

SUN CLUSTER 2.2 SERVER 端软件包安装过程

一、组网需求:

SUN服务器或者工作站两台

Solaris操作系统

SUN CLUSTER软件

二、组网图:

无

三、配置步骤:

适用于SUNOS以及SUN CLUSTER2.2版本

1. root@ha-host2 # ./scinstall

Installing: SUNWscins

安装<SUNWscins>成功

Checking on installed package state

.....

None of the Sun Cluster software has been installed

<<Press return to continue>>

==== Install/Upgrade Software Selection Menu =====

Upgrade to the latest Sun Cluster Server packages or select package

sets for installation. The list of package sets depends on the Sun

Cluster packages that are currently installed.

Choose one:

- 1) Upgrade Upgrade to Sun Cluster 2.2 Server packages
- 2) Server Install the Sun Cluster packages needed on a server
- 3) Client Install the admin tools needed on an admin workstation
- 4) Server and Client Install both Client and Server packages
- 5) Close Exit this Menu
- 6) Quit Quit the Program

Enter the number of the package set [6]: 2

What is the path to the CD-ROM image [/cdrom/cdrom0]:

Installing Server packages

Installing the following packages: SUNWscldb SUNWsc SUNWccd SUNWcmm SUNWff SUNWmond SUNWpnm SUNWscman SUNWscfb SUNWscmgr SUNWffx SUNWscldb SUNWmondx

>>>> Warning <<<<

The installation process will run several scripts as root. In addition, it may install setUID programs. If you choose automatic mode, the installation of the chosen packages will proceed without any user interaction. If you wish to manually control the install process you must choose the manual installation option.

Choices:

- manual Interactively install each package
- automatic Install the selected packages with no user interaction.

In addition, the following commands are supported:

- list Show a list of the packages to be installed
- help Show this command summary
- close Return to previous menu
- quit Quit the program

Install mode [manual automatic] [automatic]:

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

安装<SUNWscldb>成功

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

Modifying /etc/rpc

安装<SUNWsc>成功

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

安装<SUNWccd>成功

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

```
安装<SUNWcmm>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
Modifying /etc/devlink.tab
安装<SUNWff>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
Modifying /etc/inet/inetd.conf
Modifying /etc/inet/services
安装<SUNWmond>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWpnm>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWscman>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
处理软件包范例<SUNWscf>来自
</cdrom/cdrom/Sun_Cluster_2_2/Sol_2.8/Packages>
Sun Cluster Configuration Database
(sparc) 2.2,REV=2000.03.14.18.21
Copyright 2000 Sun Microsystems, Inc. All rights reserved.
Copyright 2000 Sun Microsystems, Inc. Tous droits
使用</>作为包的基本目录
## 正在处理软件包信息.
## 正在处理系统信息.
软件包路径名已经正确地安装
## 检查软件包的从属性
安装Sun Cluster Configuration Database成为<SUNWscf>
##正在安装1部分- 1.
/etc/init.d/rootreserve
/etc/opt/SUNWcluster/conf/TEMPLATE.cdb
/etc/opt/SUNWcluster/conf/ccd.TEMPLATE.init
/etc/opt/SUNWcluster/conf/cdb.filter
/etc/opt/SUNWcluster/conf/dataservices
/etc/opt/SUNWcluster/conf/ha.ccd
/opt/SUNWcluster/bin/dns_sync_wrapper
/opt/SUNWcluster/bin/nshttp_sync_wrapper
/opt/SUNWcluster/bin/nsmail_sync_wrapper
/opt/SUNWcluster/bin/nsnews_sync_wrapper
[ 确认类别<none> ]
/etc/rc0.d/K60rootreserve <链接的路径名>
/etc/rc2.d/S27rootreserve <链接的路径名>
Modifying /etc/group
[ 确认类别<sed> ]
## 执行预安装正文
安装<SUNWscf>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWscmgr>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWffx>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWscldb>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
安装<SUNWmondx>成功
    Checking on installed package state
    .....
Volume Manager Selection
Please choose the Volume Manager that will be used
on this node:
1) Cluster Volume Manager (CVM)
2) Sun StorEdge Volume Manager (SSVM)
3) Solstice DiskSuite (SDS)
Choose the Volume Manager: 2
-----WARNING-----
The Sun StorEdge Volume Manager (SSVM) will need to be
installed before the cluster can be started.
<<Press return to continue>>
```

What is the name of the cluster? sc-TEST  
How many potential nodes will sc-TEST have [4]? 2  
How many of the initially configured nodes will be active [2]? 2  
What type of network interface will be used for this configuration (ether[SCI]  
[SCI])? ether  
What is the hostname of node 0 [node0]? ha-host1  
What is ha-host1's first private network interface [hme0]? hme0  
What is ha-host1's second private network interface [hme1]? hme1  
You will now be prompted for ethernet addresses of  
the host. There is only one ethernet address for each host  
regardless of the number of interfaces a host has. You can get  
this information in one of several ways:  
1. use the 'banner' command at the ok prompt,  
2. use the 'ifconfig -a' command (need to be root),  
3. use ping, arp and grep commands. ('ping exxon; arp -a | grep exxon')  
Ethernet addresses are given as six hexadecimal bytes separated  
by colons. (ie, 01:23:45:67:89:ab)  
What is ha-host1's ethernet address? 8:0:20:\*.\*.\*\*.\*\*\*  
What is the hostname of node 1 [node1]? ha-host2  
What is ha-host2's first private network interface [hme0]? hme0  
What is ha-host2's second private network interface [hme1]? hme1  
You will now be prompted for ethernet addresses of  
the host. There is only one ethernet address for each host  
regardless of the number of interfaces a host has. You can get  
this information in one of several ways:  
1. use the 'banner' command at the ok prompt,  
2. use the 'ifconfig -a' command (need to be root),  
3. use ping, arp and grep commands. ('ping exxon; arp -a | grep exxon')  
Ethernet addresses are given as six hexadecimal bytes separated  
by colons. (ie, 01:23:45:67:89:ab)  
What is ha-host2's ethernet address? 8:0:20:\*.\*.\*\*.\*\*\*  
Will this cluster support any HA data services (yes/no) [yes]? no  
Performing Quorum Selection  
Checking node status...  
Checking host ha-host1 ...  
ha-host1 is alive  
One of the specified hosts is either unreachable or permissions  
are not set up or the appropriate software has not been installed  
on it. In this situation, it is not possible to determine the set  
of devices attached to both the hosts.  
Note that both private and shared devices for this host will be  
displayed in this node and the administrator must exercise extreme  
caution in choosing a suitable quorum device.  
Getting device information for host ha-host2  
This may take a few seconds to a few minutes...done  
Select quorum device for ha-host1 and ha-host2.  
Type the number corresponding to the desired selection.  
For example: 1  
1) DISK:c1t0d0s2:01178LB362  
2) DISK:c1t1d0s2:01178N8335  
3) DISK:c1t2d0s2:01188NH828  
4) DISK:c2t10d0s2:01188LX832  
5) DISK:c2t8d0s2:01178KD241  
6) DISK:c2t9d0s2:01178KB436  
Quorum device: 1  
Disk c1t0d0s2 with serial id 01178LB362 has been chosen  
as the quorum device.  
Finished Quorum Selection  
Installing ethernet Network Interface packages.  
What is the path to the CD-ROM image [/cdrom/cdrom0]:  
Installing the following packages: SUNWsma SUNWsmx  
Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages  
Modifying /etc/devlink.tab  
Modifying /etc/inet/services

```

Modifying /etc/inet/inetd.conf
... SUNWsmas: postinstall complete
安装<SUNWsmas>成功
Package directory: /cdrom/cdrom0/Sun_Cluster_2_2/Sol_2.8/Packages
... SUNWsmas: postinstall complete
安装<SUNWsmas>成功
    Checking on installed package state
.....
.....
===== Select Data Services Menu =====
Please select which of the following data services
are to be installed onto this cluster. Select singly,
or in a space separated list.
Note: Sun Cluster HA for NFS and Sun Cluster for Informix XPS
are installed automatically with the Server Framework
You may de-select a data service by selecting it
a second time.
Select DONE when finished selecting the configuration.
1) Sun Cluster HA for Oracle
2) Sun Cluster HA for Informix
3) Sun Cluster HA for Sybase
4) Sun Cluster HA for Netscape
5) Sun Cluster HA for Netscape LDAP
6) Sun Cluster HA for Lotus
7) Sun Cluster HA for Tivoli
8) Sun Cluster HA for SAP
9) Sun Cluster HA for DNS INSTALL
10) No Data Services
11) DONE
Choose a data service: 11
===== Main Menu =====
1) Install/Upgrade - Install or Upgrade Server
    Packages or Install Client Packages.
2) Remove - Remove Server or Client Packages.
3) Change - Modify cluster or data service configuration
4) Verify - Verify installed package sets.
5) List - List installed package sets.
6) Quit - Quit this program.
7) Help - The help screen for this menu.
Please choose one of the menu items: [7]: 6
===== Verify Package Installation =====
Installation
    All of the install packages have been installed
Framework
    None of the client packages have been installed
    All of the server packages have been installed
Communications
    All of the SMA packages have been installed
Data Services
    None of the Sun Cluster HA for Oracle packages have been installed
    None of the Sun Cluster HA for Informix packages have been installed
    None of the Sun Cluster HA for Sybase packages have been installed
    None of the Sun Cluster HA for Netscape packages have been installed
    None of the Sun Cluster HA for Netscape LDAP packages have been installed
    None of the Sun Cluster HA for Lotus packages have been installed
    None of the Sun Cluster HA for Tivoli packages have been installed
    None of the Sun Cluster HA for SAP packages have been installed
    None of the Sun Cluster HA for DNS packages have been installed
    None of the Sun Cluster for Oracle Parallel Server packages have been installed
root@ha-host2 #

```

**2.如果要安装数据库的模块，请参考以下ORACLE的例子**

```

===== Select Data Services Menu =====
Please select which of the following data services
are to be installed onto this cluster. Select singly,

```

or in a space separated list.

Note: Sun Cluster HA for NFS and Sun Cluster for Informix XPS are installed automatically with the Server Framework.

You may de-select a data service by selecting it a second time.

Select DONE when finished selecting the configuration.

- 1) Sun Cluster HA for Oracle
- 2) Sun Cluster HA for Informix
- 3) Sun Cluster HA for Sybase
- 4) Sun Cluster HA for Netscape
- 5) Sun Cluster HA for Netscape LDAP
- 6) Sun Cluster HA for Lotus
- 7) Sun Cluster HA for Tivoli
- 8) Sun Cluster HA for SAP
- 9) Sun Cluster HA for DNS INSTALL
- 10) No Data Services
- 11) DONE

Choose a data service: 1

==== Select Data Services Menu =====

Please select which of the following data services are to be installed onto this cluster. Select singly, or in a space separated list.

Note: Sun Cluster HA for NFS and Sun Cluster for Informix XPS are installed automatically with the Server Framework.

You may de-select a data service by selecting it a second time.

Select DONE when finished selecting the configuration.

INSTALL

- 1) Sun Cluster HA for Oracle
- 2) Sun Cluster HA for Informix
- 3) Sun Cluster HA for Sybase
- 4) Sun Cluster HA for Netscape
- 5) Sun Cluster HA for Netscape LDAP
- 6) Sun Cluster HA for Lotus
- 7) Sun Cluster HA for Tivoli
- 8) Sun Cluster HA for SAP
- 9) Sun Cluster HA for DNS
- 10) No Data Services
- 11) DONE

Choose a data service: 11

What is the path to the CD-ROM image [/cdrom/cdrom0]:

Installing Data Service packages.

Installing the following packages: SUNWscpro SUNWscds SUNWscsyb

>>>> Warning <<<<

The installation process will run several scripts as root. In addition, it may install setUID programs. If you choose automatic mode, the installation of the chosen packages will proceed without any user interaction. If you wish to manually control the install process you must choose the manual installation option.

Choices:

- manual Interactively install each package
- automatic Install the selected packages with no user interaction.

In addition, the following commands are supported:

- list Show a list of the packages to be installed
- help Show this command summary
- close Return to previous menu
- quit Quit the program

Install mode [manual automatic] [automatic]:

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

安装<SUNWscpro>成功

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

安装<SUNWscds>成功

Package directory: /cdrom/cdrom0/Sun\_Cluster\_2\_2/Sol\_2.8/Packages

Purified ccd file written to /etc/opt/SUNWcluster/conf/ccd.database.pure

There were 0 errors found.

安装<SUNWscora>成功

Checking on installed package state

.....

===== Main Menu =====

1) Install/Upgrade - Install or Upgrade Server

Packages or Install Client Packages.

2) Remove - Remove Server or Client Packages.

3) Change - Modify cluster or data service configuration

4) Verify - Verify installed package sets.

5) List - List installed package sets.

6) Quit - Quit this program.

7) Help - The help screen for this menu.

Please choose one of the menu items: [7]: 6

==== Verify Package Installation =====

Installation

All of the install packages have been installed

Framework

None of the client packages have been installed

All of the server packages have been installed

Communications

All of the SMA packages have been installed

Data Services

All of the Sun Cluster HA for Oracle packages have been installed

None of the Sun Cluster HA for Informix packages have been installed

None of the Sun Cluster HA for Sybase packages have been installed

None of the Sun Cluster HA for Netscape packages have been installed

None of the Sun Cluster HA for Netscape LDAP packages have been installed

None of the Sun Cluster HA for Lotus packages have been installed

None of the Sun Cluster HA for Tivoli packages have been installed

None of the Sun Cluster HA for SAP packages have been installed

None of the Sun Cluster HA for DNS packages have been installed

None of the Sun Cluster for Oracle Parallel Server packages have been installed

root@ha-host2 #

### 3.配置NAFO(Network Adapter Fail Over, 主备机都要做)

运行以下命令:

root@ha-host2 # /opt/SUNWpnm/bin/pnmset

In the following dialog, you will be prompted to configure public network management.

do you want to continue ... [y/n]: y

How many NAFO backup groups on the host [1]: 1

Enter backup group number [0]: 0

Please enter all network adapters under nafo0:

hme0

The following test will evaluate the correctness of the customer

NAFO configuration...

name duplication test passed

Check nafo0... < 20 seconds

hme0 is active

remote address = 10....

test hme0 wait...

nafo0 test passed

NAFO配置结束。

### 4.配置逻辑主机 (只在主用机上做一次就可以了)

4.1启动Cluster

4.2在主用机上运行以下命令, 启动Cluster

ha-host1@root# scadmin startcluster ha-host1 sc-TEST

4.3在备用机上运行以下命令, 加入Cluster

ha-host1@root# scadmin startnode

4.4在主用机上运行以下命令, 配置逻辑主机及相关信息

ha-host1@root# sconfg sc-TEST -L ha-TEST -n ha-host1,ha-host2 -g datdg -i hme0,hme0,han2000 -m

4.5在主/备用机上运行以下命令, 配置文件管理系统

```
ha-host1@root# sscnf sc-TEST -F ha-TEST
```

4.6在主/备用机上修改双机共享存储挂接配置文件:

修改文件/etc/opt/SUNWcluster/conf/hanfs/vfstab.ha-TEST,加入如下行:

```
/dev/vx/dsk/datadg02/vol-00 /dev/vx/rdisk/datadg02/vol-00/opt/test0 ufs 1 no -  
/dev/vx/dsk/datadg02/vol-01 /dev/vx/rdisk/datadg02/vol-01/opt/test1 ufs 1 no -  
/dev/vx/dsk/datadg02/vol-02 /dev/vx/rdisk/datadg02/vol-02/opt/test2 ufs 1 no -  
/dev/vx/dsk/datadg02/vol-03 /dev/vx/rdisk/datadg02/vol-03/opt/test3 ufs 1 no -
```

4.7oracle 正常安装 再用TAR 命令备份和恢复到备用机上。

4.8为Cluster配置Oracle

1) 以下在主用机上做(Cluster 已经启动, Oracle已经启动)

```
# su - oracle
```

```
$ svrmgrl (其中省略了系统回应信息)
```

```
SVRMGR>connect internal;
```

```
SVRMGR>grant connect, resource to scott identified by tiger;
```

```
SVRMGR>alter user scott default tablespace system quota 1m on system;
```

```
SVRMGR>grant select on v_$sysstat to scott;
```

```
SVRMGR>grant create session to scott;
```

```
SVRMGR>grant create table to scott;
```

```
SVRMGR>disconnect;
```

```
SVRMGR>exit;
```

2) 编辑oracle的2个文件

以下在主用机上做

```
# su - oracle
```

```
$ vi /opt/oracle/home/network/admin/tnsnames.ora
```

(将文件中的关于HOST = host1 的设置改成HOST = ha-TEST 逻辑主机名)

(并确认其中SID = ora8, SERVICE = ora

```
$ vi /opt/oracle/home/network/admin/listener.ora
```

(将文件中的关于HOST = host1 的设置改成HOST = ha-TEST 逻辑主机名)

(并确认其中SID = ora8, SERVICE = ora

3) copy 文件及改属性

以下在主用机上做,且Cluster已经启动, /han2000目录已经挂接

```
# cp /opt/oracle/home/network/admin/tnsnames.ora /var/opt/oracle/
```

```
# cp /opt/oracle/home/network/admin/listener.ora /var/opt/oracle/
```

```
# cp /opt/oracle/admin/ora8/pfile/initora8.ora /ha-TEST
```

```
# chown oracle /ha-TEST/initora8.ora
```

```
# chgrp oinstall /ha-TEST/initora8.ora
```

```
# chown oracle /var/opt/oracle/tnsnames.ora
```

```
# chgrp oinstall /var/opt/oracle/tnsnames.ora
```

```
# chown oracle /var/opt/oracle/listener.ora
```

```
# chgrp oinstall /var/opt/oracle/listener.ora
```

4) 复制Oracle的文件到备用机

以下在主用机上做

```
# cd /opt
```

```
# tar cf oracle.tar oracle
```

```
# rcp oracle.tar ha-host2:/opt
```

```
# cd /var/opt
```

```
# tar cf var-oracle.tar oracle
```

```
# rcp var-oracle.tar ha-host2:/var/opt
```

以下在备用机上做

```
# cd /opt
```

```
# tar xf oracle.tar
```

```
# cd /var/opt
```

```
# tar xf var-oracle.tar
```

5) 在Cluster上注册Oracle服务

以下在主用机上做,且Cluster已经启动

```
# hareg -s -r oracle
```

```
# hareg -y oracle
```

```
# haoracle insert ora8 ha-TEST 60 10 120 300 scott/tiger/han2000/initN2000.ora
```

(60循环检测间隔 60秒

10连接检测间隔 10次

120检测超时时间 120秒

300重启延时时间 300秒)

```
# haoracle start ora8
```

6) 做适当的检查, 切换, 看oracle启动是否正常

```
# haoracle list
```

```
onra8:ha-TEST:60:10:120:300:scott:tiger:/ha-TEST/initora8.ora:
```

```
# hareg
```

```
oracle on
```

四、配置关键点:

略