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# SAP 微软云服务器 启动指导手册

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## 一、启动前准备工作

您好，在启动 SAP 微软云服务器前，请保证虚拟机以及开启相关端口，具体端口列表见附件。另外需要您根据下文步骤，做相关准备工作。

### 1、检查用户

- 1) 通过 SSH 端口连接您的虚拟机。

用户名: sapuser

密码: 1q2w3e4R

- 2) 连接后，请使用命令 **sudo su root**，将用户切换到 root 用户，密码与 sapuser 用户一致。

```
Have a lot of fun!
sapuser@sapsvr03:~> sudo su root
sapuser's password:
sapsvr03:/home/sapuser #
```

- 3) 然后，使用命令 **more /etc/passwd**，检查系统中是否存在以下三个用户：

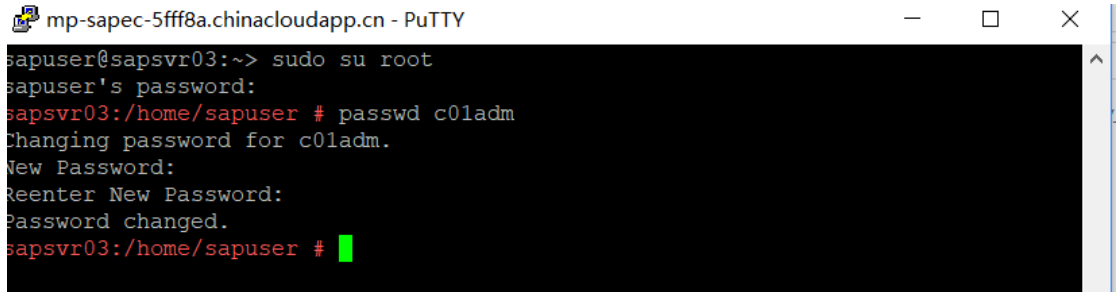
- C01adm
- Orac01
- Sapadm

```
sapsvr03:/home/sapuser # more /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/bin/bash
daemon:x:2:2:Daemon:/sbin:/bin/bash
lp:x:4:7:Printing daemon:/var/spool/lpd:/bin/bash
mail:x:8:12:Mailer daemon:/var/spool/clientmqueue:/bin/false
games:x:12:100:Games account:/var/games:/bin/bash
wwwrun:x:30:8:WWW daemon apache:/var/lib/wwwrun:/bin/false
ftp:x:40:49:FTP account:/srv/ftp:/bin/bash
nobody:x:65534:65533:nobody:/var/lib/nobody:/bin/bash
man:x:13:62:Manual pages viewer:/var/cache/man:/bin/bash
news:x:9:13:News system:/etc/news:/bin/bash
uucp:x:10:14:Unix-to-Unix CoPy system:/etc/uucp:/bin/bash
messagebus:x:100:102:User for D-Bus:/var/run/dbus:/bin/false
polkituser:x:101:103:PolicyKit:/var/run/PolicyKit:/bin/false
haldaemon:x:102:104:User for haldaemon:/var/run/hald:/bin/false
uidd:x:103:105:User for uidd:/var/run/uidd:/bin/false
at:x:25:25:Batch jobs daemon:/var/spool/atjobs:/bin/bash
postfix:x:51:51:Postfix Daemon:/var/spool/postfix:/bin/false
sshd:x:104:106:SSH daemon:/var/lib/ssh:/bin/false
puppet:x:105:107:Puppet daemon:/var/lib/puppet:/bin/false
ntp:x:74:108:NTP daemon:/var/lib/ntp:/bin/false
suse-ncc:x:106:109:Novell Customer Center User:/var/lib/YaST2/suse-ncc-fakehome:/bin/bash
sapuser:x:1000:100::/home/sapuser:/bin/bash
pulse:x:107:110:PulseAudio daemon:/var/lib/pulseaudio:/bin/false
gdm:x:108:112:Gnome Display Manager daemon:/var/lib/gdm:/bin/false
c01adm:x:301:301:SAP System Administrator:/home/c01adm:/bin/csh
orac01:x:302:302:SAP Database Administrator:/oracle/C01:/bin/csh
sapadm:x:303:301:SAP System Administrator:/home/sapadm:/bin/false
sapsvr03:/home/sapuser #
```



4) 切换到 root 用户，使用 **passwd** 用户名 命令重置如下用户的密码：

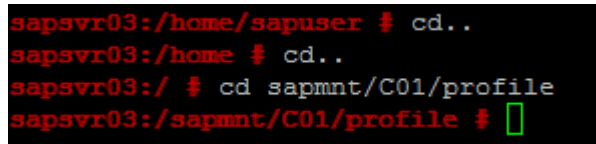
- C01adm
- Orac01
- Sapadm



```
mp-sapcc-5fff8a.chinacloudapp.cn - PuTTY
sapuser@sapsvr03:~> sudo su root
sapuser's password:
sapsvr03:/home/sapuser # passwd c01adm
Changing password for c01adm.
New Password:
Reenter New Password:
Password changed.
sapsvr03:/home/sapuser # █
```

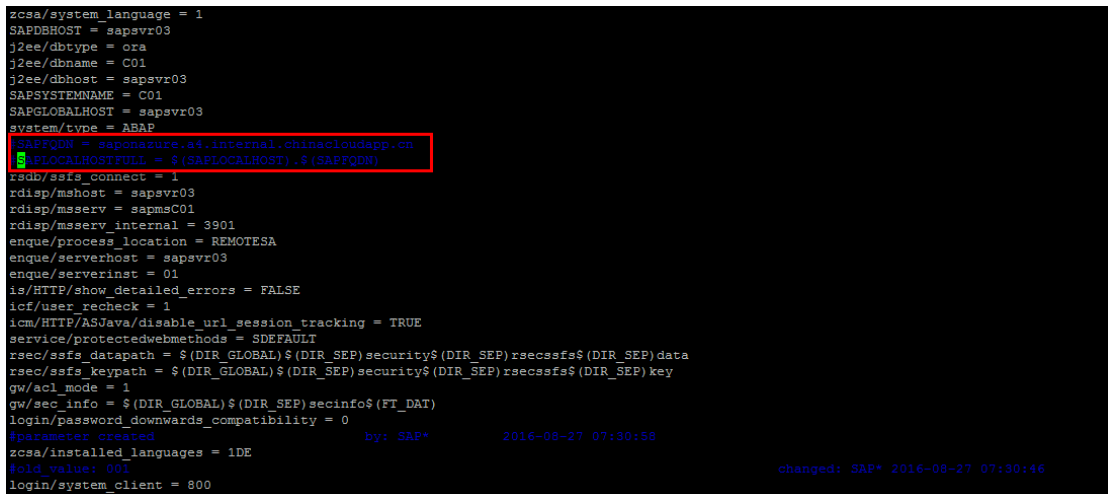
## 2、调整参数文件

1) 使用命令 **cd..**退至到根目录下，再使用命令 **cd sapmnt/C01/profile**，至目录下。



```
sapsvr03:/home/sapuser # cd..
sapsvr03:/home # cd..
sapsvr03:/ # cd sapmnt/C01/profile
sapsvr03:/sapmnt/C01/profile # █
```

2) 在目录下，使用命令 **vi DEFAULT.PFL**，修改参数文件，找到相应位置，用**#**注释如下参数。



```
zcsa/system_language = 1
SAPDBHOST = sapsvr03
j2ee/dbtype = ora
j2ee/dbname = C01
j2ee/dbhost = sapsvr03
SAPSYSTEMNAME = C01
SAPGLOBALHOST = sapsvr03
system/type = ABAP
SAPFQDN = sapccsura.a4.internal.chinacloudapp.cn
SAPLOCALHOSTFULL = $(SAPLOCALHOST).$(SAPFQDN)
rsdb/ssfs_connect = 1
rdisp/mshost = sapsvr03
rdisp/meserv = sapmsC01
rdisp/meserv_internal = 3901
enque/process_location = REMOTESA
enque/serverhost = sapsvr03
enque/serverinst = 01
is/HTTP/show_detailed_errors = FALSE
icf/user_recheck = 1
icm/HTTP/ASJava/disable_url_session_tracking = TRUE
service/protectedwebmethods = SDEFAULT
rsec/ssfs_datapath = $(DIR_GLOBAL)$ (DIR_SEP) security$ (DIR_SEP) rsecssfs$ (DIR_SEP) data
rsec/ssfs_keypath = $(DIR_GLOBAL)$ (DIR_SEP) security$ (DIR_SEP) rsecssfs$ (DIR_SEP) key
gw/acl_mode = 1
gw/sec_info = $(DIR_GLOBAL)$ (DIR_SEP) secinfo$ (FT_DAT)
login/password_downwards_compatibility = 0
parameter created by: SAP* 2016-08-27 07:30:58
zcsa/installed_languages = 1DE changed: SAP* 2016-08-27 07:30:46
old value: 001
login/system_client = 800
```



## 二、启动 SAP 系统

### 1、检查进程及调整 hosts 文件

- 1) 请分别使用命令 `ps -ef|grep ora` 和命令 `ps -ef|grep sap`，来查看相关的进程。以下结果显示 oracle 监听和进程以及 SAP 进程均未启动。

```
sapsvr03:/sapmnt/C01/profile # ps -ef|grep ora
root      1444  1326  0 15:29 ?        00:00:00 hald-addon-storage: no polling on /dev/fd0 because it is explicitly disabled
root      3979  3823  0 15:59 pts/0    00:00:00 grep  ora
sapsvr03:/sapmnt/C01/profile # ps -ef|grep sap
root      2513      1  0 15:29 ?        00:00:00 /sbin/dhclient --netconfig -L -E -HHH -c /etc/sysconfig/network/scripts/dhclient-hook -t 0 -h sapsvr03 eth0
root      3083      1  0 15:29 ?        00:00:00 /usr/sap/hostctrl/exe/saphostexec pf=/usr/sap/hostctrl/exe/host_profile
sapadm    3118      1  0 15:29 ?        00:00:00 /usr/sap/hostctrl/exe/sapstarterv pf=/usr/sap/hostctrl/exe/host_profile -D
root      3236      1  0 15:29 ?        00:00:00 /usr/sap/hostctrl/exe/saposcol -l -w60 pf=/usr/sap/hostctrl/exe/host_profile
c01adm    3326      1  0 15:29 ?        00:00:00 /usr/sap/C01/ASCS01/exe/sapstarterv pf=/usr/sap/C01/SYS/profile/C01_ASCS01_sapsvr03 -D -u c01adm
root      3541      1  0 15:29 ?        00:00:03 /usr/sap/C01/DVEBMGS00/exe/sapstarterv pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03 -D -u c01adm
root      3794  2995  0 15:40 ?        00:00:00 sshd: sapuser [priv]
sapuser   3797  3794  0 15:40 ?        00:00:00 sshd: sapuser@pts/0
sapuser   3798  3797  0 15:40 pts/0    00:00:00 -bash
root      3981  3823  0 15:59 pts/0    00:00:00 grep  sap
sapsvr03:/sapmnt/C01/profile #
```

- 2) 请使用命令 `ifconfig` 查看此虚拟机的 IP 地址。

```
sapsvr03:/sapmnt/C01/profile # ifconfig
eth0      Link encap:Ethernet HWaddr 00:17:FA:00:1B:1C
          inet addr:10.10.0.4 Bcast:10.10.0.255 Mask:255.255.255.0
          inet6 addr: fe80::217:faff:fe00:1b1c/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:2577 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3135 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1089613 (1.0 Mb) TX bytes:461878 (451.0 Kb)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING MTU:16436 Metric:1
          RX packets:390 errors:0 dropped:0 overruns:0 frame:0
          TX packets:390 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:19500 (19.0 Kb) TX bytes:19500 (19.0 Kb)
```



- 3) 请使用命令 `vi /etc/hosts`, 编辑 hosts 文件, 在文件中键入虚拟机 IP 地址以及 sapsvr03 的主机名。

```
127.0.0.1    localhost

# special IPv6 addresses
::1         localhost ipv6-localhost ipv6-loopback

fe00::0     ipv6-localnet

ff00::0     ipv6-mcastprefix
ff02::1     ipv6-allnodes
ff02::2     ipv6-allrouters
ff02::3     ipv6-allhosts

# Added by SMT registration do not remove, retain comment as well
23.101.3.47  smt-azure.susecloud.net smt-azure
10.10.0.4    sapsvr03
```

## 2、启动 oracle 监听及 SAP 系统

- 1) 请使用命令 `su orac01`, 将用户切换到 orac01, 并使用命令 `lsnrctl start` 启动监听。

```
sapsvr03:/sapmnt/C01/profile # su orac01
HOSTNAME: Undefined variable.
sapsvr03:orac01 49> lsnrctl start

LSNRCTL for Linux: Version 11.2.0.4.0 - Production on 01-SEP-2016 16:07:04

Copyright (c) 1991, 2013, Oracle. All rights reserved.

Starting /oracle/C01/112_64/bin/tnslsnr: please wait...

TNSLSNR for Linux: Version 11.2.0.4.0 - Production
System parameter file is /oracle/C01/112_64/network/admin/listener.ora
Log messages written to /oracle/C01/saptrace/diag/tnslsnr/sapsvr03/listener/alert/log.xml
Listening on: (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=C01.WORLD)))
Listening on: (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=C01)))
Listening on: (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=sapsvr03) (PORT=1521)))

Connecting to (ADDRESS=(PROTOCOL=IPC) (KEY=C01.WORLD))
STATUS of the LISTENER
-----
Alias                LISTENER
Version              TNSLSNR for Linux: Version 11.2.0.4.0 - Production
Start Date           01-SEP-2016 16:07:13
Uptime                0 days 0 hr. 0 min. 6 sec
Trace Level          off
Security              ON: Local OS Authentication
SNMP                 OFF
Listener Parameter File /oracle/C01/112_64/network/admin/listener.ora
Listener Log File    /oracle/C01/saptrace/diag/tnslsnr/sapsvr03/listener/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=C01.WORLD)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=C01)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=sapsvr03) (PORT=1521)))
Services Summary...
Service "C01" has 1 instance(s).
  Instance "C01", status UNKNOWN, has 1 handler(s) for this service...
The command completed successfully
sapsvr03:orac01 50>
```

- 2) 请使用命令 `exit`, 退回到 root 用户, 然后再次使用 `su c01adm`, 切换到用户 c01adm, 并使用命令 `startsap` 启动 SAP 系统。



```
sapsvr03:/sapmnt/C01/profile # su c01adm
HOSTNAME: Undefined variable.
sapsvr03:c01adm 54> startsap
Checking C01 Database
Database is not available via R3trans
-----
Trying to start C01 database ...
Log file: /home/c01adm/startdb.log
C01 database started
Starting Startup Agent sapstartsrvt
OK
Instance Service on host sapsvr03 started
-----
starting SAP Instance ASCS01
Startup-Log is written to /home/c01adm/startsap_ASCS01.log
-----
/usr/sap/C01/ASC01/exe/sapcontrol -prot NI_HTTP -nr 01 -function Start
Instance on host sapsvr03 started
Starting Startup Agent sapstartsrvt
OK
Instance Service on host sapsvr03 started
-----
starting SAP Instance DVEBMGS00
Startup-Log is written to /home/c01adm/startsap_DVEBMGS00.log
-----
/usr/sap/C01/DVEBMGS00/exe/sapcontrol -prot NI_HTTP -nr 00 -function Start
Instance on host sapsvr03 started
sapsvr03:c01adm 55>
```

3) 启动完成后, 使用命令 `exit` 退回到 root 用户, 并使用命令 `ps -ef|grep sap`, 检查 SAP 进程情况。SAP 系统启动是否, 主要检查以下三项即可:

- ms 开头的进程
- en 开头的进程
- 大量的 dw 开头的进程

```
sapsvr03:c01adm 56> exit
exit
sapsvr03:/sapmnt/C01/profile # ps -ef|grep sap
root      2543      1  0 15:29 ?        00:00:00 /sbin/dmccp --netconfig -l -E -MHM -c /etc/sysconfig/network/scripts/dmccp-hook -t 0 -h sapsvr03 echo
root      3083      1  0 15:29 ?        00:00:00 /usr/sap/hostctrl/exe/saphostexec pf=/usr/sap/hostctrl/exe/host_profile
sapadm    3118      1  0 15:29 ?        00:00:00 /usr/sap/hostctrl/exe/sapstartsrvt pf=/usr/sap/hostctrl/exe/host_profile -D
root      3236      1  0 15:29 ?        00:00:01 /usr/sap/hostctrl/exe/saposcol -l -w60 pf=/usr/sap/hostctrl/exe/host_profile
c01adm    3286      1  0 15:29 ?        00:00:00 /usr/sap/C01/ASC01/exe/sapstartsrvt pf=/usr/sap/C01/SYS/profile/C01_ASCS01_sapsvr03 -D -u c01adm
c01adm    3541      1  0 15:29 ?        00:00:03 /usr/sap/C01/DVEBMGS00/exe/sapstartsrvt pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03 -D -u c01adm
root      3794 2995  0 15:40 ?        00:00:00 sshd: sapsvr [priv]
sapuser   3797 3794  0 15:40 ?        00:00:00 sshd: sapsvr@pta/0
c01adm    7986      1  0 15:40 pts/0    00:00:00 -bash
c01adm    8001 7986  0 16:11 ?        00:00:00 ms.sapC01_ASCS01 pf=/usr/sap/C01/SYS/profile/C01_ASCS01_sapsvr03
c01adm    8002 7986  0 16:11 ?        00:00:01 en.sapC01_ASCS01 pf=/usr/sap/C01/SYS/profile/C01_ASCS01_sapsvr03
c01adm    9467      1  0 16:12 ?        00:00:00 sapservr pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    9522 9467  0 16:12 ?        00:00:02 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    9523 9467  0 16:12 ?        00:00:00 ig.sapC01_DVEBMGS00 -mode=profile pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    9526 9523  0 16:12 ?        00:00:00 /usr/sap/C01/DVEBMGS00/exe/igsuex_mt -mode=profile -restartcount=0 -wpid=9523 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    9527 9523  0 16:12 ?        00:00:00 /usr/sap/C01/DVEBMGS00/exe/igsuex_mt -mode=profile -no=0 -restartcount=0 -wpid=9523 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    9528 9523  0 16:12 ?        00:00:00 /usr/sap/C01/DVEBMGS00/exe/igsuex_mt -mode=profile -no=1 -restartcount=0 -wpid=9523 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10340 9522  0 16:12 ?        00:00:00 gwrd -dp pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10341 9522  0 16:12 ?        00:00:00 icman -attach pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10342 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10343 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10344 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10345 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10346 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10347 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10348 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10349 9522  2 16:12 ?        00:00:06 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10350 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10351 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10352 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10353 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10354 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10355 9522  2 16:12 ?        00:00:07 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10356 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10357 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10358 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10359 9522  0 16:12 ?        00:00:03 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10360 9522  0 16:12 ?        00:00:01 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10361 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10362 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10363 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10364 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10365 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10366 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10367 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10368 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10369 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10370 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10371 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10372 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10373 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10374 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10375 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10376 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10377 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10378 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
c01adm    10379 9522  0 16:12 ?        00:00:00 dw.sapC01_DVEBMGS00 pf=/usr/sap/C01/SYS/profile/C01_DVEBMGS00_sapsvr03
root      10623 3893  0 16:17 pts/0    00:00:00 vi+ap sap
```

---

### 三、端口列表附件

名称	协议	公用端口	私有端口
<b>Tcp3200</b>	TCP	3200	3200

