在ULTRAM网元管理簇的高性能的恢复- vEPC

Contents

Introduction

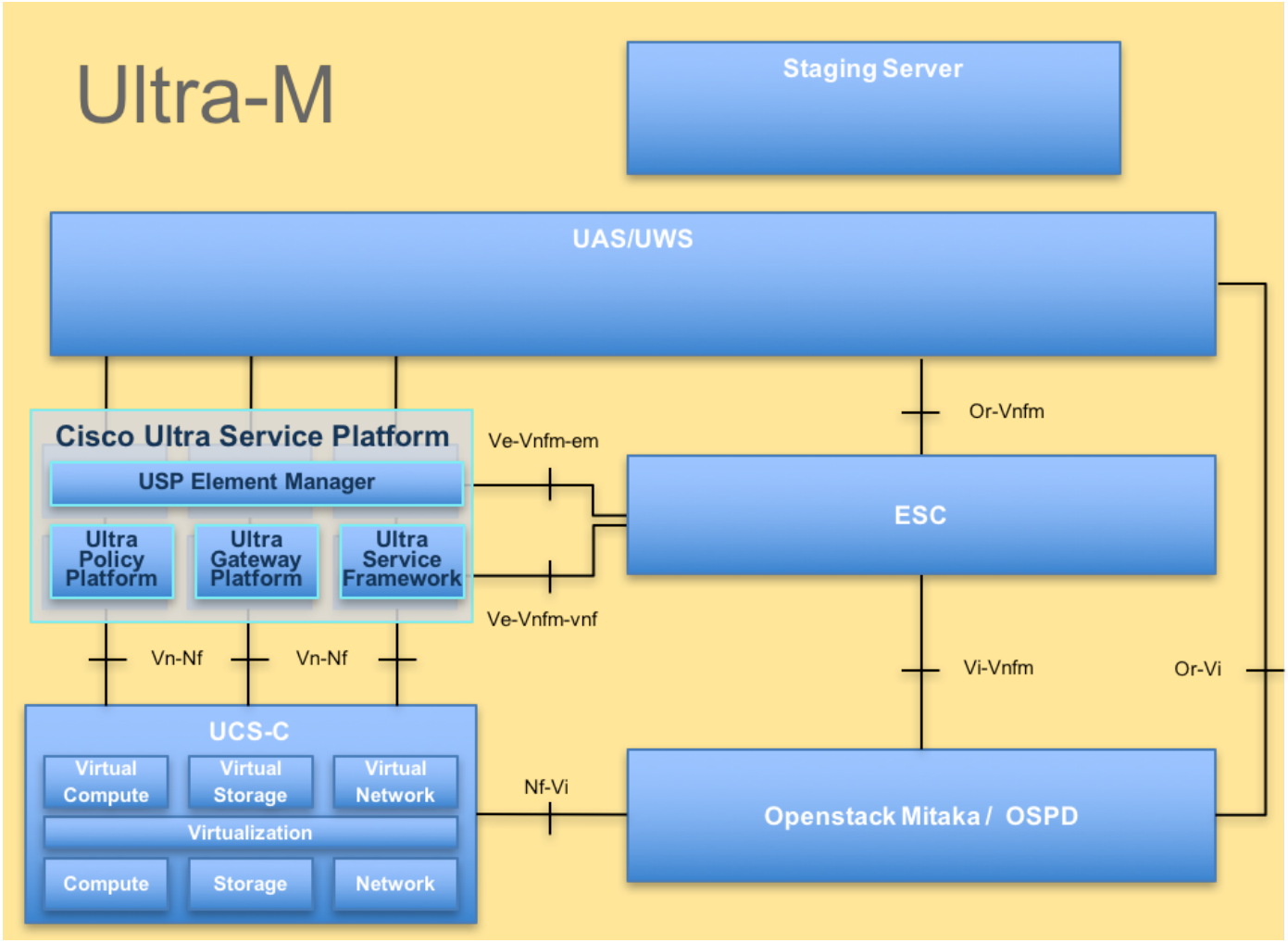
本文描述要求的步骤为了恢复高可用性(HA)在设置的ULTRA网元管理(EM)簇M主机StarOS虚拟网络作用(VNFs)。

背景信息

ULTRAM是设计的一个被预先包装的和被验证的虚拟化的便携信息包核心解决方案简化VNFs的配置。ULTRAM解决方案包括被提及的虚拟机类型：

- 自动IT
- 自动配置
- 超自动化服务(UAS)
- 网元管理(EM)
- 弹性服务控制器(ESC)
- 控制功能(CF)
- 会话功能(SF)

ULTRAM高级体系结构和介入的组件在此镜像表示：



UltraM体系结构

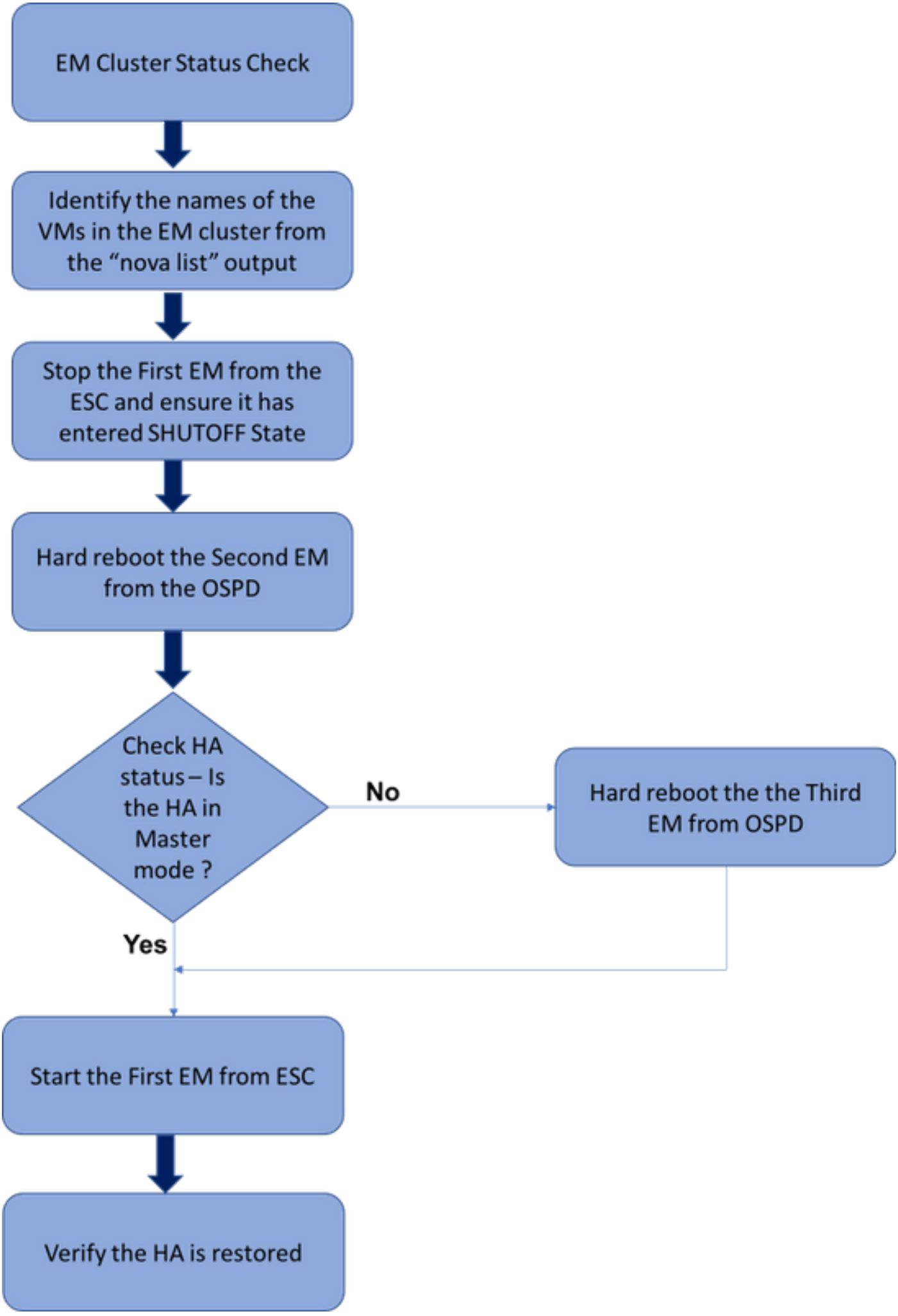
本文供熟悉Cisco ULTRAM平台的Cisco人员使用。

Note:超M 5.1.x版本考虑为了定义在本文的程序。

简称

HA	高可用性
VNF	虚拟网络功能
CF	控制功能
SF	服务功能
ESC	有弹性服务控制器
MOP	程序方法
OSD	对象存储磁盘
HDD	硬盘驱动器
SSD	固体驱动
精力	虚拟基础设施管理器
VM	虚拟机
EM	网元管理
UAS	超自动化服务
UUID	通用唯一标识符

Mop的工作流


EM Cluster Status Check
Identify the names of the VMs in the EM cluster from the “nova list” output
Stop the First EM from the ESC and ensure it has entered SHUTOFF State
Hard reboot the Second EM from the OSPD
Check HA status – Is the HA in Master mode ?
No
Hard reboot the the Third EM from OSPD
Yes
Start the First EM from ESC
Verify the HA is restored

EM HA恢复程序的高级工作流

检查簇状态

登陆对活动EM并且检查HA状态。可以有两个方案：

1. HA模式是**无**：

```
ubuntu@vnfd1deploymentem-0:~$ ncs_cli -u admin -C
admin@scm# show ncs-state ha
 ncs-state ha mode none

admin@scm# show ems
%no entries found%
```

2. EM簇只有一个节点(EM簇包括3个VMs) ：

```
ubuntu@vnfd1deploymentem-0:~$ ncs_cli -u admin -C
admin@scm# show ncs-state ha
 ncs-state ha mode none

admin@scm# show ems
%no entries found%
```

在两个案件， HA状态可以被在下个部分提及的步骤恢复。

HA恢复程序

识别是簇的一部分从新星列表的EMs的VM名字。将有是EM簇的一部分的三个VMs。

```
[stack@director ~]$ nova list | grep vnfd1
| e75ae5ee-2236-4ffd-a0d4-054ec246d506 | vnfd1-deployment_c1_0_13d5f181-0bd3-43e4-be2d-
ada02636d870 | ACTIVE | - | Running | tmo-autovnf2-uas-orchestration=172.18.180.22; DI-
INTERNAL2=192.168.2.17; DI-INTERNAL1=192.168.1.14; tmo-autovnf2-uas-management=172.18.181.23 |
| 33c779d2-e271-47af-8ad5-6a982c79ba62 | vnfd1-deployment_c4_0_9dd6e15b-8f72-43e7-94c0-
924191d99555 | ACTIVE | - | Running | tmo-autovnf2-uas-orchestration=172.18.180.13; DI-
INTERNAL2=192.168.2.14; DI-INTERNAL1=192.168.1.4; tmo-autovnf2-uas-management=172.18.181.21 |
| 65344d53-de09-4b0b-89a6-85d5cfdb3a55 | vnfd1-deployment_s2_0_b2cbf15a-3107-45c7-8edf-
1afc5b787132 | ACTIVE | - | Running | SERVICE-NETWORK1=192.168.10.4, 192.168.10.9; SERVICE-
NETWORK2=192.168.20.17, 192.168.20.6; tmo-autovnf2-uas-orchestration=172.18.180.12; DI-
INTERNAL2=192.168.2.6; DI-INTERNAL1=192.168.1.12 |
| e1a6762d-4e84-4a86-a1b1-84772b3368dc | vnfd1-deployment_s3_0_882cf1ed-fe7a-47a7-b833-
dd3e284b3038 | ACTIVE | - | Running | SERVICE-NETWORK1=192.168.10.22, 192.168.10.14; SERVICE-
NETWORK2=192.168.20.5, 192.168.20.14; tmo-autovnf2-uas-orchestration=172.18.180.14; DI-
INTERNAL2=192.168.2.7; DI-INTERNAL1=192.168.1.5 |
| b283d43c-6e0c-42e8-87d4-a3af15a61a83 | vnfd1-deployment_s5_0_672bbb00-34f2-46e7-a756-
52907e1d3b3d | ACTIVE | - | Running | SERVICE-NETWORK1=192.168.10.21, 192.168.10.24; SERVICE-
NETWORK2=192.168.20.21, 192.168.20.24; tmo-autovnf2-uas-orchestration=172.18.180.20; DI-
INTERNAL2=192.168.2.13; DI-INTERNAL1=192.168.1.16 |
| 637547ad-094e-4132-8613-b4d8502ec385 | vnfd1-deployment_s6_0_23cc139b-a7ca-45fb-b005-
733c98ccc299 | ACTIVE | - | Running | SERVICE-NETWORK1=192.168.10.13, 192.168.10.19; SERVICE-
NETWORK2=192.168.20.9, 192.168.20.22; tmo-autovnf2-uas-orchestration=172.18.180.16; DI-
INTERNAL2=192.168.2.19; DI-INTERNAL1=192.168.1.21 |
| 4169438f-6a24-4357-ad39-2a35671d29e1 | vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-
b3b367fef5b8 | ACTIVE | - | Running | tmo-autovnf2-uas-orchestration=172.18.180.6; tmo-autovnf2-
uas-management=172.18.181.8 |
```

| 30431294-c3bb-43e6-9bb3-6b377aefbc3d | vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-f2ebf62b252a | ACTIVE | - | Running | tmo-autovnf2-uas-orchestration=172.18.180.7; tmo-autovnf2-uas-management=172.18.181.9 |
| 28ab33d5-7e08-45fe-8a27-dfb68cf50321 | vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-06e45054dba0 | ACTIVE | - | Running | tmo-autovnf2-uas-orchestration=172.18.180.3; tmo-autovnf2-uas-management=172.18.181.7 |

从ESC和检查终止一EM是否进入了**切断状态**。

```
[admin@vnfm1-esc-0 esc-cli]$ /opt/cisco/esc/esc-confd/esc-cli/esc_nc_cli vm-action STOP vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8

[admin@vnfm1-esc-0 esc-cli]$ ./esc_nc_cli get esc_datamodel | egrep --color "<state>|<vm_name>|<vm_id>|<deployment_name>"
          <snip>

               <state>SERVICE_INERT_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8</vm_name>
                    <state>VM_SHUTOFF_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-f2ebf62b252a</vm_name>
                   <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-06e45054dba0</vm_name>
                   <state>VM_ALIVE_STATE</state>
```

现在，一旦EM进入了**切断状态**，请重新启动从OpenStack平台导向器(OSPD)的另一个EM。

```
[admin@vnfm1-esc-0 esc-cli]$ /opt/cisco/esc/esc-confd/esc-cli/esc_nc_cli vm-action STOP vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8

[admin@vnfm1-esc-0 esc-cli]$ ./esc_nc_cli get esc_datamodel | egrep --color "<state>|<vm_name>|<vm_id>|<deployment_name>"
          <snip>

               <state>SERVICE_INERT_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8</vm_name>
                    <state>VM_SHUTOFF_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-f2ebf62b252a</vm_name>
                   <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-06e45054dba0</vm_name>
                   <state>VM_ALIVE_STATE</state>
```

再登陆对EM VIP并且检查HA状态。

```
[admin@vnfm1-esc-0 esc-cli]$ /opt/cisco/esc/esc-confd/esc-cli/esc_nc_cli vm-action STOP vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8

[admin@vnfm1-esc-0 esc-cli]$ ./esc_nc_cli get esc_datamodel | egrep --color "<state>|<vm_name>|<vm_id>|<deployment_name>"
          <snip>

               <state>SERVICE_INERT_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8</vm_name>
                    <state>VM_SHUTOFF_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-
```

```
f2ebf62b252a</vm_name>
                    <state>VM_ALIVE_STATE</state>
                    <vm_name>vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-
06e45054dba0</vm_name>
                    <state>VM_ALIVE_STATE</state>
```

如果HA在“是从ESC的更加早期的切断的重要的”状态，请开始EM。请继续重新启动从OSPD的下个EM再然后检查HA状态。

```
[admin@vnfm1-esc-0 esc-cli]$ /opt/cisco/esc/esc-confd/esc-cli/esc_nc_cli vm-action START vnfd1-
deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8

[admin@vnfm1-esc-0 esc-cli]$ ./esc_nc_cli get esc_datamodel | egrep --color
"<state>|<vm_name>|<vm_id>|<deployment_name>"
          <snip>

               <state>SERVICE_ACTIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-
b3b367fef5b8</vm_name>
                    <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-
f2ebf62b252a</vm_name>
                   <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-
06e45054dba0</vm_name>
                   <state>VM_ALIVE_STATE</state>
```

在您开始EM从ESC后，请检查EM的HA状态。应该恢复了它。

```
[admin@vnfm1-esc-0 esc-cli]$ /opt/cisco/esc/esc-confd/esc-cli/esc_nc_cli vm-action START vnfd1-
deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-b3b367fef5b8

[admin@vnfm1-esc-0 esc-cli]$ ./esc_nc_cli get esc_datamodel | egrep --color
"<state>|<vm_name>|<vm_id>|<deployment_name>"
          <snip>

               <state>SERVICE_ACTIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_02d1510d-53dd-4a14-9e21-
b3b367fef5b8</vm_name>
                    <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f17989e3-302a-4681-be46-
f2ebf62b252a</vm_name>
                   <state>VM_ALIVE_STATE</state>
                   <vm_name>vnfd1-deployment_vnfd1-_0_f63241f3-2516-4fc4-92f3-
06e45054dba0</vm_name>
                   <state>VM_ALIVE_STATE</state>
```