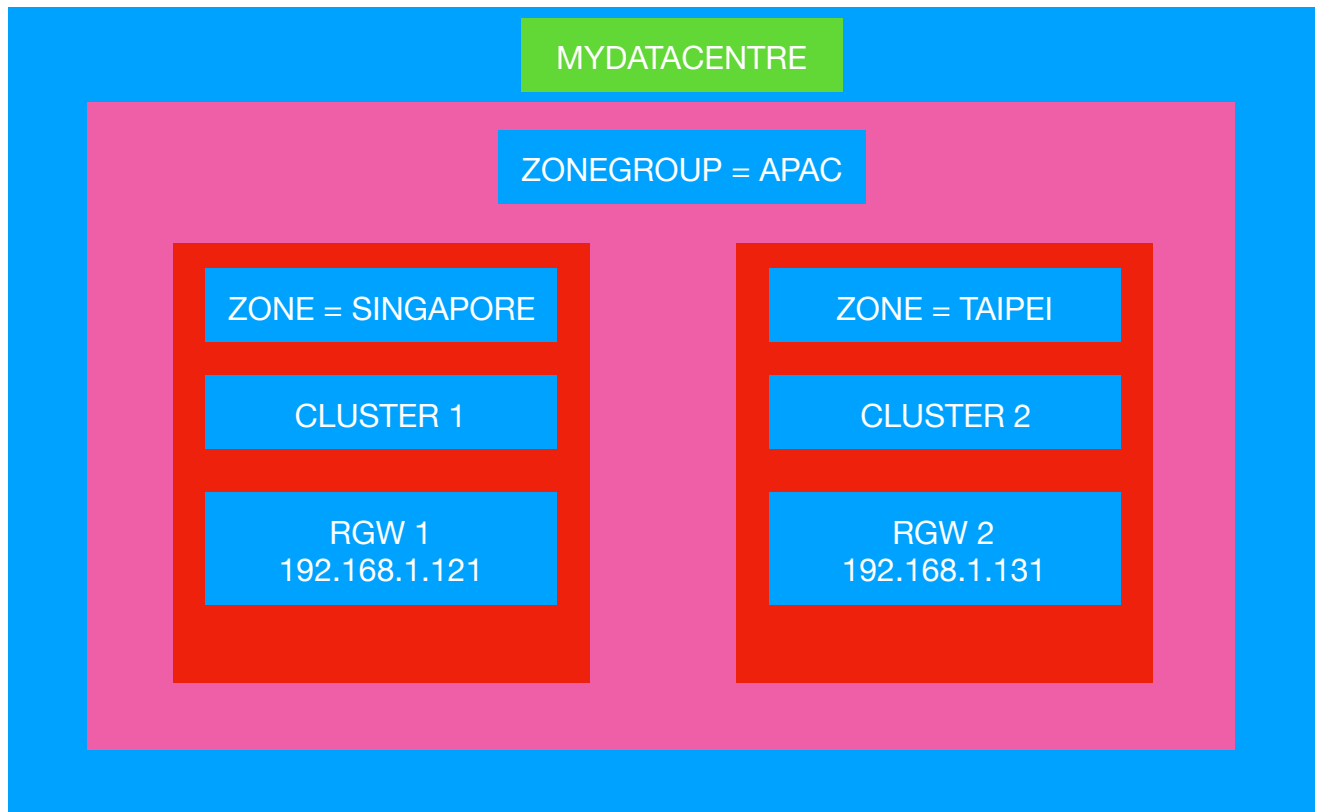


# MultiSite S3 Rados Gateway

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This user guide will help to setup MultiSite S3 Rados Gateway using command line and UniVirStore Manager.



## Preparation

- 1) Ceph Version Should be 10.2.10 or above
- 2) Create 2 or more clusters
- 3) RadosGW from different cluster should be able to ping each other using name, so we use xip.io dns for automatic name resolution.

## Using Command Line

### Master Setup (on RadosGW1)

#### 1) CREATE A REALM AS MYDATACENTRE

```
radosgw-admin realm create --rgw-realm=mydatacentre --default
```

#### 2) CREATE ZONEGROUP AS APAC

```
radosgw-admin zonegroup create --rgw-zonegroup=apac --endpoints=http://192.168.1.121.xip.io:7480 --master --default
```

```
radosgw-admin zonegroup default --rgw-zonegroup=apac
```

### 3) CREATE A ZONE AS SINGAPORE

```
radosgw-admin zone create --rgw-zonegroup=apac --rgw-zone=singapore --endpoints=http://192.168.1.121.xip.io:7480 --access-key=zoneuser --secret=mylongsecret --default --master
```

### 4) CREATE A SYSTEM USER USED FOR ZONE SYNC

```
radosgw-admin user create --uid=zoneuser --display-name="DO NOT DELETE THIS USER" --access-key=zoneuser --secret=mylongsecret --system
```

### 5) COMMIT THE CHANGES

```
radosgw-admin period get
```

```
radosgw-admin period update --commit
```

### 6) CREATE A SYSTEMD SERVICE FOR RADOSGW

```
echo "[Unit]
Description=Ceph rados gateway
After=network-online.target local-fs.target time-sync.target
Wants=network-online.target local-fs.target time-sync.target
PartOf=ceph-radosgw.target
```

```
[Service]
ExecStart=/usr/bin/radosgw -f --cluster ceph
Restart=on-failure
StartLimitInterval=30s
StartLimitBurst=5
```

```
[Install]
WantedBy=ceph-radosgw.target
```

```
" > /etc/systemd/system/ceph-radosgw.service
```

```
mkdir /var/lib/ceph/radosgw/ceph-admin
cp /etc/ceph/ceph.client.admin.keyring /var/lib/ceph/radosgw/ceph-admin/keyring
```

### 7) ENABLE AND START THE SERVICE

```
systemctl enable ceph-radosgw
systemctl start ceph-radosgw
systemctl status ceph-radosgw
```

## Slave Setup (on RadosGW2)

### 1) PULL THE REALM INFORMATION FROM MASTER

```
radosgw-admin realm pull --url=http://192.168.1.121.xip.io:7480 --access-key=zoneuser --secret=mylongsecret
```

## 2) SET APAC AS THE DEFAULT ZONEGROUP

```
radosgw-admin zonegroup default --rgw-zonegroup=apac
```

## 3) CREATE SECONDARY ZONE AS TAIPEI

```
radosgw-admin zone create --rgw-zonegroup=apac --rgw-zone=taipei --access-key=zoneuser --secret=mylongsecret --endpoints=http://192.168.1.131.xip.io:7480 --default
```

## 4) COMMIT THE CHANGES

```
radosgw-admin period update --commit --rgw-zone=taipei
```

## 5) CREATE A SYSTEMD SERVICE FOR RADOSGW

```
echo "[Unit]
Description=Ceph rados gateway
After=network-online.target local-fs.target time-sync.target
Wants=network-online.target local-fs.target time-sync.target
PartOf=ceph-radosgw.target
```

```
[Service]
ExecStart=/usr/bin/radosgw -f --cluster ceph
Restart=on-failure
StartLimitInterval=30s
StartLimitBurst=5
```

```
[Install]
WantedBy=ceph-radosgw.target
```

```
" > /etc/systemd/system/ceph-radosgw.service
```

```
mkdir /var/lib/ceph/radosgw/ceph-admin
cp /etc/ceph/ceph.client.admin.keyring /var/lib/ceph/radosgw/ceph-admin/
keyring
```

## 6) ENABLE AND START THE SERVICE

```
systemctl enable ceph-radosgw
systemctl start ceph-radosgw
systemctl status ceph-radosgw
```

# Testing

In Gateway1 (192.168.1.250) I have created 2 configuration files to access each gateway. We can use s3cmd to test

```
root@gateway1:~/multisiteRGW# pwd
/root/multisiteRGW
```

```
root@gateway1:~/multisiteRGW# ls
192.168.1.121.xip.io.cfg 192.168.1.131.xip.io.cfg
root@gateway1:~/multisiteRGW#
```

### **1) CREATE BUCKET ON RGW1**

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.121.xip.io.cfg mb s3://TEST111
Bucket 's3://TEST111/' created
```

### **2) LIST THE BUCKET FROM RGW2**

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.131.xip.io.cfg ls
2017-11-03 04:12 s3://TEST111
```

### **3) PUT A FILE IN RGW2**

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.131.xip.io.cfg put /root/fio.log s3://TEST111/
fio.log
/root/fio.log -> s3://TEST111/fio.log [1 of 1]
1647 of 1647 100% in 1s 874.51 B/s done
root@gateway1:~/multisiteRGW#
```

### **4) GET THE FILE BACK FROM RGW1**

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.121.xip.io.cfg get s3://TEST111/fio.log
s3://TEST111/fio.log -> ./fio.log [1 of 1]
1647 of 1647 100% in 0s 193.06 kB/s done
root@gateway1:~/multisiteRGW#
```

### **5) LIST THE FILE FROM BOTH GATEWAYS**

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.121.xip.io.cfg la
2017-11-03 04:40 1647 s3://TEST111/fio.log
```

```
root@gateway1:~/multisiteRGW# s3cmd -c 192.168.1.131.xip.io.cfg la
2017-11-03 04:40 1647 s3://TEST111/fio.log
```

```
root@gateway1:~/multisiteRGW#
```

# Failover And Disaster Recovery

If the master zone fails, failover to the secondary zone for disaster recovery.

## 1) PROMOTE TAIPEI ZONE TO MASTER

```
radosgw-admin zone modify --rgw-zone=taipei --master --default
```

```
radosgw-admin period update --commit
```

## 2) RESTART RADOS GATEWAY SERVICE

```
systemctl restart ceph-radosgw
```

If the former master zone recovers, revert the operation.

## 1) FROM THE RECOVERED ZONE, PULL THE PERIOD FROM THE CURRENT MASTER ZONE.

```
radosgw-admin realm pull --url=http://192.168.1.131.xip.io:7480 --access-key=zoneuser --secret=mylongsecret
```

## 2) MAKE THE RECOVERED ZONE THE MASTER AND DEFAULT ZONE.

```
radosgw-admin zone modify --rgw-zone=singapore --master --default
```

## 3) UPDATE THE PERIOD TO MAKE THE CHANGES TAKE EFFECT.

```
radosgw-admin period update --commit
```

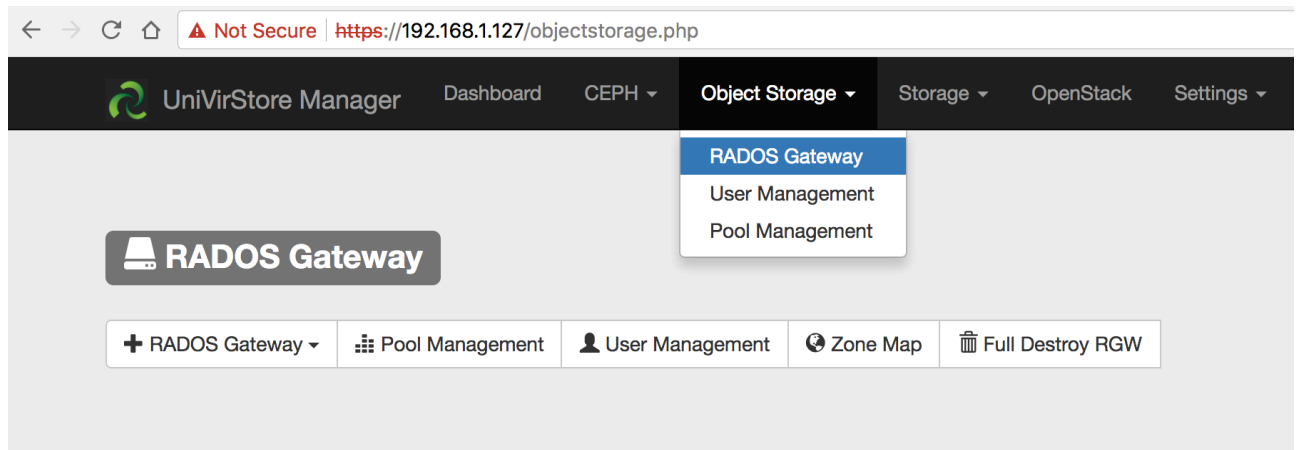
## 4) RESTART RADOS GATEWAY SERVICE

```
systemctl restart ceph-radosgw
```

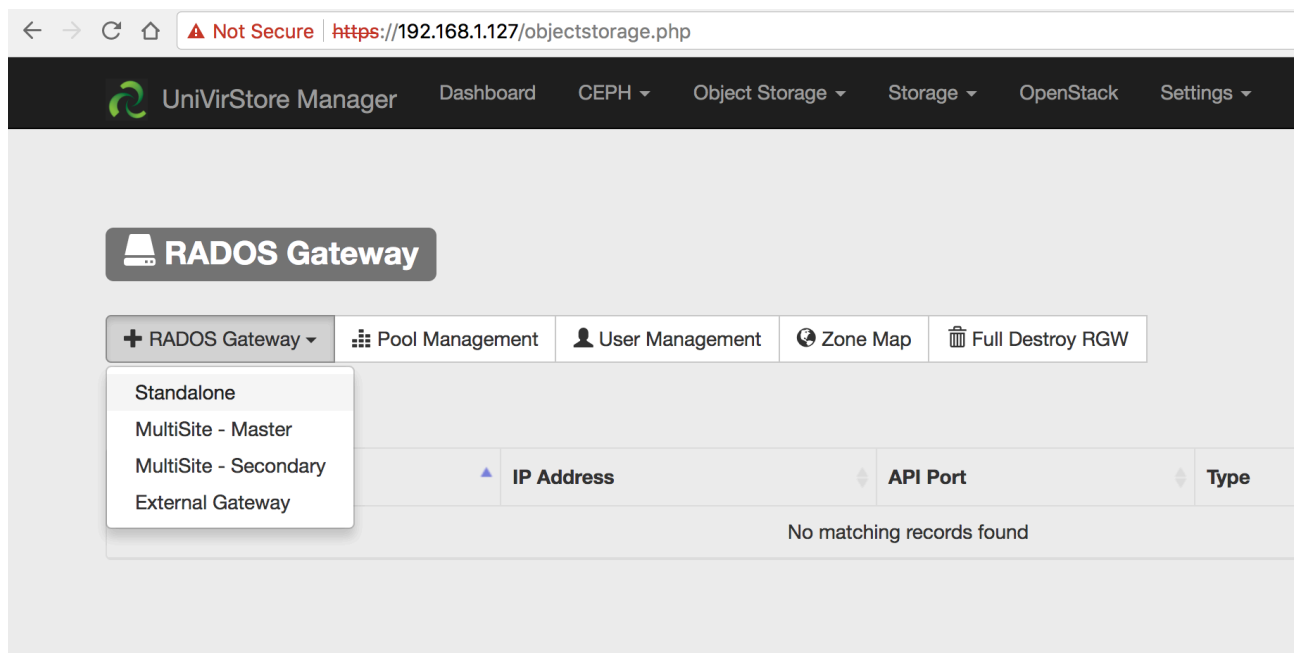
# Using UniVirStore Manager Web Interface

## Creating Standalone Rados Gateway

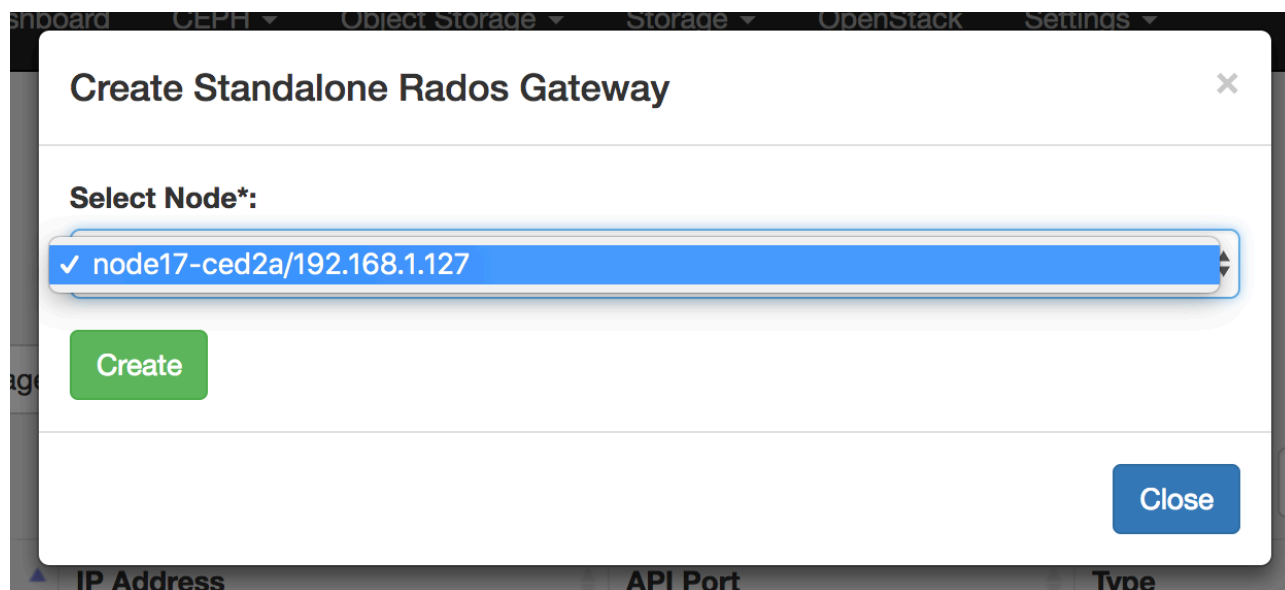
- 1) Login to UniVirStore Manager
- 2) Navigate to Object Storage —> RADOS Gateway



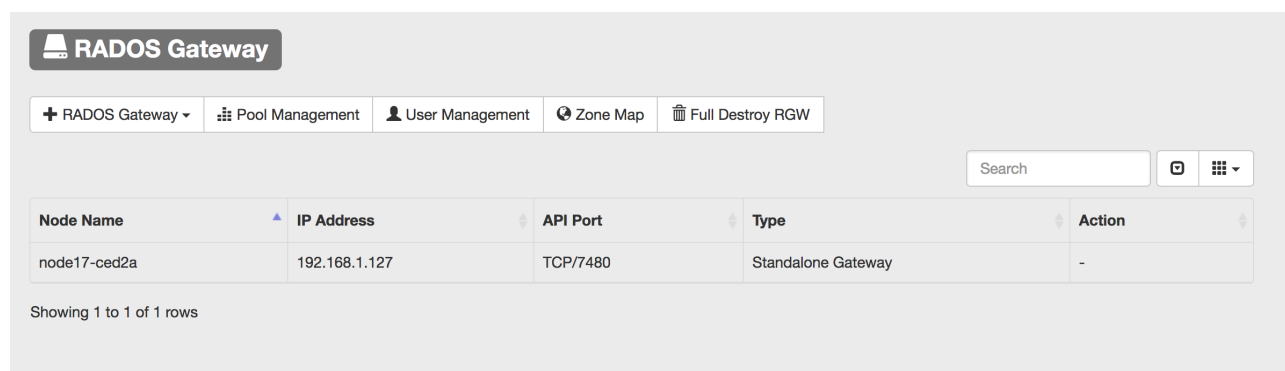
- 3) Click on “+ RADOS Gateway” and Select “Standalone”



4) Select the Node that you want to make as RADOS Gateway and click “**Create**”



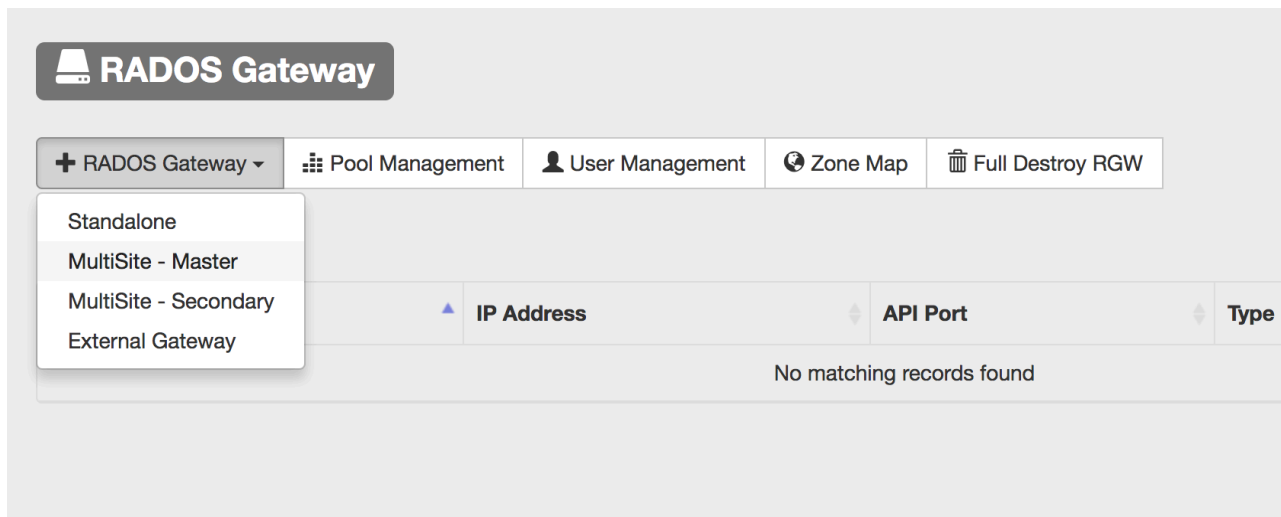
5) This will create a Standalone RADOS Gateway on the selected node.





# Creating Master RADOS Gateway

1) Under Object Storage —> RADOS Gateway, Click on “+ **RADOS Gateway**” and Select “**MultiSite - Master**”



2) Select the node and fill in the required information and click “**Create**”

The screenshot shows a modal window titled 'Create MultiSite Master Rados Gateway'. The form contains four required fields, each with an asterisk: 'Select Node\*', 'Realm\*', 'Zonegroup\*', and 'Zone\*'. The 'Select Node\*' field is a dropdown menu with the selected value 'node21-a0fbc/192.168.1.121'. The 'Realm\*' field is a text input with the value 'mydatacentre'. The 'Zonegroup\*' field is a text input with the value 'apac'. The 'Zone\*' field is a text input with the value 'singapore'. At the bottom left of the form is a green 'Create' button, and at the bottom right is a blue 'Close' button.

3) This will create a MultiSite Master RADOS Gateway on the selected node.

+ RADOS Gateway ▾

Pool Management

User Management

Zone Map

Full Destroy RGW

Sea

Node Name ▲	IP Address ◆	API Port ◆	Type
node21-a0fbc	192.168.1.121	TCP/7480	<b>Master Gateway</b> REALM = mydatacentre ZONEGROUP = apac ZONE = singapore

Showing 1 to 1 of 1 rows

4) Click on “**Zone Map**” to see more details

RGW MultiSite Zone Map ×		
ZONEGROUP - apac		
TYPE ▲	ZONE ◆	ENDPOINT ◆
MASTER	singapore*	http://192.168.1.121:7480
* This Zone		
Close		

# Creating Secondary RADOS Gateway

To add another Ceph Cluster to an existing RADOS Cluster you need to create it as a Secondary RADOS Gateway. You will need the below information from Master

- Master IP
- REALM
- ZONEGROUP

+ RADOS Gateway ▾

Pool Management

User Management

Zone Map

Full Destroy RGW

Node Name

IP Address

API Port

Type

Master Gateway

REALM = mydatacentre

ZONEGROUP = apac

ZONE = singapore

node21-a0fbc

192.168.1.121

TCP/7480

Showing 1 to 1 of 1 rows

- Zone User Access Key
- Zone User Secret Key

Zone Users details can be found in Master at **Object Storage —> User Management**

UID	Name	Keys
zoneuser	DO NOT DELETE THIS USER	S3 Access Key : 37JB3fUzRMdX2zq8GG8X S3 Secret Key : R08o8FhoQ6E3FPbmRn5b1yWSyWJevE9F7doC0WPT
Showing 1 to 1 of 1 rows		

1) Under Object Storage —> RADOS Gateway, Click on “+ **RADOS Gateway**” and Select “**MultiSite - Secondary**”

RADOS Gateway

+ RADOS Gateway ▾

Standalone

MultiSite - Master

MultiSite - Secondary

External Gateway

Pool Management

User Management

Zone Map

Full Destroy RGW

IP Address

API Port

No matching records found

2) Select the node and fill in the required information and click “**Create**”

Create MultiSite Secondary Rados Gateway

Select Node\*:

node31-b2916/192.168.1.131

Master RGW IP Address\*:

192.168.1.121

Existing Master Realm\*:

mydatacentre

Existing Master Zonegroup\*:

apac

New Secondary Zone\*:

taipei

Zone User Access Key\*:

37JB3fUzRMdX2zq8GG8X

Zone User Secret Key\*:

R08o8FhoQ6E3FPbmRn5b1yWSyWJevE9F7doC0WPT

Create

Close

NEW  
ZONE

DETAILS  
FROM  
MASTER

Close

3) This will create a MultiSite Secondary RADOS Gateway on the selected node.

+ RADOS Gateway ▾	Pool Management	User Management	Zone Map	Full Destroy RGW
Search				
Node Name	IP Address	API Port	Type	Action
node31-b2916	192.168.1.131	TCP/7480	<b>Secondary Gateway</b> REALM = mydatacentre ZONEGROUP = apac ZONE = taipei	<a href="#">Promote to Master</a>
Showing 1 to 1 of 1 rows				

4) Click on “**Zone Map**” to see more details

RGW MultiSite Zone Map		
ZONEGROUP - apac		
TYPE	ZONE	ENDPOINT
MASTER	singapore	http://192.168.1.121:7480
SECONDARY	<b>taipei*</b>	http://192.168.1.131:7480
* This Zone		
<a href="#">Close</a>		

# Promoting Secondary to Master

- 1) Under Object Storage —> RADOS Gateway, Click on “**Promote to Master**” to make this Secondary RADOS Gateway as Master RADOS Gateway

+ RADOS Gateway ▾	Pool Management	User Management	Zone Map	Full Destroy RGW
Search				
Node Name	IP Address	API Port	Type	Action
node31-b2916	192.168.1.131	TCP/7480	Secondary Gateway REALM = mydatacentre ZONEGROUP = apac ZONE = taipei	Promote to Master

Showing 1 to 1 of 1 rows

RGW MultiSite Zone Map		
ZONEGROUP - apac		
TYPE	ZONE	ENDPOINT
MASTER	taipei*	http://192.168.1.131:7480
SECONDARY	singapore	http://192.168.1.121:7480
* This Zone		
Close		

ZONE = taipei

# Creating External RADOS Gateway

Any external Intel 64bit server can also be extended as a additional gateway.

## Prerequisite

- 1) Make sure at least one node in the cluster is either Standalone, Master or Secondary Gateway
- 2) Install any flavour of Linux that supports docker
- 3) Docker Engine should be installed, started and enabled to start at boot
- 4) Internet should be available to pull image from [hub.docker.com](https://hub.docker.com) or you can pull the image on some other node, save and load it on this node
- 5) This system should be accessible from UVS Ceph Cluster
- 6) The Below TCP Ports will be used and should be accessible from UVS Ceph Cluster

Port	Purpose
TCP/7480	RADOS Gateway API
TCP/7481	SSH
TCP/7482	Manager

- 1) On External Gateway Pull the UVS RADOS Image from docker hub using the below command

```
docker pull ambedded/radosgw:latest
```

**Note:** In case Internet access is not available, this image can be pull on any other system and loaded on this system.

To Pull and Save on a Internet Connected System

```
# docker pull ambedded/radosgw:latest  
# docker save ambedded/radosgw:latest > radosgw.tar
```

Copy the **radosgw.tar** file on the external gateway system and load it using the below command

```
# docker load -i radosgw.tar
```

- 2) Create uvs-rgw container using the below command

```
docker run --restart=always --name uvs-rgw --net=host -d ambedded/radosgw:latest
```

3) Make sure uvs-rgw container is up using the below command

```
docker ps
```

4) Login to UVS Manager on Ceph Cluster, navigate to Object Storage —> RADOS Gateway, Click on “+ **RADOS Gateway**” and Select “**External Gateway**”

The screenshot shows the 'RADOS Gateway' management page. At the top, there's a header with a 'RADOS Gateway' icon and title. Below it, a navigation bar includes a '+ RADOS Gateway' dropdown, 'Pool Management', 'User Management', 'Zone Map', and 'Full Destroy RGW'. The dropdown menu is open, showing options: 'Standalone', 'MultiSite - Master', 'MultiSite - Secondary', and 'External Gateway'. Below the menu is a table with columns: 'IP Address', 'API Port', and 'Type'. One row is visible with the IP '192.168.1.131', API Port 'TCP/7480', and Type 'Master Gateway'. The 'Type' column also contains details: 'REALM = mydatacentre', 'ZONEGROUP = apac', and 'ZONE = taipei'. At the bottom, it says 'Showing 1 to 1 of 1 rows'.


IP Address	API Port	Type
192.168.1.131	TCP/7480	<b>Master Gateway</b> REALM = mydatacentre ZONEGROUP = apac ZONE = taipei

5) Type the IP address of the External Linux Server and click “**Create**”

The screenshot shows a modal dialog box titled 'Create External Rados Gateway'. It has a close button (X) in the top right corner. Inside the dialog, there's a label 'External RGW IP Address\*:' followed by a text input field containing '192.168.1.250'. Below the input field is a green 'Create' button. At the bottom right of the dialog is a blue 'Close' button.



6) This will add an additional Gateway

 **RADOS Gateway**

+ RADOS Gateway

Pool Management

User Management

Zone Map

Full Destroy RGW

Node Name	IP Address	API Port	Type	Action
gateway1	192.168.1.250	TCP/7480	External Gateway	<a href="#">Reconfig</a> <a href="#">Delete</a>
node31-b2916	192.168.1.131	TCP/7480	Master Gateway REALM = mydatacentre ZONEGROUP = apac ZONE = taipei	-

Showing 1 to 2 of 2 rows

7) Login to `http://<external_gateway_ip>:7482` using username admin and password mars200 to check the status, start, stop, restart the service.

192.168.1.250:7482/?message=Page%20refreshed%20at%20Wed%20Nov%20%20%208%2003%3A28%3A09%202017

# Supervisor

status

Page refreshed at Wed Nov 8 03:28:09 2017

REFRESH

RESTART ALL

STOP ALL

State	Description	Name	Action
running	pid 239, uptime 0:13:34	radosgw	<a href="#">Restart</a> <a href="#">Stop</a> <a href="#">Clear Log</a> <a href="#">Tail -f</a>
running	pid 9, uptime 0:20:34	sshd	<a href="#">Restart</a> <a href="#">Stop</a> <a href="#">Clear Log</a> <a href="#">Tail -f</a>

## Destroying RADOS Gateway Completely

This option will completely remove and disable RADOS Gateway from the cluster. Use this very carefully as all related pools will also be deleted and it is irreversible.

1) Click on “**Full Destroy RGW**”

+ RADOS Gateway

Pool Management

User Management

Zone Map

Full Destroy RGW

Showing 1 to 1 of 1 rows

2) Read the message and Click **“DESTROY”** if you really want to do that.

