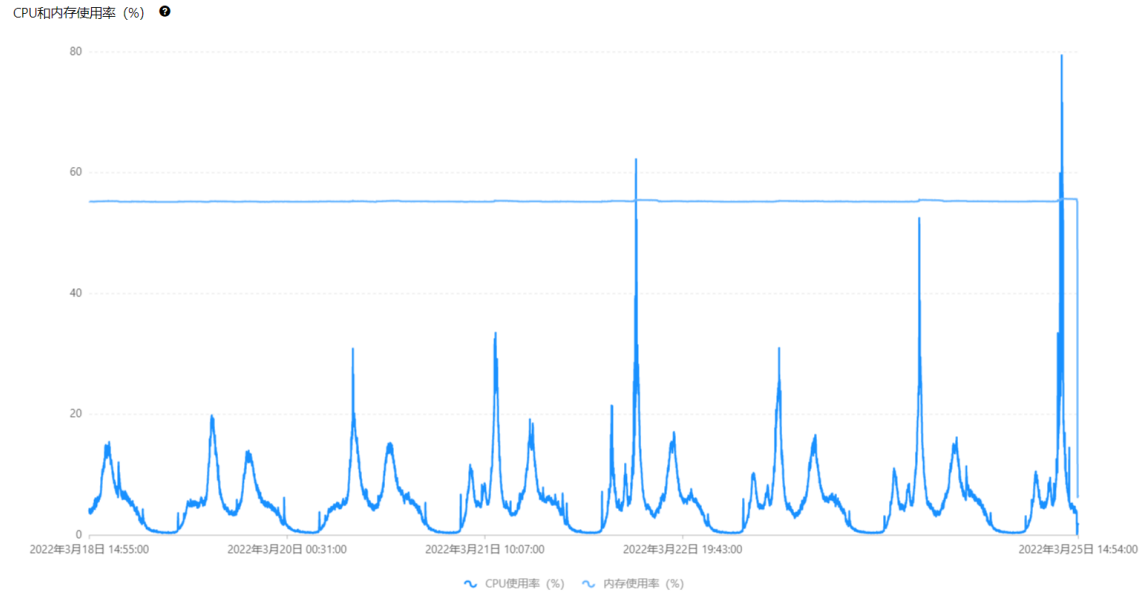
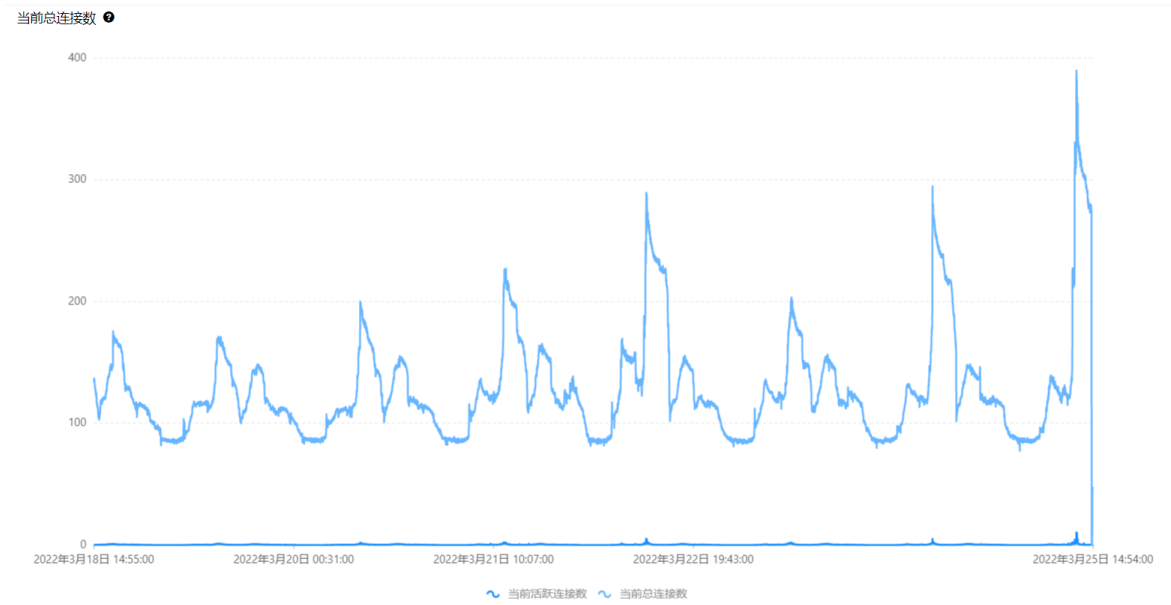
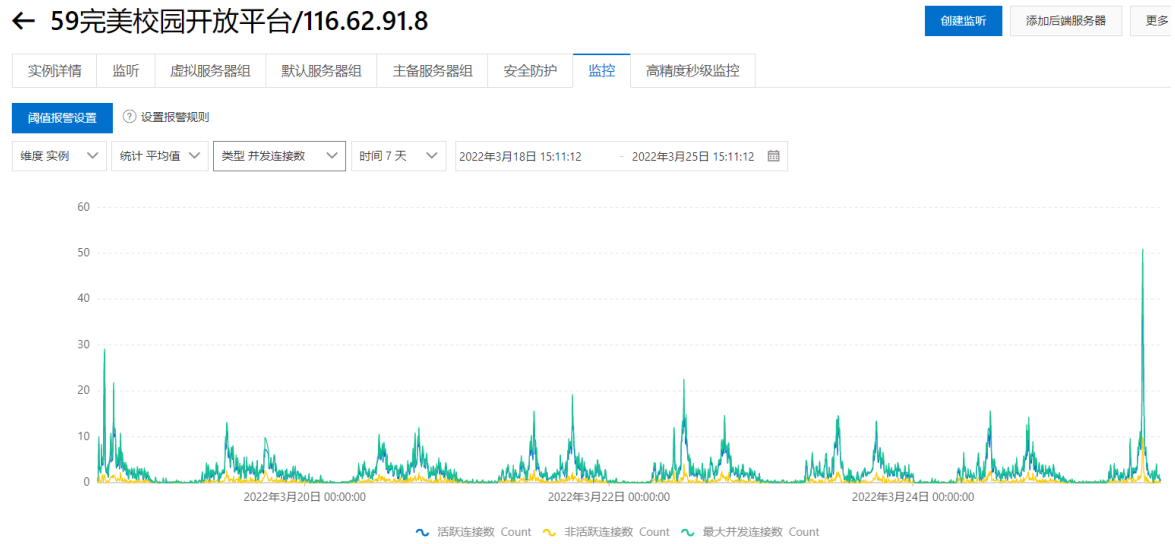
现象：开放平台数据库出现cpu使用率周期性递增，25号达到了80%左右



连接数也呈现周期性递增：



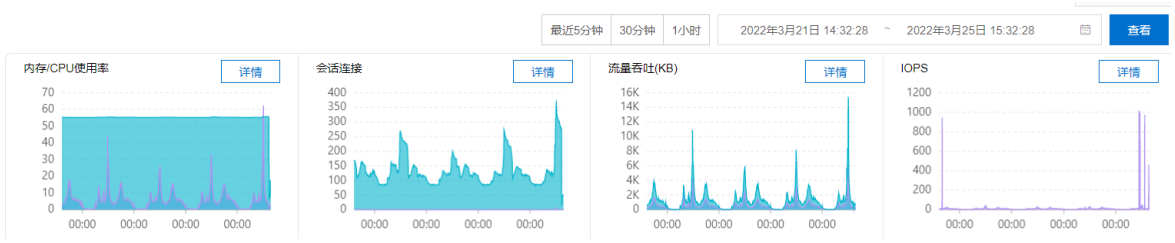
两台负载服务7天内的并发连接变化：

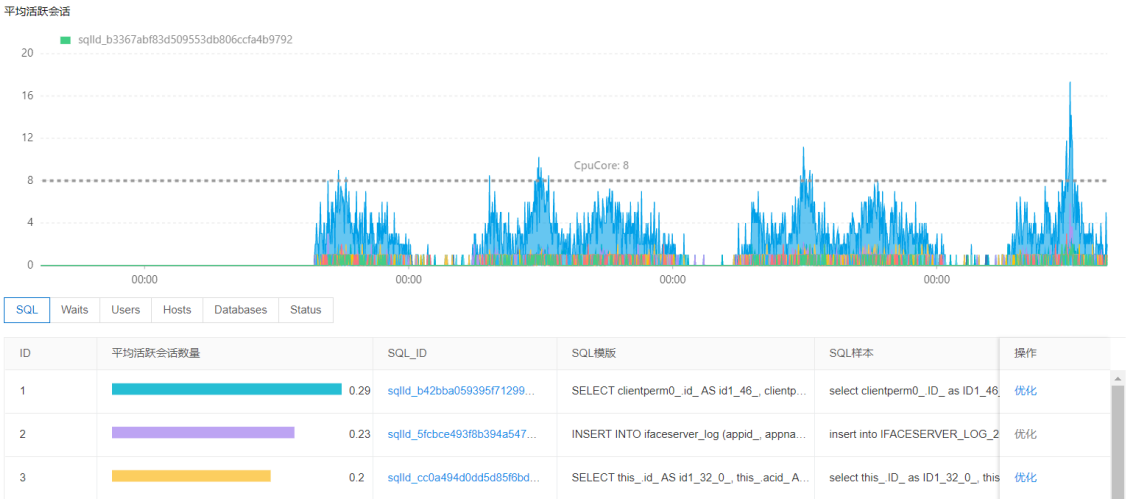


其中22号12点钟的并发连接数达到4000，25号的并发连接达到5000，其余天数平均峰值连接数在2000-3000之间。

根据上面的信息推测，数据库的性能波动很可能是由于用户数增加导致。

分析数据库的实际使用状态：





活跃度最高的sql是

```
SELECT clientperm0_.ID_ AS ID1_46_, clientperm0_.CLIENTKEY_ AS CLIENTKEY2_46_, clientperm0_.CUSTOMERCODE_ AS CUSTOMER3_46_, clientperm0_.RESOURCEID_ AS RESOURCEID6_46_, clientperm0_.STATE_ AS STATE4_46_
        , clientperm0_.USERUNIONID_ AS USERUNIO5_46_
FROM OAUTH2_CLIENTPERMISSION clientperm0_
        CROSS JOIN OAUTH2_RESOURCE resource1_
WHERE clientperm0_.RESOURCEID_ = resource1_.ID_
        AND 1 = 1
        AND clientperm0_.CLIENTKEY_ = '716ed348e1764409995b539090cc89be'
        AND clientperm0_.STATE_ = 1
        AND resource1_.RESOURCEACCESSLEVEL_ IN (1)
```

这个sql的含义是根据clientId查询给哪些学校配置了哪些授权接口权限，可以通过增加联合索引增加一定效率

```
ALTER TABLE `ifacetransport`.`oauth2_clientpermission` ADD INDEX `idx_CLIENTKEY_STATE` (`CLIENTKEY_`, `STATE_`)
```

活跃度第3的sql是查询某个学校是否拥有某个非授权接口的访问权限

```
SELECT this_.ID_ AS ID1_32_0_, this_.ACID_ AS ACID2_32_0_, this_.CREATEDATE_ AS CREATEDATE3_32_0_, this_.IFACENAME_ AS IFACENAME4_32_0_, this_.IFACETITLE_ AS IFACETITLE5_32_0_
FROM IFACESERVER_APPCUSTOMERIFACE this_
```

```
3 WHERE this_.ACID_ = 24097
4         AND this_.IFACENAME_ = 'QueryFundDatils'
```

可以通过增加联合索引提供查询效率：

```
1 ALTER TABLE `ifacetransport`.`ifaceserver_appcustomeriface` ADD INDEX `idx_
  ACID_IFACENAME` (`ACID_`, `IFACENAME_`)
```

索引诊断建议

1. DDL语句 复制

```
ALTER TABLE `ifacetransport`.`ifaceserver_appcustomeriface` ADD INDEX `idx_ACID_IFACENAME` (`ACID_`, `IFACENAME_`)
```

2. 详情

列名	语句	索引名	数据库名	表名	是否唯一键
["ACID_","IFACENAME_"]	ALTER TABLE `ifacetransp...	idx_ACID_IFACENAME	ifacetransport	ifaceserver_appcustomeriface	否

语句优化建议

暂无建议

优化收益：预期性能提升**4316.26**倍(提升倍数=旧代价/新代价-1)

(诊断编号: 623d82a47003244af5844ac7)