ChartMuseum - The helm chart repository with amazon s3 bucket as storage support.

ChartMuseum is an open-source **Helm Chart Repository**, with support for cloud storage backend, including Google Cloud Storage, Amazon S3 etc. We have been using helm charts for packaging our application and deploying them on kuberentes. But what about managing them and keeping track of the charts versioning.

If you still looking for an answer then there is something called ***ChartMuseum*** (An opensource helm charts repository).

We are listing the steps needed to setup up your own in house helm chart repository using *ChartMuseum* and how we can store our custom charts into it.

prerequisite :-

1. **Working kubernetes cluster**
2. **Helm**
3. **Custom chart**

Setup *ChartMuseum*

Install binary (Linux)

```
curl -LO
https://s3.amazonaws.com/chartmuseum/release/latest/bin/linux/amd64/char
tmuseum
chmod + chartmuseum
cp -prf chartmuseum /usr/local/bin/chartmuseum
```

Run *ChartMuseum*

```
chartmuseum --port=8080 --storage="local"
--storage-local-rootdir="./chartmuseum" &
```

Installing Charts into Kubernetes

Add the URL to your *ChartMuseum* installation to the local repository list

```
helm repo add chartmuseum http://localhost:8080
```

Custom repository is now setup. So how can we use it for storing custom helm charts. Let's look at the steps.

Create a custom chart and package it.

```
$helm create mychart
$ cd mychart
$ helm package .
```

Upload chart to *ChartMuseum*

```
$ curl --data-binary "@mychart-0.1.0.tgz"
http://localhost:8080/api/charts
{"saved":true} << O/P
```

Search your chart into *ChartMuseum*

```
$ helm search chartmuseum/
NAME                    CHART VERSION   APP VERSION     DESCRIPTION
chartmuseum/mychart     0.1.0           1.0             A Helm chart for
Kubernetes
```

Install chart into kubernetes

```
$ helm install chartmuseum/mychart
```

How to store custom charts in s3 bucket?

```
chartmuseum --debug --port=8080 --storage="amazon"
--storage-amazon-bucket="<BUCKET-NAME>" --storage-amazon-prefix=""
--storage-amazon-region="us-east-1" &
```

Note: Please note the IAM policy required.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AllowListObjects",
      "Effect": "Allow",
      "Action": [
        "s3:ListBucket"
      ],
      "Resource": "arn:aws:s3:::my-s3-bucket"
    },
    {
      "Sid": "AllowObjectsCRUD",
      "Effect": "Allow",
      "Action": [
        "s3:DeleteObject",
        "s3:GetObject",
        "s3:PutObject"
      ],
      "Resource": "arn:aws:s3:::my-s3-bucket/*"
    }
  ]
}
```

This can be used in similar way as we used local *ChartMuseum* repository in the earlier steps.