

Distribuire/ridistribuire UAME in caso di danneggiamento

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Introduzione

In questo documento viene descritta la procedura per distribuire o ridistribuire Ultra Automation and Monitoring Engine (UAME).

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Componenti delle soluzioni Cisco Ultra Virtual Packet Core
- UAME
- Openstack

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- USP 6.9.0
- UAME
- Cloud - Openstack 13 (Queens)

Premesse

UAME

UAME è un nuovo modulo software di Ultra Automation Services (UAS) introdotto per:

- Supportare l'installazione integrata di funzioni di rete virtualizzate (VNF) 4G o 5G e funzioni di rete native cloud 5G.
- Ridurre il numero di macchine virtuali (VM) generalmente richieste da USP e UAS, sostituendo i componenti UEM, AutoIT, AutoDeploy e AutoVNF.

UAME fornisce l'orchestrazione della distribuzione per i seguenti elementi:

1. 4GVNFs:

1.1. VNF basati su CUPS: L'UAME lavora con il VNFM (Virtual Network Function Manager) per implementare VPC VNF basate su SI (CP) e su user plane (UP) a supporto dell'architettura CUPS (Control and User Plane Separation).

1.2. VNF non basati su CUPS: UAME è compatibile con le versioni precedenti e collabora con VNFM per fornire supporto di installazione per i gateway 4G non CUPS (basati su VPC-DI) e la funzione PCRF (Policy and Charging Rules Function) 4G.

2. NF da 5 G:

2.1. NF basati su VNF: L'UAME lavora con il VNFM per implementare le funzioni di rete (NF) basate su VPC-SI.

2.2. NF basati su cloud nativi: L'UAME interagisce con il VNFM per implementare l'infrastruttura SMI (Ultra Cloud Core Subscriber Microservices Infrastructure). L'SMI lavora quindi con il VNFM per distribuire NF in un cluster Kubernetes (noto anche come K8s) basato su VM.

Problema

Una o entrambe le VM UAME sono danneggiate. Non è possibile ripristinare UAME anche dopo aver riavviato il server di elaborazione host da OpenStack.

nova start/nova reboot: anche **hard** fallisce dopo aver impostato lo stato della VM attiva da OpenStack con questo comando.

nova reset-state - attivo <UAME_Vm_NAME>.

Procedura per la redistribuzione

1. Accedere a OpenStack Platform Director (OSPD) e verificare la configurazione di installazione.

```
[stack@<POD-NAME>-ospd usp-images]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 189G 0 189G 0% /dev
```

```
tmpfs 189G 80K 189G 1% /dev/shm
tmpfs 189G 2.7M 189G 1% /run
tmpfs 189G 0 189G 0% /sys/fs/cgroup
/dev/sda2 1.1T 109G 930G 11% /
/dev/loop0 543M 543M 0 100% /mnt/ucs-c220m5-huu-4.1.1g
/dev/sda1 477M 102M 346M 23% /boot
tmpfs 38G 0 38G 0% /run/user/0
tmpfs 38G 0 38G 0% /run/user/1000
/dev/loop1 4.0G 4.0G 0 100% /home/stack/usp-6_9_8/usp-6_9_8-mount
```

2. Se il montaggio non è disponibile, è possibile montarlo manualmente con questi passi.

```
# cd /home/stack

# mkdir /home/stack/usp-6_9_8/usp-6_9_8-mount

# sudo mount -t iso9660 -o loop /home/stack/usp-6_9_8/usp-images/usp-6_9_8.iso /home/stack/usp-6_9_8/usp-6_9_8-mount
```

```
mount: /dev/loop0 is write-protected, mounting read-only
```

3. Verificare il contenuto del file ISO.

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ ll /home/stack/usp-6_9_8/usp-6_9_8-mount/tools
total 22
-r--r--r--. 1 root root 8586 Sep 1 2020 cisco_openpgp_verify_release.py
-r-xr-xr-x. 1 root root 1955 Sep 1 2020 uas-certs.sh
-r-xr-xr-x. 1 root root 5534 Sep 1 2020 usp-csar-installer.sh
-r-xr-xr-x. 1 root root 2546 Sep 1 2020 usp-gpg-key.sh
-r-xr-xr-x. 1 root root 3354 Sep 1 2020 usp-uas-installer.sh
(undercloud) [stack@<POD-NAME>-ospd ~]$
```

4. Verificare che i file siano disponibili.

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ ll /opt/cisco/usp/uas-installer/images/
total 909544
-rw-r--r--. 1 root root 931367936 Aug 20 2020 usp-uas-6.9.0-9247.qcow2
```

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ ll /opt/cisco/usp/uas-installer/scripts/
total 180
-rwxr-xr-x. 1 root root 806 Jun 24 18:28 auto-deploy-booting.sh
-rwxr-xr-x. 1 root root 5460 Jun 24 18:28 autoit-user.py
-rwxr-xr-x. 1 root root 811 Jun 24 18:28 auto-it-vnf-staging.sh
-r-xr-x---. 1 root root 102209 Jun 24 18:28 boot_uas.py
-rwxr-xr-x. 1 root root 4762 Jun 24 18:28 encrypt_account.sh
-rwxr-xr-x. 1 root root 3945 Jun 24 18:28 encrypt_credentials.sh
-rwxr-xr-x. 1 root root 16019 Jun 24 18:28 start-ultram-vm.py
-rwxr-xr-x. 1 root root 15315 Jun 24 18:28 uas-boot.py
-rwxr-xr-x. 1 root root 5384 Jun 24 18:28 uas-check.py
-rwxr-xr-x. 1 root root 11283 Jun 24 18:28 usp-tenant.py
(undercloud) [stack@<POD-NAME>-ospd ~]$
```

5. In caso contrario, avviare lo script **usp-uas-installer.sh**. Estrarrà e renderà disponibili i file precedentemente menzionati.

```
[stack@<POD-NAME>-ospd tools]$ sudo ./usp-uas-installer.sh
```

6. Elencare l'immagine qws2 e lo script **boot_uas.py**.

```
[root@<POD-NAME>-ospd ~]# cd /opt/cisco/usp/bundles/uas-bundle
```

```
[root@<POD-NAME>-ospd uas-bundle]# ll
total 909572
drwxr-xr-x. 3 root root 4096 Jun 24 18:28 models
drwxr-xr-x. 2 root root 4096 Jun 24 18:28 tools
-rw-r--r--. 1 root root 649 Aug 20 2020 usp-build-info.json
-rw-r--r--. 1 root root 97 Aug 20 2020 usp-bundle-manifest.yml
-rw-r--r--. 1 root root 931367936 Aug 20 2020 usp-uas-6.9.0-9247.qcow2
-rw-r--r--. 1 root root 32 Aug 20 2020 usp-uas-6.9.0-9247.qcow2.md5
-rw-r--r--. 1 root root 40 Aug 20 2020 usp-uas-6.9.0-9247.qcow2.shal
-rw-r--r--. 1 root root 128 Aug 20 2020 usp-uas-6.9.0-9247.qcow2.sha512
[root@<POD-NAME>-ospd uas-bundle]# cd tools/
[root@<POD-NAME>-ospd tools]# ll
total 100
-rwxr-xr-x. 1 root root 102209 Aug 20 2020 boot_uas.py
[root@<POD-NAME>-ospd tools]#

[root@<POD-NAME>-ospd tools]# ll /opt/cisco/usp/uas-installer/images/
total 909544
-rw-r--r--. 1 root root 931367936 Aug 20 2020 usp-uas-6.9.0-9247.qcow2
```

7. Estrarre il bundle usp con l'uso di questo passo se i file precedentemente menzionati non sono disponibili.

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ sudo su -
Last login: Tue Sep 7 02:20:36 UTC 2021 from 10.255.143.5 on pts/0
[root@<POD-NAME>-ospd ~]# ll /home/stack/usp-6_9_8/usp-6_9_8-mount/repo/
total 4142608
-r--r--r--. 1 root root 623 Sep 1 2020 rel.gpg
-r--r--r--. 1 root root 87783720 Sep 1 2020 usp-auto-it-bundle-5.8.0-1.x86_64.rpm
-r--r--r--. 1 root root 1008975328 Sep 1 2020 usp-em-bundle-6.9.0-1.x86_64.rpm
-r--r--r--. 1 root root 1168 Sep 1 2020 USP_RPM_CODE_REL_KEY-CCO_RELEASE.cer
-r--r--r--. 1 root root 918264637 Sep 1 2020 usp-uas-bundle-6.9.0-1.x86_64.rpm
-r--r--r--. 1 root root 886391928 Sep 1 2020 usp-ugp-bundle-21.15.47-1.x86_64.rpm
-r--r--r--. 1 root root 1340535896 Sep 1 2020 usp-vnfm-bundle-4.5.0.112-1.x86_64.rpm
-r--r--r--. 1 root root 74725 Sep 1 2020 usp-yang-bundle-1.0.0-1.x86_64.rpm
[root@<POD-NAME>-ospd ~]#

[root@<POD-NAME>-ospd tools]# cd /

[root@<POD-NAME>-ospd /]# rpm2cpio /home/stack/usp-6_9_8/usp-6_9_8-mount/repo/usp-uas-bundle-6.9.0-1.x86_64.rpm | cpio -idmv
```

8. Eliminare la distribuzione UAME e ridistribuirla

Per eliminare

```
./boot_uas.py --autovnf --delete 1624559350-098061
```

The deployment ID will be available as mentioned highlighted above or in the file mentioned `"/home/stack/UAME_$(date +"%Y%m%d-%H%M").log"`. Refer the latest file.

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ cat UAME_0624Jun061624559462.log
2021-06-24 18:30:30,392 - Deployment: 1624559350-098061 instantiated successfully
```

1. Distribuire UAME.

```
(undercloud) [stack@<POD-NAME>-ospd ~]$ sudo -s
[root@<POD-NAME>-ospd stack]# source *core
```

```
(<POD-NAME>) (<POD-NAME>) [root@<POD-NAME>-ospd stack]# cd /opt/cisco/usp/uas-installer/scripts
(<POD-NAME>) (<POD-NAME>) [root@<POD-NAME>-ospd scripts]# ./boot_uas.py --openstack --uame --
image /opt/cisco/usp/uas-installer/images/usp-uas-6.9.0-9247.qcow2 --flavor <PODNAME>-UAME-
FLAVOR --net <PODNAME>-MGMT-NW --net <PODNAME>-ORCH-NW --ha --hostname <PODNAME>-UAME --ha-net
<PODNAME>-MGMT-NW --password password --gateway 172.168.10.1 --floating-ip <floating ip of UAME>
--external-network <PODNAME>-EXTERNAL-MGMT --admin password--oper password --security password
```

Note: "password" has to be replaced with the UAME login password and "PODNAME" with the current POD. "floating-ip" should be obtained from the IP matrix

```
2021-06-24 18:28:52,225 - Uploading image '<POD-NAME>-UAME-usp-uas-6.9.0-9247' from
'/opt/cisco/usp/uas-installer/images/usp-uas-6.9.0-9247.qcow2'
2021-06-24 18:29:06,945 - Uploaded image '<POD-NAME>-UAME-usp-uas-6.9.0-9247' successfully
2021-06-24 18:29:09,987 - Creating Server Group to enforce anti-affinity
2021-06-24 18:29:10,098 - Deployment started with transaction id --- 1624559350-098061
2021-06-24 18:29:11,766 - Created HA VIP, IP: 172.168.20.40
2021-06-24 18:29:17,125 - Allocating/Associating floating-ip
2021-06-24 18:29:17,125 - Acquire Lock : floating_ip
2021-06-24 18:29:17,125 - Lock floating_ip acquired
2021-06-24 18:29:20,474 - Assigned floating IP '10.250.100.198' to IP '172.168.20.40'
2021-06-24 18:29:20,475 - Released lock: floating_ip
2021-06-24 18:29:26,206 - Server: <POD-NAME>-UAME instantiated, waiting for server to be active
2021-06-24 18:30:01,415 - Server: <POD-NAME>-UAME instantiated, waiting for server to be active
2021-06-24 18:30:30,392 - Deployment: 1624559350-098061 instantiated successfully
2021-06-24 18:30:30,393 -
```

```
+-----+
Deployment ID | Instances
-----+-----
1624559350-098061 | e71616e8-bf01-4561-bdd6-4e3bf3ed1d5e
VIP: 172.168.20.40 | eth0: 172.168.10.6/24
Floating IP: 10.250.100.198 | eth1: 172.168.11.23/24
|
| 3d956097-16b1-4909-b539-c6a90e01678c
| eth0: 172.168.10.18/24
| eth1: 172.168.11.8/24
+-----+
```

2. Salvare manualmente l'ID distribuzione nel file /home/stack/uame_(date).log.

```
grep -i "deployment:" /var/log/autovnf.log | tail -1 >> /home/stack/UAME_$(date +"%Y%m%d-%H%M").log
```

3. Verificare che l'UAME sia attivo e in esecuzione.

```
(<POD-NAME>) [stack@<POD-NAME>-ospd ~]$ nova list | grep -i uame
| e71616e8-bf01-4561-bdd6-4e3bf3ed1d5e | <POD-NAME>-UAME-1 | ACTIVE | - | Running | <POD-NAME>-
MGMT-NW=172.168.10.6; <POD-NAME>-ORCH-NW=172.168.11.23 |
| 3d956097-16b1-4909-b539-c6a90e01678c | <POD-NAME>-UAME-2 | ACTIVE | - | Running | <POD-NAME>-
MGMT-NW=172.168.10.18; <POD-NAME>-ORCH-NW=172.168.11.8 |
```

4. Accedere all'UAME ed eseguire questi controlli.

```
[root@adi-tmo Downloads]# ssh ubuntu@10.250.100.198
ubuntu@10.250.100.198's password:
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-187-generic x86_64)
```

- * Documentation: <https://help.ubuntu.com>
- * Management: <https://landscape.canonical.com>
- * Support: <https://ubuntu.com/advantage>

Cisco Ultra Services Platform (USP)
Build Date: Thu Aug 20 09:11:07 EDT 2020
Description: UAS build assemble-uas#9247
shal: 557151c

[ubuntu@](#)

```
ubuntu@<POD-NAME>-uame-1:~$ sudo su -  
root@<POD-NAME>-uame-1:~# confd_cli -u admin -C  
Enter Password for 'admin':  
elcome to the ConfD CLI  
admin connected from 127.0.0.1 using console on <POD-NAME>-uame-1  
<POD-NAME>-uame-1#
```

```
<POD-NAME>-uame-1#show uas  
uas version 6.9.0  
uas state active  
uas external-connection-point 172.168.20.40  
INSTANCE IP STATE ROLE
```

```
-----  
172.168.10.6 alive CONFD-MASTER  
172.168.10.18 alive CONFD-SLAVE
```

```
NAME LAST HEARTBEAT
```

```
-----  
AutoVNF-MASTER 2021-09-07 05:11:03  
ESCHearBeatMonitor-<POD-NAME>-VNF-NEPCF300 2021-09-07 05:11:26  
ESCHearBeatMonitor-<POD-NAME>-VNF-NEPGW300 2021-09-07 05:11:22  
USPCFMWorker 2021-09-07 05:11:06  
USPCHBWorker 2021-09-07 05:11:06  
USPCWorker 2021-09-07 05:11:02
```

```
<POD-NAME>-uame-1#
```