

CPAR: Compute Node Graceful Shutdown and Restart

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Introduction

This document describes the procedure to be followed for the graceful shutdown and restart of compute node.

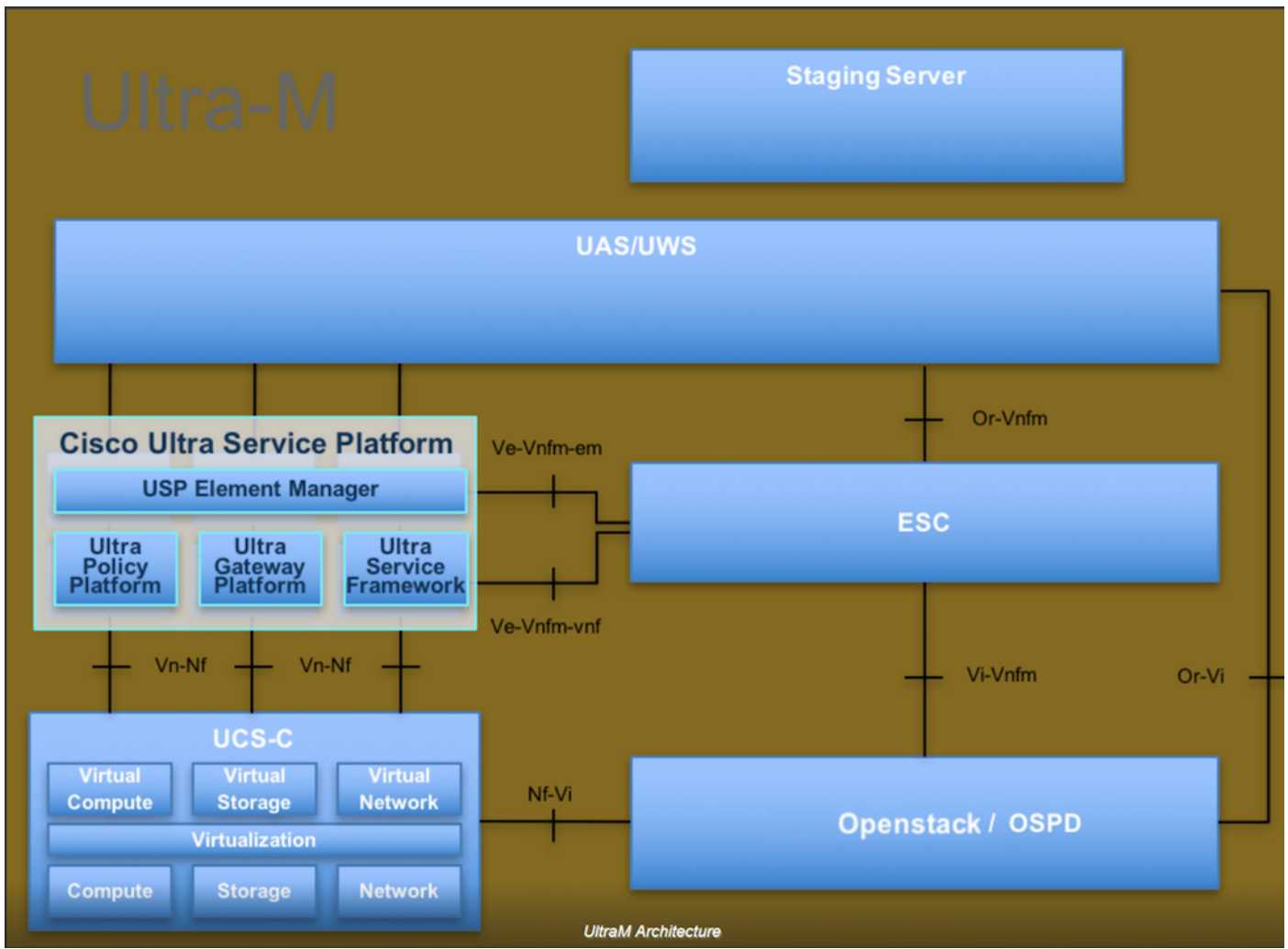
This procedure applies for an Openstack environment using NEWTON version where ESC does not manage Cisco Prime Access Registrar (CPAR) and CPAR is installed directly on the VM deployed on Openstack. CPAR is installed as a compute/VM.

Background Information

Ultra-M is a pre-packaged and validated virtualized mobile packet core solution that is designed in order to simplify the deployment of VNFs. OpenStack is the Virtualized Infrastructure Manager (VIM) for Ultra-M and consists of these node types:

- Compute
- Object Storage Disk - Compute (OSD - Compute)
- Controller
- OpenStack Platform - Director (OSPD)

The high-level architecture of Ultra-M and the components involved are shown in this image:



This document is intended for Cisco personnel who are familiar with Cisco Ultra-M platform and it details the steps required to be carried out at OpenStack and Redhat OS.

Note: Ultra M 5.1.x release is considered in order to define the procedures in this document.

CPAR Instance Shutdown

It is important not to shutdown all 4 AAA instance within one site (city) at the same time. Each AAA instance will need to be shutdown one by one.

Step 1. Shutdown CPAR application with this command:

```
/opt/CSCCOar/bin/arserver stop
```

A message which states "Cisco Prime Access Registrar Server Agent shutdown complete." Should show up

Note: If a user left a CLI session open, the arserver stop command won't work and this message is displayed:

```
"ERROR: You can not shut down Cisco Prime Access Registrar while the
CLI is being used. Current list of running
CLI with process id is: 2903 /opt/CSCCOar/bin/aregcmd -s"
```

In this example the process id 2903 needs to be terminated before CPAR can be stopped. If this is the case please terminate this process through this command:

```
kill -9 *process_id*
```

Then repeat the step 1.

Step 2. Verify that CPAR application is indeed shutdown with this command:

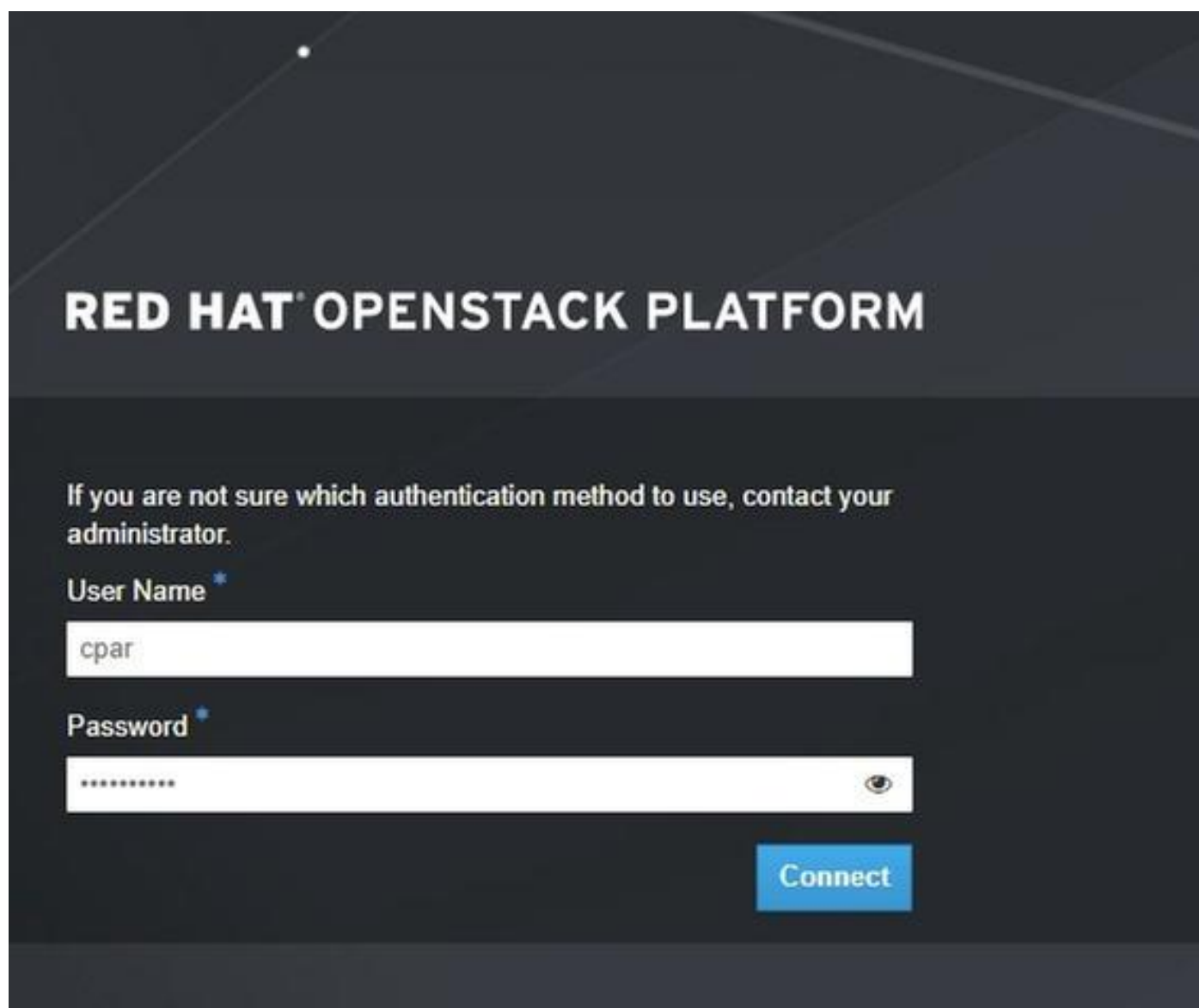
```
/opt/CSCCOar/bin/arstatus
```

These messages should appear:

```
Cisco Prime Access Registrar Server Agent not running
```

```
Cisco Prime Access Registrar GUI not running
```

Step 3. Enter the Horizon GUI website that corresponds to the Site (City) currently being worked on, refer to this for the IP details. Please enter with cpar credentials for customized view:



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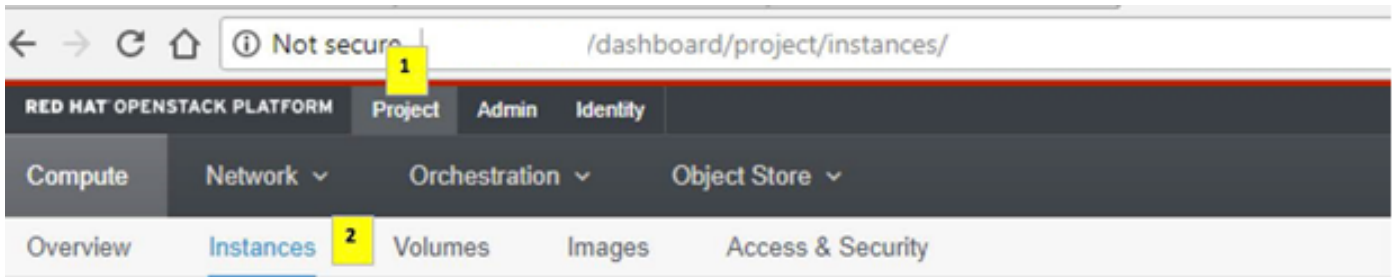
If you are not sure which authentication method to use, contact your administrator.

User Name *

Password *

Connect

Step 4. Navigate to **Project > Instances**, as shown in the image.



If the user used was cpar, then only the 4 AAA instances appear in this menu.

Step 5. Shut down only one instance at a time, please repeat the whole process in this document.

To shutdown the VM navigate to **Actions > Shut Off Instance**:



and confirm your selection.

Step 6. Validate that the instance was indeed shut down by checkin the Status = Shutoff and Power State = Shut Down

Size	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
AAA-CPAR	-	Shutoff	AZ-dalaaa09	None	Shut Down	3 months, 2 weeks	Start Instance

This step ends the CPAR shutdown process.

CPAR Application Compute Restart and Health check

CPAR Instance Start

Please follow this procedure, once the RMA activity is completed and CPAR services can be re-established in the Site that was shut down.

Step 1. Login back to Horizon, navigate to **Project > Instance > Start Instance**.

Step 2. Verify that the status of the instance is active and the power state is Running, as shown in the image.

Instances

Instance Name	Image Name	IP Address	Size	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
<input type="checkbox"/> dilaaa04	dilaaa01-sept092017	diameter-routable1 • 10.160.132.231 radius-routable1 • 10.160.132.247 tb1-mgmt • 172.16.181.16 Floating IPs: • 10.250.122.114	AAA-CPAR	-	Active	AZ-dilaaa04	None	Running	3 months	Create Snapshot

CPAR Instance Post Startup Health Check

Step 1. Login via Secure Shell (SSH) to the CPAR instance.

Execute the command `/opt/CSCOar/bin/arstatus` at OS level

```
[root@wscaaa04 ~]# /opt/CSCOar/bin/arstatus
Cisco Prime AR RADIUS server running          (pid: 4834)
Cisco Prime AR Server Agent running           (pid: 24821)
Cisco Prime AR MCD lock manager running       (pid: 24824)
Cisco Prime AR MCD server running             (pid: 24833)
Cisco Prime AR GUI running                    (pid: 24836)
SNMP Master Agent running                    (pid: 24835)
[root@wscaaa04 ~]#
```

Step 2. Execute the command `/opt/CSCOar/bin/aregcmd` at OS level and enter the admin credentials. Verify that CPAR Health is 10 out of 10 and the exit CPAR CLI.

```
[root@rvraaa02 logs]# /opt/CSCOar/bin/aregcmd
Cisco Prime Access Registrar 7.3.0.1 Configuration Utility Copyright (C) 1995-2017 by Cisco
Systems, Inc. All rights reserved. Cluster:
User: admin Passphrase:
```

Logging in to localhost

```
[ //localhost ]
LicenseInfo = PAR-NG-TPS 7.2(100TPS:) PAR-ADD-TPS 7.2(2000TPS:) PAR-RDDR-TRX 7.2()
PAR-HSS 7.2()
Radius/ Administrators/
```

Server 'Radius' is running, its health is 10 out of 10

--> exit

Step 3. Execute the command `netstat | grep diameter` and verify that all DRA connections are established.

The output mentioned here is for an environment where Diameter links are expected. If fewer links are displayed, this represents a disconnection from the DRA that needs to be analyzed.

```
[root@aa02 logs]# netstat | grep diameter
tcp          0          0 aaa02.aaa.epc.:77 mp1.dra01.d:diameter ESTABLISHED
```

```
tcp          0          0 aaa02.aaa.epc.:36 tsa6.dra01:diameter ESTABLISHED
tcp          0          0 aaa02.aaa.epc.:47 mp2.dra01.d:diameter ESTABLISHED
tcp          0          0 aaa02.aaa.epc.:07 tsa5.dra01:diameter ESTABLISHED
tcp          0          0 aaa02.aaa.epc.:08 np2.dra01.d:diameter ESTABLISHED
```

Step 4. Check that the TPS log shows requests being processed by CPAR. The values highlighted represent the TPS and the ones that needs attention. The value of TPS should not exceed 1500.

```
[root@aaa04 ~]# tail -f /opt/CSC0ar/logs/tps-11-21-2017.csv 11-21-2017,23:57:35,263,0
11-21-2017,23:57:50,237,0
11-21-2017,23:58:05,237,0
11-21-2017,23:58:20,257,0
11-21-2017,23:58:35,254,0
11-21-2017,23:58:50,248,0
11-21-2017,23:59:05,272,0
11-21-2017,23:59:20,243,0
11-21-2017,23:59:35,244,0
11-21-2017,23:59:50,233,0
```

Step 5 Look for any “error” or “alarm” messages in **name_radius_1_log**.

```
[root@aaa02 logs]# grep -E "error|alarm" name_radius_1_log
```