概述

每解决一次复杂问题,个人能力就会得到一次提升。所以,不要惧怕问题,要拥抱问题,积极面对。 个人认为一次较为复杂问题的解决需要以下要素:

全面搜集错误信息 + 仔细研究错误信息 + 足够的技术储备(越是复杂的问题越考验综合技术能力) + 良好的逻辑思维和系统思维能力。最后,你要冷静!

分析过程

inception报警信息

从2018-12-27中午开始,持续收到inception的报警。

TM报警:应用中心线上环境

T

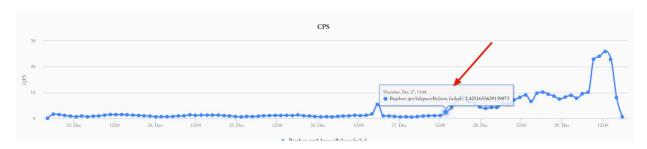
tonggao@baidu.com <tonggao@baidu.com>

王天煜(wangtianyu01)-爱奇艺影业; 王宁(wangning05)-爱奇艺影业; 王君(wangjun04)-爱奇艺影业; 王罗力; 其他 +5 项 2018年12月29日 星期六 09:54

显示详细信息

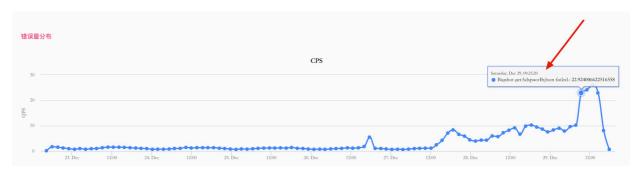
TM报警[InceptionOnline],发生次数 1920, 报警内容: Bigshot getAdspaceByJson failed.

TM上的inception错误曲线如下:



可以看到确切时间应该在13:40分左右。

另一个时间挂点是2018-12-29 09:30左右。



bigshot报警信息

TM报警: Bigshot线上环境



tonggao@baidu.com <tonggao@baidu.com>

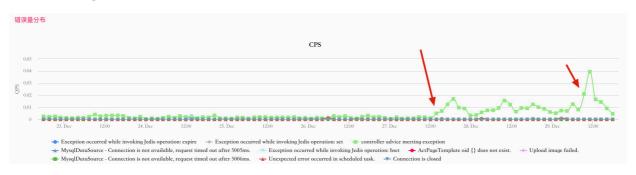
王宁(wangning05)-爱奇艺影业; 王君(wangjun04)-爱奇艺影业 2018年12月29日 星期六 09:54

显示详细信息

TM报警[BigShotOnline],发生次数 2, 报警内容: 实例CPU使用率大于240%

其实之前一直没有引起足够的重视,到了29号错误量倍增,并伴随着bigshot的使用率过高的报警, 大家才更加重视这个异常,并下决心解决它。

下面再看下bigshot的错误曲线。



对比inception和bigshot的错误曲线, 我们可以得到两点信息:

- 1. 两者的趋势是吻合的。
- 2. 但是,错误QPS完全不是一个量级。这里是否有个疑问:为啥错误QPS不在一个量级?后面回答

分析inception的异常(异常样例见附录二)

很明显, 就是request timeout (200ms)。

分析bigshot的异常(异常样例见附录三)

- 1. 从其错误提示可以看出,是其往已经关闭的socket里写数据导致抛出异常: java.io.IOException: Connection reset by peer 。
- 2. 通过其中的一段日志

```
2018-12-29 17:10:12.561 INFO -
com.baidu.movie.user.bigshot.service.aop.OperationRecordAspect - Path:
/api/tms/newBatchGet, Params:
[{"ids":"18,86,46,77,63,64","cityId":338,"cinemaId":null,"movieId":nul
l,"force":null,"experimentIds":"","userId":null,"displayInfos":null,"c
hannel":"map","client":"webapp","module":null,"logId":1546074611103}],
Time: 21 ms
```

可以看出, controller方法的处理时间为21ms。

3. controller处理完成之后,立马出现了异常。

```
2018-12-29 17:10:12.561 INFO -
com.baidu.movie.user.bigshot.service.aop.OperationRecordAspect - Path:
/api/tms/newBatchGet, Params:
[{"ids":"18,86,46,77,63,64","cityId":338,"cinemaId":null,"movieId":nul
l,"force":null,"experimentIds":"","userId":null,"displayInfos":null,"c
hannel":"map","client":"webapp","module":null,"logId":1546074611103}],
Time: 21 ms

2018-12-29 17:10:12.566 ERROR -
com.baidu.movie.user.bigshot.web.aop.BigShotControllerAdvice -
controller advice meeting exception
```

分析bigshot为啥出现CPU使用率过高的报警

- 1. 通过jpaas平台进入容器内,通过 top 命令观察一会儿,可以发现,就是我们app的java进程会占用过高的CPU。
- 2. 通过 top -Hp 260 (260是PID), 观察进程内最消耗CPU的线程信息, 观察一会儿之后可以发现, 有一个线程频繁出现CPU使用率达到将近100%。记下线程id。
- 3. 将线程id转成16进制。(为后续jstack命令准备,比如293>0x125)
- 4. 使用 jstack -1 260 | grep '0x113' , 得到线程信息。

```
[work@57210007 ~]$ jstack -1 260 | grep '0x125'

"Concurrent Mark-Sweep GC Thread" os_prio=0 tid=0x00007f400012c000
nid=0x125 runnable
```

可以发现该线程正是GC线程。

到此,基本可以确定JVM发生了频繁的Full GC。而触发Full GC最常见的场景就是大对象进入老年代导致老年代内存被占用太多,但是每次Full GC回收效果又很有限。

heap dump过程

为了确认是否有大对象存在,我们决定对线上jvm进行heap dump以进行分析。

heapdump第1步:在jpaas上发出heap dump命令



dump文件会存放到 /home/work/bin 目录下。

heapdump第2步:将dump文件从jpass容器拷贝到百度内网的开发机

scp heapdump 1546071701221 work@nj02-nuomi-ensl-map6.nj02:/home/work

heapdump第3步:将dump文件从百度内网的开发机拷贝到本机

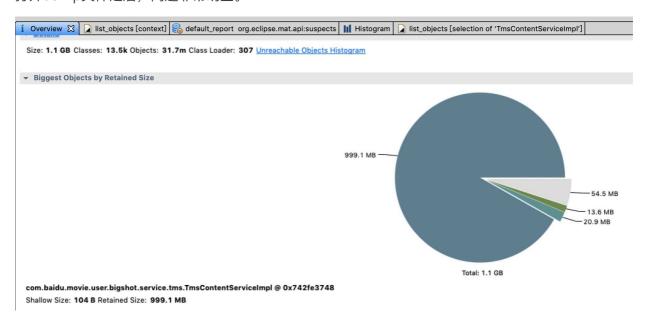
首先,通过sz行不通,文件太大,sz不行。(我在mac上尝试了不行,同事李建极在windows先尝试了也不行)。

最后,我利用了一个讨巧的方法进行文件的拷贝,即利用该开发机上安装的nginx,将dump文件拷贝到nginx的html目录下,然后通过浏览器访问文件地址,下载之。

使用MAT对dump文件进行分析

在安装和使用MAT的过程中,也遇到了两个问题,请参见附录一。

打开dump文件之后,问题非常明显。



点进去查看具体的内存占用。

i Overview list_objects [context] 🛭 😂 default_report org.eclipse.mat.api:suspects	Histogran	n 📓 list_objects	[selection of 'TmsContentSe
Class Name	Shallow Heap	Retained Hear	
→ <regex></regex>	<numeric></numeric>	<numeric></numeric>	
▼ 🔲 com.baidu.movie.user.bigshot.service.tms.TmsContentServiceImpl @ 0x742fe3748	104	1,047,610,056	
▶ ileNameAndUserIdsMap java.util.HashMap @ 0x748cd3a48	48	1,042,835,992	
▶ 🔲 allTmsContent java.util.ArrayList @ 0x77fdcee58	24	4,773,448	
tmsStrategyService com.baidu.movie.user.bigshot.service.tms.TmsStrategySer	24	988,984	
tmsSubContentService com.baidu.movie.user.bigshot.service.tms.TmsSubCont	24	108,936	
▶ 🚺 tmsContentRepo com.sun.proxy.\$Proxy124 @ 0x742bea730	16	43,880	
applicationContext org.springframework.boot.context.embedded.AnnotationCo	136	35,344	
▶ D	10	22.004	

到这里就定位到了代码逻辑。

顺着代码逻辑一通看,通过查看数据库的记录,发现是运营最近两天操作了运营位。然后找运营确认操作步骤,最终定位到问题触发逻辑。

这里简单描述下业务逻辑:

运营位是可以定向展示的,具体向哪些用户展示,是运营通过一个文件上传到服务器上的,该文件会存放在nfs上,所有的bigshot实例均可看到,然后bigshot定时读取该文件进行转换之后存储到内存里(即fileNameAndUserIdsMap)。

也就是说,运营位越多,文件越大,则该map占用的内存越大。

解决方法

首先,这里之前的实现逻辑肯定是有问题的。长远来看,是要重构的。

其次,是如何快速解决该问题。大家讨论之后,基本给出了以下方案:

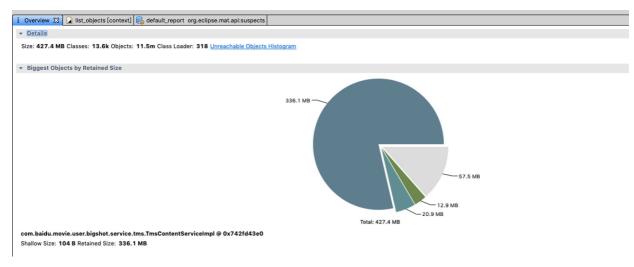
- 1. 增大实例的内存配置,同时调整jvm的启动参数。
- 2. 看业务上是否有可以调整的空间。

对于方案1, 肯定要做发布, 发布之后的效果也不好确定。所以, 重点考察了方案2。

再次仔细梳理代码逻辑,发现其程序会将所有非删除状态的运营位均加载到内存。但是页面上真正展示的只是处于进行中的运营位。所以,我将所有影响内存大小的运营位信息导出找运营——确认,最终将一些处于暂停状态的运营位进行编辑,使其上传空文件。做完这个操作之后,错误便大幅降低,不再报警。

从业务上梳理临时解决方案、感谢王君的提醒。

再次进行heap dump, 确认解决方案的效果。



i III 🖳 🔞 🧐 🔚 🕻 😪 🔍 🖾 🕶 🛂 🔠		
i Overview		
Class Name	Shallow Heap	Retained Hear
< Regex>	<numeric></numeric>	<numeric></numeric>
▼	104	352,395,752
▶ ileNameAndUserIdsMap java.util.HashMap @ 0x757eb4918	48	347,621,688
▶ 🔲 allTmsContent java.util.ArrayList @ 0x757eb4900	24	4,773,448
tmsStrategyService com.baidu.movie.user.bigshot.service.tms.TmsStrategyServiceImpl @ 0x74303e	24	988,984
tmsSubContentService com.baidu.movie.user.bigshot.service.tms.TmsSubContentServiceImpl @ 0x7	24	108,936
▶ 🔲 applicationContext org.springframework.boot.context.embedded.AnnotationConfigEmbeddedWebApp	136	35,344
tmsStrategyRepo com.sun.proxy.\$Proxy128 @ 0x742d1e4e0	16	32,904
tmsConfRepo com.sun.proxy.\$Proxy123 @ 0x742fa4c30	16	32,504
tmsPopupInfoRepo com.sun.proxy.\$Proxy125 @ 0x74303e088	16	26,632

前后对比,fileNameAndUserIdsMap降低了700M。

这里回答下上面提到的问题:为啥错误QPS不在一个量级?

在bigshot发生Full GC期间的请求会直接timeout,而不会进入bigshot的业务逻辑。之后在Full GC即将结束的时候发生的请求才有可能进入业务逻辑,并且正好在请求返回之前timeout,导致出现bigshot的错误。所以,概率很低。

副产品

- 1. 如果你需要从百度内网拷贝大文件到本机,可以参考文章中的方案。
- 2. 如果你本机使用MAT遇到问题,本文章附录一可能能够提供一些参考。
- 3. 对jvm CPU使用率过高问题的分析基本就是这个套路,理解原理,记录关键命令便可。还有就是手不能太生。

附录一: 安装MAT可能遇到的错误(MAC为例)。

问题1: 官网下载下来的程序, 双加打开出错。

现象:

MemoryAnalyzer



An error has occurred.

See the log file /Users/songjie/.eclipse/ 1301461649_macosx_cocoa_x86_64/configuration/ 1546076259614.log.

OK

分析: eclipse的一个bug。

解决:

右键mat显示包内容,进入Contents->MacOS下面,会有一个MemoryAnalyzer的命令。

打开终端,进入此路径找到MemoryAnalyzer,运行

./MemoryAnalyzer -data ./dump

参考: https://blog.csdn.net/mahl1990/article/details/79298616

问题2: 加载heapdump文件失败,提示heap size不够

问题

An internal error occurred during:
"Parsing heap dump from **\java_pid6564.hprof'".Java heap space

分析

提示比较明显,是MAT本身配置的heap size不够。

解决

找到MAT的配置文件,调大heap size便可。

配置文件: MemoryAnalyzer.ini

配置项: -Xmx1024m

附录二: inception日志

```
2018-12-29 17:20:09.171 INFO -
com.baidu.movie.user.inception.na.controller.DispatcherController -
Request: {"api":1002,"user":
{"bduss": "undefined", "cookieBduss": "undefined", "stoken": null, "cuid": null, "i
mei":null, "phone":null, "passportid":null, "ip":null, "phoneNo":null, "username
":null, "globalData":null, "baiduid":null, "login":false}, "data":"
{\"cityId\":144,\"longitude\":107.37675524523823,\"latitude\":22.4009476708
755, \"sortByDistance\":true, \"isHomePage\":false, \"pageNum\":0, \"pageSize\"
:2}","timestamp":1546075209128,"sign":"d534215102b6d5626dfb7822b4791cb1","v
ersion":"1.0.0.1", "channel": "map", "client": "1001", "experimentIds":
[], "module":null, "subChannel":null, "logId":83296084939054892, "osName":null,
"osVersion":null, "cityType":null, "cityId":null, "https":null, "rateLimit":nul
1, "source":null, "userAgent":null}, mockup = null
2018-12-29 17:20:09.172 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncGet logId: 83296084939054892, url: http://10.194.238.11:2002/ssn with
param: {tpl=cmovie, stoken=null, apid=1315, cm=516, cip=10.186.20.19,
incomplete user=1, sid=undefined}
2018-12-29 17:20:09.174 INFO -
com.baidu.movie.user.inception.na.controller.DispatcherController - User
Info:
{"bduss": "undefined", "cookieBduss": "undefined", "stoken": null, "cuid": null, "i
mei":null, "phone":null, "passportid":null, "ip":"10.186.20.19", "phoneNo":null
, "username":null, "globalData":null, "baiduid":null, "login":false}
2018-12-29 17:20:09.174 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJson: http://bigshot.baidu.com/api/tms/newBatchGet with
{"ids":"39,72,126","cityId":144,"movieId":null,"cinemaId":null,"experimentI
ds":"","userId":null,"displayInfos":
[], "channel": "map", "client": "1001", "module": null, "logId": 1546075209174} and
time out:200
```

```
2018-12-29 17:20:09.174 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJson: http://cmovie-se-ui.int.baidu.com/UiService/cinema search
with
{"cookie":null,"ip":null,"from":"1001","qid":null,"uid":null,"query":null,"
distance":null, "book":null, "groupon":null, "date":null, "refundable":null, "lo
gid":83296084939054892, "experiment ids":
[], "city id":144, "district id":null, "sort opt":0, "aoi ids":null, "metro stat
ion_ids":null,"metro_line_ids":null,"movieids":null,"user_location":
{"longitude":107.37675524523823,"latitude":22.4009476708755},"brand ids":nu
11, "feature_ids":null, "memcard_template_ids":null, "promo_item":null, "cinema
_presale_id":null,"schedule_presale_id":null,"need_movieids":null,"relative
cinema ids":[]} and time out:500
2018-12-29 17:20:09.177 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJson: http://cmovie-se-
facetdict.int.baidu.com/FacetDictService/get_district_aoi_info with
{"log_id":83296084945066167,"city_id":144,"district_id":null} and time
out:10000
2018-12-29 17:20:09.179 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJson: http://cmovie-se-
facetdict.int.baidu.com/FacetDictService/get metro with
{"log_id":83296084946763958,"city_id":144} and time out:10000
2018-12-29 17:20:09.180 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJsonWithGzip:
http://pandora.dianying.baidu.com/api/coupon/movie/merchant/queryCoupons4Ci
nemaBanner with
{"logId":"1546075209180","appKey":"APPCENTER","sign":"2E9FED3F61E54CB0BCCE1
B1676FEE829", "ip": "10.186.20.19", "channel": "map", "client": "1001", "module": n
ull, "cityId":144, "experimentIds":[], "cuid":null, "imei":null, "userInfo":
{"passuid":null, "regUserMobile":null, "smsUserMobile":null}, "appTag":1, "bdus
s":"undefined"} and time out:4000
2018-12-29 17:20:09.180 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJsonWithGzip:
http://pandora.dianying.baidu.com/api/price/getCinemasPriceInfo with
{"logId": "1546075209180", "appKey": "APPCENTER", "sign": "2E9FED3F61E54CB0BCCE1
B1676FEE829", "ip": "10.186.20.19", "channel": "map", "client": "1001", "module": n
ull, "cityId":144, "experimentIds":[], "cuid":null, "imei":null, "userInfo":
{"passuid":null, "regUserMobile":null, "smsUserMobile":null}, "appTag":1, "bdus
s":"undefined", "cinemaIds":[10818,10509], "movieId":null, "movieIds":
[], "date":null, "memCardTemplateIds":[]} and time out:500
```

```
2018-12-29 17:20:09.185 INFO -
com.baidu.movie.user.inception.base.http.DefaultAsyncHttpService - Start
asyncPostJsonWithGzip:
http://pandora.dianying.baidu.com/api/price/getCinemasPriceInfo with
{"logId":"1546075209185","appKey":"APPCENTER","sign":"98A6B122598A011DD2638
OF60C42DA0C", "ip": "10.186.20.19", "channel": "map", "client": "1001", "module": n
ull, "cityId":144, "experimentIds":[], "cuid":null, "imei":null, "userInfo":
{"passuid":null, "regUserMobile":null, "smsUserMobile":null}, "appTag":1, "bdus
s":"undefined", "cinemaIds":[10818,10509], "movieId":null, "movieIds":
[], "date":null, "memCardTemplateIds":[]} and time out:500
2018-12-29 17:20:09.387 WARN -
com.baidu.movie.user.inception.base.adspace.DefaultNewAdSpaceService -
getAdSpaceInfos failed with request:
{"ids":"39,72,126","cityId":144,"movieId":null,"cinemaId":null,"experimentI
ds":"", "userId":null, "displayInfos":
[], "channel": "map", "client": "1001", "module": null, "logId": 1546075209174},
response is null.
2018-12-29 17:20:09.387 ERROR -
com.baidu.movie.user.inception.base.adspace.DefaultNewAdSpaceService -
Bigshot getAdspaceByJson failed.
java.lang.RuntimeException: java.util.concurrent.ExecutionException:
java.util.concurrent.TimeoutException: Request timeout to
bigshot.baidu.com/10.207.7.201:80 after 200 ms
at
com.baidu.movie.user.inception.base.http.FutureAdapter.get(FutureAdapter.ja
va:56)
com.baidu.movie.user.inception.base.http.FutureAdapter.get(FutureAdapter.ja
va:44)
at
com.baidu.movie.user.inception.na.component.api.cinema.cinemalist.CinemaLis
tAPI.fillAdSpaceInfo(CinemaListAPI.java:263)
at sun.reflect.GeneratedMethodAccessor2014.invoke(Unknown Source)
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImp
1.java:43)
at java.lang.reflect.Method.invoke(Method.java:483)
```

```
at
com.baidu.movie.user.inception.na.component.api.SegmentAPITemplate.execute(
SegmentAPITemplate.java:143)
at
com.baidu.movie.user.inception.na.controller.DispatcherController.handleReq
uest(DispatcherController.java:378)
at
com.baidu.movie.user.inception.na.controller.DispatcherController.getRespon
se(DispatcherController.java:196)
at sun.reflect.GeneratedMethodAccessor904.invoke(Unknown Source)
at
\verb|sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.invoke(DelegatingMethodAcces)) | | | | | | | | | | | | | 
1.java:43)
at java.lang.reflect.Method.invoke(Method.java:483)
at
org.springframework.web.method.support.InvocableHandlerMethod.doInvoke(Invo
cableHandlerMethod.java:221)
at
org.springframework.web.method.support.InvocableHandlerMethod.invokeForRequ
est(InvocableHandlerMethod.java:136)
at
org.springframework.web.servlet.mvc.method.annotation.ServletInvocableHandl
erMethod.invokeAndHandle(ServletInvocableHandlerMethod.java:110)
at.
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandler
Adapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:817)
at
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandler
Adapter.handleInternal(RequestMappingHandlerAdapter.java:731)
at
\verb|org.springframework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.han| \\
dle(AbstractHandlerMethodAdapter.java:85)
org.springframework.web.servlet.DispatcherServlet.doDispatch(DispatcherServ
let.java:959)
```

```
org.springframework.web.servlet.DispatcherServlet.doService(DispatcherServl
et.java:893)
at
org.springframework.web.servlet.FrameworkServlet.processRequest(FrameworkSe
rvlet.java:968)
at
org.springframework.web.servlet.FrameworkServlet.doPost(FrameworkServlet.ja
va:870)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:644)
at
org.springframework.web.servlet.FrameworkServlet.service(FrameworkServlet.j
ava:844)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:725)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:301)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.web.filter.CharacterEncodingFilter.doFilterInternal(Cha
racterEncodingFilter.java:121)
at.
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
at.
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
```

```
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.apache.logging.log4j.web.Log4jServletFilter.doFilter(Log4jServletFilter
.java:71)
at.
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
\verb|org.apache.catalina.core.Standard \verb|WrapperValve.invoke(Standard \verb|WrapperValve.j|)| \\
ava:219)
at
org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.j
ava:106)
at
org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBas
e.java:503)
at
org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:13
6)
at
org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:78
)
at.
org.apache.catalina.valves.AbstractAccessLogValve.invoke(AbstractAccessLogV
alve.java:610)
org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.jav
a:88)
org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:526)
```

```
org.apache.coyote.http11.AbstractHttp11Processor.process(AbstractHttp11Proc
essor.java:1033)
at
org.apache.coyote.AbstractProtocol$AbstractConnectionHandler.process(Abstra
ctProtocol.java:652)
at
org.apache.coyote.http11.Http11NioProtocol$Http11ConnectionHandler.process(
Http11NioProtocol.java:222)
org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.doRun(NioEndpoint.ja
va:1566)
at
org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.run(NioEndpoint.java
:1523)
at
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1
142)
at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:
617)
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.j
ava:61)
at java.lang.Thread.run(Thread.java:745)
Caused by: java.util.concurrent.ExecutionException:
java.util.concurrent.TimeoutException: Request timeout to
bigshot.baidu.com/10.207.7.201:80 after 200 ms
at java.util.concurrent.CompletableFuture.get(CompletableFuture.java:2237)
at
\verb|org.asynchttpclient.netty.NettyResponseFuture.get(NettyResponseFuture.java: \\
168)
com.baidu.movie.user.inception.base.http.FutureAdapter.get(FutureAdapter.ja
va:44)
... 53 more
```

```
Caused by: java.util.concurrent.TimeoutException: Request timeout to bigshot.baidu.com/10.207.7.201:80 after 200 ms

at org.asynchttpclient.netty.timeout.TimeoutTimerTask.expire(TimeoutTimerTask.java:43)

at org.asynchttpclient.netty.timeout.RequestTimeoutTimerTask.run(RequestTimeoutTimerTask.java:48)

at io.netty.util.HashedWheelTimer$HashedWheelTimeout.expire(HashedWheelTimer.java:625)

at io.netty.util.HashedWheelTimer$HashedWheelBucket.expireTimeouts(HashedWheelTimer.java:700)

at io.netty.util.HashedWheelTimer$Worker.run(HashedWheelTimer.java:428)

... 1 more
```

附录三: bigshot日志

```
2018-12-29 17:10:12.540 INFO -
com.baidu.movie.user.bigshot.service.tms.TmsApiServiceImpl - position 64 do
not have tms content in city 338

2018-12-29 17:10:12.545 INFO -
com.baidu.movie.user.bigshot.service.tms.TmsApiServiceImpl - position 77 do
not have tms content in city 338

2018-12-29 17:10:12.555 INFO -
com.baidu.movie.user.bigshot.service.tms.TmsApiServiceImpl - position 46 do
not have tms content in city 338

2018-12-29 17:10:12.561 INFO -
com.baidu.movie.user.bigshot.service.aop.OperationRecordAspect - Path:
/api/tms/newBatchGet, Params:
[{"ids":"18,86,46,77,63,64","cityId":338,"cinemaId":null,"movieId":null,"fo
rce":null,"experimentIds":"","userId":null,"displayInfos":null,"channel":"m
ap","client":"webapp","module":null,"logId":1546074611103}], Time: 21 ms
```

```
2018-12-29 17:10:12.566 ERROR -
com.baidu.movie.user.bigshot.web.aop.BigShotControllerAdvice - controller
advice meeting exception
org.apache.catalina.connector.ClientAbortException: java.io.IOException:
Connection reset by peer
at
org.apache.catalina.connector.OutputBuffer.realWriteBytes(OutputBuffer.java
:396)
at org.apache.tomcat.util.buf.ByteChunk.flushBuffer(ByteChunk.java:426)
at
org.apache.catalina.connector.OutputBuffer.doFlush(OutputBuffer.java:342)
at org.apache.catalina.connector.OutputBuffer.flush(OutputBuffer.java:316)
org.apache.catalina.connector.CoyoteOutputStream.flush(CoyoteOutputStream.j
ava:110)
at.
com.fasterxml.jackson.core.json.UTF8JsonGenerator.flush(UTF8JsonGenerator.j
ava:1022)
at
com.fasterxml.jackson.databind.ObjectWriter.writeValue(ObjectWriter.java:89
1)
at
org.springframework.http.converter.json.AbstractJackson2HttpMessageConverte
r.writeInternal(AbstractJackson2HttpMessageConverter.java:269)
at
org.springframework.http.converter.AbstractGenericHttpMessageConverter.writ
e(AbstractGenericHttpMessageConverter.java:100)
at
org.springframework.web.servlet.mvc.method.annotation.AbstractMessageConver
{\tt terMethodProcessor.writeWithMessageConverters(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProce
dProcessor.java:223)
at
org.springframework.web.servlet.mvc.method.annotation.AbstractMessageConver
{\tt terMethodProcessor.writeWithMessageConverters(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterS(AbstractMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConverterMethodProcessor.writeWithMessageConve
dProcessor.java:154)
```

```
at
org.springframework.web.servlet.mvc.method.annotation.RequestResponseBodyMe
thodProcessor.handleReturnValue(RequestResponseBodyMethodProcessor.java:165
)
at
org.springframework.web.method.support.HandlerMethodReturnValueHandlerCompo
site.handleReturnValue(HandlerMethodReturnValueHandlerComposite.java:81)
at.
org.springframework.web.servlet.mvc.method.annotation.ServletInvocableHandl
erMethod.invokeAndHandle(ServletInvocableHandlerMethod.java:126)
at.
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandler
Adapter.invokeHandlerMethod(RequestMappingHandlerAdapter.java:832)
at
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandler
Adapter.handleInternal(RequestMappingHandlerAdapter.java:743)
at
org.springframework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.han
dle(AbstractHandlerMethodAdapter.java:85)
at
org.springframework.web.servlet.DispatcherServlet.doDispatch(DispatcherServ
let.java:961)
at
org.springframework.web.servlet.DispatcherServlet.doService(DispatcherServl
et.java:895)
org.springframework.web.servlet.FrameworkServlet.processRequest(FrameworkSe
rvlet.java:967)
at.
org.springframework.web.servlet.FrameworkServlet.doPost(FrameworkServlet.ja
va:869)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:644)
at
org.springframework.web.servlet.FrameworkServlet.service(FrameworkServlet.j
ava:843)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:725)
```

```
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:301)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.boot.actuate.autoconfigure.EndpointWebMvcAutoConfigurat
ion$ApplicationContextHeaderFilter.doFilterInternal(EndpointWebMvcAutoConfi
guration.java:281)
at
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
com.baidu.movie.user.bigshot.web.filter.CheckFilter.doRealFilter(CheckFilte
r.java:50)
at
com.baidu.movie.user.bigshot.web.filter.CheckFilter.doFilterInternal(CheckF
ilter.java:124)
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
```

```
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.boot.actuate.trace.WebRequestTraceFilter.doFilterIntern
al(WebRequestTraceFilter.java:115)
at.
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.web.filter.RequestContextFilter.doFilterInternal(Reques
tContextFilter.java:99)
at
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.web.filter.HttpPutFormContentFilter.doFilterInternal(Ht
tpPutFormContentFilter.java:87)
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
```

```
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.web.filter.HiddenHttpMethodFilter.doFilterInternal(Hidd
enHttpMethodFilter.java:77)
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.springframework.web.filter.CharacterEncodingFilter.doFilterInternal(Cha
racterEncodingFilter.java:121)
at
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
\verb|org.springframework.boot.actuate.autoconfigure.MetricsFilter.doFilterIntern|\\
al(MetricsFilter.java:103)
org.springframework.web.filter.OncePerRequestFilter.doFilter(OncePerRequest
Filter.java:107)
```

```
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(Applicatio
nFilterChain.java:239)
at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterC
hain.java:206)
at
org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.j
ava:219)
org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.j
ava:106)
at
org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBas
e.java:503)
at
org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:13
6)
at
org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:78
)
at
org.apache.catalina.valves.AbstractAccessLogValve.invoke(AbstractAccessLogV
alve.java:610)
at
org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.jav
a:88)
at
org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:526)
at
org.apache.coyote.http11.AbstractHttp11Processor.process(AbstractHttp11Proc
essor.java:1033)
at
org.apache.coyote.AbstractProtocol$AbstractConnectionHandler.process(Abstra
ctProtocol.java:652)
```

```
org.apache.coyote.http11.Http11NioProtocol$Http11ConnectionHandler.process(
Http11NioProtocol.java:222)
at
org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.doRun(NioEndpoint.ja
va:1566)
at
org.apache.tomcat.util.net.NioEndpoint$SocketProcessor.run(NioEndpoint.java
:1523)
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1
at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:
617)
at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.j
ava:61)
at java.lang.Thread.run(Thread.java:745)
Caused by: java.io.IOException: Connection reset by peer
at sun.nio.ch.FileDispatcherImpl.writeO(Native Method)
at sun.nio.ch.SocketDispatcher.write(SocketDispatcher.java:47)
at sun.nio.ch.IOUtil.writeFromNativeBuffer(IOUtil.java:93)
at sun.nio.ch.IOUtil.write(IOUtil.java:65)
at sun.nio.ch.SocketChannelImpl.write(SocketChannelImpl.java:470)
at org.apache.tomcat.util.net.NioChannel.write(NioChannel.java:122)
at
\verb|org.apache.tomcat.util.net.NioBlockingSelector.write(NioBlockingSelector.ja|)|
va:101)
at
org.apache.tomcat.util.net.NioSelectorPool.write(NioSelectorPool.java:173)
```

```
org.apache.coyote.httpl1.InternalNioOutputBuffer.writeToSocket(InternalNioO
utputBuffer.java:139)
at
org.apache.coyote.http11.InternalNioOutputBuffer.addToBB(InternalNioOutputB
uffer.java:197)
at
org.apache.coyote.http11.InternalNioOutputBuffer.access$000(InternalNioOutp
utBuffer.java:41)
at
\verb|org.apache.coyote.http11.InternalNioOutputBuffer\\ \$SocketOutputBuffer.doWrite
(InternalNioOutputBuffer.java:320)
at
org.apache.coyote.http11.filters.ChunkedOutputFilter.doWrite(ChunkedOutputF
ilter.java:121)
at
org.apache.coyote.http11.AbstractOutputBuffer.doWrite(AbstractOutputBuffer.
java:257)
at org.apache.coyote.Response.doWrite(Response.java:523)
org.apache.catalina.connector.OutputBuffer.realWriteBytes(OutputBuffer.java
:391)
... 78 more
```