1. 需求说明

在算法模块,完成异常检测的能力构建。当前仅后端任务,用python实现。 算法模块以指标的形式输出模型计算后的预测值和异常值。

# 2. 概要设计

# 2.1.相关概念说明

2.1.1. 异常检测

根据时序指标的历史值建模, 分析当前值是否异常

2.1.2. Handler

API处理服务,负责解析api接口的指令和配置数据。

2.1.3. Scheduler

调度器, 负责调度模型参数训练任务和当前异常检测任务。

2.1.4. Connector

连接器,负责数据的查询和写入。

2.1.5. **Model** 

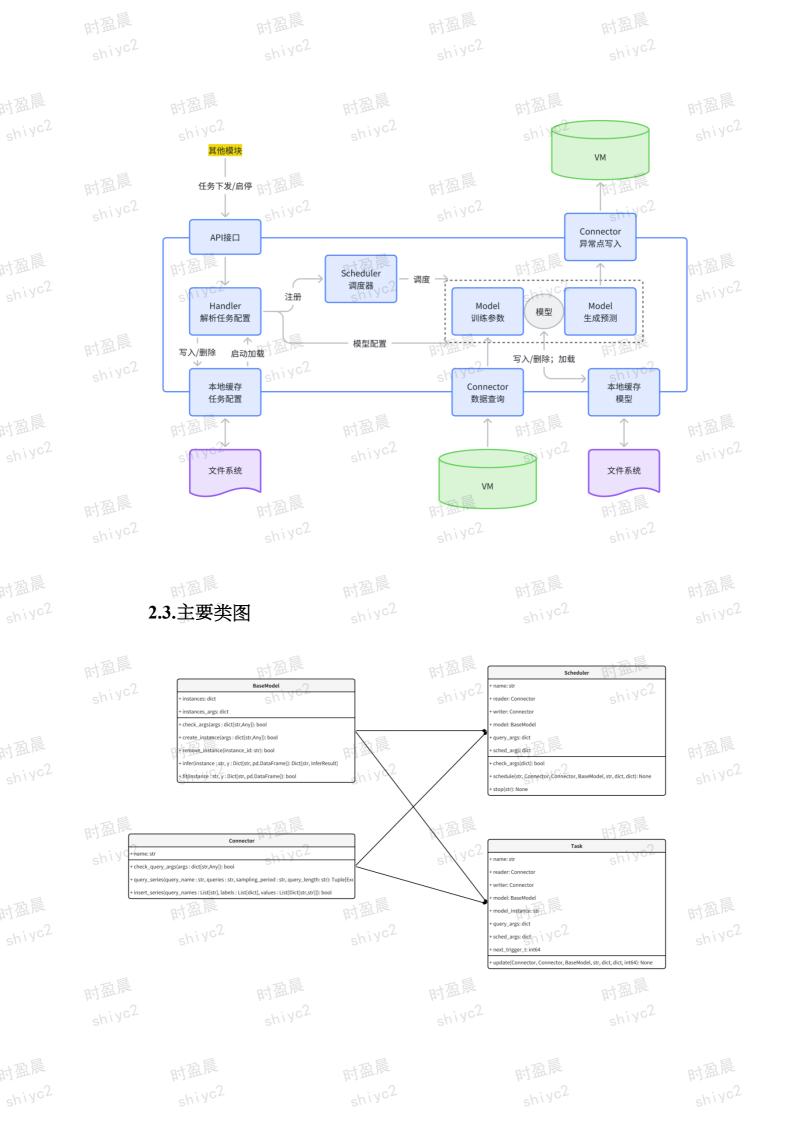
模型。负责训练和预测。

### 2.2.流程图

算法模块分为两个能力:第一是预测能力,第二是异常检测能力。

预测能力指的是,采用历史的指标数据训练一个模型(注意,每个时间序列都会对 应一个模型),再利用训练好的模型,预测某一段时间内的指标值。

异常检测能力指的是,根据预测的指标值,包括预测的上下限,和真实的指标值进行计算,反应当前真实指标值偏离预测的程度,这个程度即为"异常分数"。

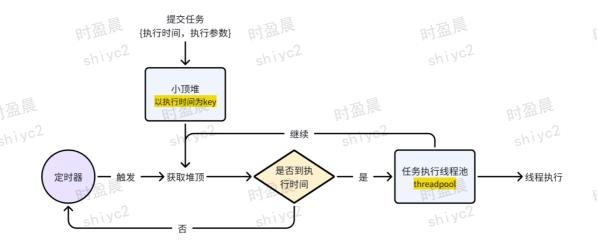


2.4.组件

#### 2.4.1. 调度器

- 周期调度器 (Periodic)
  - 调度器参数:

```
計盈 単任务参数:
shiyc2{
                              "多长时间推理一次,必填,格式类似于
               "infer every":
     5s/5m/5h/5d/5w",
                           世 推理的时间跨度,必填,格式类似于
               "infer_window":
     5s/5m/5h/5d/5w",
         shiyo "fit_every":
                            。 "多长时间训练一次,必填,格式类似于
     5s/5m/5h/5d/5w",
                             "训练数据的时间跨度,必填,格式类似于
               "fit_window":
     5s/5m/5h/5d/5w" 时盈辰
     全局参数(在服务的全局配置文件中,提交任务时不用给):
     {
         "max_tasks": -1 //最大任务数,超过则拒绝, -1为不限制
```



● 单次任务调度器

执行一次"训练"+"推理"的步骤。 单次任务调度器是服务强制加载的,无需启动时指定。

● 调度器参数

时盈晨 shiyc2

时盈辰 shiyo2 时盈晨 chiyc<sup>2</sup> 时盈晨 shiyc2

时盈晨 shiyc2

#### 2.4.2.模型

主要负责指标的异常检测,滚动训练,定时输出指标值的异常分数,分数在(-1,1)可认为此指标在此时刻正常,否则异常,绝对值越高越严重。正数意味着因偏高而异常,负数意味着因偏低而异常。

当前支持以下模型:

- 1. Prophet模型 (Prophet)
  - 模型参数(所有参数均选填,具体含义参考官网
     https://facebook.github.io/prophet/docs/quick\_start.html#python-api)

```
"growth": "linear",
    "changepoints": null,
    "n_changepoints": 25,
    "changepoint_range": 0.8,
    "yearly_seasonality": "auto",
    "weekly_seasonality": "auto",
    "daily_seasonality": "auto",
    "holidays": null,
    "seasonality_prior_scale": 10,
    "holidays_prior_scale": 10,
    "changepoint_prior_scale": 0.05,
    "mcmc_samples": 0,
    "interval_width": 0.8,
    "uncertainty_samples": 1000
}
```

# 2.4.3.输入输出

- 支持的连接器列表: 时盈晨
- Victoriametrics:输入、输出
  - Pulsar:輸出
  - 标准输入输出:输出
- 输出指标:查询表达式返回的label都会添加到输出指标中,任务参数中的\${query\_name}会写到标签"\_\_for"中。
  - model output y:指标原始值,仅异常检测任务有此指标
  - model output yhat:指标预测中位值
  - \_model\_output\_yhat\_upper:指标预测范围的上限
  - \_model\_output\_yhat\_lower:指标预测范围的下限
  - \_model\_output\_anomaly\_score:指标异常分数,仅异常检测任务有此指标。 指标,只是

3. 数据库设计

无 时盈晨

4. 接口设计

- 接口列表

shiv<sup>®</sup>2 任务提交

【注】若提交时name重复,则会更新此任务。更新任务为CPU高负载工作,故尽量<mark>不要</mark> 重复提交任务。

URL 时盈晨	srv-algorithm:8450/submit/{tenant}
参数 参数	tenant:租户ID, int64, 是 <mark>数据源</mark> 的租户
调用方法	POST
请求体	{
时盈晨 shiyc2	中connector.name, pipline包含reader的)",     "writer": "数据写入组件,选择,范围由服务配置文件确定(配置文件中connector.name, pipline包含writer的)",     "model": "模型,选择,范围由服务配置文件确定(配置文件中
<u></u>	model.name) ",     "model_args": {}, // 模型参数, 由具体模型确定     "scheduler": "调度器,选择,范围由服务配置文件确定(配置文件中 scheduler.name)",
时盈晨 shiyc2	scheduler.name) ",     "scheduler_args": {}, /> 调度器参数, 有具体调度器确定     "query_name": "本次任务的查询名称, 用于输出指标的_for标签, 每     个租户唯一",     "query_args": {         "queries": "查询表达式",
3	"sampling_period_fit": "训练采样间隔,例如:5m", "sampling_period_infer": "推理采样间隔,例如:1m"
	时盈晨    时盈晨
n4 + 14	Brives shives
响应体	失败返回错误信息;
时盈晨	成功返回'success'  时盈晨  时盈晨
shiyc2	shiyc <sup>2</sup> shiyc <sup>2</sup>

#### ● 任务停止

URL	srv-algorithm:8450/stop/{tenant}	
参数	tenant:租户ID, int64, 是 <mark>数据源</mark> 的和	且户    时盈辰
调用方法	POST shiye?	2 shiyc2

时盈晨 shiyc<sup>2</sup> 时盈晨 chivc2 时盈晨 shiyc<sup>2</sup>

时盈晨 chivc2

#### ● 模型测试

#### 执行单次训练和检测,返回结果

```
srv-algorithm:8450/test/{tenant}
URL
              tenant:租户ID, int64, 是数据
参数
调用方法
              POST
请求体
                  "reader": "数据查询组件, 选择, 范围由服务配置文件确定(配置文件
              中connector.name, pipline包含reader的) ",
                  "writer": "数据写入组件, 选择, 范围由服务配置文件确定(配置文件
              中connector.name, piptine包含writer的) ", http://
                     "model": "模型,选择,范围由服务配置文件确定(配置文件中
              model.name) ",
                "model_args": {}, // 模型参数, 由具体模型确定
                  "scheduler_args": { // 单次任务调度器参数
                 "infer window": "12h",
                     "fit window": "12h"
                  },
                  "query_name" 本次任务的查询名称", 时盈晨
                  "query_args." \\{\text{G}^{\text{L}}
                     "queries": "查询表达式",
                      "sampling_period_fit": "训练采样间隔, 例如:5m",
                | sampling_period_infer": "推理采样间隔,例如:1m"
                shiyc2
响应体
              {
                  "anomaly": {
                                     // 异常检测结果
                     "cpu usage-202.4": { // guery name
                         "data": { // 和prometheus query_range结构一致
                             "result": [
                                    "metric": {
                                        " name ": " model output v",
                                      "_res_id": "507215006502145",
                                       " res ip": "192.168.202.4",
                                       "_res_model": "Switch",
                                     " task id": "1868911926194339841"
                                    "values": [
                                     时盈晨1734483840.0,
                                           6.0"
```

対盈晨 shiyc<sup>2</sup> shiy

时盈辰 shiyc2 时盈晨 shiyc2

时盈晨 shiyc2

```
时盈辰
                          ],
                    },
            }
        },
     "original": {
                       // 原始查询结果
       "cpu_usage-202.4": { // query_name
           "data": { // 和prometheus query_range结构一致
              "result": [...]
           }
} 时盈晨}
```

### 任务配置示例

每个任务在服务的本地文件系统都存有一份配置信息, 路径在 \${home}/task/\${tenantid}/\${task-name}.yaml,其中\${home}是服务数据目录的根路径, \${tenantid}是租户ID(需要和数据源,例如VM使用的租户ID保持一致),\${task-name} 是task名称(即),每个租户下唯一。一个推荐配置如下:

```
model args: {}
model name: prophet
name: yc-task
query_args:
  queries: os.mem.used
  sampling_period_fit: 5m
  sampling_period_infer: 1m
query name: os mem used
reader name: vm-source
scheduler args:
  fit every: 1d
  fit window: 14d
  infer_every: 1m
  infer window: 5m
scheduler name: periodical
writer_name: vm-source
```

# 配置中的字段与提交任务接口中的字段一

# 5. 部署说明

服务由python编写,需要的基础环境为python3.10。安装其他依赖可以执行: pip install -r requirements.txt

如果需要部署镜像,本地执行:

pip download -r./requirements.txt -d./lib/

将包下载到lib文件夹下,一并打入基础镜像中,在dockerbuild时执行包安装: pip install --no-index --find-links=./lib -r ./requirements.txt

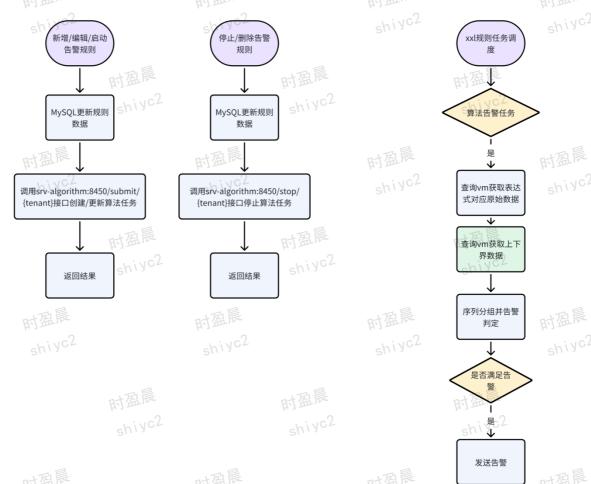
资源限制:视数据量,启动内存占用大概80M,单条时间序列训练的模型可以按照2计算内存占用。

业务指标定义(promethues)—暂未开发

# 6. 监控器改造点

5.1. 后端

5.1.1. 接口&告警判定逻辑



5.1.2. 算法任务参数

	算法任务参数	对应取值
时盈	name,和是	<b>台警规则名</b>
H-1	reader reader	默认vm-source
SUIN	Shirt	SULA

	时盈屋 writer	默认vm-source	时盈辰
	shiyo model	根据告警规则中配置的范型id,取自范型数据	ghiyc2
	model_args	根据告警规则中配置的范型id,取自范型数据	
叶双晨	model_args.interval_width	对应告警规则中配置的置信区间比例值	
即,四	#17.00	\$.config.intervalWidth	
shiyoz	scheduler	shiyo2默认periodical shiyo2	
	时盈晨 scheduler_args shiyoz	默认: {     "fit_every": "1d",     "fit_window": "14d",     "infer_every": "1m", shiyo2     "infer_window": "5m"     }	时盈晨 shiyo2
时盈辰	query_name	detector-rule-{告警规则id}	
shi)c2	shiyo2	"query_args": {\subseteq 2 "queries": "{{查询表达式}}}",	
	query_args	"sampling_period_fit": "5m",	
	时盈晨	"sampling_period_infer": "{{execInterval}}"	时盈晨
	shiyoz	shiyoz shiyoz	shiycz

#### 5.1.3. 接口

#### 算法范型接口 5.1.3.1

时盈晨	5.1.3.	1. 算法范型接	专口。一种风晨	叫恩晨
0	URI	/srv-detecte	or/anomaly-detection/paradigm/list	H.) mm.
shiyoz	Method	GET <sup>© ∠</sup>	shiycz	shiyoz
	时盈晨 shiyo2	{	成功點晨    时盈晨	
			': "asdasasda",	
时盈晨 shi)c <sup>2</sup>		时盈晨 "pa shiyc <sup>2</sup> "	growth": "linear", changepoints": null, 1902	时盈晨 shiyc2
	Response Snly	" " "	n_changepoints": 25, changepoint_range": 0.8, yearly_seasonality": "auto", weekly_seasonality": "auto", daily_seasonality": "auto", holidays": null,	
时盈晨 shi)c2		时盈晨 "shiyc2 "	seasonality_mode": "additive", seasonality_prior_scale": 10, holidays_prior_scale": 10, changepoint_prior_scale": 0.05, mcmc_samples": 0,	时盈晨 shiyc2
	时盈晨 shiyc <sup>2</sup>	"	interval_width": 0.8, uncertainty_samples": 1000 shiyo <sup>2</sup>	
时盈晨		計盈晨	时盈晨	时盈晨

# 时盈5.1.3.2. 算法训练结果趋势图

时盈5.1.3.2. 算法训练	结果趋势图	时盈晨
shiyo <sup>2</sup> 字段	类型	曲地描述
\$.fitWindow	String	训练数据的时间跨度,必填,格
\$.IIt W IIIdow	Sumg	式类似于5s/5m/5h/5d/5w
时监区的监区		规则类型,此处算法异常检测
shive2 \$.config.type shive2	String	shiyc <sup>2</sup> type值为 shiyc <sup>2</sup>
		ANOMALY_DETECTION
\$.config.algorithmParadigmId	String	算法范型id,值为7.1.3.1算法范型
5.comig.aigorithin aradiginid	时盈恩嗎	接口的列表元素id(\$.data[*].id)
\$.config.intervalWidth	double	控制置信区间的宽度,即算法结
\$.comig.intervalwidth	o double	果上下界宽度,默认0.8
		比较类型:大于上界-GT_UPPER
\$.config.compareType	String	、小于下界-LT_LOWER、大于
\$.config.compareType	String	shiyo2 上界或小于下界-shiyo2
3.		OUT_OF_RANGE

	URI	/srv-detector/anomaly-detection/que	ry-range A. F.	
	Method	PSOT	1102	
	shiyo	{ shiye	shiyo	
		"fitWindow": "12h",		
一品昌		"config": {	4	
<b></b>		"algorithmParadigmId": "comn	non_paradigms",	时盈晨
shiyc2		"intervalWidth": 0.8,	ANGE	shiyc2
211.		"compareType": "OUT_OF_RA	ANGE",	
		"queryConfig": {		
	时盈晨	"metricCode": "cpu.usage", "aggreType": "AVG",	时盈晨	
	出了	"groupBys":[	出.) III.	
	shiyc2	" res ip",	shiyc2	
		res_np , " res_model"		
		1		
寸盈晨		时盈是 "selectConditions": [付盈是		时盈晨
				shiyc2
shiyc2		shiyc2		shiyoz
		"editorMode": "builder"		
	Request	)		
	时盈晨	"type": "ANOMALY_DETEC	TION",力温尼	
	shiyc2	"alertCriteria";	shiyc2	
	SUL	{ Shi }	SULA	
		"level": "CRITICAL",		
四昌		"triggerCount": 1,		
†盈晨		时盈是 "logical": "AND",对盈晨		时盈晨
shi)c2		shiyo2 "conditions": [ shiyo2		shiyc2
		}		
		"operator": "EQUAL		
	时盈晨	"value": 1	时盈晨	
	H.J BIEL	7	H.) DEE	
	shiyc2	l shiyc2	shiyc2	
		},		
		)		
付盈晨		"level": "MAJOR", "triggerCount": 1,		时盈晨
		"logical": "AND",		shiyc2
shiyez		shiyo iogioui . Iii ib , shiyo		shiyo

```
时盈辰
                          "conditions": [
                              "operator": "EQUAL",
                               "value": null
                shiyc2},
                          "level": "MODERATE",
                          "triggerCount": 1,
                          "logical": "AND",
                          "conditions": [
                               "operator": "EQUAL",
                               "value": null
                                          时盈晨
                          ]
                          "level": "MINOR",
                          "triggerCount": 1,
                          "logical": "AND",
                          "conditions": [
                               "operator": "EQUAL",
                               "value": null时量
                          ]
                     ],
                      "noDataTriggerCount": 1,
                      "noDataLevel": null,
                      "resolveTriggerCount": 1,
                     "abnormalDuration": "1"
               "execInterval": "1m"
                   "msg": "处理成功!",
                   "body": [ <sub>时</sub>盈晨
                          "metric": {
                            "_res_ip": "192.168.202.3",
                            " res model": "Switch"
Response
                          "values": [
                               "1734542940.0": "3.0"
                             州盈辰
                              "1734543240.0": "3.0"
                                            shiy
                                                                       shiy
```

```
时盈晨
时盈辰
                          "metric": {
                             " res ip": "192.168.202.4",
                             " res model": "Switch"
                          },
"values": [
                               "1734543060.0": "3.0"
                               "1734543360.0": "3.0"
                             村盈辰
                          ]
                       },
                          "metric": {
                             " res ip": "192.168.235.10",
                            "_res_model": "OS"
                          },
"values": [
                               "1734543000.0": "1.0"
                               "1734543300.0": "1.0"
               shiye2}
                     ],
                     Ī
                          "metric": {
                             " name__": "_model_output_y",
                             " res ip": "192.168.202.3",
                             " res model": "Switch"
                          "values": [
                               "1734542940.0": "3.0"
                             },
                               "1734543240.0": "3.0"
                             } shiyoZ
                        },
                          "metric": {
                            "__name__": "_model_output_yhat",
"_res_ip": "192.168.202.3",
                             " res model": "Switch"
                          },
"values": [
                               "1734542940.0": "1.0"
                             },
                               "1734543240.0": "1.0"
                  iyc2
```

```
时盈辰
                                                     时盈辰
                        」时盈辰
                        "metric": {
                          " name ": " model output yhat lower",
                                                                  时盈晨
                          " res ip": "192.168.202.3",
                          " res model": "Switch"
                       },
"values": [
                            "1734542940.0": "0.9999999987394873"
                            "1734543240.0": "0.9999999986925525"
              shiyc2},
                        "metric": {
                          " name ": " model output yhat upper",
                          " res ip": "192.168.202.3",
                          " res model": "Switch"
                        "values": [
                            "1734542940.0": "1.0000000013235644"
                            "1734543240.0": "1.0000000013043118"
                       ] 时盈晨
                        "metric": {
                          "__name__": "_model_output_anomaly_score",
" res_in": "192.168.202.3".
                          " res ip": "192.168.202.3",
                          " res model": "Switch"
                       },
"values": [
                            "1734542940.0": "1547941451.3578053"
                            "1734543240.0": "1531534728.9098954"
              shiyc2}
                   ]
                 "httpStatusCode": 200
shiyc2
```

创建监控器告警规则 5.1.3.3.

西島	字段	类型	描述	The last
町笽ル	盯血。	时	血ル	的血质

	时盈晨	时盈晨	规则类型, 此处算法异常检测
	\$.type	String	type值为
	511.7	511.	ANOMALY_DETECTION
			规则类型,此处算法异常检测
时盈息	\$.config.type	String	时盈晨 type值为 时盈晨
1-11	2		ANOMALY_DETECTION
SUI)	\$.config.algorithmParadigmId	String	算法范型id,值为7.1.3.1算法范型
	\$.comig.argoriumii aradigiind	String	接口的列表元素id(\$.data[*].id)
	\$.config.intervalWidth	时型。	控制置信区间的宽度,即算法结
	\$.comg.intervalwidin	wardouble	果上下界宽度,默认0.8
	SHIA	SHIJO	比较类型:大于上界-GT_UPPER
	\$.config.compareType	String	、小于下界-LT LOWER、大于
时風馬	\$.comig.compare Type	String	上界或小于下界- 从
H.3 TI	2		OUT_OF_RANGE
SHIN,	shiyo		shiyo

	URI	/srv-monitor/monitor-strategy/add		
	Method	PSOT		
	时监风	时	时监风	
	shiyc2	"resType": "PhysicalServer",	shiyc2	
	51111	"name": "qweqwe",		
		"defaultType": 0,		
拉温晨		"desc": null, "resIds": null,		时盈晨
.7 1111		"resIds": null,		H.1 mm.
shiyc2		"resGroupIds": null, shiyo2		shiyc2
		rules . [		
	_ =	"metricCode": "cpu.usage",	- =	
	时盈晨	"status": 1,	时盈晨	
	shiyc2	"metricName": "CPU利用率",		
	SIII	"config": {	SIII	
		"algorithmParadigmId": "as	dasdasdas",	
加晨		"intervalWidth": 0.8,	,	时盈晨
J min		"compareType": "OUT_OF	_RANGE",	村门 西下。
shiyc2		"queryConfig": { shive?		shiyc2
	Request	"metricCode": "cpu.usage	e",	
	•	"aggreType": "AVG",		
	时盈晨	"groupBys": [	时盈晨	
	shiyc2	"_res_ip", " res_model"	shiyc2	
	SILLS	<u>sylles_model</u>	SILL	
		"selectConditions": [		
盈晨		时盈晨 {   label  :    res. in		时盈晨
) in o		"label": " res ip",		的画
shiyc2		"label": "_res_ip", "value": "192.168.20	)2.3",	shiyc2
		"logic": "AND",		
		"op": "EQUAL"		
	时盈晨	1 温晨	时盈晨	
	shiyc2	],	shiyc2	
	shiji	"editorMode": "builder"	Shire	
		}, "type": "ANOMALV DETI	ECTION"	
四晨		"type": "ANOMALY_DETI	LCTION,	
拉图表		时盈晨 "alertCriteria": [ 时盈晨		时盈晨
shiyc2		chiyo2		shiyo2

```
时盈辰
时盈辰
                           "level": "CRITICAL",
                           "triggerCount": 1,
                           "logical": "AND",
                           "conditions": [
                               "operator": "EQUAL",
                               "value": 1
                           ]
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                           "triggerCount": 1,
                           "logical": "AND",
                           "conditions": [
                               "operator": "EQUAL",
                               "value": null
                           "level": "MODERATE",
                           "triggerCount": 1,
                           "logical": "AND",
                           "conditions":
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                               "value": null
                         时盈晨
                           "level": "MINOR".
                           "triggerCount": 1,
                           "logical": "AND",
                           "conditions": [hive2
                               "operator": "EQUAL",
                         r Stator": "!
"value": null
                       "noDataTriggerCount": 1,
                       "noDataLevel": null,
                       "resolveTriggerCount": 1,
                       "abnormalDuration": "1"
                    "unit": "%".
                    "metricType": 2,
                    "description": "CPU利用率是指在一定时间内,CPU执行
              指令的比率。它通常用来衡量系统计算资源的使用情况",
                    "execInterval": "1m",
            "alertTemplateConfig": {
                       "type": 0,
```

时盈辰 shiyc2

shiyc2

shiyc2

时盈辰 shiyc2 时盛辰 shiyc2

```
时盈辰
                        "alert": "${resource.typeName}(名称:
               ${resource.name}, IP: ${resource.ip}), ${query.metricName}
               触发【${rule.level}】告警,最近值为${rule.result}。",
                        "resolve": "${resource.typeName}(名称:
              ${resource.name}, IP:${resource.ip}), ${query.metricName}
               告警【${rule.level}】,最近值为${rule.result}。",
                        "noData": "${resource.typeName}(名称:
               \label{eq:control_solution} $\{\mbox{resource.ip}\}) \;, \quad $\{\mbox{query.metricName}\}$
               的最近数据为空,触发【${rule.level}】告警。"
                      "type": "ANOMALY_DETECTION", Volume
                      "delayConfig": {
             时盈晨 },
              shijy&2
                  "monitoringPeriodConfig": [
                      "dayOfWeeks": [
                        "MONDAY"
                        "TUESDAY".
                        "WEDNESDAY".
                        "THURSDAY".
                        "FRIDAY"
                        "SATURDAY",
                        "SUNDAY"
                      "startTime": "00:00",
                      "endTime": "23:59"
                    }
                  "dataType": 0,
                 "status": 0
                                                                时盈晨
                                      时盈晨
                                        shiyc2
                  "code": 0,
                 "msg": "成功",
Response
                  "data": {}
                                                    shiyc2
```

#### 编辑监控器告警却皿 5.1.3.4

	3.1.3	.4. 编辑血红的口言观则		
=	URI	/srv-monitor/monitor-strategy/edit		_ =
K	Method	PSOT 时盈辰		时盈辰
c2		"resType": "PhysicalServer",		shiyc2
		"name": "qweqwe",		
		"defaultType": 0,		
	时盈晨	"desc": null,	时盈晨 shiyc2	
	Request	"resIds": null, 102	bivc2	
	57113	"resGroupIds": null,	5///3	
		"rules": [		
į.		"metricCode": "cpu.usage",		时盈晨
c2		"status": 1,		-hivc2

shiyc2

"metricName": "CPU利用率", "config": { "algorithmParadigmId": "asdasdasdas", "intervalWidth": 0.8, "compareType": "OUT OF RANGE", "queryConfig": {\mathbb{W} "metricCode": "cpu.usage", "aggreType": "AVG", "groupBys": [ " res ip", " res model" "selectConditions": [ "label": " res\_ip", "value": "192.168.202.3", "logic": "AND", 2 "op": "EQUAL" "editorMode": "builder" "type": "ANOMALY\_DETECTION", "alertCriteria": [ "level": "CRITICAL". "triggerCount": 1, 02 "logical": "AND", "conditions": [ "operator": "GT", shiyd'value": 80 ] }, c2 "level": "MAJOR", "triggerCount": 1, "logical": "AND", "conditions": [ shive operator": "GT", "value": null ] }, "level": "MODERATE", "triggerCount": 1, "logical": "AND", "conditions": [ shill G "operator": "GT", "value": null 时盈晨 } ] shiyc2 shiyc2

```
时盈辰
                          "level": "MINOR",
                          "triggerCount": 1,
                          "logical": "AND",
                          "conditions": [
                              "operator": "GT",
                              "value": null
                      "noDataTriggerCount": 1,
                      "noDataLevel": null,
                      "resolveTriggerCount": 1,
                      "abnormalDuration": "1"
             shiyo2},
"unit": "%",
                   "metricType": 2,
                   "description": "CPU利用率是指在一定时间内, CPU执行
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                    "execInterval": "1m",
                    "alertTemplateConfig": {
                      "type": 0,
                     "alert": "${resource.typeName}(名称:
             ${resource.name}, IP:${resource.ip}), ${query.metricName}
             触发【${rule.level}】告警,最近值为${rule.result}。",
                      "resolve": "${resource.typeName}(名称:
             ${resource.name}, IP: ${resource.ip}), ${query.metricName}
             告警【${rule.level}】,最近值为${rule.result}。",
                      "noData": "${resource.typeName}(名称:
             ${resource.name}, IP:${resource.ip}), ${query.metricName}
             的最近数据为空,触发【${rule.level}】告警。"
                   "type": "ANOMALY DETECTION",
                   "delayConfig": {
                    "id": "1869209345426874369"
               "monitoringPeriodConfig": [
            时盈局
                   "dayOfWeeks": [
                      "MONDAY"
                      "TUESDAY"
                      "WEDNESDAY".
                      "THURSDAY",
                      "FRIDAY",
                      "SATURDAY",
                      "SUNDAY"
                   "startTime": "00:00",大温晨
                   "endTime": "23:59"
```

时盈晨		时盈晨		时盈晨		时盈晨	
shiyc2		shiyc2		shiyc2		shiyc2	
	时盈晨	}	时盈晨		时盈晨		时盈局
	shiyc2	1a : 1	/pe":0, 86920934536	2460674",	shiyc2		shiy
时盈晨		"status"	: 0	时盈晨		时盈晨	
shi)c2	Response	"code": "msg": "data":	"成功",	shiyc2	时盈晨	shiyc2	时盈息
	时益加 shiyc2	}	时益/2		的益//shiyc2		的篇》 shi
时盈晨	5.2. 前端 5.2.1. 指标 如果	是当前告警规则				口除了根据表	
shiyc2	达式查询指标, 5.2.2. 创建	企需要查询 建规则相关页面	ī	shiyc2		shiyc2	
	时盈晨 shiyc2		时盈晨 shiyc2		时盈晨 shiyc2		时盈5 shi)
时盈晨 shiyc <sup>2</sup>		时盈晨 shiyc2		时盈晨 shiyc2		时盈晨 shiyc2	
shiyo		shiyo		shiyo		shiyo	
	时盈晨		时盈晨		时盈晨		时盈息
	shiyc2		shiyc2		shiyc2		
时盈晨		时盈晨		时盈晨		时盈晨	
shiyc2		shiyc2		shiyc2		shiyc2	
	时盈晨		时盈晨		时盈晨		时盈息
	shiyc2		shiyc2		shiyc2		
时盈晨		时盈晨		时盈晨		时盈晨	
shiyc2		shiyc2		shiyc2		shiyc2	
	时盈晨		时盈晨		时盈晨		时盈息
	shiyc2		shiyc2		shiyc2		
时盈晨		时盈晨		时盈晨		时盈晨	
shiyc2		shiyc2		shiyc2		shiyc2	
	时盈晨		时盈晨		时盈晨		时盈息
	shiyc2		shiyc2		shiyc2		