Terraform - Cloud Q on AWS
Using Qumulo EC2 & EBS type change scripts
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Qumulo EC2 Instance type change script

The "modify-instance-types.sh" script allows you to change the EC2 instance type of a Qumulo cluster. You might want to consider using this to manage the cost and performance of your EC2 instances running Qumulo.

Pre-Requisites:

- The script depends on the cluster being deployed with the Qumulo Cloud Q Quick Start CloudFormation or aws-terraform-cloud-q Terraform templates.
- The script is designed to run on an AWS Linux 2 AMI leveraging either an IAM role or with the AWS CLI configured.
- The AWS Linux 2 EC2 instance must have connectivity to the cluster.

Permissions:

The following IAM permissions are leveraged to run the script:
- ssm:get-parameter
- ec2:describe-instances
- ec2:stop-instances
- ec2:modify-instance-attribute
- ec2:start-instances

If you are running the script from an EC2 Linux instance or a remote machine outside of the VPC, make sure to add the client machine's IP to access TCP ports 443 and 8000 on the INBOUND security group (SG) of the Qumulo Cluster.
On your client machine, allow OUTBOUND TCP ports 8000 to Q cluster subnet CIDR and 443 to all traffic.

Running the Script:

Make sure to change the file permissions on the script to be executable and run the script using the following command,

username$ ./modify-instance-types.sh --region <aws region> --qstackname <nested stack name> --newtype <ec2 instance type> --nodecount <number of nodes in cluster> --inservice <yes/no>

where:

–region   = AWS region where Qumulo cluster is running
–qstackname = Cloudformation Stack name or Terraform unique deployment name.
–newtype   = desired EC2 instance type
–nodecount   = number of nodes in the Qumulo Cluster
–inservice   = yes/no/NA

- Inservice = yes : In this case, your instances can be in running state, so the script modifies each instance one at a time so the cluster remains operational.
- Inservice = no : In this case, your instances can be in running state, the script shuts down all the instances at once, modifies the instance type and restarts them.
- Inservice = Not specified : In this case, instances can be in stopped state, the script modifies the instance type and leaves the instances in stopped state.

Qumulo EBS volume type change script

The "modify-vol-types.sh" script allows you to change the EBS volume type of a Qumulo cluster. The supported type changes are:

- st1 to sc1 or sc1 to st1 (for HDD tier)
- gp2 to gp3 or gp3 to gp2 (for flash tier)
- Modify gp3 throughput and iops within gp3 (for flash tier)

You might want to consider using this to optimize the cost and performance of your EBS volumes backing the Qumulo cluster.

Pre-Requisites:

- The script depends on the cluster being deployed with the Qumulo Cloud Q Quick Start CloudFormation or aws-terraform-cloud-q Terraform templates.
- The script is designed to run on a EC2 linux machine with the AWS CLI Version 2 installed. You can either leverage an IAM role or configure the AWS CLI Version 2 on the machine.
- You may also run this script from your local machine (Mac/Linux) with AWS CLI Version 2 installed and configured.

Permissions:

The following IAM permissions are leveraged to run the script:
- ec2:describe-volumes
- ec2:modify-volumes
- ec2:create-tags

On your client machine, allow TCP port 443 OUTBOUND to all traffic.

Running the Script:

Make sure to change the file permissions on the script to be executable and run the script using the following command,

```
username$ ./modify-vol-types.sh --region <aws region> --tagname <name> --oldtype <ebs vol type> --newtype <ebs vol type> [--iops  <gp3 iops> --throughput <gp3 throughput>]
```

where:
–region   = AWS region where Qumulo cluster is running
–tagname   = EBS Volume tag value corresponding to the tag key "Name"
–oldtype   = old ebs volume type
–newtype   = desired ebs volume type
–iops   = desired gp3 iops per volume [Optional]
–throughput   = desired gp3 throughput in MB/s [Optional]