

AIOVP 自动添加功能

一、前言

数据库性能往往在一些特殊应用执行时会出现波动，或特定的活动时会出现 CPU 峰值，导致性能表现受影响。有一部份原因是出现大量 IO，瞬间有比较多的数据页需要读出或写入。因此 SinoDB 设计了自动添加 AIOVP 的功能，目的就是为因应突然的大量 IO，当 IO 负载过重时，系统自动判断，添加 AIOVP 消化 IO，保障性能。

二、测试

1. onconfig 参数档有一个特别参数配置 AUTO_TUNE，它是一个总开关，开启后，以下各自动化参数才生效，包括：

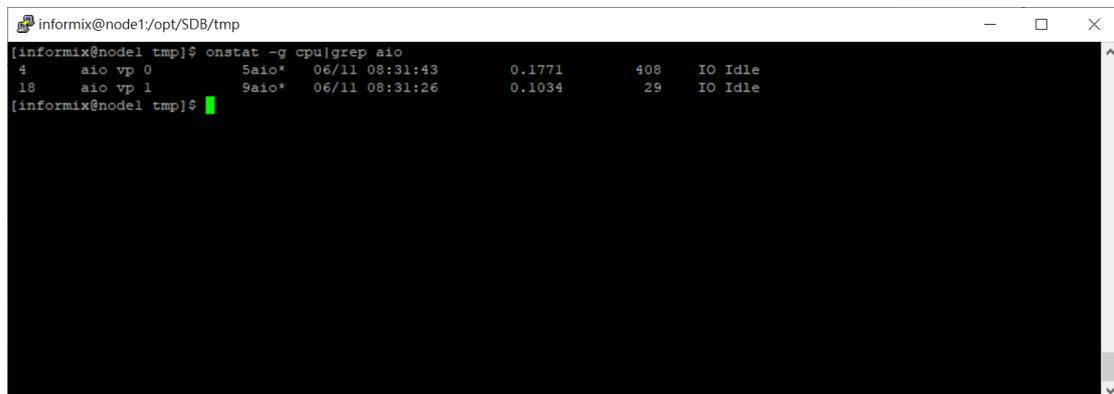
- AUTO_AIOVPS
- AUTO_CKPTS
- AUTO_LRU_TUNING
- AUTO_READAHEAD
- AUTO_REPREPARE
- AUTO_STAT_MODE

2. 将以下两个参数配置为 1

```
AUTO_TUNE 1
```

```
AUTO_AIOVPS 1
```

- 数据库启动后，发现有两个 aiovp 运行，因为目前有两个 chunk，aiovp 启动数和 chunk 个数相同



```
informix@node1:/opt/SDB/tmp
[informix@node1 tmp]$ onstat -g cpu|grep aio
 4   aio vp 0      5aio*  06/11 08:31:43    0.1771    408    IO Idle
18   aio vp 1      9aio*  06/11 08:31:26    0.1034    29     IO Idle
[informix@node1 tmp]$
```

```
informix@node1:/opt/SDB/etc
[informix@node1 etc]$ onstat -d
Sinoregal SinoDB Dynamic Server Version 12.10.FC8 -- On-Line -- Up 00:04:09 -- 75340 Kbytes

Dbspaces
address      number  flags      fchunk  nchunks  pgsize  flags  owner  name
44b6f028     1      0x20001    1       1        2048   N BA   informix rootdbs
44c83660     2      0x28001    2       1        2048   N SBA  informix sbspace
  2 active, 2047 maximum

Chunks
address      chunk/dbs  offset  size  free  bpages  flags  pathname
44b6f268     1 1      0     150000 42700  PO-B-- /opt/SDB/autodb/rootdbs
45b53028     2 2      0     5000   4474   POSB-- /opt/SDB/autodb/sbspace_000
  2 active, 32766 maximum

NOTE: The values in the "size" and "free" columns for DSpace chunks are
      displayed in terms of "pgsize" of the DSpace to which they belong.

Expanded chunk capacity mode: always

[informix@node1 etc]$
```

3. 制造 IO

- 利用 demo 数据库中的 customer 表，建立 customer2 表并删除 PK

```
create table customer2
(
    customer_num          serial(101),
    fname                 char(15),
    lname                 char(15),
    company               char(20),
    address1              char(20),
    address2              char(20),
    city                  char(15),
    state                 char(2),
    zipcode               char(5),
    phone                 char(18)
);
```

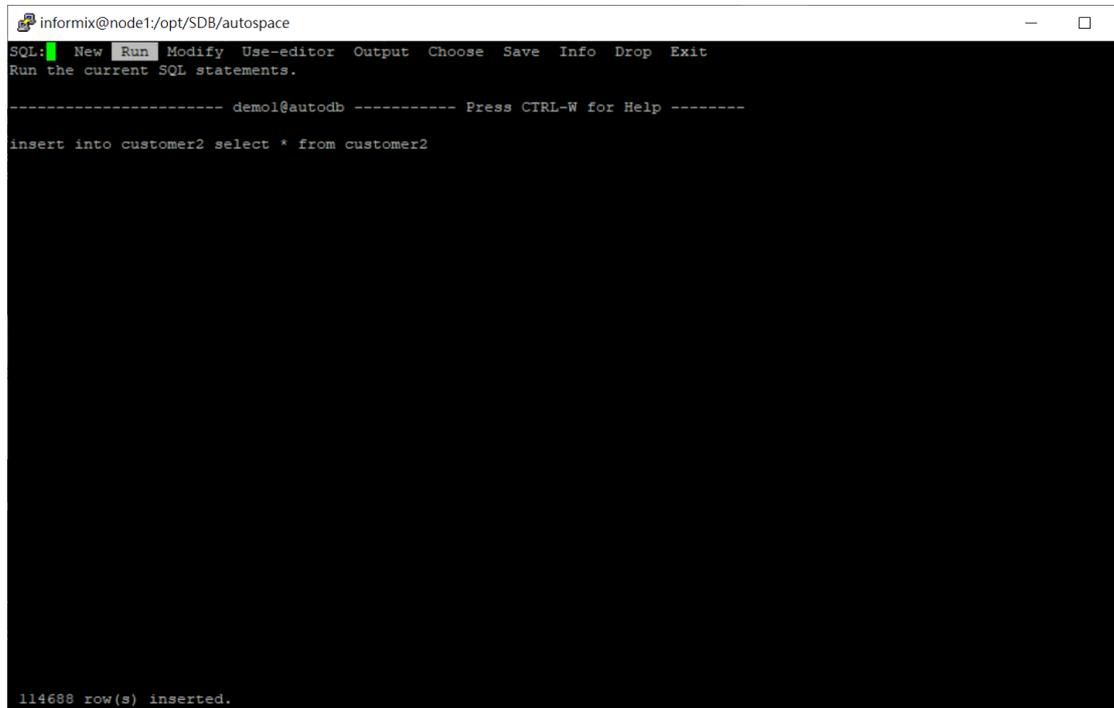
- 插入数据

```
insert into customer2 select * from customer;
```

- 倍增数据

```
insert into customer2 select * from customer2;
```

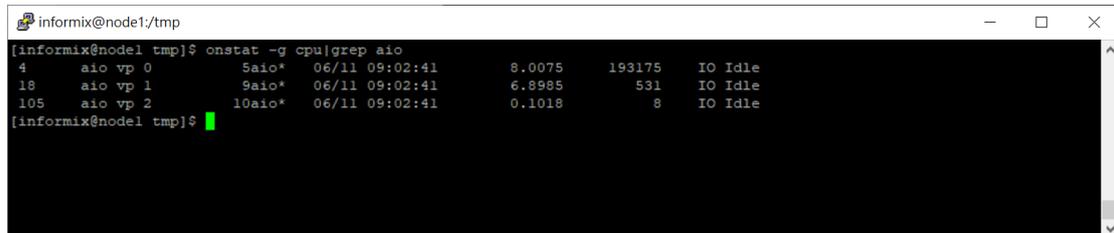
重复执行下列 SQL，倍增数据，大约执行到第 9 或 10 次，发生 AIOVP 自动增加



```
informix@node1:/opt/SDB/autospace
SQL: New Run Modify Use-editor Output Choose Save Info Drop Exit
Run the current SQL statements.
----- demol@autodb ----- Press CTRL-W for Help -----
insert into customer2 select * from customer2

114688 row(s) inserted.
```

- AIOVP 自动添加



```
informix@node1:/tmp
[informix@node1 tmp]$ onstat -g cpulgrep aio
4      aio vp 0      Saio*  06/11 09:02:41      8.0075      193175      IO Idle
18     aio vp 1      Saio*  06/11 09:02:41      6.8985      531        IO Idle
105    aio vp 2      10aio* 06/11 09:02:41      0.1018      8          IO Idle
[informix@node1 tmp]$
```