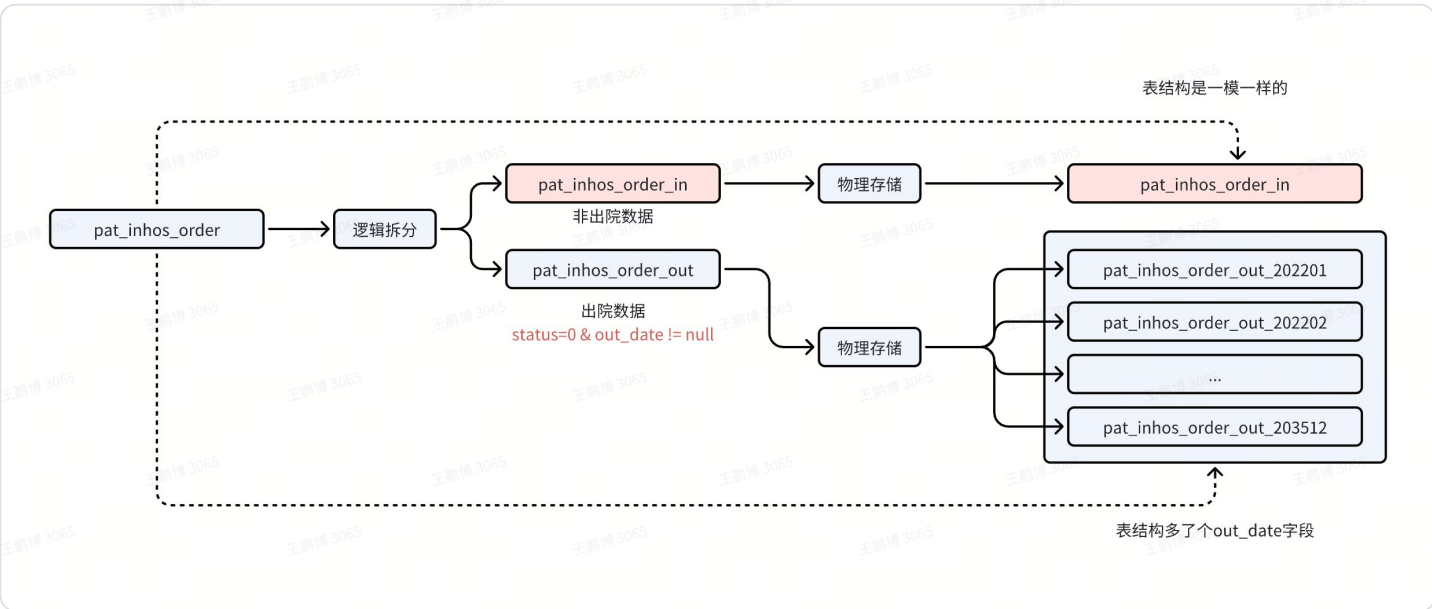


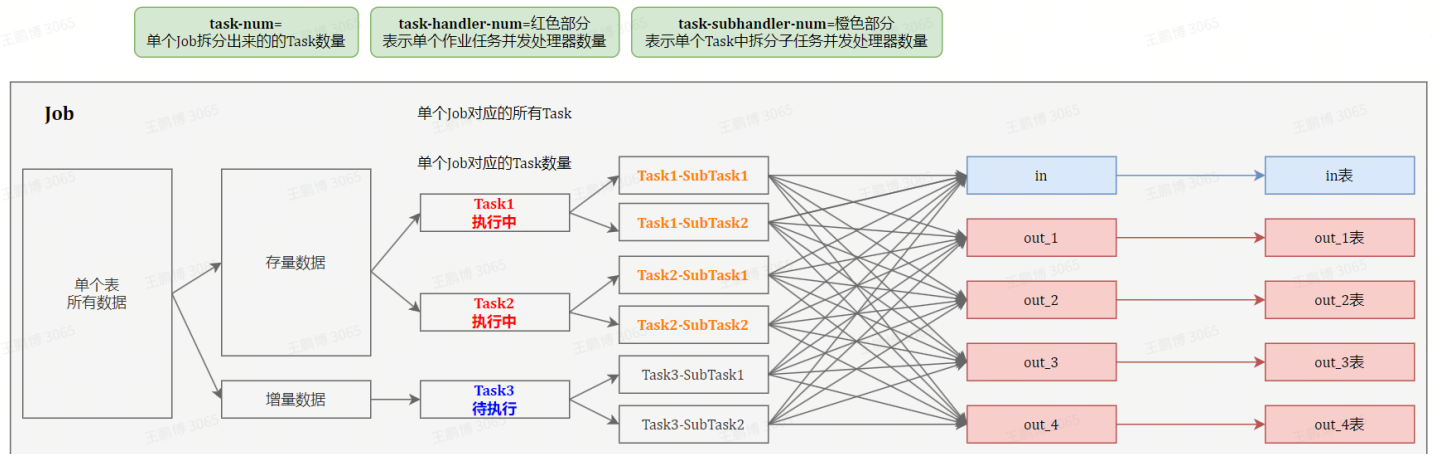
# 医嘱冷热发布方案-数据迁移v3\_不停机迁移

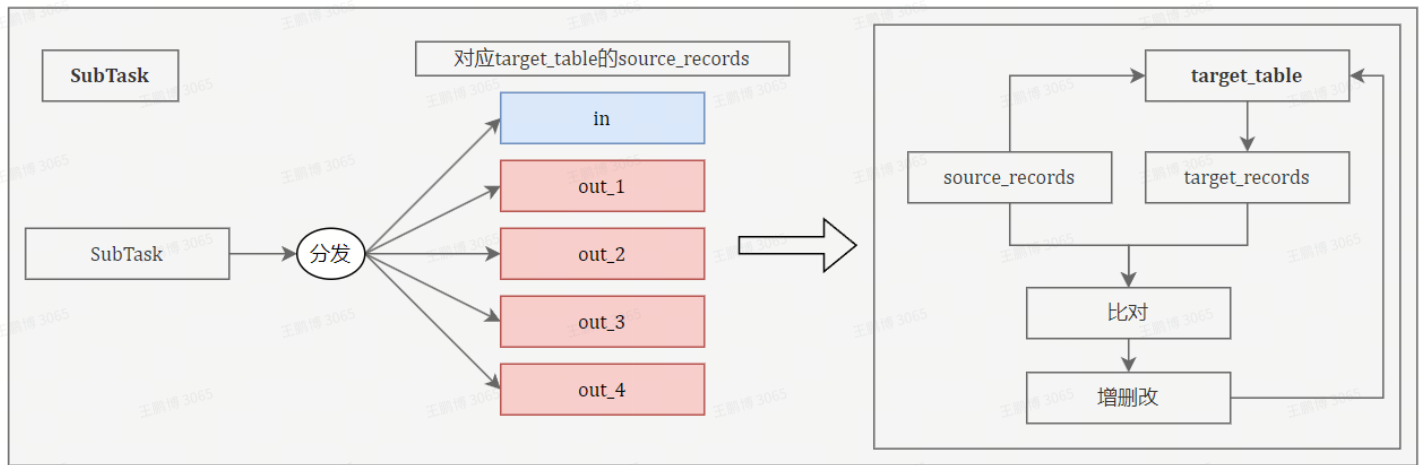
## 方案设计

### 拆分思路



### 迁移程序方案设计





## 数据迁移

### 环境

IP	部署软件
10.2.3.160	MySQL、Mongo、Prometheus
10.2.3.158	业务程序、迁移程序、Sharding-Proxy

### 前提

#### 1.整改同步程序

！ 同步程序需要处理updateTime字段is not null，并且确保在数据迁移之前，已经上线修改后的同步程序！

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同步程序需要处理updateTime字段is not null，并且确保在数据迁移之前，已经上线修改后的同步程序！

#### 2.更新历史数据

```

2  update pat_inhos_order set update_time = create_time where update_time is
   null;
3  -- 数据量: 60421583 耗时:
4  update pat_inhos_order_group set update_time = create_time where update_time
   is null;
5
6  select count(*) all_cnt from pat_inhos_order where update_time is null;
   -- 0 (验证执行成功)
7  select count(*) all_cnt from pat_inhos_order_group where update_time is null;
   -- 0 (验证执行成功)

```

### 3.创建索引

```

1  drop index idx_update_time on pat_inhos_order;
2  create index idx_update_time on pat_inhos_order (update_time);
3  -- 数据量: 33112780 耗时:
4  drop index idx_update_time on pat_inhos_order_group;
5  create index idx_update_time on pat_inhos_order_group (update_time);

```

### 配置说明

```

1  server:
2    port: 8888
3  spring:
4    datasource:
5      driver-class-name: com.mysql.cj.jdbc.Driver
6      url: jdbc:mysql://10.2.3.160:3306/windranger_emr?
       characterEncoding=utf8&serverTimezone=GMT%2B8&allowMultiQueries=true
7      username: user
8      password: Lachesis-mh_1024
9      hikari:
10         maximum-pool-size: 200
11     sql:
12       init:
13         schema-locations: classpath*:db/schema.sql
14         mode: always
15         platform: mysql
16     logging:
17       config: classpath:logs/logback-spring.xml
18
19     transfer:
20       global:

```

```

21     # 边界值
22     update-time: '2025-02-18 00:00:00'
23     # 是否需要重新初始化任务
24     reset: false
25     jobs:
26     - table-name: pat_inhos_order
27       # 是否开启作业
28       enable: true
29       # 单个作业拆分任务数量
30       task-num: 50
31       # 需要处理的最小业务序号，一般多用于测试使用（闭区间[1,task-num]，但是必须小于等于task-max-sequence)
32       task-min-sequence: 1
33       # 需要处理的最大业务序号，一般多用于测试使用（闭区间[1,task-num]，但是必须大于等于task-min-sequence)
34       task-max-sequence: 50
35       # 单个作业任务并发处理器
36       task-handler-num: 5
37       # 子任务数量=10×10=100
38       task-sub-handler-num: 20
39       # 任务批量查询数量限制
40       task-sub-handler-query-limit: 2000
41     - table-name: pat_inhos_order_group
42       # 是否开启作业
43       enable: true
44       # 单个作业拆分任务数量
45       task-num: 50
46       # 需要处理的最小业务序号，一般多用于测试使用（闭区间[1,task-num]，但是必须小于等于task-max-sequence)
47       task-min-sequence: 1
48       # 需要处理的最大业务序号，一般多用于测试使用（闭区间[1,task-num]，但是必须大于等于task-min-sequence)
49       task-max-sequence: 50
50       # 单个作业任务并发处理器
51       task-handler-num: 5
52       # 子任务数量=10×10=100
53       task-sub-handler-num: 20
54       # 任务批量查询数量限制
55       task-sub-handler-query-limit: 2000

```

## 执行迁移

### 迁移程序 - 启动

```
1 cd /usr/local/springboot/transfer
2 ./transfer start
3 tailf logs/log_info.log
```

## 迁移程序 - 初始化

```
1 curl --location 'http://localhost:8888/init' \
2 --header 'Content-Type: application/json' \
3 --data '{
4     "tableNames": ["pat_inhos_order_group"]
5 }'
```

## 迁移程序 - 执行迁移作业

TODO 必须等待初始化完成~

```
1 curl --location 'http://localhost:8888/start' \
2 --header 'Content-Type: application/json' \
3 --data '{
4     "tableNames": ["pat_inhos_order_group"]
5 }'
```

注意调用接口的IP地址！

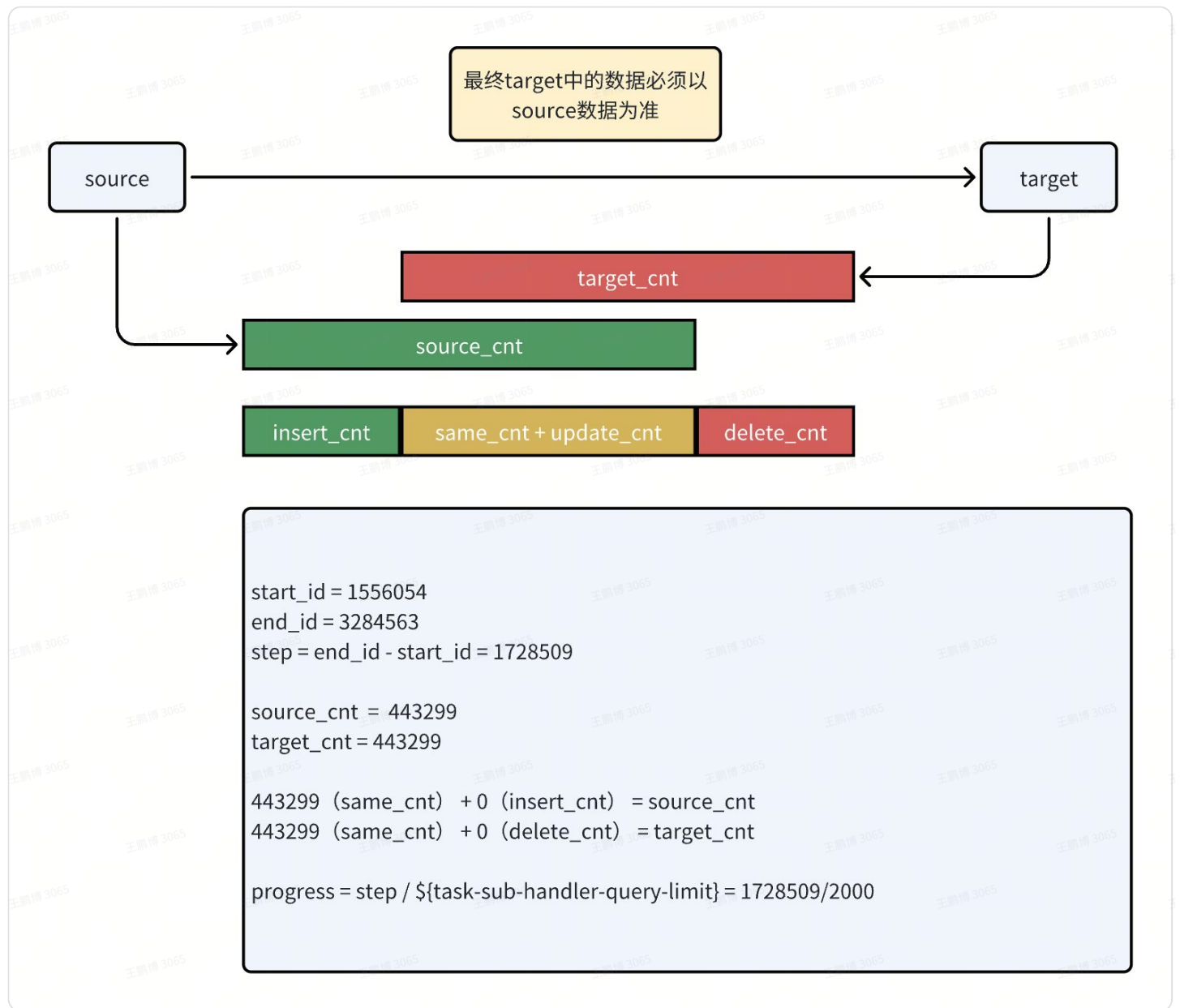
tableNames为空集合时表示启动所有作业，可以指定具体作业！

## 查询进度

1 SELECT \* FROM transfer\_task ORDER BY table\_name,sequence;

id	table_name	sequence	start_id	end_id	step	init_cnt	source_cnt	target_cnt	same_cnt	insert_cnt	delete_cnt	update_cnt	progress	result	consume	start_time	end_time	create_time	update_time
50	pat_inshos_order		0	84254381	(NULL)	(NULL)	0	0	0	0	0	0	0	0	0	0	(NULL)	2025-02-20 09:57:04	2025-02-20 11:04:51
1	pat_inshos_order	1	1554054	3284551	1728537	496826	496826	496826	496826	0	0	0	0	0	0	0	0	0	0
2	pat_inshos_order	2	3284592	5013129	1728537	1266620	1266620	1266620	1266620	0	0	0	0	0	0	0	0	0	0
3	pat_inshos_order	3	5013130	6741667	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	pat_inshos_order	4	6741668	8470205	1728537	95940	95940	95940	95940	0	0	0	0	0	0	0	0	0	0
5	pat_inshos_order	5	8470206	10198743	1728537	1451470	1451470	1451470	1451470	0	0	0	0	0	0	0	0	0	0
6	pat_inshos_order	6	10198744	11927281	1728537	757645	757645	757645	757645	0	0	0	0	0	0	0	0	0	0
7	pat_inshos_order	7	11927282	13655919	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	pat_inshos_order	8	13655920	15384357	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	pat_inshos_order	9	15384358	17112956	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	pat_inshos_order	10	17112957	18841433	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	pat_inshos_order	11	18841434	20569971	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	pat_inshos_order	12	20569972	22298509	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	pat_inshos_order	13	22298510	24027047	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	pat_inshos_order	14	24027048	25755585	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	pat_inshos_order	15	25755586	27484123	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	pat_inshos_order	16	27484124	29212661	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	pat_inshos_order	17	29212662	30941199	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	pat_inshos_order	18	30941200	32669737	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	pat_inshos_order	19	32669738	34398275	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	pat_inshos_order	20	34398276	36126813	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	pat_inshos_order	21	36126814	37855351	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	pat_inshos_order	22	37855352	39583889	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	pat_inshos_order	23	39583890	41312427	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	pat_inshos_order	24	41312428	43040965	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	pat_inshos_order	25	43040966	44769503	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	pat_inshos_order	26	44769504	46498041	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	pat_inshos_order	27	46498042	48226579	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	pat_inshos_order	28	48226580	49955117	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	pat_inshos_order	29	49955118	51683655	1728537	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	pat_inshos_order	30	51683656	53412193	1728537	395	395	395	395	0	0	0	0	0	0	0	0	0	0
31	pat_inshos_order	31	53412194	55140731	1728537	413	413	413	413	0	0	0	0	0	0	0	0	0	0
32	pat_inshos_order	32	55140732	56869269	1728537	12	12	12	12	0	0	0	0	0	0	0	0	0	0
33	pat_inshos_order	33	56869270	58597807	1728537	1435557	1435557	1435557	1435557	0	0	0	0	0	0	0	0	0	0
34	pat_inshos_order	34	58597808	60326345	1728537	1709679	1709679	1709679	1709679	0	0	0	0	0	0	0	0	0	0
35	pat_inshos_order	35	60326346	62054883	1728537	1691359	1691359	1691359	1691359	0	0	0	0	0	0	0	0	0	0
36	pat_inshos_order	36	62054884	63783421	1728537	1713434	1713434	1713434	1713434	0	0	0	0	0	0	0	0	0	0
37	pat_inshos_order	37	63783422	65511959	1728537	1711697	1711697	1711697	1711697	0	0	0	0	0	0	0	0	0	0
38	pat_inshos_order	38	65511960	67240497	1728537	1721966	1721966	1721966	1721966	0	0	0	0	0	0	0	0	0	0
39	pat_inshos_order	39	67240498	68969035	1728537	1722019	1722019	1722019	1722019	0	0	0	0	0	0	0	0	0	0
40	pat_inshos_order	40	68969036	70697573	1728537	1689015	1689015	1689015	1689015	0	0	0	0	0	0	0	0	0	0
41	pat_inshos_order	41	70697574	72426111	1728537	1713205	1713205	1713205	1713205	0	0	0	0	0	0	0	0	0	0
42	pat_inshos_order	42	72426112	74154649	1728537	1643611	1643611	1643611	1643611	0	0	0	0	0	0	0	0	0	0
43	pat_inshos_order	43	74154650	75883187	1728537	1727923	1727923	1727923	1727923	0	0	0	0	0	0	0	0	0	0
44	pat_inshos_order	44	75883188	77611725	1728537	1727342	1727342	1727342	1727342	0	0	0	0	0	0	0	0	0	0
45	pat_inshos_order	45	77611726	79340263	1728537	1728049	1728049	1728049	1728049	0	0	0	0	0	0	0	0	0	0
46	pat_inshos_order	46	79340264	81068801	1728537	1728037	1728037	1728037	1728037	0	0	0	0	0	0	0	0	0	0
47	pat_inshos_order	47	81068802	82797339	1728537	1728190	1728190	1728190	1728190	0	0	0	0	0	0	0	0	0	0
48	pat_inshos_order	48	82797340	84525877	1728537	1726694	1726694	1726694	1726694	0	0	0	0	0	0	0	0	0	0
49	pat_inshos_order	49	84525878	86254390	1728537	1727987	1727987	1727987	1727987	0	0	0	0	0	0	0	0	0	0
50	pat_inshos_order_group		0	18941997	(NULL)	(NULL)	0	0	0	0	0	0	0	0	0	0	(NULL)	2025-02-20 09:58:09	2025-02-20 11:04:51
51	pat_inshos_order_group	1	2156477	5991275	3825598	2191839	2191839	2191839	2191839	0	0	0	0	0	0	0	0	0	0
52	pat_inshos_order_group	2	5991276	9816874	3825598	3238662	3238662	3238662	3238662	0	0	0	0	0	0	0	0	0	0
53	pat_inshos_order_group	3	9816875	13642473	3825598	3822106	3822106	3822106	3822106	0	0	0	0	0	0	0	0	0	0
54	pat_inshos_order_group	4	13642474	17468072	3825598	3821585	3821585	3821585	3821585	0	0	0	0	0	0	0	0	0	0

## 指标说明



## 查询监控

地址: <http://10.2.3.160:3000>

用户名: admin

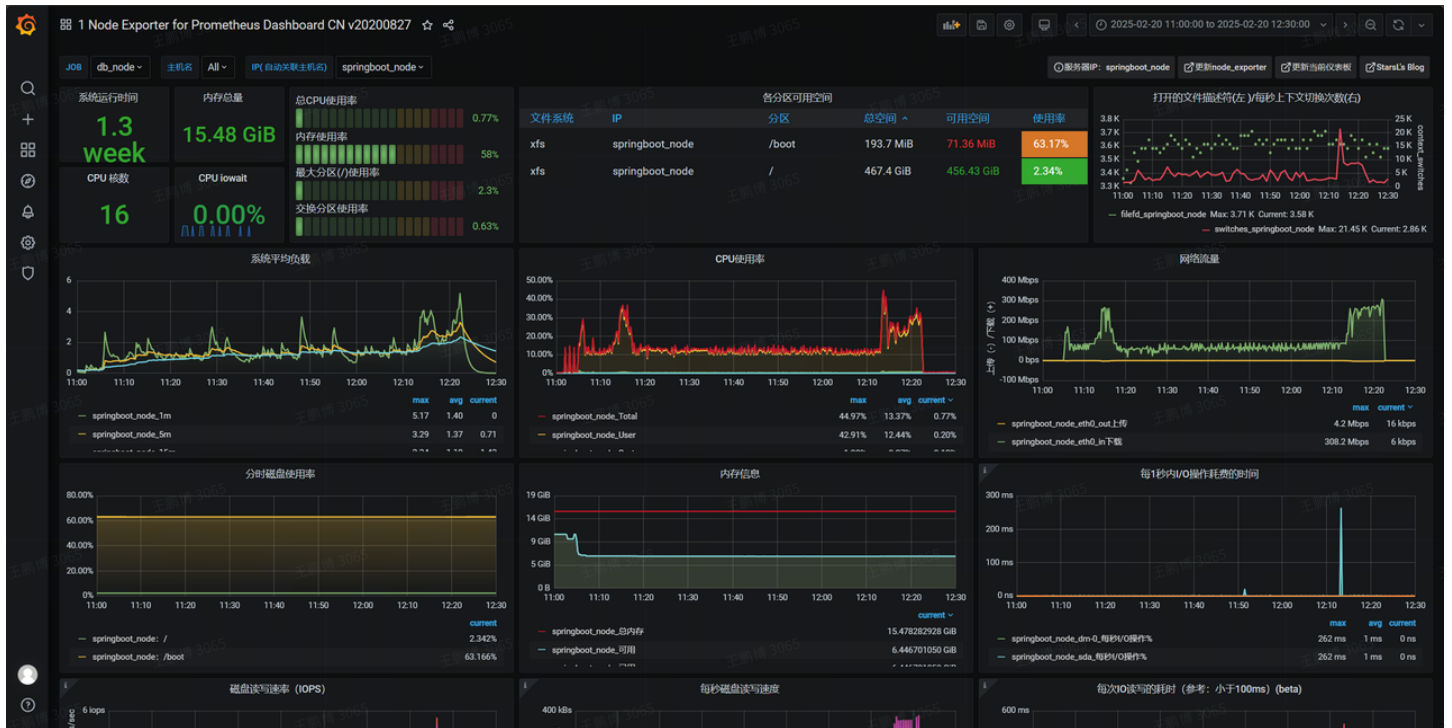
密码: Lachesis-mh\_1024

## 数据库-10.2.3.160





## 业务&迁移程序-10.2.3.158



## 数据重置



## 在院表数据情况

这里以清空pat\_inhos\_order\_group对应的在院表数据为例~

### MySQL Client

这里以清空pat\_inhos\_order\_group对应的在院表数据为例~

```
1 use windranger_emr;  
2 select count(*) from pat_inhos_order_group_in;  
3 truncate table pat_inhos_order_group_in;
```

## 出院表数据清空

这里以清空pat\_inhos\_order\_group对应的出院表数据为例~

### MySQL Client

这里以清空pat\_inhos\_order\_group对应的出院表数据为例~

找到所有是pat\_inhos\_order\_group\_out\_为前缀的表，进行drop操作。

## 迁移程序

还没开发，如有需要再做开发~

## Sharding-Proxy

这里以清空pat\_inhos\_order\_group对应的出院表数据为例~

前提：需要部署Sharding-Proxy，这里因为需要JVM环境，所以部署在10.2.3.158服务，对应代理的数据库地址也是10.2.3.158，用户名:root，密码:root

```
1  mysql> use windranger_emr;
2  Reading table information for completion of table and column names
3  You can turn off this feature to get a quicker startup with -A
4
5  Database changed
6  mysql> select count(*) from pat_inhos_order_group_out;
7  +-----+
8  | count(*) |
9  +-----+
10 | 34881179 |
11 +-----+
12 1 row in set (2 min 24.43 sec)
13
14 mysql> truncate table pat_inhos_order_group_out;
15 Query OK, 0 rows affected (10.94 sec)
16
17 mysql> select count(*) from pat_inhos_order_group_out;
18 +-----+
19 | count(*) |
20 +-----+
21 |         0 |
22 +-----+
23 1 row in set (0.02 sec)
24
25 mysql>
```