframework.cloud<span class="highlight-nt">&lt;/groupId&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">&lt;artifactId&gt;</span>spring-cloud-starter-gateway<span class="highlight-nt">&lt;/artifactId&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;/dependency&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl"></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;dependency&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">&lt;groupId&gt;</span>org.springframework.boot<span class="highlight-nt">&lt;/groupId&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">&lt;artifactId&gt;</span>spring-boot-starter-data-redis-reactive<span class="highlight-nt">&lt;/artifactId&gt;</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;/dependency&gt;</span></span></span></code></pre>
```

### 

```
<pre><code class="language-yaml highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">spring</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">cloud</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">gateway</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">routes</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">-</span><span class="highlight-nt">id</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">account-service</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">uri</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">lb:</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">order</span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">10000</span></span></span></code></pre>
```

```

n> <span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">predicates</span><span class="h
ghlight-p">:</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-l">Path=/account-service/**</span
<span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">filters</span><span class="highli
ht-p">:</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">name</span><span class="high
ight-p">:</span><span class="highlight-w"> </span><span class="highlight-l">RequestRat
Limiter</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">args</span><span class="highli
ht-p">:</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">redis-rate-limiter.replenishRate
/<span><span class="highlight-p">:</span><span class="highlight-w"> </span><span class
"highlight-m">1</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">redis-rate-limiter.burstCapacity
/<span><span class="highlight-p">:</span><span class="highlight-w"> </span><span class
"highlight-m">3</span><span class="highlight-w">
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-w">      </span><span class="highlight-nt">key-resolver</span><span clas
="highlight-p">:</span><span class="highlight-w"> </span><span class="highlight-s2">"#
@ipKeyResolver}"</span><span class="highlight-w">
</span></span></span></code></pre>
<p>主要是配置三个主要参数：</p>
<ul>
<li>redis-rate-limiter.replenishRate :<br>
允许用户每秒处理多少个请求</li>
<li>redis-rate-limiter.burstCapacity: <br>
令牌桶的容量，允许在一秒钟内完成的最大请求数</li>
<li>key-resolver :<br>
用于限流的键的解析器的 Bean 对象的名字。它使用 SpEL 表达式根据#{@beanName}从 Spring 容
中获取 Bean 对象。</li>
</ul>
<p>配置 Bean</p>
<pre><code class="language-java highlight-chroma"><span class="highlight-line"><span c
lass="highlight-cl"><span class="highlight-cm">/**
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-cm">* 自定义限流标志的key，多个维度可以从这里入手
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-cm">* exchange对象中获取服务ID、请求信息，用户信息等
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-cm">*/</span></span></span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="high
light-nd">@Bean</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="high
light-n">KeyResolver</span> <span class="highlight-nf">ipKeyResolver</span><span class
"highlight-o">()</span> <span class="highlight-o">{</span>

```

```

</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-k">return</span> <span class="highlight-n">exchange</span> <span class="highlight-o">.</span><span class="highlight-o">-&gt;</span></span> <span class="highlight-n">Mono</span><span class="highlight-o">.</span><span class="highlight-o">.</span><span class="highlight-na">just</span><span class="highlight-o">(</span><span class="highlight-n">exchange</span><span class="highlight-o">.</span><span class="highlight-na">getRequest</span><span class="highlight-o">().</span><span class="highlight-na">getRemoteAddress</span><span class="highlight-o">().</span><span class="highlight-na">getHostName</span><span class="highlight-o">());</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-o">}</span></span>
</span></span></code></pre>

```

## Sentinel 限流

我们之前的章节已经讲过 Sentinel 的使用方法，如果有不清楚的可以翻看之前的章节，这里主说一下与 SpringCloud gateway 的整合。

Sentinel 从 1.6.0 版本开始提供了 Spring Cloud Gateway 的适配模块，可以提供两种资源维度限流：

- route 维度：即在 Spring 配置文件中配置的路由条目，资源名为对应的 routeId 自定义
- API 维度：用户可以利用 Sentinel 提供的 API 来自定义一些 API 分组

下面是整合步骤

### POM 依赖

```

<pre><code class="language-xml highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;dependency&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;groupId&gt;</span>com.alibaba.cloud<span class="highlight-nt">&lt;/group
Id&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;artifactId&gt;</span>spring-cloud-alibaba-sentinel-gateway<span class="high
light-nt">&lt;/artifactId&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;/dependency&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl">
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;dependency&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;groupId&gt;</span>com.alibaba.cloud<span class="highlight-nt">&lt;/group
Id&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;artifactId&gt;</span>spring-cloud-starter-alibaba-sentinel<span class="high
light-nt">&lt;/artifactId&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;/dependency&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl">
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;dependency&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;groupId&gt;</span>com.alibaba.csp<span class="highlight-nt">&lt;/group
Id&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-nt">&lt;artifactId&gt;</span>sentinel-datasource-nacos<span class="high
light-nt">&lt;/artifactId&gt;</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">&lt;/dependency&gt;</span>
</span></span></code></pre>

```

```
</span></span></code></pre>
```

<p>由于需要使用 nacos 作为 sentinel 的配置中心，所以也引入了 <code>sentinel-datasource-nacos</code></p>

### ``` <pre><code class="language-yaml highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">...</span><span class="highlight-w"></span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">spring</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">cloud</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">sentinel</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">transport</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">dashboard</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span><span class="highlight-m">10.0.1.48</span><span class="highlight-p">:</span></span><span class="highlight-m">8858</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">eager</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span><span class="highlight-kc">true</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">datasource</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">ds</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">nacos</span><span class="highlight-p">:</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">server-addr</span><span class="highlight-p">:</span></span><span class="highlight-m">10.0.10.48</span><span class="highlight-p">:</span></span><span class="highlight-m">8848</span></span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">data-id</span><span class="highlight-p">:</span></span><span class="highlight-l">gateway-sentinel-flow</span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">group-id</span><span class="highlight-p">:</span></span><span class="highlight-l">DEFAULT_GROUP</span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span><span class="highlight-nt">rule-type</span><span class="highlight-p">:</span></span><span class="highlight-l">gw-flow</span><span class="highlight-w"></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span></span></span></pre> ``` 原文链接: [SpringCloud Alibaba 微服务实战十二 - 网关限流](#)

```
s="highlight-w" > /span> <span class="highlight-nn" >...</span> <span class="highlight-w" >
</span> </span> </span> </code> </pre>
<p>这里主要是 sentinel 的相关配置, 从 nacos 配置中心获取 <code>gateway-sentinel-flow</code>
<code>de</code> 配置文件, 限流类型是网关类型 gw-flow。 </p>
<h3 id="限流配置-" >限流配置</h3>
<p>在 nacos 配置管理 public 页面建立 <code>data-id</code> 为 <code>gateway-sentinel-fl
w</code> 的配置文件 (json 格式), 给 <code>account-service</code> 与 <code>product-s
ervice</code> 添加限流规则。 </p>
<pre> <code class="language-json highlight-chroma" > <span class="highlight-line" > <span c
lass="highlight-cl" > <span class="highlight-p" > [ </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="hi
hlight-p" > { </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "resource" </span> <span class="highlight-p" > : </span> <span class="highlight-
2" > "account-service" </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "count" </span> <span class="highlight-p" > : </span> <span class="highlight-mi
> 5 </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "grade" </span> <span class="highlight-p" > : </span> <span class="highlight-mi
> 1 </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "paramItem" </span> <span class="highlight-p" > : </span> <span class="highligh
-p" > { </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class=
highlight-nt" > "parseStrategy" </span> <span class="highlight-p" > : </span> <span class="hig
light-mi" > 0 </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-p" > } </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="hi
hlight-p" > } , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="hi
hlight-p" > { </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "resource" </span> <span class="highlight-p" > : </span> <span class="highlight-
2" > "product-service" </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "count" </span> <span class="highlight-p" > : </span> <span class="highlight-mi
> 2 </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "grade" </span> <span class="highlight-p" > : </span> <span class="highlight-mi
> 1 </span> <span class="highlight-p" > , </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-nt" > "paramItem" </span> <span class="highlight-p" > : </span> <span class="highligh
-p" > { </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class=
highlight-nt" > "parseStrategy" </span> <span class="highlight-p" > : </span> <span class="hig
light-mi" > 0 </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="h
ghlight-p" > } </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="hi
hlight-p" > } </span>
</span> </span> <span class="highlight-line" > <span class="highlight-cl" > <span class="high
light-p" > ] </span> </span> </pre>
```

```
</span></span></code></pre>
```

<p>配置完成以后启动网关项目，登录 sentinel 控制台，查看限流规则：<br>

</p>

<p>配置说明：</p>

```
<pre><code class="language-properties highlight-chroma"><span class="highlight-line"><span class="highlight-cl">以客户端IP作为限流因子
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">public static final i  
t PARAM_PARSE_STRATEGY_CLIENT_IP = 0;
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">以客户端HOST作  
限流因子
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">public static final i  
t PARAM_PARSE_STRATEGY_HOST = 1;
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">以客户端HEADER  
数作为限流因子
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">public static final i  
t PARAM_PARSE_STRATEGY_HEADER = 2;
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">以客户端请求参数  
为限流因子
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">public static final i  
t PARAM_PARSE_STRATEGY_URL_PARAM = 3;
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">以客户端请求Cook  
e作为限流因子
```

```
</span></span><span class="highlight-line"><span class="highlight-cl">public static final i  
t PARAM_PARSE_STRATEGY_COOKIE = 4;
```

```
</span></span></code></pre>
```

### 限流测试</h3>

<p>多次通过网关访问 <code>account-service</code> 服务进行测试 <code>http://localhost:890/account/getByCode/javadaily</code> 查看限流效果：<br>

</p>

### 自定义响应异常</h3>

<p>SpringCloud-gateway 限流异常默认的实现逻辑为 <code>SentinelGatewayBlockException  
andler</code>，可以查看源码发现异常响应的关键代码如下<br>

</p>

<p>由于服务后端都是返回 JSON 的响应格式，所以我们需要修改原异常响应，将其修改成 <code>esultData</code> 类的响应格式。要实现这个功能只需要写个新的异常处理器然后在 SpringCloud  
ateWay 配置类中注入新的异常处理器即可。</p>

<ul>

<li>自定义异常处理器 <code>CustomGatewayBlockExceptionHandler</code></li>

</ul>

```
<pre><code class="language-java highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-kd">public</span> <span class="highlight-kd">class</span></span> <span class="highlight-nc">CustomGatewayBlockExceptionHandler</span> <span class="highlight-kd">implements</span></span> <span class="highlight-nc">WebExceptionHandler</span>
```

```
</span> <span class="highlight-o">{</span></span>
```

```
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-o">...</span></span>
```

```
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-cm">/**
```

```
</span></span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-cm"> * 重写限流响应，改造成JSON格式的响应数据
```

```
</span></span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-cm">
```

```
</span></span></span><span class="highlight-line"><span class="highlight-cl"> <span class="highlight-cm">
```

```

s="highlight-cm"> * @author javadaily
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-cm"> * @date 2020/1/20 15:03
</span></span></span><span class="highlight-line"><span class="highlight-cl"><span cla
s="highlight-cm"> */</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="h
ghlight-kd">private</span> <span class="highlight-n">Mono</span><span class="highligh
-o">&lt;</span><span class="highlight-n">Void</span><span class="highlight-o">&gt;</s
pan> <span class="highlight-nf">writeResponse</span><span class="highlight-o">(</span
<span class="highlight-n">ServerResponse</span> <span class="highlight-n">response</s
an><span class="highlight-o">,</span><span class="highlight-n">ServerWebExchange</s
an> <span class="highlight-n">exchange</span><span class="highlight-o">)</span> <spa
class="highlight-o">{</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-n">ServerHttpResponse</span> <span class="highlight-n">serverHttpResponse</
pan> <span class="highlight-o">=</span> <span class="highlight-n">exchange</span><s
an class="highlight-o">.</span><span class="highlight-na">getResponse</span><span cla
s="highlight-o">());</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-n">serverHttpResponse</span> <span class="highlight-o">.</span><span class="
ighlight-na">getHeaders</span><span class="highlight-o">().</span><span class="highlig
t-na">add</span><span class="highlight-o">(</span><span class="highlight-s">"Content-
type"</span><span class="highlight-o">,</span><span class="highlight-s">"application/js
n;charset=UTF-8"</span><span class="highlight-o">);</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-n">ResultData</span> <span class="highlight-o">&lt;</span> <span class="highli
ht-n">Object</span> <span class="highlight-o">&gt;</span> <span class="highlight-n">re
ultData</span> <span class="highlight-o">=</span> <span class="highlight-n">ResultDat
</span> <span class="highlight-o">.</span><span class="highlight-na">fail</span><span class="h
ass="highlight-o">(</span><span class="highlight-n">ReturnCode</span> <span class="hi
hlight-o">.</span><span class="highlight-na">RC200</span> <span class="highlight-o">.<
span> <span class="highlight-na">getCode</span><span class="highlight-o">(),</span> <
pan class="highlight-n">ReturnCode</span> <span class="highlight-o">.</span><span clas
="highlight-na">RC200</span> <span class="highlight-o">.</span><span class="highlight-
a">getMessage</span><span class="highlight-o">());</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-n">String</span> <span class="highlight-n">resultString</span> <span class="hi
hlight-o">=</span> <span class="highlight-n">JSON</span> <span class="highlight-o">.<
span> <span class="highlight-na">toJSONString</span><span class="highlight-o">(</span>
<span class="highlight-n">resultData</span><span class="highlight-o">);</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-n">DataBuffer</span> <span class="highlight-n">buffer</span> <span class="hi
hlight-o">=</span> <span class="highlight-n">serverHttpResponse</span><span class="h
ghlight-o">.</span><span class="highlight-na">bufferFactory</span><span class="highlig
t-o">().</span><span class="highlight-na">wrap</span><span class="highlight-o">(</spa
><span class="highlight-n">resultString</span><span class="highlight-o">.</span><span
lass="highlight-na">getBytes</span><span class="highlight-o">());</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-k">return</span> <span class="highlight-n">serverHttpResponse</span> <span class="h
ass="highlight-o">.</span><span class="highlight-na">writeWith</span><span class="high
ight-o">(</span><span class="highlight-n">Mono</span> <span class="highlight-o">.</sp
n> <span class="highlight-na">just</span><span class="highlight-o">(</span><span class
"highlight-n">buffer</span><span class="highlight-o">));</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="h

```



```

highlight-o">}</span>
</span></span><span class="highlight-line"><span class="highlight-cl">
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="h
ghlight-nd">@Override</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="h
ghlight-kd">public</span> <span class="highlight-n">Mono</span><span class="highlight
o">&lt;</span><span class="highlight-n">Void</span><span class="highlight-o">&gt;</s
an> <span class="highlight-nf">handle</span><span class="highlight-o">(</span><span c
ass="highlight-n">ServerWebExchange</span> <span class="highlight-n">exchange</spa
><span class="highlight-o">,</span><span class="highlight-n">Throwable</span> <span
lass="highlight-n">ex</span><span class="highlight-o">)</span> <span class="highlight-o
">}</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-k">if</span> <span class="highlight-o">(</span><span class="highlight-n">exch
nge</span><span class="highlight-o">.</span><span class="highlight-na">getResponse</
pan><span class="highlight-o">().</span><span class="highlight-na">isCommitted</span
<span class="highlight-o">())</span> <span class="highlight-o">}</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span clas
="highlight-k">return</span> <span class="highlight-n">Mono</span><span class="highli
ht-o">.</span><span class="highlight-na">error</span><span class="highlight-o">(</spa
><span class="highlight-n">ex</span><span class="highlight-o">);</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-o">}</span><span class="highlight-k">else</span> <span class="highlight-o">{
/pan>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span clas
="highlight-k">return</span> <span class="highlight-o">!</span><span class="highlight-n
">BlockException</span><span class="highlight-o">.</span><span class="highlight-na">isB
lockException</span><span class="highlight-o">(</span><span class="highlight-n">ex</s
an><span class="highlight-o">)</span> <span class="highlight-o">?</span> <span class=
highlight-n">Mono</span><span class="highlight-o">.</span><span class="highlight-na"
error</span><span class="highlight-o">(</span><span class="highlight-n">ex</span><sp
n class="highlight-o">)</span> <span class="highlight-o">:</span> <span class="highlight
k">this</span><span class="highlight-o">.</span><span class="highlight-na">handleBloc
kedRequest</span><span class="highlight-o">(</span><span class="highlight-n">exchang
</span><span class="highlight-o">,</span><span class="highlight-n">ex</span><span cl
ss="highlight-o">).</span><span class="highlight-na">flatMap</span><span class="highli
ht-o">((</span><span class="highlight-n">response</span><span class="highlight-o">)</
pan> <span class="highlight-o">-&gt;</span> <span class="highlight-k">this</span><spa
class="highlight-o">.</span><span class="highlight-na">writeResponse</span><span clas
="highlight-o">(</span><span class="highlight-n">response</span><span class="highligh
-o">,</span><span class="highlight-n">exchange</span><span class="highlight-o">));</
pan>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class=
highlight-o">}</span></span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="h
ghlight-o">}</span></span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="hi
hlight-o">...</span>
</span></span><span class="highlight-line"><span class="highlight-cl"> <span class="high
ight-o">}</span></span>
</span></span></code></pre>

```

大家可以直接复制 `SentinelGatewayBlockExceptionHandler` 类，然后修改 `writeResponse` 方法接口

</li>修改 Gateway 配置类，注入 <code>CustomGatewayBlockExceptionHandler</code> </li>  
</ul>

```
<pre><code class="language-java highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nd">@Configuration</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-kd">public</span></span></span><span class="highlight-kd">class</span></span><span class="highlight-n">GatewayConfiguration</span></span><span class="highlight-o">{</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-o">...</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-cm">/**</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-cm"> * 注入自定义网关异常</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-cm"> */</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nd">@Bean</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nd">@Order</span></span></span><span class="highlight-o">(</span><span class="highlight-n">Ordered</span></span><span class="highlight-o">.</span><span class="highlight-na">HIGHEST_RECEDENCE</span></span><span class="highlight-o">)</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-kd">public</span></span></span><span class="highlight-n">CustomGatewayBlockExceptionHandler</span></span><span class="highlight-nf">sentinelGatewayBlockExceptionHandler</span></span><span class="highlight-o">()</span></span><span class="highlight-o">{</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-c1">// Register the custom block exception handler .</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-k">return</span></span></span><span class="highlight-k">new</span></span></span><span class="highlight-n">CustomGatewayBlockExceptionHandler</span></span><span class="highlight-o">(</span><span class="highlight-n">viewResolvers</span></span><span class="highlight-o">,</span><span class="highlight-n">serverCodecConfigurer</span></span><span class="highlight-o">);</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-o">}</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-o">...</span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-o">}</span></span></span></span></code></pre>
```

</ul>  
<li>在 bootstrap.yml 文件中新增配置</li>  
</ul>

```
<pre><code class="language-yaml highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">spring</span></span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-w"></span></span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">main</span></span></span><span class="highlight-p">:</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-nt">allow-bean-definition-overriding</span></span></span><span class="highlight-p">:</span></span></span><span class="highlight-w"></span></span><span class="highlight-kc">true</span></span></span></span></code></pre>
```

<ul>

<li>重新测试，限流响应结果如下</li>

</ul>

```
<pre><code class="language-json highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-p">{</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"message"</span><span class="highlight-p">:</span></span> <span class="highlight-2">"服务开启限流保护,请稍后再试!"</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"status"</span><span class="highlight-p">:</span></span> <span class="highlight-mi">200</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"success"</span><span class="highlight-p">:</span></span> <span class="highlight-k">false</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"timestamp"</span><span class="highlight-p">:</span></span> <span class="highlight-mi">1579509123946</span></span></span><span class="highlight-line"><span class="highlight-cl"><span class="highlight-p">}</span></span></code></pre>
```

<h3 id="限流不生效">限流不生效</h3>

<p>各位在使用过程中如果发现网关层限流不生效，可以以 debug 模式启动网关服务，然后对网关过滤器 `SentinelGatewayFilter` 中的 filter 方法进行调试，我发现 sentinel 获取到的 id 并不是我们配置的 `account-service`，而是加了 `CompositeDiscoverClient_` 前缀，如下图所示：<br>

</p>

<p>所以我们需要修改 `gateway-sentinel-flow` 的配置，给我们的 resource 也上前缀，修改完的配置如下：</p>

```
<pre><code class="language-json highlight-chroma"><span class="highlight-line"><span class="highlight-cl"><span class="highlight-p">[{</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"resource"</span><span class="highlight-p">:</span></span> <span class="highlight-2">"CompositeDiscoveryClient_account-service"</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"count"</span><span class="highlight-p">:</span></span> <span class="highlight-mi">5</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"grade"</span><span class="highlight-p">:</span></span> <span class="highlight-mi">1</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"paramItem"</span><span class="highlight-p">:</span></span> <span class="highlight-p">}</span></span></code></pre>
```

```
<pre><code class="language-json highlight-chroma"><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"parseStrategy"</span><span class="highlight-p">:</span></span> <span class="highlight-mi">0</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"resource"</span><span class="highlight-p">:</span></span> <span class="highlight-2">"CompositeDiscoveryClient_product-service"</span><span class="highlight-p">,</span></span></span><span class="highlight-line"><span class="highlight-cl">  <span class="highlight-nt">"resource"</span><span class="highlight-p">:</span></span> <span class="highlight-2">"CompositeDiscoveryClient_product-service"</span><span class="highlight-p">,</span></span></span></pre>
```

```
highlight-nt">"count"</span><span class="highlight-p">:</span><span class="highlight-mi
>2</span><span class="highlight-p">,</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="h
ghlight-nt">"grade"</span><span class="highlight-p">:</span><span class="highlight-mi
>1</span><span class="highlight-p">,</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="h
ghlight-nt">"paramItem"</span><span class="highlight-p">:</span><span class="highligh
-p">{</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class=
highlight-nt">"parseStrategy"</span><span class="highlight-p">:</span><span class="high
light-mi">0</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="h
ghlight-p">}</span>
</span></span><span class="highlight-line"><span class="highlight-cl"><span class="high
ight-p">}}</span>
</span></span></code></pre>
<p></
>
<p>通过使用 jemter 对接口进行测试，发现网关能正常限流<br>
</p>
<p>经过以上几步，我们可以将后端微服务层的限流配置去掉，让网关层承担限流的功能。</p>
<p>好了，各位朋友们，本期的内容到此就全部结束啦，能看到这里的同学都是优秀的同学，下一个
职加薪的就是你了！<br>
如果觉得这篇文章对你有帮助的话请扫描下面二维码加个关注。</p>
<p>"转发"加"在看"，养成好习惯！咱们下期再见！</p>
<blockquote>
<p>SpringCloud Alibaba 系列文章</p>
</blockquote>
<ul>
<li><a href="https://ld246.com/forward?goto=http%3A%2F%2Fwww.javadaily.cn%2Ftags%2
SpringCloud" target="_blank" rel="nofollow ugc">SpringCloud Alibaba 微服务实战系列</a><
li>
</ul>
```