

# UCS C240 M4 م كحتلا ةدحو مداخ لادبتسا PCRFB م كحتلا ةدحوب

## تايوتحمل

[ةمدقملا](#)

[ةيساسألا تابلطتملا](#)

[يطايتحال اخصنلا](#)

[ةلاجال نم يلوألا ققحتلا](#)

[م كحتلا تادحو ةومجم يف تاجايسلا ليطعت](#)

[ةديجل م كحتلا ةدحو ةدقع تيبثت](#)

[ةدئازلا ةباحسلا يف م كحتلا ةدحو ةدقع لادبتسا](#)

[ةلشافلا م كحتلا ةدحو ةدقع ةلازال ريضحتلا](#)

[ةديج م كحت ةدحو ةدقع ةفاضال ريضحتلا](#)

[يودي لخدت](#)

[م كحتلا ةدحو يف Overcloud تامدخ نم ققحتلا](#)

[L3 ليكوتاهجوم اهان](#)

[ةبسوخل تامدخ اهان](#)

[م كحتلا ةدحو دقع يلع جاسلا ليغشت ةداع](#)

## ةمدقملا

Ultra-M دادعلا يف بي عم م كحت ةدحو مداخ لادبتسالا ةبولطملا تاوطخلا دنتمسلا اذه فصلي (VNFs) ةيرهاظلا CPS ةكبش فئاظو فيضتسي.

## ةيساسألا تابلطتملا

### يطايتحال اخصنلا

مادختساب (DB) OSPD تانايب ةدعاقول يطايتحال اخصن اراجاب Cisco ي صوت ، دادرتسالا ةلاحي في ةيالات تاوطخلا:

```
[root@director ~]# mysqldump --opt --all-databases > /root/undercloud-all-databases.sql
[root@director ~]# tar --xattrs -czf undercloud-backup-`date +%F`.tar.gz /root/undercloud-all-databases.sql
/etc/my.cnf.d/server.cnf /var/lib/glance/images /srv/node /home/stack
tar: Removing leading `/' from member names
```

### ةلاجال نم يلوألا ققحتلا

لبق اهتمحص نم دكأتلاو اهتمدخو OpenStack ةئيبل ةيلاجال ةلاجال نم ققحتلا مهملا نم ةي لمع اراجا تقو في تافعاصل م ل بنجت في دعاسي نأ نكمي . لادبتسالا اراجا ةعباتم م كحتلا ةدحو لادبتسا





neutron-dhcp-agent.service	loaded active running	OpenStack Neutron DHCP Agent
neutron-openvswitch-agent.service Agent	loaded active running	OpenStack Neutron Open vSwitch
neutron-ovs-cleanup.service Cleanup Utility	loaded active exited	OpenStack Neutron Open vSwitch
neutron-server.service	loaded active running	OpenStack Neutron Server
openstack-aodh-evaluator.service service	loaded active running	OpenStack Alarm evaluator
openstack-aodh-listener.service service	loaded active running	OpenStack Alarm listener
openstack-aodh-notifier.service service	loaded active running	OpenStack Alarm notifier
openstack-ceilometer-central.service agent	loaded active running	OpenStack ceilometer central
openstack-ceilometer-collector.service service	loaded active running	OpenStack ceilometer collection
openstack-ceilometer-notification.service notification agent	loaded active running	OpenStack ceilometer
openstack-glance-api.service named Glance) API server	loaded active running	OpenStack Image Service (code-
openstack-glance-registry.service named Glance) Registry server	loaded active running	OpenStack Image Service (code-
openstack-heat-api-cfn.service API Service	loaded active running	Openstack Heat CFN-compatible
openstack-heat-api.service	loaded active running	OpenStack Heat API Service
openstack-heat-engine.service	loaded active running	Openstack Heat Engine Service
openstack-ironic-api.service	loaded active running	OpenStack Ironic API service
openstack-ironic-conductor.service service	loaded active running	OpenStack Ironic Conductor
openstack-ironic-inspector-dnsmasq.service Ironic Inspector	loaded active running	PXE boot dnsmasq service for
openstack-ironic-inspector.service for OpenStack Ironic	loaded active running	Hardware introspection service
openstack-mistral-api.service	loaded active running	Mistral API Server
openstack-mistral-engine.service	loaded active running	Mistral Engine Server
openstack-mistral-executor.service	loaded active running	Mistral Executor Server
openstack-nova-api.service	loaded active running	OpenStack Nova API Server
openstack-nova-cert.service	loaded active running	OpenStack Nova Cert Server
openstack-nova-compute.service	loaded active running	OpenStack Nova Compute Server
openstack-nova-conductor.service	loaded active running	OpenStack Nova Conductor Server
openstack-nova-scheduler.service	loaded active running	OpenStack Nova Scheduler Server
openstack-swift-account-reaper.service (swift) - Account Reaper	loaded active running	OpenStack Object Storage
openstack-swift-account.service (swift) - Account Server	loaded active running	OpenStack Object Storage
openstack-swift-container-updater.service (swift) - Container Updater	loaded active running	OpenStack Object Storage
openstack-swift-container.service (swift) - Container Server	loaded active running	OpenStack Object Storage
openstack-swift-object-updater.service (swift) - Object Updater	loaded active running	OpenStack Object Storage
openstack-swift-object.service (swift) - Object Server	loaded active running	OpenStack Object Storage
openstack-swift-proxy.service (swift) - Proxy Server	loaded active running	OpenStack Object Storage
openstack-zaqar.service Service (code-named Zaqar) Server	loaded active running	OpenStack Message Queuing
openstack-zaqar@1.service Service (code-named Zaqar) Server Instance 1	loaded active running	OpenStack Message Queuing
openvswitch.service	loaded active exited	Open vSwitch

LOAD = Reflects whether the unit definition was properly loaded.

ACTIVE = The high-level unit activation state, i.e. generalization of SUB.

SUB = The low-level unit activation state, values depend on unit type.

37 loaded units listed. Pass --all to see loaded but inactive units, too.  
To show all installed unit files use 'systemctl list-unit-files'.

## مكحتال تادحو ةومجم يف تاجايسال ليطعت

```
[root@pod1-controller-0 ~]# sudo pcs property set stonith-enabled=false  
[root@pod1-controller-0 ~]# pcs property show
```

```
Cluster Properties:  
cluster-infrastructure: corosync  
cluster-name: tripleo_cluster  
dc-version: 1.1.15-11.e17_3.4-e174ec8  
have-watchdog: false  
last-lrm-refresh: 1510809585  
maintenance-mode: false  
redis_REPL_INFO: pod1-controller-0  
stonith-enabled: false
```

```
Node Attributes:  
pod1-controller-0: rmq-node-attr-last-known-rabbitmq=rabbit@pod1-controller-0  
pod1-controller-1: rmq-node-attr-last-known-rabbitmq=rabbit@pod1-controller-1  
pod1-controller-2: rmq-node-attr-last-known-rabbitmq=rabbit@pod1-controller-2
```

## ةديجال مكحتال ةدحو ةدق ةتبت

دادعال تاوطخو ديدج UCS C240 M4 مداخ ةتبت ةصاخال تاوطخال ال عوجل نكمي 1. ةوطخال  
[Cisco UCS C240 M4](#) مداخ ةتبت ةومدخ ليلد نم يلو ال

2. ةوطخال CIMC IP مادختساب مدخال ال لوخدل ليجستب مق.

3. ةوطخال بصومل رادصال عم ةقفاوتم ةتبتال جماربل نكت مل اذا BIOS ةيقرت ةارجاب مق. 3. ةوطخال  
ان: BIOS ةيدحت تاوطخ مي دقت مت. اقباس مدختسمل اب

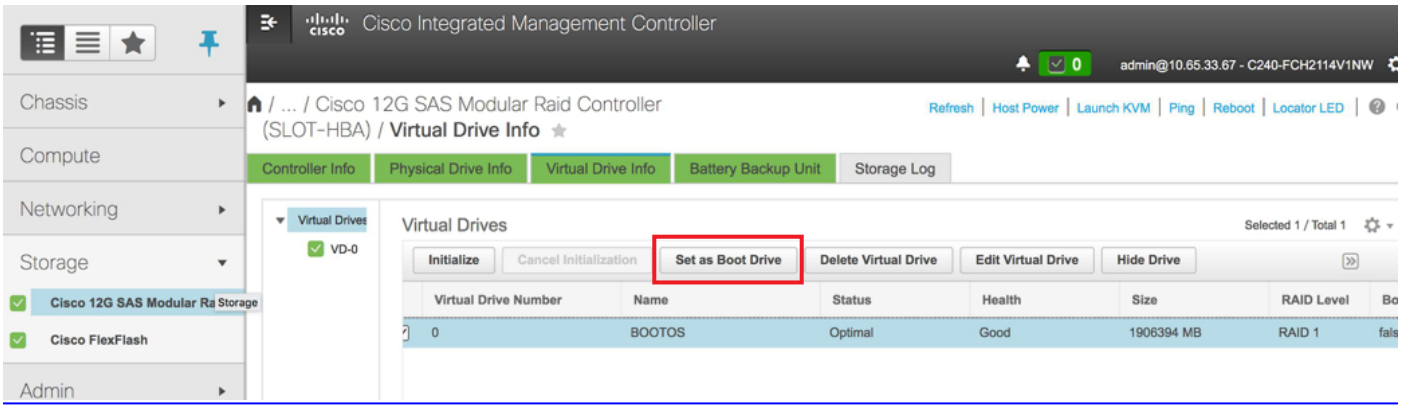
[Cisco UCS C-Series](#) لمارح ال ع بكرملا مدخال اب صاخال BIOS ةيقرت ليلد

ال لقتنا. اديج نوكم ريغ نوكي نأ بجي. ةيدامل صارق ال تاكرحم ةلاح نم ققحت 4. ةوطخال  
كرحم تامولعم > Cisco 12G SAS (slot-HBA) ةيطمنل RAID مكحتال ةدحو > نيختال ةدحو  
ةيدامل صارق ال.

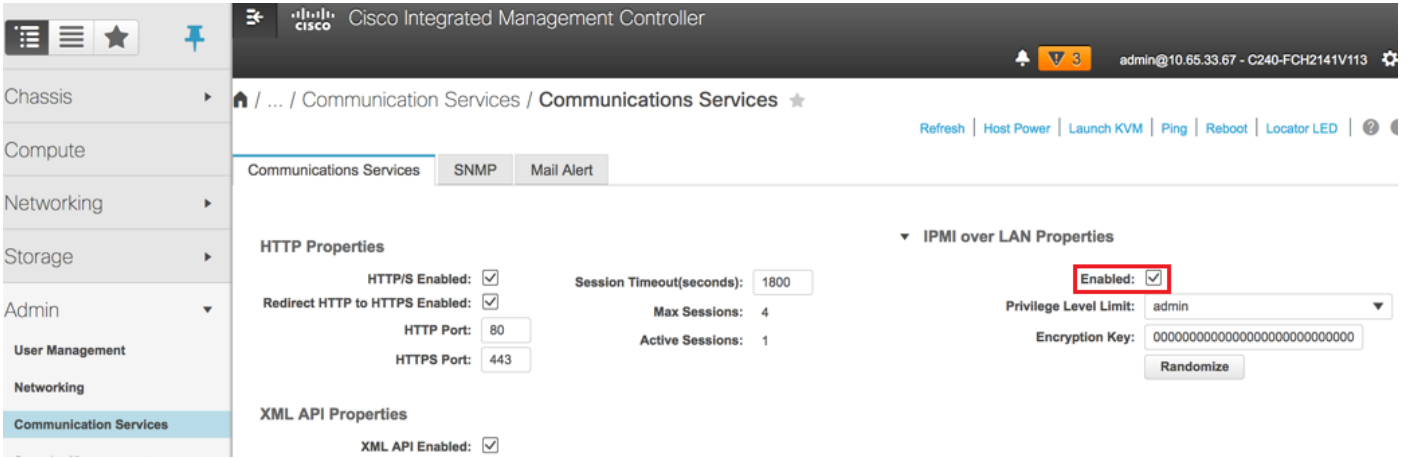
Controller	Physical Drive Number	Status	Health	Boot Drive	Drive Firmware
<input type="checkbox"/> SLOT-HBA	1	Unconfigured Good	Good	false	N003
<input type="checkbox"/> SLOT-HBA	2	Unconfigured Good	Good	false	N003

5. ةوطخال RAID مادختساب ةيدامل صارق ال تاكرحم نم يضارتفا صارقا كرحم ةاشنال.

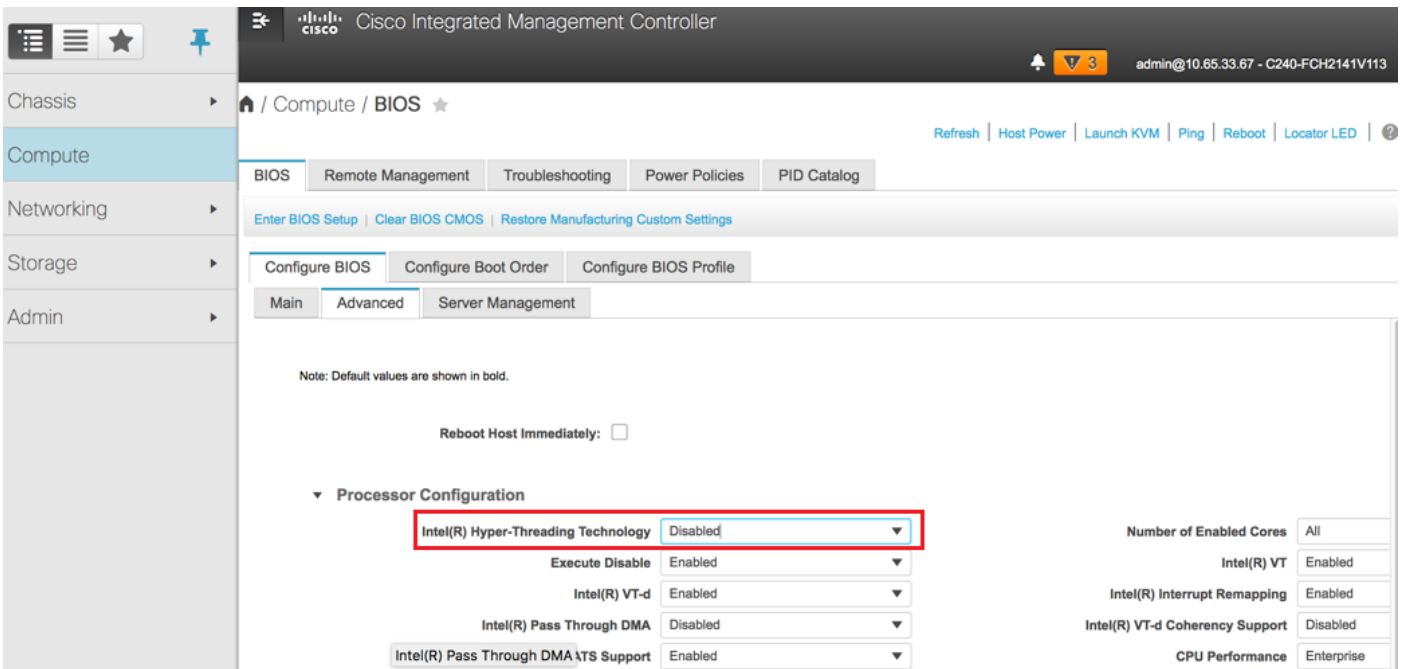




لإصلاح التام > لإصلاح التام > Admin > لإصلاح التام، LAN ربع IPMI نيكمتل 6. ةوطخل



> BIOS نيوكت > BIOS > Compute > لإصلاح التام، HyperThreading لمع ليطعت لجأ نم 7. ةوطخل  
ةروصلال يف حضوم وه امك، جلالعمل نيوكت > مدقتم



ةراشالاب يه مسقلا اذه يف ةروكذمل نيوكتل تاوطخو انه ةروصلال ضرع متي: ةظحال  
لمعت تنك اذا ةفيفط تافال تخإ كانه نوكت دقو 3.0(3e) تبالل جمانربال رادصإ لإ  
ىرأ تارادصإ لىع

# عدئازلا ةباحسلا يف مكحتلا ةدحو ةدقع لادبتسا

ةديدل مكحتلا ةدحوب ةبعملا مكحتلا ةدحو لادبتسالا ةبولطملا تاوطخلا مسقلا اذه يطغي مت يذل `deploy.sh` يصنلا جم انربلا مادختسا ةداعا متيس ، بسبب اذهلو . ةباحسلا يف `ControllerNodePostDeployment` ةلحرم يف ، رشنلا تقو يفو . سدكمل ضرعل همادختسا ةداعا لبق يوديلا لخدتل مزلي . يمدلا تادحو يف دويقلا ضعيب بسبب شي دحتلا لشفيس رشنلاب صاخلا يصنلا جم انربلا ليغشت

## ةلشافلا مكحتلا ةدحو ةدقع ةلازال ريضحتلا

مسالا ةيمقرلا ةقحلال وه سرهفلا . ةلشافلا مكحتلا ةدحو سرهف يلع فرعتلا 1. ةوطخلا مسالا وه سرهفلا ، لاثملا اذه يف `OpenStack` مداخ ةمئاق جارخا يف مكحتلا ةدحو

```
[stack@director ~]$ nova list | grep controller
| 5813a47e-af27-4fb9-8560-75dec3347b4 | pod1-controller-0 | ACTIVE | - | Running
| ctlplane=192.200.0.152 |
| 457f023f-d077-45c9-bbea-dd32017d9708 | pod1-controller-1 | ACTIVE | - | Running
| ctlplane=192.200.0.154 |
| d13bb207-473a-4e42-a1e7-05316935ed65 | pod1-controller-2 | ACTIVE | - | Running
| ctlplane=192.200.0.151 |
```

دارملا ةدقلا فيرعت هئاشنم `~templates/remove-controller.yaml` `YAML` فلم ءاشنلا 2. ةوطخلا دراوملا ةمئاق لاخدال ةقباسلا ةوطخلا يف دوجوملا سرهفلا مدختسا . اهفدح

```
[stack@director ~]$ cat templates/remove-controller.yaml
```

```
parameters:
  ControllerRemovalPolicies:
    [{'resource_list': ['2']}]
```

```
parameter_defaults:
  CorosyncSettleTries: 5
```

تبيثتل همادختسا متي يذلا رشنلل يصنلا جم انربلا نم ةخسن ءارجاب مق 3. ةوطخلا هؤاشنلا مت يذل `remove-controller.yaml` فلملا ني مضتل رطس لاخداو ةيوقول ةباحسلا اقبسم

```
[stack@director ~]$ cp deploy.sh deploy-removeController.sh
[stack@director ~]$ cat deploy-removeController.sh
time openstack overcloud deploy --templates \
-r ~/custom-templates/custom-roles.yaml \
-e /home/stack/templates/remove-controller.yaml \
-e /usr/share/openstack-tripleo-heat-templates/environments/puppet-pacemaker.yaml \
-e /usr/share/openstack-tripleo-heat-templates/environments/network-isolation.yaml \
-e /usr/share/openstack-tripleo-heat-templates/environments/storage-environment.yaml \
-e /usr/share/openstack-tripleo-heat-templates/environments/neutron-sriov.yaml \
-e ~/custom-templates/network.yaml \
-e ~/custom-templates/ceph.yaml \
-e ~/custom-templates/compute.yaml \
-e ~/custom-templates/layout-removeController.yaml \
-e ~/custom-templates/rabbitmq.yaml \
--stack pod1 \
--debug \
--log-file overcloudDeploy_$(date +%m_%d_%y__%H_%M_%S).log \
--neutron-flat-networks phys_pcie1_0,phys_pcie1_1,phys_pcie4_0,phys_pcie4_1 \
--neutron-network-vlan-ranges datacentre:101:200 \
```



```
--neutron-disable-tunneling \  
--verbose --timeout 180
```

انه ةروكذملا رماوألما ادختساب اهلادبتسا متيس يتلا مكحتلا ةدحو فرعم ددح 4. ةوطخلال ةنايصلال عضو لىل اهلقنو.

```
[stack@director ~]$ nova list | grep controller
```

```
| 5813a47e-af27-4fb9-8560-75dec3347b4 | pod1-controller-0 | ACTIVE | - | Running  
| ctlplane=192.200.0.152 |  
  
| 457f023f-d077-45c9-bbea-dd32017d9708 | pod1-controller-1 | ACTIVE | - | Running  
| ctlplane=192.200.0.154 |  
  
| d13bb207-473a-4e42-a1e7-05316935ed65 | pod1-controller-2 | ACTIVE | - | Running  
| ctlplane=192.200.0.151 |
```

```
[stack@director ~]$ openstack baremetal node list | grep d13bb207-473a-4e42-a1e7-05316935ed65
```

```
| e7c32170-c7d1-4023-b356-e98564a9b85b | None | d13bb207-473a-4e42-a1e7-05316935ed65 | power  
off | active | False |
```

```
[stack@b10-ospd ~]$ openstack baremetal node maintenance set e7c32170-c7d1-4023-b356-e98564a9b85b
```

```
[stack@director ~]$ openstack baremetal node list | grep True
```

```
| e7c32170-c7d1-4023-b356-e98564a9b85b | None | d13bb207-473a-4e42-a1e7-05316935ed65 | power  
off | active | True |
```

نم Galera ةلازاب مق ، لادبتسالال اءارج ا تقويف تانايبلا ةدعاق لىغشت نامضل 5. ةوطخلال ةطشنلا مكحتلا تادحو دحا لىل رمالا اذله لىغشتب مق م مزلال مظنم يف مكحتلا رصنع.

```
[root@pod1-controller-0 ~]# sudo pcs resource unmanage galera  
[root@pod1-controller-0 ~]# sudo pcs status
```

```
Cluster name: tripleo_cluster  
Stack: corosync  
Current DC: pod1-controller-0 (version 1.1.15-11.e17_3.4-e174ec8) - partition with quorum  
Last updated: Thu Nov 16 16:51:18 2017 Last change: Thu Nov 16 16:51:12 2017  
by root via crm_resource on pod1-controller-0  
3 nodes and 22 resources configured  
Online: [ pod1-controller-0 pod1-controller-1 ]  
OFFLINE: [ pod1-controller-2 ]
```

Full list of resources:

```
ip-11.120.0.109 (ocf::heartbeat:IPaddr2): Started pod1-controller-0  
ip-172.25.22.109 (ocf::heartbeat:IPaddr2): Started pod1-controller-1  
ip-192.200.0.107 (ocf::heartbeat:IPaddr2): Started pod1-controller-0
```

```
Clone Set: haproxy-clone [haproxy]  
Started: [ pod1-controller-0 pod1-controller-1 ]  
Stopped: [ pod1-controller-2 ]
```

**Master/Slave Set: galera-master [galera] (unmanaged)**

```
galera (ocf::heartbeat:galera): Master pod1-controller-0 (unmanaged)  
galera (ocf::heartbeat:galera): Master pod1-controller-1 (unmanaged)
```

```
Stopped: [ pod1-controller-2 ]
ip-11.120.0.110      (ocf::heartbeat:IPAddr2):      Started pod1-controller-0
ip-11.119.0.110     (ocf::heartbeat:IPAddr2):      Started pod1-controller-1
```

<snip>

## ةديج مكحت ةدحو ةدق ةفاضال ريضحتال

طوق ةديجال مكحتال ةدحو لي صافات مادختساب **ControllerRMA.json** فلم ءاشن | 1. ةوطخال لكش ب. لبق نم ةديجال مكحتال ةدحو لي ءدوومال سرهفالا مقرر مادختساب مدع نم دكأت يلاتال مكحت ةدحو مقرر لي ءال ددعال ةدايز، يحدومن

ءاشن اب مق كلذل، Controller-2 ناك اقباس لي ءال: لاثم

json. ةغيص كرابتعا ي ف عض: ةطخال م

```
[stack@director ~]$ cat controllerRMA.json
{
  "nodes": [
    {
      "mac": [
        <MAC_ADDRESS>
      ],
      "capabilities": "node:controller-3,boot_option:local",
      "cpu": "24",
      "memory": "256000",
      "disk": "3000",
      "arch": "x86_64",
      "pm_type": "pxe_ipmitool",
      "pm_user": "admin",
      "pm_password": "<PASSWORD>",
      "pm_addr": "<CIMC_IP>"
    }
  ]
}
```

ةوطخال ي ف ءاشن | مت يذال json فلم مادختساب ةديجال ةدق ءال داريتساب مق 2. ةوطخال ةقباسال

```
[stack@director ~]$ openstack baremetal import --json controllerRMA.json
```

```
Started Mistral Workflow. Execution ID: 67989c8b-1225-48fe-ba52-3a45f366e7a0
```

```
Successfully registered node UUID 048ccb59-89df-4f40-82f5-3d90d37ac7dd
```

```
Started Mistral Workflow. Execution ID: c6711b5f-fa97-4c86-8de5-b6bc7013b398
```

```
Successfully set all nodes to available.
```

```
[stack@director ~]$ openstack baremetal node list | grep available
```

```
| 048ccb59-89df-4f40-82f5-3d90d37ac7dd | None | None | power
off | available | False
```

ةءال ءال ءادال ةدق ءال نييعتب مق 3. ةوطخال

```
[stack@director ~]$ openstack baremetal node manage 048ccb59-89df-4f40-82f5-3d90d37ac7dd
```

```
[stack@director ~]$ openstack baremetal node list | grep off
```

```
| 048ccb59-89df-4f40-82f5-3d90d37ac7dd | None | None | power off | manageable | False |
```

ي. اذلال مأتال ليغش 4. ةوطخال

```
[stack@director ~]$ openstack overcloud node introspect 048ccb59-89df-4f40-82f5-3d90d37ac7dd --
provide
Started Mistral Workflow. Execution ID: f73fb275-c90e-45cc-952b-bfc25b9b5727
Waiting for introspection to finish...
Successfully introspected all nodes.
Introspection completed.
Started Mistral Workflow. Execution ID: a892b456-eb15-4c06-b37e-5bc3f6c37c65
Successfully set all nodes to available
```

```
[stack@director ~]$ openstack baremetal node list | grep available
| 048ccb59-89df-4f40-82f5-3d90d37ac7dd | None | None | power
off | available | False |
```

مادختس| نم دكأت. ةديجال مكحتال ةدحو صئاصخب ةحاتمال ةدقعال يل ع ةمالع عضو 5. ةوطخال  
فل م ي ف مدختسم وه امك، ةديجال مكحتال ةدحو ل م ي عمال مكحتال ةدحو فرعم  
**controllerRMA.json**.

```
[stack@director ~]$ openstack baremetal node set --property capabilities='node:controller-
3,profile:control,boot_option:local' 048ccb59-89df-4f40-82f5-3d90d37ac7dd
```

، دح ي ي ذل او **layout.yaml** ي مس ي ص صخم بل اق ك انه، رش ن لل ي ص ن ال ج م ان ر بل ي ف 6. ةوطخال  
ي ف. ةفلتخم ال تاه ا و لل مكحتال تادحو ل اه ني ي عت م تي ي ال IP ني وانع يه ام، رخ ا روم ا ني ب  
ة فاضا دن ع Controller-1 و Controller-2 و 0-مكحتال ةدحو ل ة فرعم ني وانع 3 ك انه، دي ج سد كم  
ة ي عرف ةكبش ل كل لس لس ت ي ف ي ال ال IP ن اونع ة فاضا نم دكأت، ةدي ج مكحت ةدحو

ControllerIPs:

```
internal_api:
- 11.120.0.10
- 11.120.0.11
- 11.120.0.12
- 11.120.0.13
```

tenant:

```
- 11.117.0.10
- 11.117.0.11
- 11.117.0.12
- 11.117.0.13
```

storage:

```
- 11.118.0.10
- 11.118.0.11
- 11.118.0.12
- 11.118.0.13
```

storage\_mgmt:

```
- 11.119.0.10
- 11.119.0.11
- 11.119.0.12
- 11.119.0.13
```

ةدقعال ةلازال، اق ب سم هؤاشن| م تي ذل **deploy-removeControl.sh** ليغش ت ب ن آل مق 7. ةوطخال  
ةدي ج ال ةدقعال ة فاضا ة م ي دق ال.

كلت دن ع و ControllerNodeDeployment\_Step1 ي ف ةوطخال هذ ل ش ف ع ق و ت م ال نم: **ةطخال م**  
اب و ل ط م ي و دي ل ل خ د ت ال نو كي، ة ط ق ن ل

```
[stack@b10-ospd ~]$ ./deploy-addController.sh
```





```
[root@pod1-controller-0 ~]# sudo crm_node -R pod1-controller-2 --force
```

نم ةلشافال ةدقعال فذحل ةطشنال مكحتال تادحو ىدحل نم رمأل اذه لىغش تب مق 5 ةوطخال Rabbitmq ةومحمل ماظن

```
[root@pod1-controller-0 ~]# sudo rabbitmqctl forget_cluster_node rabbit@pod1-controller-2
```

```
Removing node 'rabbit@newtonoc-controller-2' from cluster ...
```

ةدقعال لىل روثعال لىل اجاتحت ،كلذب مايقلل MongoDB نم ةلشافال ةدقعال فذحا 6 ةوطخال. فىضملاب صاخال IP ناوع لىل روثعال netstat مدختسا .ةطشنال Mongo.

```
[root@pod1-controller-0 ~]# sudo netstat -tulnp | grep 27017
```

```
tcp        0      0 11.120.0.10:27017  0.0.0.0:*          LISTEN
219577/mongod
```

مادختساب ساسأل يه تناك اذا ام ةفرعمل ققحتو ةدقعال لىل لوخدل لىل سب مق 7 ةوطخال. قبال رمال نم ذفنل مقرو IP ناوع

```
[heat-admin@pod1-controller-0 ~]$ echo "db.isMaster()" | mongo --host 11.120.0.10:27017
```

```
MongoDB shell version: 2.6.11
```

```
connecting to: 11.120.0.10:27017/test
```

```
{
  "setName" : "tripleo",
  "setVersion" : 9,
  "ismaster" : true,
  "secondary" : false,
  "hosts" : [
    "11.120.0.10:27017",
    "11.120.0.12:27017",
    "11.120.0.11:27017"
  ],
  "primary" : "11.120.0.10:27017",
  "me" : "11.120.0.10:27017",
  "electionId" : ObjectId("5a0d2661218cb0238b582fb1"),
  "maxBsonObjectSize" : 16777216,
  "maxMessageSizeBytes" : 48000000,
  "maxWriteBatchSize" : 1000,
  "localTime" : ISODate("2017-11-16T18:36:34.473Z"),
  "maxWireVersion" : 2,
  "minWireVersion" : 0,
  "ok" : 1
}
```

ةطشنال مكحتال ةدحو لىل لوخدل لىل سب مق ف ،ةىسئىرلا ةدحوال يه ةدقعال نكت مل اذا. اهسفن ةوطخال ذىفنتب مقو ىخال

ةدقعال نع ثحبا . rs.status() رمال مادختساب ةحاتملا دقعال درسب مق ،ىساسأل نم 8 ةوطخال. ةىدخال ةدقعال مسا دحو ةبىجتستملا ريغ/ةمىدقلا

```
[root@pod1-controller-0 ~]# mongo --host 11.120.0.10
```

```
MongoDB shell version: 2.6.11
```

```
connecting to: 11.120.0.10:27017/test
```

```
<snip>
```

```
tripleo:PRIMARY> rs.status()
```

```
{
  "set" : "tripleo",
```

```

"date" : ISODate("2017-11-14T13:27:14Z"),
"myState" : 1,
"members" : [
  {
    "_id" : 0,
    "name" : "11.120.0.10:27017",
    "health" : 1,
    "state" : 1,
    "stateStr" : "PRIMARY",
    "uptime" : 418347,
    "optime" : Timestamp(1510666033, 1),
    "optimeDate" : ISODate("2017-11-14T13:27:13Z"),
    "electionTime" : Timestamp(1510247693, 1),
    "electionDate" : ISODate("2017-11-09T17:14:53Z"),
    "self" : true
  },
  {
    "_id" : 2,
    "name" : "11.120.0.12:27017",
    "health" : 1,
    "state" : 2,
    "stateStr" : "SECONDARY",
    "uptime" : 418347,
    "optime" : Timestamp(1510666033, 1),
    "optimeDate" : ISODate("2017-11-14T13:27:13Z"),
    "lastHeartbeat" : ISODate("2017-11-14T13:27:13Z"),
    "lastHeartbeatRecv" : ISODate("2017-11-14T13:27:13Z"),
    "pingMs" : 0,
    "syncingTo" : "11.120.0.10:27017"
  },
  {
    "_id" : 3,
    "name" : "11.120.0.11:27017",
    "health" : 0,
    "state" : 8,
    "stateStr" : "(not reachable/healthy)",
    "uptime" : 0,
    "optime" : Timestamp(1510610580, 1),
    "optimeDate" : ISODate("2017-11-13T22:03:00Z"),
    "lastHeartbeat" : ISODate("2017-11-14T13:27:10Z"),
    "lastHeartbeatRecv" : ISODate("2017-11-13T22:03:01Z"),
    "pingMs" : 0,
    "syncingTo" : "11.120.0.10:27017"
  }
],
"ok" : 1
}

```

ءاطخأل اضعب رهظت **rs.remove** رمأل مادختساب ةلشافلا ةدقعال فذخا؛ يسأسألأ نم 9 ةوطخال ةدقعال ةلازا لىل روثعلل رخأ ةرم ةلاجال نم ققحت نكلو، رمألأ اذه لىغشت دنع

```

[root@pod1-controller-0 ~]$ mongo --host 11.120.0.10
<snip>
tripleo:PRIMARY> rs.remove('11.120.0.12:27017')
2017-11-16T18:41:04.999+0000 DBClientCursor::init call() failed
2017-11-16T18:41:05.000+0000 Error: error doing query: failed at src/mongo/shell/query.js:81
2017-11-16T18:41:05.001+0000 trying reconnect to 11.120.0.10:27017 (11.120.0.10) failed
2017-11-16T18:41:05.003+0000 reconnect 11.120.0.10:27017 (11.120.0.10) ok

tripleo:PRIMARY> rs.status()
{
  "set" : "tripleo",
  "date" : ISODate("2017-11-16T18:44:11Z"),

```

```

"myState" : 1,
"members" : [
  {
    "_id" : 3,
    "name" : "11.120.0.11:27017",
    "health" : 1,
    "state" : 2,
    "stateStr" : "SECONDARY",
    "uptime" : 187,
    "optime" : Timestamp(1510857848, 3),
    "optimeDate" : ISODate("2017-11-16T18:44:08Z"),
    "lastHeartbeat" : ISODate("2017-11-16T18:44:11Z"),
    "lastHeartbeatRecv" : ISODate("2017-11-16T18:44:09Z"),
    "pingMs" : 0,
    "syncingTo" : "11.120.0.10:27017"
  },
  {
    "_id" : 4,
    "name" : "11.120.0.10:27017",
    "health" : 1,
    "state" : 1,
    "stateStr" : "PRIMARY",
    "uptime" : 89820,
    "optime" : Timestamp(1510857848, 3),
    "optimeDate" : ISODate("2017-11-16T18:44:08Z"),
    "electionTime" : Timestamp(1510811232, 1),
    "electionDate" : ISODate("2017-11-16T05:47:12Z"),
    "self" : true
  }
],
"ok" : 1
}
tripleo:PRIMARY> exit
bye

```

ةدق ع ني مضت .ةطشنل مكحتل ةدحو دق ةمئاق ثي دحتل رمألا اذه ليغشتب مق 10 ةوطخل ةدحو ةمئاقلا هذه في ةديدل مكحتل ةدحو

```
[root@pod1-controller-0 ~]# sudo pcs resource update galera wsrep_cluster_address=gcomm://pod1-controller-0,pod1-controller-1,pod1-controller-2
```

ةديدل مكحتل ةدحو لىل لعفاب ةدحووم مكحت ةدحو نم تافلما هذه خسنا 11 ةوطخل:

**/etc/sysconfig/clustercheck**

**/root/.my.cnf**

On existing controller:

```
[root@pod1-controller-0 ~]# scp /etc/sysconfig/clustercheck stack@192.200.0.1:/tmp/.
[root@pod1-controller-0 ~]# scp /root/.my.cnf stack@192.200.0.1:/tmp/my.cnf
```

On new controller:

```
[root@pod1-controller-3 ~]# cd /etc/sysconfig
[root@pod1-controller-3 sysconfig]# scp stack@192.200.0.1:/tmp/clustercheck .
[root@pod1-controller-3 sysconfig]# cd /root
[root@pod1-controller-3 ~]# scp stack@192.200.0.1:/tmp/my.cnf .my.cnf
```



لعمل باب إدوجوم ال م كحت ال ا دحو و إدح | نم **cluster node add** رم ال ا لي غش تب مق 12. ة و ط خ ال

```
[root@pod1-controller-1 ~]# sudo pcs cluster node add pod1-controller-3
```

Disabling SBD service...

pod1-controller-3: sbd disabled

pod1-controller-0: Corosync updated

pod1-controller-1: Corosync updated

Setting up corosync...

pod1-controller-3: Succeeded

Synchronizing pcsd certificates on nodes pod1-controller-3...

pod1-controller-3: Success

Restarting pcsd on the nodes in order to reload the certificates...

pod1-controller-3: Success

فل م ال ا ض ر ع و م كحت ة د ح و ل ك ال ا ل و خ د ل ا ل ي ج س ت ك ن ك م ي 13. ة و ط خ ال

ة د ح و ل ة ن ي ع م ال ا د ق ع ال ا ن ا ن م و ة د ي د ج ال م كحت ال ا د ح و د ر س ن م د ك ا ت **/etc/corosync/corosync.conf**. ا ر ج | ن م د ك ا ت . ل ب ق ن م ه م ا د خ ت س | م ت ي م ل ذ ل ا ل س ل س ت ل ا ي ف ي ل ا ت ال ا م ق ر ل ا ي ه ك ل ت م كحت ال ا ث ال م كحت ال ا د ح و ع ي م ج ي ل ع ر ي غ ت ال ا ه ذ ه

```
[root@pod1-controller-1 ~]# cat /etc/corosync/corosync.conf
```

```
totem {
  version: 2
  secauth: off
  cluster_name: tripleo_cluster
  transport: udpu
  token: 10000
}
nodelist {
  node {
    ring0_addr: pod1-controller-0
    nodeid: 5
  }
  node {
    ring0_addr: pod1-controller-1
    nodeid: 7
  }
  node {
    ring0_addr: pod1-controller-3
    nodeid: 6
  }
}
quorum {
  provider: corosync_votequorum
}
logging {
  to_logfile: yes
  logfile: /var/log/cluster/corosync.log
  to_syslog: yes
}
```

ل ي د ع ت ال ا د ع ب **/etc/corosync/corosync.conf** ل ا ث م ال ا ل ي ب س ي ل ع :

```
totem {
version: 2
secauth: off
cluster_name: tripleo_cluster
```

```

transport: udpu
token: 10000
}
nodelist {
  node {
    ring0_addr: pod1-controller-0
    nodeid: 5
  }
  node {
    ring0_addr: pod1-controller-1
    nodeid: 7
  }
  node {
    ring0_addr: pod1-controller-3
    nodeid: 9
  }
}
quorum {
  provider: corosync_votequorum
}
logging {
  to_logfile: yes
  logfile: /var/log/cluster/corosync.log
  to_syslog: yes
}

```

يُعد Corosync أحد مدعي طش النل مكحتل تادحوى لى **Corosync** ليغشت ةداعإب مق 14. ةوطخل ةديجل مكحتل ةدحو.

```

[root@pod1-controller-0 ~]# sudo pcs cluster reload corosync
[root@pod1-controller-1 ~]# sudo pcs cluster reload corosync

```

ةباينلل مكحتل تادحوى دح| نم ةديجل مكحتل ةدحو ةدق ع ءدب 15. ةوطخل

```

[root@pod1-controller-1 ~]# sudo pcs cluster start pod1-controller-3

```

ةباينلل مكحتل تادحو دحأ نم **Galera** ليغشت ةداعإب مق 16. ةوطخل

```

[root@pod1-controller-1 ~]# sudo pcs cluster start pod1-controller-3

```

pod1-controller-0: Starting Cluster...

```

[root@pod1-controller-1 ~]# sudo pcs resource cleanup galera
Cleaning up galera:0 on pod1-controller-0, removing fail-count-galera
Cleaning up galera:0 on pod1-controller-1, removing fail-count-galera
Cleaning up galera:0 on pod1-controller-3, removing fail-count-galera
* The configuration prevents the cluster from stopping or starting 'galera-master' (unmanaged)

```

Waiting for 3 replies from the CRMD... OK

```

[root@pod1-controller-1 ~]#
[root@pod1-controller-1 ~]# sudo pcs resource manage galera

```

يُعد لوصحلل ةنايصلل عضو لي طعتب مق. ةنايصلل عضو في ةومجمل ماظن 17. ةوطخل ءدب لل تامدخل

```

[root@pod1-controller-2 ~]# sudo pcs property set maintenance-mode=false --wait

```

تادحو جاردإ م تي تي ح اريلل ل (PCs) ي صخشلل رتوي ب مكلل ةزهجأ ةلاح نم ققحت 18. ةوطخل اريلل ل في ةيسيئر رصانك ةثاللل مكحتل

نم ازم لت قول اضعب رمأل قرغتسي دق، ةريكلل تانيي عت لل ةبسنن لابل: ةظحال مق  
تانايب لل دعوق.

```
[root@pod1-controller-1 ~]# sudo pcs status | grep galera -A1
```

```
Master/Slave Set: galera-master [galera]
```

```
Masters: [ pod1-controller-0 pod1-controller-1 pod1-controller-3 ]
```

ةنايب لل عضو لل ةومجم لل ماظن لايوتب مق 19. ةوطخلل

```
[root@pod1-controller-1~]# sudo pcs property set maintenance-mode=true --wait
```

```
[root@pod1-controller-1 ~]# pcs cluster status
```

```
Cluster Status:
```

```
Stack: corosync
```

```
Current DC: pod1-controller-0 (version 1.1.15-11.el7_3.4-e174ec8) - partition with quorum
```

```
Last updated: Thu Nov 16 19:17:01 2017
```

```
Last change: Thu Nov 16 19:16:48 2017
```

```
by root via cibadmin on pod1-controller-1
```

```
*** Resource management is DISABLED ***
```

```
The cluster will not attempt to start, stop or recover services
```

```
PCSD Status:
```

```
pod1-controller-3: Online
```

```
pod1-controller-0: Online
```

```
pod1-controller-1: Online
```

هذه اقبسم هليغشتب تمق يذل ايصل لل رشن لل جامنرب لايغشت ةداعاب مق 20. ةوطخلل  
حجنت نأ بجي ةرمل

```
[stack@director ~]$ ./deploy-addController.sh
```

```
START with options: [u'overcloud', u'deploy', u'--templates', u'-r', u'/home/stack/custom-templates/custom-roles.yaml', u'-e', u'/usr/share/openstack-tripleo-heat-templates/environments/puppet-pacemaker.yaml', u'-e', u'/usr/share/openstack-tripleo-heat-templates/environments/network-isolation.yaml', u'-e', u'/usr/share/openstack-tripleo-heat-templates/environments/storage-environment.yaml', u'-e', u'/usr/share/openstack-tripleo-heat-templates/environments/neutron-sriov.yaml', u'-e', u'/home/stack/custom-templates/network.yaml', u'-e', u'/home/stack/custom-templates/ceph.yaml', u'-e', u'/home/stack/custom-templates/compute.yaml', u'-e', u'/home/stack/custom-templates/layout-removeController.yaml', u'--stack', u'newtonoc', u'--debug', u'--log-file', u'overcloudDeploy_11_14_17__13_53_12.log', u'--neutron-flat-networks', u'phys_pcie1_0,phys_pcie1_1,phys_pcie4_0,phys_pcie4_1', u'--neutron-network-vlan-ranges', u'datacentre:101:200', u'--neutron-disable-tunneling', u'--verbose', u'--timeout', u'180']  
options: Namespace(access_key='', access_secret='****', access_token='****', access_token_endpoint='', access_token_type='', aodh_endpoint='', auth_type='', auth_url='https://192.200.0.2:13000/v2.0', authorization_code='', cacert=None, cert='', client_id='', client_secret='****', cloud='', consumer_key='', consumer_secret='****', debug=True, default_domain='default', default_domain_id='', default_domain_name='', deferred_help=False, discovery_endpoint='', domain_id='', domain_name='', endpoint='', identity_provider='', identity_provider_url='', insecure=None, inspector_api_version='1', inspector_url=None, interface='', key='', log_file=u'overcloudDeploy_11_14_17__13_53_12.log', murano_url='', old_profile=None, openid_scope='', os_alarming_api_version='2', os_application_catalog_api_version='1', os_baremetal_api_version='1.15', os_beta_command=False, os_compute_api_version='', os_container_infra_api_version='1', os_data_processing_api_version='1.1', os_data_processing_url='', os_dns_api_version='2', os_identity_api_version='', os_image_api_version='1', os_key_manager_api_version='1', os_metrics_api_version='1', os_network_api_version='', os_object_api_version='', os_orchestration_api_version='1', os_project_id=None, os_project_name=None, os_queues_api_version='2', os_tripleoclient_api_version='1', os_volume_api_version='', os_workflow_api_version='2', passcode='', password='****', profile=None, project_domain_id='', project_domain_name='', project_id='', project_name='admin', protocol='', redirect_uri='',
```

```

region_name='', roles='', timing=False, token='***', trust_id='', url='', user='',
user_domain_id='', user_domain_name='', user_id='', username='admin', verbose_level=3,
verify=None)
Auth plugin password selected

Starting new HTTPS connection (1): 192.200.0.2
"POST /v2/action_executions HTTP/1.1" 201 1696
HTTP POST https://192.200.0.2:13989/v2/action_executions 201
Overcloud Endpoint: http://172.25.22.109:5000/v2.0
Overcloud Deployed
clean_up DeployOvercloud:
END return value: 0

real    54m17.197s
user    0m3.421s
sys     0m0.670s

```

## مكحتال ةدحو يف Overcloud تامدخ نم ققحتال

مكحتال ةدحو دقع ىلع حيحص لكشب ةرادم ال تامدخال عيمج ليغشت نم دكأت

```
[heat-admin@pod1-controller-2 ~]$ sudo pcs status
```

## L3 ليكوتاهجوم اهان

فلم ردصم نم دكأت. حيحص لكشب L3 االمع ةفاضتسا نامضل تاهجوم ال نم ققحت overcloud دنع ارج اذ ةقحتال.

هجوم ال مسا ىلع روثع ال 1. ةوطخال

```
[stack@director~]$ source corerc
[stack@director ~]$ neutron router-list
```

```

+-----+-----+-----+
-----+-----+-----+
| id | name | distributed | ha |
external_gateway_info |
+-----+-----+-----+
-----+-----+-----+

```

```

| d814dc9d-2b2f-496f-8c25-24911e464d02 | main | {"network_id": "18c4250c-e402-428c-87d6-
a955157d50b5", | False | True |

```

يسير ال وه هجوم ال مسا، لال ال اذ يف

ةديجال ةدقعال اولش افال ةدقعال ل UUID ىلع روثع ال L3 لم اوع ةفاك درسب مق 2. ةوطخال

```
[stack@director ~]$ neutron agent-list | grep "neutron-l3-agent"
```

```

| 70242f5c-43ab-4355-abd6-9277f92e4ce6 | L3 agent | pod1-controller-0.localdomain |
nova | :-) | True | neutron-l3-agent |
| 8d2ffbc-b6ff-42cd-b5b8-da31d8da8a40 | L3 agent | pod1-controller-2.localdomain |
nova | xxx | True | neutron-l3-agent |
| a410a491-e271-4938-8a43-458084ffe15d | L3 agent | pod1-controller-3.localdomain |
nova | :-) | True | neutron-l3-agent |

```

```
| cb4bc1ad-ac50-42e9-ae69-8a256d375136 | L3 agent | pod1-controller-1.localdomain |
nova | :- ) | True | neutron-l3-agent |
```

نم pod1-controller-2.localdomain عم قفاوتي يذال L3 ليمع ةلازا بجي، لاثملا اذه في 3. ةوطخل  
هجوملا الى pod1-controller-3.localdomain عم قفاوتي يذال هجوملا ةفاضل بجيو هجوملا.

```
[stack@director ~]$ neutron l3-agent-router-remove 8d2ffbc-b6ff-42cd-b5b8-da31d8da8a40 main
```

Removed router main from L3 agent

```
[stack@director ~]$ neutron l3-agent-router-add a410a491-e271-4938-8a43-458084ffe15d main
```

Added router main to L3 agent

ثلاثلا يوتسملا نم ءالكولل ةثدحمالا ةمئاقلا صحف 4. ةوطخل

```
[stack@director ~]$ neutron l3-agent-list-hosting-router main
```

```
+-----+-----+-----+-----+
----+-----+
| id | host | admin_state_up |
alive | ha_state |
+-----+-----+-----+-----+
----+-----+
| 70242f5c-43ab-4355-abd6-9277f92e4ce6 | pod1-controller-0.localdomain | True | :- )
| standby |
| a410a491-e271-4938-8a43-458084ffe15d | pod1-controller-3.localdomain | True | :- )
| standby |
| cb4bc1ad-ac50-42e9-ae69-8a256d375136 | pod1-controller-1.localdomain | True | :- )
| active |
+-----+-----+-----+-----+
----+-----+
```

اهتلازواهتلازا تمت يتي كحتلا ةدحو ةدقع نم اهليغشت متي تامدخ يي درسب مق 5. ةوطخل

```
[stack@director ~]$ neutron agent-list | grep controller-2
```

```
| 877314c2-3c8d-4666-a6ec-69513e83042d | Metadata agent | pod1-controller-2.localdomain
| | xxx | True | neutron-metadata-agent |
| 8d2ffbc-b6ff-42cd-b5b8-da31d8da8a40 | L3 agent | pod1-controller-2.localdomain |
nova | xxx | True | neutron-l3-agent |
| 911c43a5-df3a-49ec-99ed-1d722821ec20 | DHCP agent | pod1-controller-2.localdomain |
nova | xxx | True | neutron-dhcp-agent |
| a58a3dd3-4cdc-48d4-ab34-612a6cd72768 | Open vSwitch agent | pod1-controller-2.localdomain
| | xxx | True | neutron-openvswitch-agent |
```

```
[stack@director ~]$ neutron agent-delete 877314c2-3c8d-4666-a6ec-69513e83042d
```

Deleted agent(s): 877314c2-3c8d-4666-a6ec-69513e83042d

```
[stack@director ~]$ neutron agent-delete 8d2ffbc-b6ff-42cd-b5b8-da31d8da8a40
```

Deleted agent(s): 8d2ffbc-b6ff-42cd-b5b8-da31d8da8a40

```
[stack@director ~]$ neutron agent-delete 911c43a5-df3a-49ec-99ed-1d722821ec20
```

Deleted agent(s): 911c43a5-df3a-49ec-99ed-1d722821ec20

```
[stack@director ~]$ neutron agent-delete a58a3dd3-4cdc-48d4-ab34-612a6cd72768
```

Deleted agent(s): a58a3dd3-4cdc-48d4-ab34-612a6cd72768

```
[stack@director ~]$ neutron agent-list | grep controller-2
```

```
[stack@director ~]$
```

## ةبسوحلا تامدخ ءاهن

مقرواهات لازلانتمت يتالادقعالنم ةيقبتمال Nova service-list رصانع نم ققحت 1 ةوطخل اهاذبح.

```
[stack@director ~]$ nova service-list | grep controller-2
```

```
| 615 | nova-consoleauth | pod1-controller-2.localdomain | internal | enabled | down
| 2017-11-16T16:08:14.000000 | - |
| 618 | nova-scheduler | pod1-controller-2.localdomain | internal | enabled | down
| 2017-11-16T16:08:13.000000 | - |
| 621 | nova-conductor | pod1-controller-2.localdomain | internal | enabled | down
| 2017-11-16T16:08:14.000000 | - |
```

```
[stack@director ~]$ nova service-delete 615
[stack@director ~]$ nova service-delete 618
[stack@director ~]$ nova service-delete 621
```

```
stack@director ~]$ nova service-list | grep controller-2
```

اهل لغشت ةداع| و امكحتل اذحو عيمج لى عمكحتل اذحو ةيلم لى لغشت نم دكأت 2 ةوطخل  
openstack-nova-consulth ل رت و ي ب م ك ل ا ةزهجأ دروم لى لغشت ةداع| :رمأل ا اذ م اذحت ساب

```
[stack@director ~]$ nova service-list | grep consoleauth
```

```
| 601 | nova-consoleauth | pod1-controller-0.localdomain | internal | enabled | up
| 2017-11-16T21:00:10.000000 | - |
| 608 | nova-consoleauth | pod1-controller-1.localdomain | internal | enabled | up
| 2017-11-16T21:00:13.000000 | - |
| 622 | nova-consoleauth | pod1-controller-3.localdomain | internal | enabled | up
| 2017-11-16T21:00:13.000000 | - |
```

## مكحتل اذحو دق ع لى ع اى س ل لى لغشت ةداع|

ةي عرفل اذكو بشل لى لى IP هيجوتل مكحتل اذحو عيمج نم ققحت 1 ةوطخل

```
[root@pod1-controller-3 ~]# ip route
default via 172.25.22.1 dev vlan101
11.117.0.0/24 dev vlan17 proto kernel scope link src 11.117.0.12
11.118.0.0/24 dev vlan18 proto kernel scope link src 11.118.0.12
11.119.0.0/24 dev vlan19 proto kernel scope link src 11.119.0.12
11.120.0.0/24 dev vlan20 proto kernel scope link src 11.120.0.12
169.254.169.254 via 192.200.0.1 dev eno1
172.25.22.0/24 dev vlan101 proto kernel scope link src 172.25.22.102
192.0.0.0/8 dev eno1 proto kernel scope link src 192.200.0.103
```

ةم يدق ل مكحتل اذحو ةدق ع لى ع جرم لى أ ل ا ز اب مق لى ل ا ل ا ل ا ل نى و ك ت نم ققحت 2 ةوطخل

```
[root@pod1-controller-3 ~]# sudo pcs stonith show --full
Resource: my-ipmilan-for-controller-6 (class=stonith type=fence_ipmilan)
Attributes: pcmk_host_list=pod1-controller-1 ipaddr=192.100.0.1 login=admin
passwd=Cisco@123Starent lanplus=1
Operations: monitor interval=60s (my-ipmilan-for-controller-6-monitor-interval-60s)
Resource: my-ipmilan-for-controller-4 (class=stonith type=fence_ipmilan)
Attributes: pcmk_host_list=pod1-controller-0 ipaddr=192.100.0.14 login=admin
passwd=Cisco@123Starent lanplus=1
Operations: monitor interval=60s (my-ipmilan-for-controller-4-monitor-interval-60s)
Resource: my-ipmilan-for-controller-7 (class=stonith type=fence_ipmilan)
Attributes: pcmk_host_list=pod1-controller-2 ipaddr=192.100.0.15 login=admin
passwd=Cisco@123Starent lanplus=1
```

```
Operations: monitor interval=60s (my-ipmilan-for-controller-7-monitor-interval-60s)
```

```
[root@pod1-controller-3 ~]# pcs stonith delete my-ipmilan-for-controller-7  
Attempting to stop: my-ipmilan-for-controller-7...Stopped
```

ةدي دجال مكحت لة دحول يروح م نيوك تة فاضا | 3. ةوطخال

```
[root@pod1-controller-3 ~]# sudo pcs stonith create my-ipmilan-for-controller-8 fence_ipmilan  
pcmk_host_list=pod1-controller-3 ipaddr=<CIMC_IP> login=admin passwd=<PASSWORD> lanplus=1 op  
monitor interval=60s
```

ةل اال نم ققحت لال او مكحت ة دحو ويا نم جاي س لال لي غشت ة داع اب مق 4. ةوطخال

```
[root@pod1-controller-1 ~]# sudo pcs property set stonith-enabled=true  
[root@pod1-controller-3 ~]# pcs status
```

<snip>

```
my-ipmilan-for-controller-1 (stonith:fence_ipmilan): Started pod1-controller-3  
my-ipmilan-for-controller-0 (stonith:fence_ipmilan): Started pod1-controller-3  
my-ipmilan-for-controller-3 (stonith:fence_ipmilan): Started pod1-controller-3
```

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسم ل ا ذه Cisco ت مچرت  
م ل ا ل ا ا ن ا ع مچ ي ف ن ي م دخت س م ل ل م عد ي و ت ح م م ي دقت ل ة ي ر ش ب ل و  
امك ة ق ي ق د ن و ك ت ن ل ة ل ا ة مچرت ل ض ف ا ن ا ة ظ ح ال م ي ج ر ي . ة ص ا خ ل ا م ه ت غ ل ب  
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ال ا ة مچرت ل ا ع م ل ا ح ل ا و ه  
ي ل ا م ا ة ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا هذه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco  
Systems (ر ف و ت م ط ب ا ر ل ا) ي ل ص ا ل ا ي ز ي ل ج ن ا ل ا دن ت س م ل ا