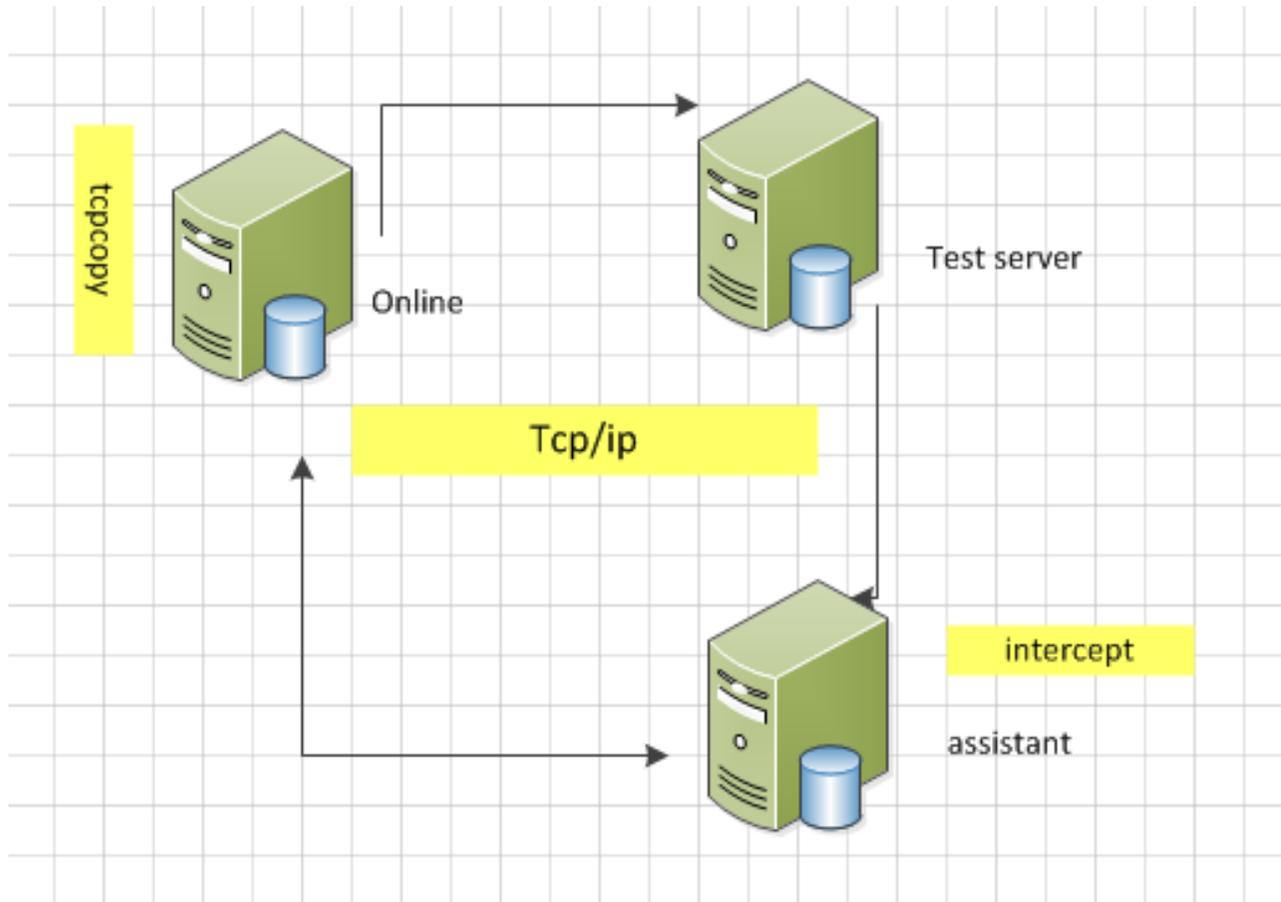


TCPCOPY-Real traffic benchmark tool

TCPCOPY 由网易杭研开源，通过复制网卡端口流量，从而模拟线上真实负载，通过 N 倍放大做到真实环境流量翻倍的效果。对于日常业务的激增起到一个预测作用。

TCPCOPY 可以直接将流量包复制至 MYSQL database，从而模拟线上 client 包流量的翻倍压力，对于测试机器来说，相当于将线上机器成倍的增加，从而可以压测出当前 MYSQL DB 所能承受的极限值。对于 SQL 而言，也利于在高压环境下的问题暴露。

我们的 TCPCOPY 架构图



通过直接导入线上流量， 模拟 troy 线上压力

测试环境:

online server : 10.128.6.16 master

test server : 10.128.6.83 clone database

assistant server : 10.128.6.84

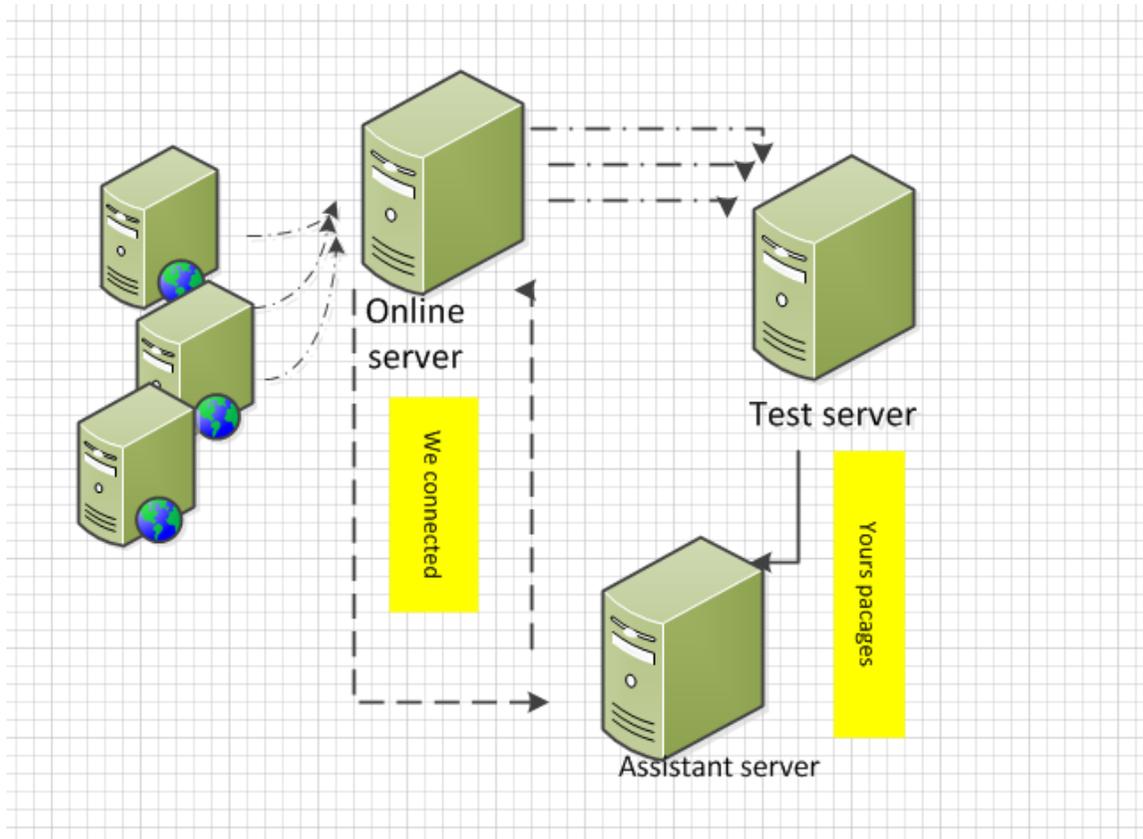
在 test server 上增加如下路由信息:

```
route add -host 10.128.10.68 gw 10.128.6.84
route add -host 10.128.11.96 gw 10.128.6.84
route add -host 10.128.13.97 gw 10.128.6.84
route add -host 10.128.16.59 gw 10.128.6.84
route add -host 10.128.17.109 gw 10.128.6.84
route add -host 10.128.17.99 gw 10.128.6.84
route add -host 10.128.19.142 gw 10.128.6.84
route add -host 10.128.19.150 gw 10.128.6.84
route add -host 10.128.19.160 gw 10.128.6.84
route add -host 10.128.6.17 gw 10.128.6.84
```

```
route add -host 10.128.7.121 gw 10.128.6.84  
route add -host 10.128.7.122 gw 10.128.6.84
```

在 test server 上将线上(online server)上的 mysql client IP 请求全部路由到 assistant server 由 assistant sever 跟 这些 client 机器完成握手，从而完成整个过程。Test server 本身并不负责这些连接的建立。

Processing :



在 assistant server 上开启 intercept 进程

```
/usr/local/intercept/sbin/intercept -i bond0 -F 'tcp and src port 3307' -p 36525 -d
```

端口设置为 36525

在 online server 上开启 tcpcopy 进程

```
tcpcopy -x 3307-10.128.6.83:3307 -s 10.128.6.84:36525 -C 4 -n 50
```

将本地 3307 端口的流量直接复制到 test server (由 test server 路由至 assistant server, 最后由 assistant server 完成应答) , 实际的数据包则在 test server 上执行。

-C tcpcopy 进程与 intercept 进程开启并行通信 -n 将线上流量复制 N 倍

```
[20:33:26root@a1-tcpcopy-assis /usr/local/intercept/sbin]
#netstat -n | awk '/^tcp/ {++S[$NF]} END {for(a in S) print a, S[a]}'
ESTABLISHED 5
TIME_WAIT 30
```

在 test server 上即可看到实际流量, 经测试 -n 100 基本是一个极限值 (tcpcopy 没有连接池的概念, 所以对 test server 的连接都是短连接, 会引起 DB 层的瞬间连接暴增问题, 目前没有好的解决方案) 对于 troy 来说本身就是一个超过 4 万 QPS 的应用, 而 TCPCOPY 极限压测到 5 万的 QPS 已经是上限了

Test server load

Query List (? for help)											pajk monitor:3307, 22h, 33.93k QPS, 101/47/48 con/run/cac thds, 5.6.17-log
When	Load	Cxns	QPS	Slow	Se/In/Up/De%	QCacheHit	KCacheHit	BpsIn	BpsOut		
Now	0.00	101	33.93k	0	99/ 0/ 0/ 0	0.00%	100.00%	17.72M	65.81M		
Total	0.00	19.53k	106.98	0	99/ 0/ 0/ 0	0.00%	66.67%	54.39k	202.36k		
Cmd	ID	State	User	Host	DB	Time	Query				
Query	53818	preparing	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53819	preparing	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53820	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53821	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53823	Writing to net	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53824	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53825	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select item.id,item.app_id, item.plugin_name, item.item_name,item.item_filed,item.item_view, item.description,item				
Query	53827	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53828	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53829	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id, app_id,plugin_name,item_id,alarm_id,send_time, send_type, send_content, send_status,last_send_time,emai				
Query	53830	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53831	preparing	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53832	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53833	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53834	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select item.id,item.app_id, item.plugin_name, item.item_name,item.item_filed,item.item_view, item.description,item				
Query	53835	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_name,app_desc,app_status,app_language,is_effective,app_instance_num,effective_time,effective_interva				
Query	53836	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select item.id,item.app_id, item.plugin_name, item.item_name,item.item_filed,item.item_view, item.description,item				
Query	53837	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53838	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53839	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select item.id,item.app_id, item.plugin_name, item.item_name,item.item_filed,item.item_view, item.description,item				
Query	53840	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_name,app_desc,app_status,app_language,is_effective,app_instance_num,effective_time,effective_interva				
Query	53841	init	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53842	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53843	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53845	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53846	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53847	statistics	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,parent_id,app_id,server_id,plugin_name,item_id,item_name, alarm_id,alarm_level, alarm_times,warn_times,				
Query	53848	Writing to net	pajk_mon	10.128.16.59	pajk_monitor	00:00	select item.id,item.app_id, item.plugin_name, item.item_name,item.item_filed,item.item_view, item.description,item				
Query	53849	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				
Query	53850	Sending data	pajk_mon	10.128.16.59	pajk_monitor	00:00	select id,app_id,plugin_name,item_id,item_field_id,alarm_name, alarm_level, warning_times,current_warning_times, a				

Interface Traffic

	191Mb	381Mb	572Mb	763Mb	954Mb
a1-troy-server-10-68.hz		=> a1-tcpcopy-target.hz		0b	0b
		<=		148Mb	31.7Mb
a1-troy-server-17-99.hz		=> a1-tcpcopy-target.hz		0b	0b
		<=		139Mb	27.8Mb
a1-tcpcopy-assis.hz		=> a1-dba-analysis1a.hz		33.8Mb	7.66Mb
		<=		1.00Mb	254Kb
a1-troy-server-16-59.hz		=> a1-tcpcopy-target.hz		0b	0b
		<=		0b	3.43Mb
a1-dba-mha-01a.hz		=> a1-tcpcopy-target.hz		0b	0b
		<=		111Kb	94.2Kb
a1-tcpcopy-assis.hz		=> a1-dba-manager01a.hz		2.39Kb	2.12Kb
		<=		208b	291b
a1-tcpcopy-assis.hz		=> a1-ops-zabbix-server.hz		2.26Kb	1.13Kb
		<=		2.29Kb	1.14Kb
<hr/>					
TX:	cum: 462MB	peak: 33.8Mb		rates: 33.8Mb	7.66Mb
RX:	3.52GB	288Mb		288Mb	63.3Mb
TOTAL:	3.98GB	322Mb		322Mb	71.0Mb

下一步计划

按成自动化恢复+自动化压测（需要实际的 slave 激活成 master, 直接线上 slave 压测存在风险）