minio 容灾备份

Bucket Replication桶复制

两个集群单向复制

部署环境说明

节点IP	角色	备注
192.168.251.133	主minio站点	桶edoc2向备站点单向同步
192.168.251.88	备minio站点	

```
[root@node1 minio]# cat run.sh
#!/bin/bash

export MINIO_ROOT_USER=admin
export MINIO_ROOT_PASSWORD=edoc2@edoc2

/opt/minio/minio server --config-dir /opt/minio/config/ --console-address
":30000"\
    http://192.168.251.133/data{1..2}/drive{1..2}
```

配置mc客户端

添加两个站点的连接配置（主备站点都操作）

```
wget https://dl.min.io/client/mc/release/linux-amd64/mc
```

```
## 主站点
# mc config host add node1 http://192.168.251.133:9000 admin edoc2@edoc2 --api
s3v4

## 备站点
# mc config host add node2 http://192.168.251.88:9000 admin edoc2@edoc2 --api
s3v4
```

创建同步的bucket（主备站点都创建）

```
# mc mb node1/edoc2
# mc mb node2/edoc2
```

配置主站点复制所需权限

下载主站点权限配置文件

```
wget --no-check-certificate
https://docs.min.io/minio/baremetal/examples/ReplicationAdminPolicy.json


## 该"EnableRemoteBucketConfiguration"语句授予创建远程目标以支持复制的权限。
## 该"EnableReplicationRuleConfiguration"语句授予在存储桶上创建复制规则的权限。
该"arn:aws:s3:::*资源将复制权限应用于源部署上的任何存储桶。您可以根据需要将用户策略限制到特定的存储桶。
```

添加 ReplicationAdminPolicy 策略

```
# cat ReplicationAdminPolicy.json | mc admin policy add node1
ReplicationAdminPolicy /dev/stdin
Added policy `ReplicationAdminPolicy` successfully.
```

创建用户及为用户绑定策略

```
# mc admin user add node1 replAdmin 1qaz2wsx3edc
Added user `replAdmin` successfully.

# mc admin policy set node1 ReplicationAdminPolicy user=replAdmin
Policy `ReplicationAdminPolicy` is set on user `replAdmin`
```

配置备站点复制所需权限

下载备战点权限配置文件

```
# wget --no-check-certificate
https://docs.min.io/minio/baremetal/examples/ReplicationRemoteUserPolicy.json

## 该"EnableReplicationOnBucket"语句授予远程目标检索存储桶级配置的权限，以支持MinIO 部署中所有存储桶上的复制操作。要将策略限制为特定存储桶，请将这些存储桶指定为Resource数组中类似于的元素"arn:aws:s3:::bucketName"。
## 该"EnableReplicatingDataIntoBucket"语句授予远程目标将数据同步到MinIO 部署中的任何存储桶的权限。要将策略限制为特定存储桶，请将这些存储桶指定为Resource数组中类似于的元素"arn:aws:s3:::bucketName/*"。
```

备站点添加远程用户策略 ReplicationRemoteUserPolicy

```
# cat ReplicationRemoteUserPolicy.json | mc admin policy add node2
ReplicationRemoteUserPolicy /dev/stdin
Added policy `ReplicationRemoteUserPolicy` successfully.
```

配置访问备站点的远程用户replRemote为其并设置策略

```
# mc admin user add node2 replReomte 1qaz2wsx3edc
Added user `replReomte` successfully.

# mc admin policy set node2 ReplicationRemoteUserPolicy user=replReomte
Policy `ReplicationRemoteUserPolicy` is set on user `replReomte`
```

其他的必须要求

1. 开启版本控制

   MinIO 依赖于版本控制提供的不变性保护来支持复制和重新同步。

   ```
   # mc version info node1/edoc2      // 查看node1/edoc2 是否开启版本控制

   // 创建同步之前版本控制开启
   # mc version enable node1/edoc2
   # mc version enable node2/edoc2


   // 不开启会报错
   [root@node1 ~]# mc admin bucket remote add node1/edoc2 \
   >    http://replReomte:1qaz2wsx3edc@192.168.251.88:9000/edoc2 \
   >    --service "replication"
   mc: <ERROR> Unable to configure remote target. The replication source does
   not have versioning enabled.
   ```

2. 只支持两个minio部署的机器的同步，要配置任意 S3 兼容服务之间的复制，请使用.`mc mirror`
3. 如果开启了加密，两个集群都要开启相应的加密方式

为bucket创建远程的复制目标

```
mc admin bucket remote add node1/edoc2 \
   http://replReomte:1qaz2wsx3edc@192.168.251.88:9000/edoc2 \
   --service "replication"
   [--sync]    ## 可选默认是异步的


[root@node1 ~]# mc admin bucket remote add node1/edoc2
http://replReomte:1qaz2wsx3edc@192.168.251.88:9000/edoc2    --service
"replication"
Remote ARN = `arn:minio:replication::4eb0bf77-a13f-4174-bef7-f08945ed517d:edoc2`

// 返回ARN
```

为bucket创建桶复制规则

```
mc replicate add node1/edoc2 \
   --remote-bucket 'arn:minio:replication::4eb0bf77-a13f-4174-bef7-
f08945ed517d:edoc2' \
   --replicate "delete,delete-marker,existing-objects"
Replication configuration rule applied to node1/edoc2 successfully.
```

测试复制配置

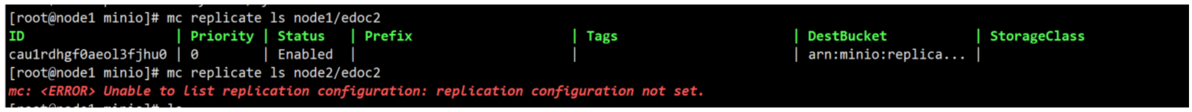
```
## 向node1上传文件可以同步到node2
[root@node1 ~]# mc ls node1/edoc2
[root@node1 ~]# mc cp ReplicationAdminPolicy.json node1/edoc2
...ionAdminPolicy.json:  848 B / 848 B ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃
64.05 KiB/s 0s[root@node1 ~]# ░░░░░░░░░░░░░░░░░░░░▓┃
[root@node1 ~]# mc ls node1/edoc2
```

```
[2022-06-28 19:37:31 CST]   848B STANDARD ReplicationAdminPolicy.json
[root@node1 ~]# mc ls node2/edoc2
[2022-06-28 19:37:31 CST]   848B STANDARD ReplicationAdminPolicy.json

## 向node2 上传文件不能同步到node1
[root@node2 minio]# mc cp run.sh node2/edoc2
/opt/minio/run.sh:     684 B / 684 B ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 47.91
KiB/s 0s [root@node2 minio]# ░░░░░░░░░░░░░▓┃
[root@node2 minio]# mc ls node1/edoc2
[2022-06-28 19:37:31 CST]   848B STANDARD ReplicationAdminPolicy.json
[root@node2 minio]# mc ls node2/edoc2
[2022-06-28 19:37:31 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-28 19:42:50 CST]   684B STANDARD run.sh
```

两个集群的双向同步

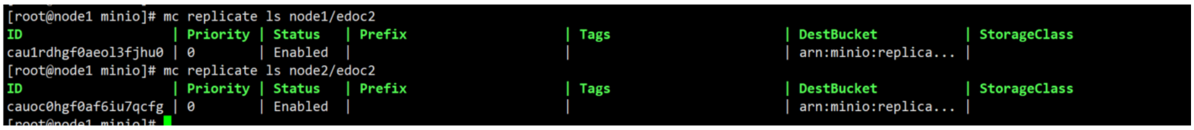
双向同步应用程序既可以写主站点也可以写备站点，数据自动会向对方同步。

配置方法与单向同步操作步骤一致，再配置个从node2 到 node1 的单向同步。



```
[root@node1 minio]# mc replicate ls node1/edoc2
ID                   | Priority | Status  | Prefix                       | Tags                        | DestBucket              | StorageClass
cau1rdhgf0aeol3fjhu0 | 0        | Enabled |                              |                             | arn:minio:replica... |
[root@node1 minio]# mc replicate ls node2/edoc2
mc: <ERROR> Unable to list replication configuration: replication configuration not set.
```

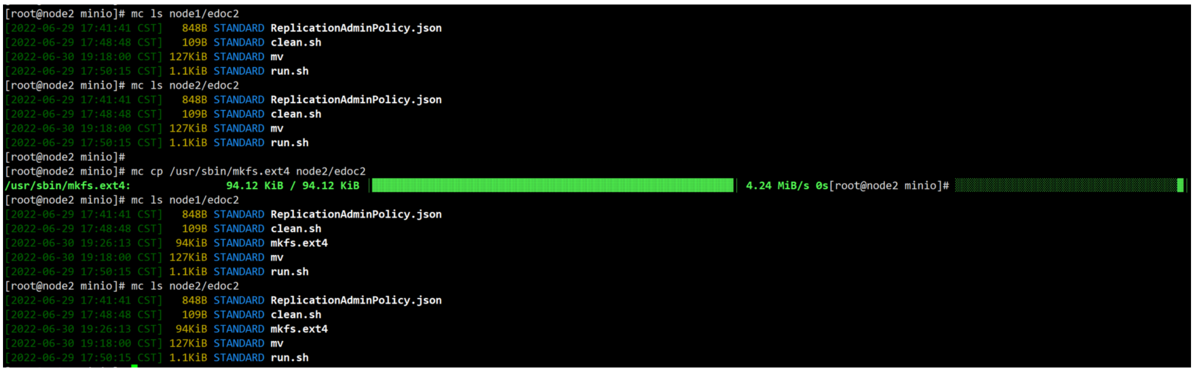
单向同步，node2/edoc2 没有配置replicate



```
[root@node1 minio]# mc replicate ls node1/edoc2
ID                   | Priority | Status  | Prefix                       | Tags                        | DestBucket              | StorageClass
cau1rdhgf0aeol3fjhu0 | 0        | Enabled |                              |                             | arn:minio:replica... |
[root@node1 minio]# mc replicate ls node2/edoc2
ID                   | Priority | Status  | Prefix                       | Tags                        | DestBucket              | StorageClass
cauoc0hgf0af6iu7qcfg | 0        | Enabled |                              |                             | arn:minio:replica... |
```

双向同步，各有一个复制任务同步到对方 bucket

测试复制配置



```
[root@node2 minio]# mc ls node1/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]#
[root@node2 minio]# mc cp /usr/sbin/mkfs.ext4 node2/edoc2
/usr/sbin/mkfs.ext4:                94.12 KiB / 94.12 KiB ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 4.24 MiB/s 0s[root@node2 minio]# ░░░░░░░░░░░░░░▓┃
[root@node2 minio]# mc ls node1/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
```

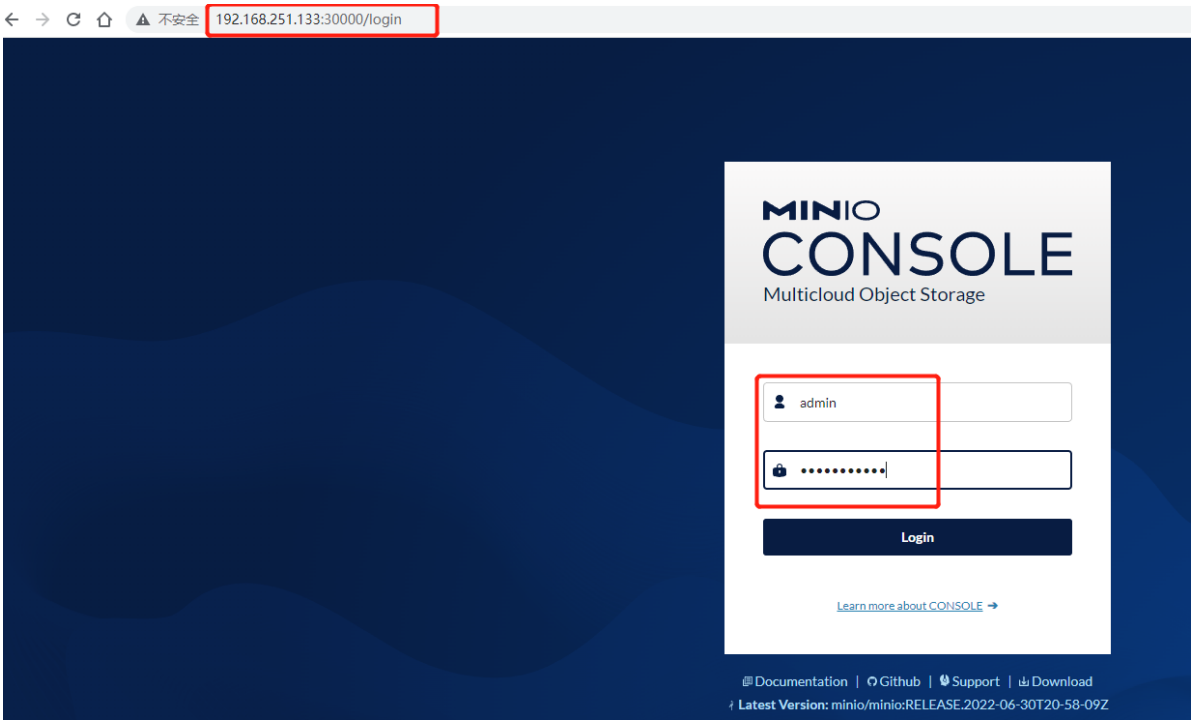
```
[root@node2 minio]# mc ls node1/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]#
[root@node2 minio]# mc cp /usr/sbin/fdisk node1/edoc2
/usr/sbin/fdisk:                195.80 KiB / 195.80 KiB ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 7.06 MiB/s 0s[root@node2 minio]# ░░░░░░░░░░░░░░▓┃
[root@node2 minio]# mc ls node1/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:27:14 CST] 196KiB STANDARD fdisk
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-06-29 17:41:41 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-06-29 17:48:48 CST]   109B STANDARD clean.sh
[2022-06-30 19:27:14 CST] 196KiB STANDARD fdisk
[2022-06-30 19:26:13 CST]  94KiB STANDARD mkfs.ext4
[2022-06-30 19:18:00 CST] 127KiB STANDARD mv
[2022-06-29 17:50:15 CST] 1.1KiB STANDARD run.sh
```

图形化配置操作

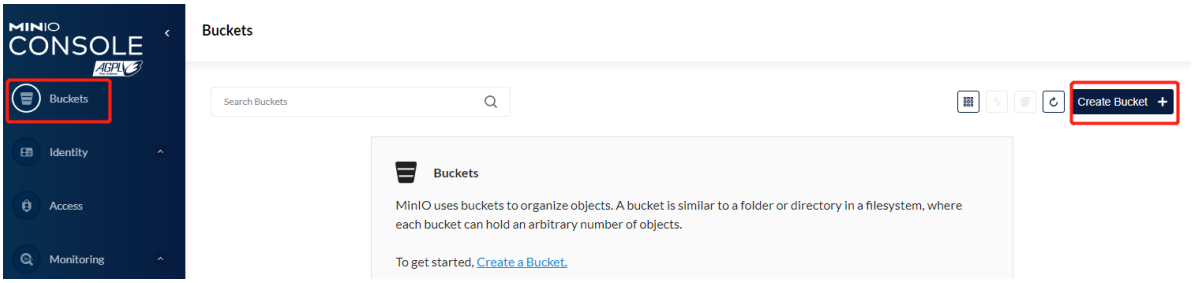
访问minio的管理节点，启动的时候制定console端口

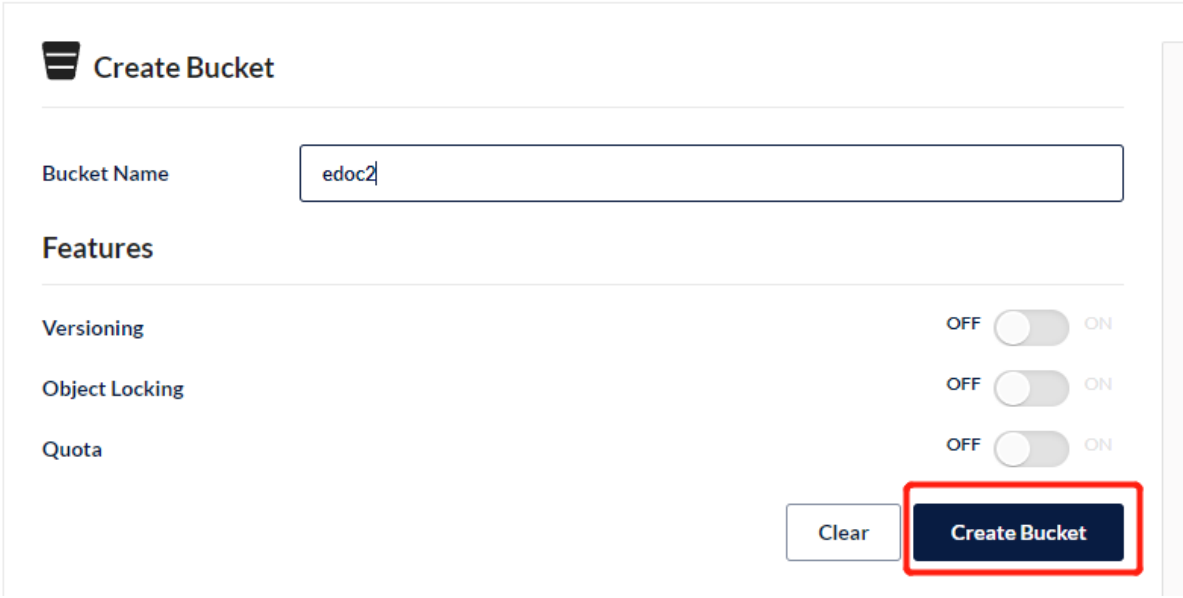
```
[root@node1 minio]# cat run.sh
#!/bin/bash

export MINIO_ROOT_USER=admin
export MINIO_ROOT_PASSWORD=edoc2@edoc2

/opt/minio/minio server --config-dir /opt/minio/config/ --console-address ":30000" \
    http://192.168.251.133/data{1..2}/drive{1..2}
```

输入启动minio时候指定的root管理员的用户名密码

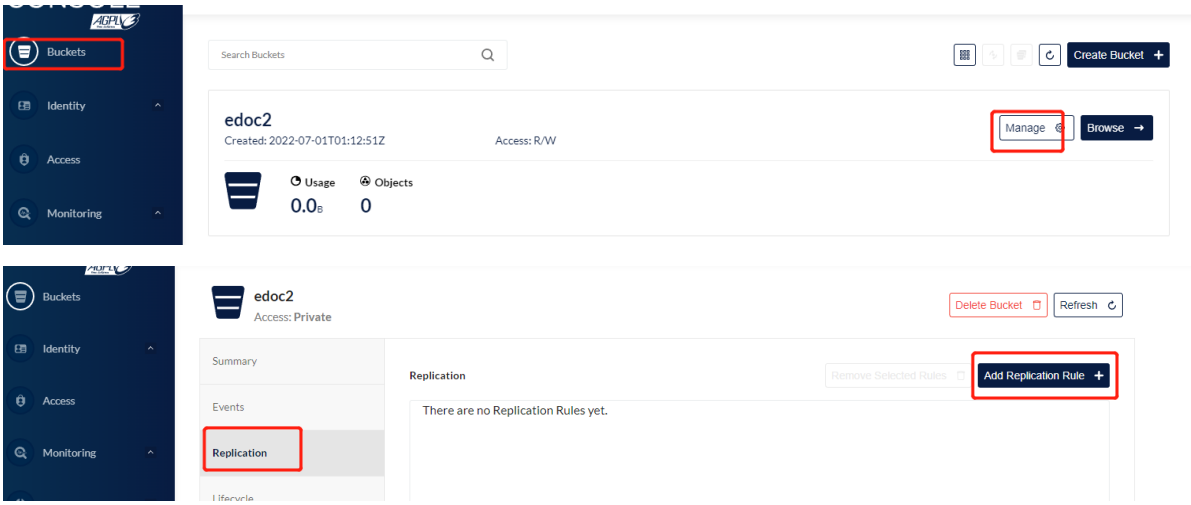


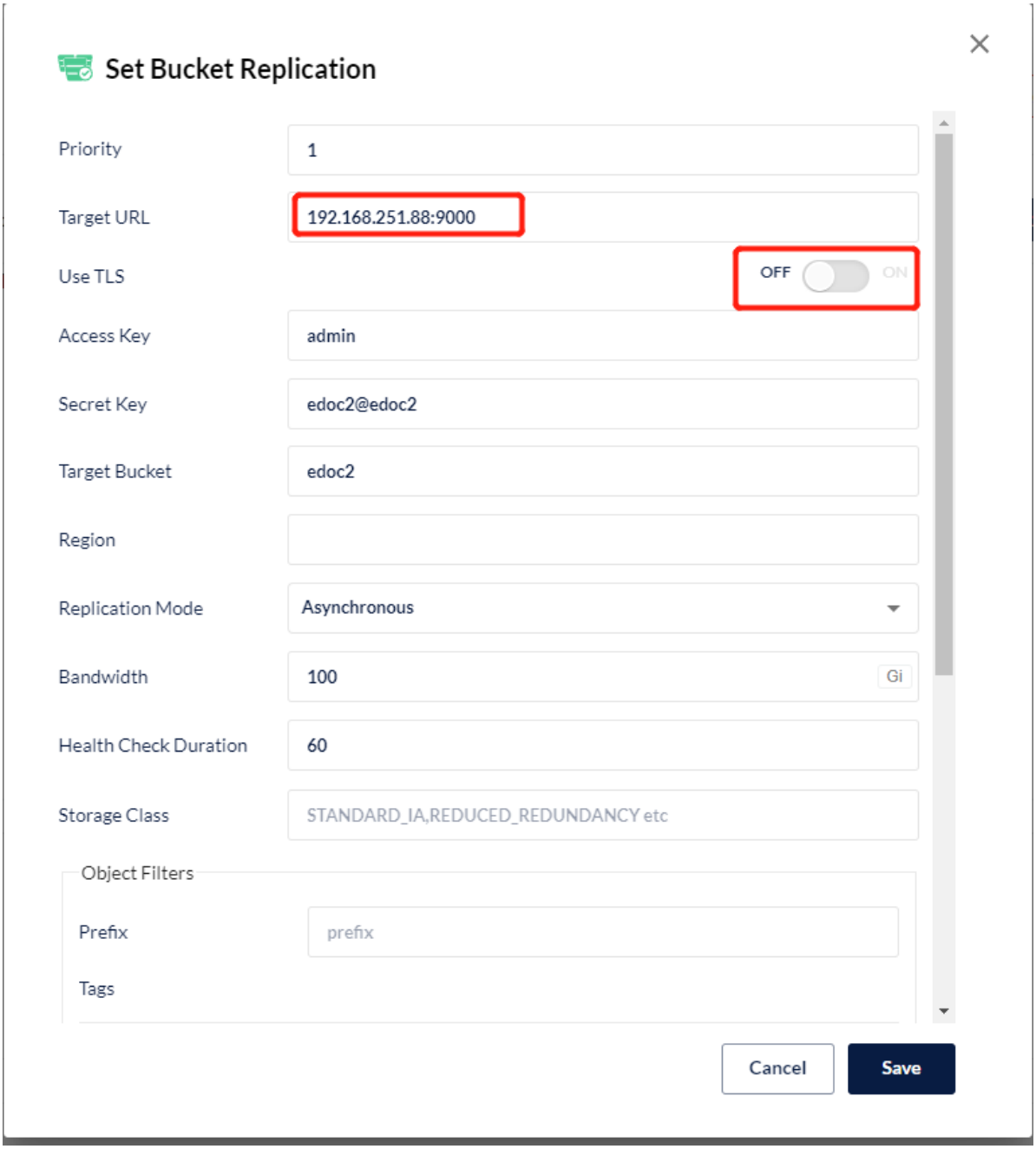
创建bucket（两个站点都创建）





配置bucket replication

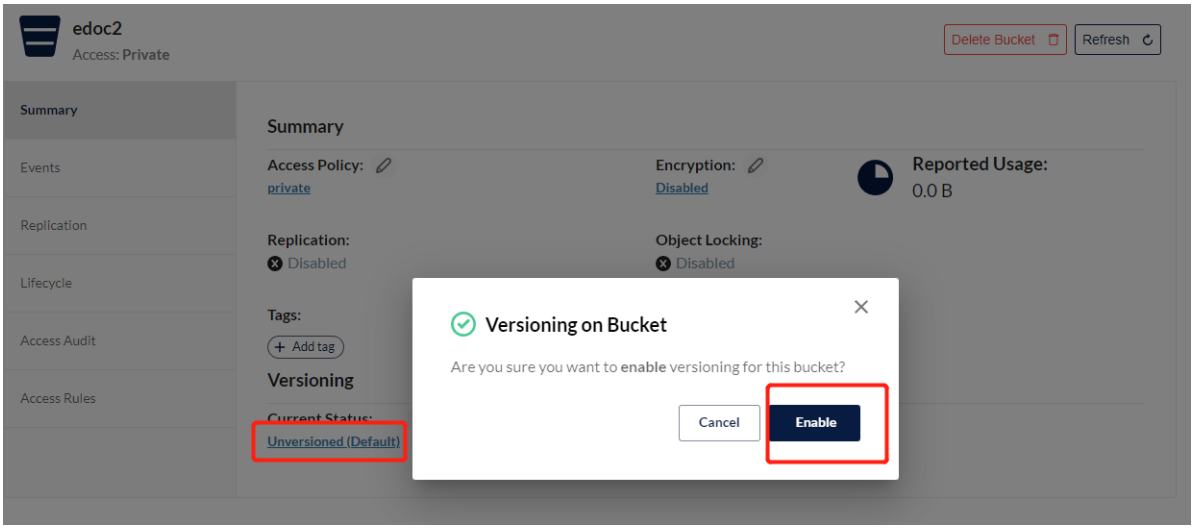




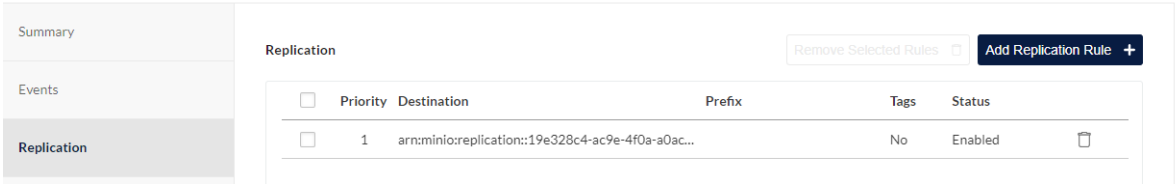
需要注意的是：

1. 默认 `Use TLS` 是开启的，没有配置`https`，就需要把这个给关闭
2. `Target URL`： 同步到目标站点的地址，不需要添加协议，如：`http://192.168.251.88:9000` (这个表单会自动根据`Use TLS`的值决定使用 `http`还是`https`)

注意：bucket 的版本控制需要手动开启（两边都要开启）



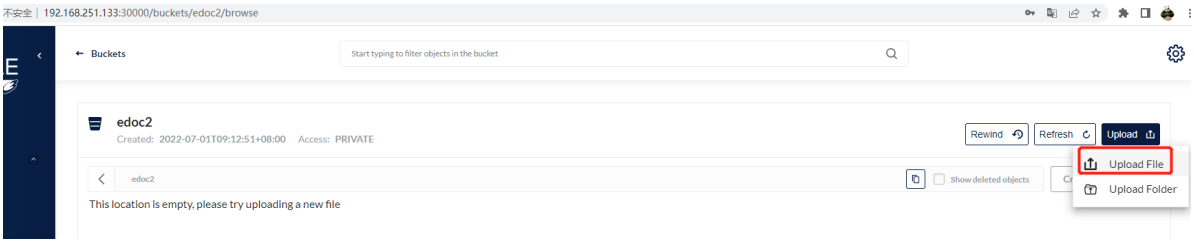
创建好后的同步规则



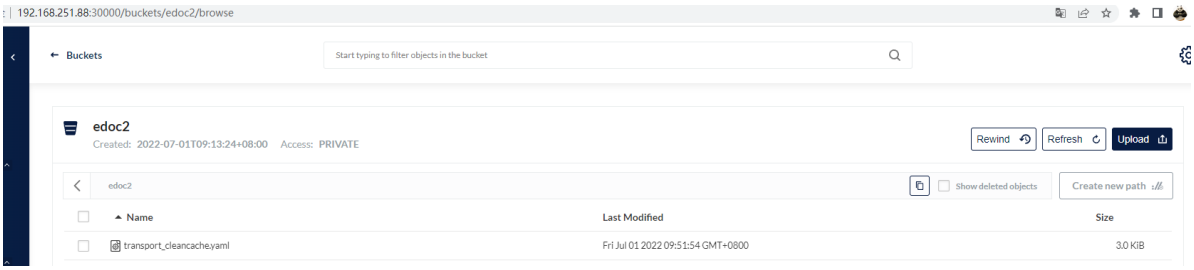
在备站点进行相同的操作，即可进行备站点到主站点的同步。

测试桶复制

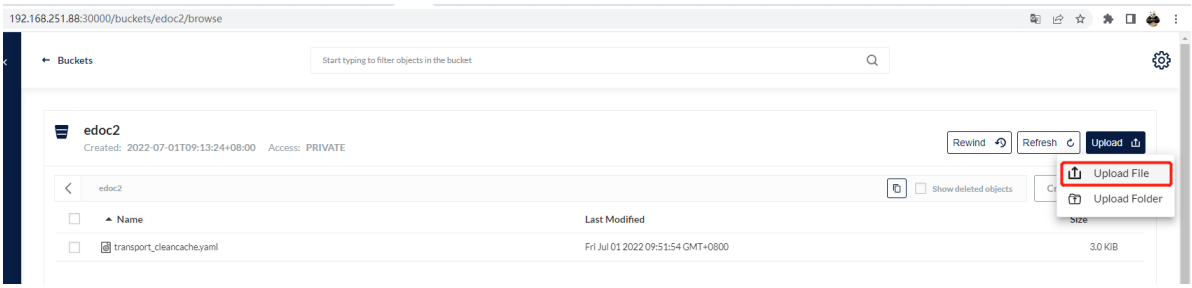
主站点上传文件

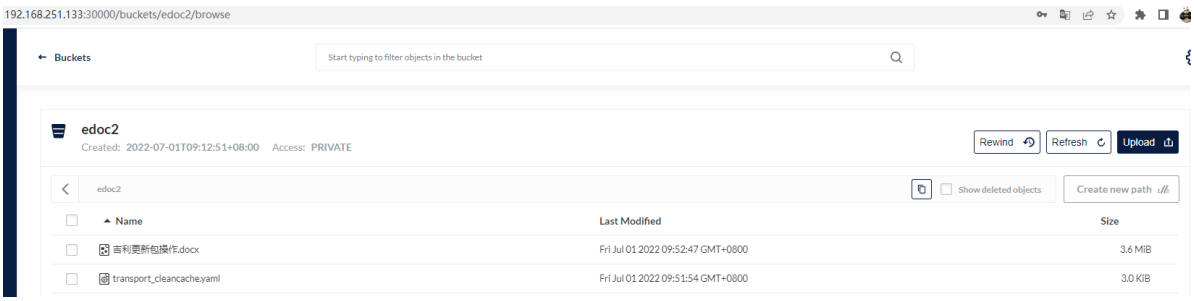


备站点查看



备战点上传文件





Site Replication站点复制

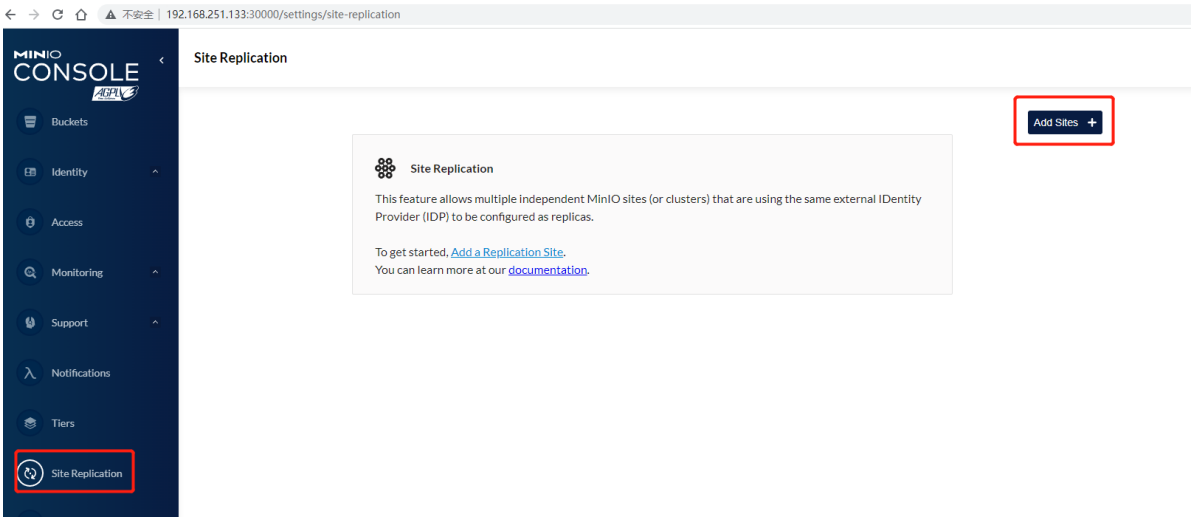
桶复制是在bucket级别的复制同步，而site replication 是在minio站点级别的复制同步，minoi 站点复制的包含有一下内容：

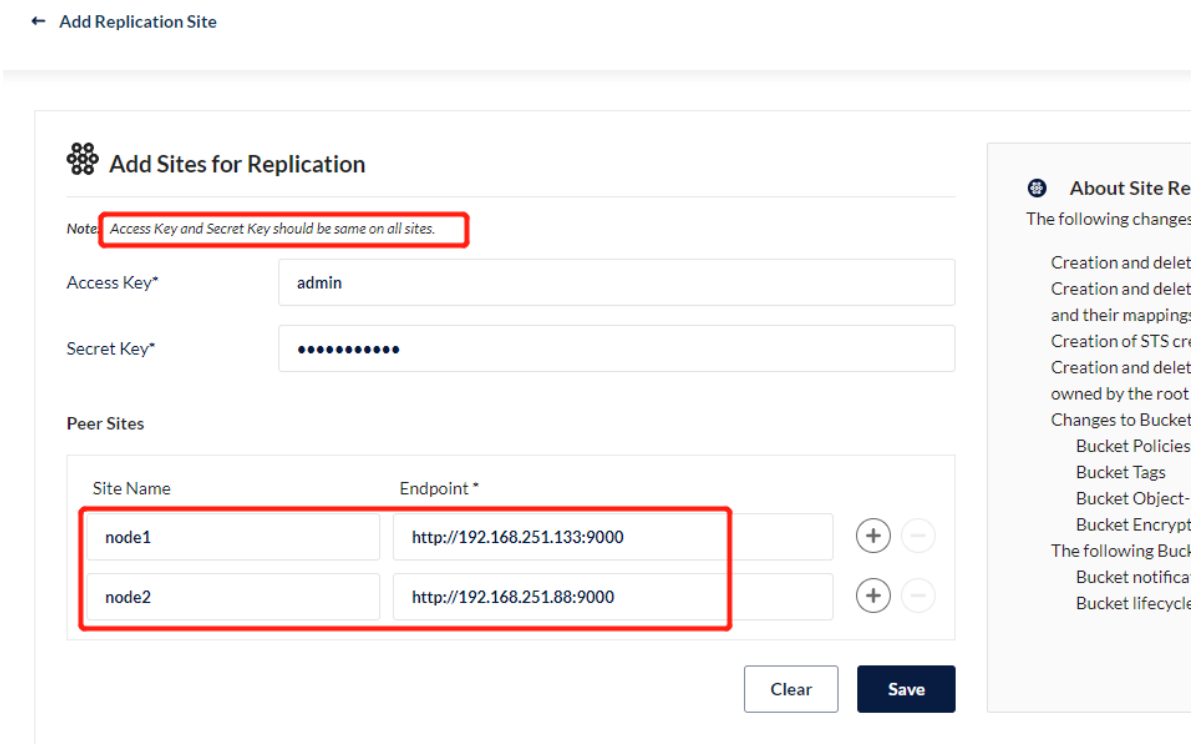
每个 MinIO 部署（“对等站点”）在其他对等站点之间同步以下更改：

- 桶和对象的创建、修改和删除，包括
  - 存储桶和对象配置
  - 政策
  - `mc tag set`
  - 锁定，包括保留和合法保留配置
  - 加密设置
- 创建和删除 IAM 用户、组、策略以及到用户或组的策略映射（针对 LDAP 用户或组）
- `root`为可从本地凭证验证的会话令牌创建安全令牌服务 (STS)凭证
- 创建和删除服务帐户（用户拥有的除外`root`）
- 站点复制为所有复制站点上的所有新存储桶和现有存储桶启用存储桶版本控制。

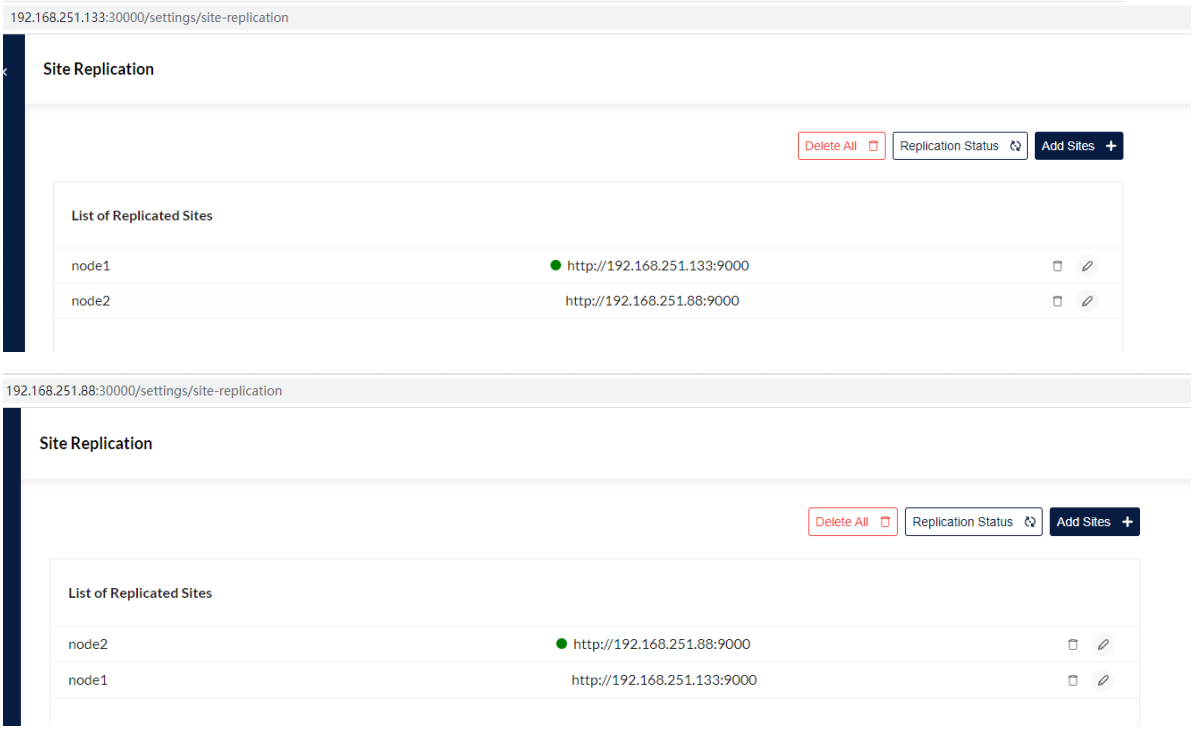
站点复制配置

主站点进行配置





注意：站点同步需要ak和sk保持一致，填写对等站点的访问地址后保存



此时分别访问两个站点，站点的同步已经配置完成

站点复制测试

默认两个站点双向同步所有的操作

创建bucket

```
[root@node1 minio]# mc ls node1
[2022-07-01 10:28:50 CST]     0B edoc2/
[root@node1 minio]# mc ls node2
[2022-07-01 10:28:50 CST]     0B edoc2/
[root@node1 minio]# mc mb node1/edoc3
Bucket created successfully `node1/edoc3`.
[root@node1 minio]# mc ls node1
[2022-07-01 10:28:50 CST]     0B edoc2/
[2022-07-01 10:29:48 CST]     0B edoc3/
[root@node1 minio]# mc ls node2
[2022-07-01 10:28:50 CST]     0B edoc2/
[2022-07-01 10:29:48 CST]     0B edoc3/
[root@node1 minio]# mc mb node2/edoc4
Bucket created successfully `node2/edoc4`.
[root@node1 minio]# mc ls node1
[2022-07-01 10:28:50 CST]     0B edoc2/
[2022-07-01 10:29:48 CST]     0B edoc3/
[2022-07-01 10:30:09 CST]     0B edoc4/
[root@node1 minio]# mc ls node2
[2022-07-01 10:28:50 CST]     0B edoc2/
[2022-07-01 10:29:48 CST]     0B edoc3/
[2022-07-01 10:30:09 CST]     0B edoc4/
```

上传文件

```
[root@node1 minio]# mc cp run.sh node2/edoc4
/opt/minio/run.sh:                    1.10 KiB / 1.10 KiB ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 62.88 KiB/s 0s
[root@node1 minio]# mc ls node1/edoc4
[2022-07-01 10:31:43 CST] 1.1KiB STANDARD run.sh
[root@node1 minio]# mc ls node2/edoc4
[2022-07-01 10:31:43 CST] 1.1KiB STANDARD run.sh
```

删除文件

```
[root@node1 minio]# mc rm node1/edoc4/run.sh
Creating delete marker `node1/edoc4/run.sh` (versionId=86bd4494-cedb-4d48-bedd-97a20ba6c889).
[root@node1 minio]# mc ls node2/edoc4
[root@node1 minio]#
```

添加用户

```
[root@node1 minio]# mc admin user add node1 node1user foo12345
Added user `node1user` successfully.
```

```
[root@node1 minio]# mc admin user add node2 node2user foo12345
Added user `node2user` successfully.
[root@node1 minio]# mc admin user list node2
enabled    node1user
enabled    node2user
[root@node1 minio]# mc admin user list node1
enabled    node1user
enabled    node2user
```

差异重新同步

备站点down机后，在主站点上传的数据，并不会立即在备战点恢复后同步到备站点，但最终会达到同步一致。

停止备站点，上传了三个文件到 edoc2 bucket

```
[root@node2 minio]# systemctl stop minio
```

```
[root@node2 minio]# mc cp run.sh node1/edoc2
/opt/minio/run.sh:                    684 B / 684 B ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 39.59 KiB/s 0s
[root@node2 minio]# mc cp Replication* node1/edoc2
...licationRemoteUserPolicy.json:  2.12 KiB / 2.12 KiB ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 118.87 KiB/s 0s
[root@node2 minio]# mc ls node1/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
```

```
[root@node2 minio]# mc ls node1/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
```

备站点没有上传的三个文件，但没有立即进行文件同步（测试过程中发现一段时间后会有文件同步，如何触发还不清楚）

```
[root@node2 minio]# mc ls node1/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
```

还有一个文件没用同步过去

最终同步一致

```
[root@node2 minio]# mc ls node1/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
```

停止备站点后，主站点创建bucket，在上传一个文件

```
[root@node2 minio]# mc mb node1/edoc6
mc: <ERROR> Unable to make bucket `node1/edoc6`. Your previous request to create the named bucket succeeded and you already own it.
[root@node2 minio]# mc cp run.sh node1/edoc6
/opt/minio/run.sh:                 684 B / 684 B ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 43.85 KiB/s 0s [roo
[root@node2 minio]# systemctl start minio
[root@node2 minio]# mc ls node2
[2022-07-01 10:28:50 CST]     0B edoc2/
[2022-07-01 10:29:48 CST]     0B edoc3/
[2022-07-01 10:30:09 CST]     0B edoc4/
[2022-07-01 10:59:49 CST]     0B edoc5/
[2022-07-01 11:00:40 CST]     0B edoc6/
[root@node2 minio]# mc ls node2/edoc6
[root@node2 minio]#
```

备站点的 bucket 创建成功，但是没有进行立即文件同步。最终还是同步一致

```
[root@node2 minio]# mc ls node1/edoc6
[2022-07-01 11:00:25 CST]   684B STANDARD run.sh
[root@node2 minio]# mc ls node2/edoc6
[2022-07-01 11:00:25 CST]   684B STANDARD run.sh
```

文件的重新同步

配置了站点同步后，每一个bucket都有一个桶的同步规则

```
[root@node2 minio]# mc replicate ls node1/edoc2
ID                  | Priority | Status   | Prefix                   | Tags                     | DestBucket             | StorageClass
site-repl-66f9c09... | 10       | Enabled  |                          |                          | arn:minio:replica...   |
[root@node2 minio]# mc replicate ls node1/edoc6
ID                  | Priority | Status   | Prefix                   | Tags                     | DestBucket             | StorageClass
site-repl-66f9c09... | 10       | Enabled  |                          |                          | arn:minio:replica...   |
[root@node2 minio]# mc replicate ls node1/edoc5
ID                  | Priority | Status   | Prefix                   | Tags                     | DestBucket             | StorageClass
site-repl-66f9c09... | 10       | Enabled  |                          |                          | arn:minio:replica...   |
```

```
[root@node2 minio]# mc replicate ls node1/edoc2
ID                     | Priority | Status   | Prefix                        | Tags                          | DestBucket              | StorageClass
site-repl-66f9c09... | 10       | Enabled  |                               |                               | arn:minio:replica... |
[root@node2 minio]# mc replicate ls node1/edoc2 --json
{
 "op": "",
 "status": "success",
 "url": "",
 "rule": {
  "ID": "site-repl-66f9c096-e985-43db-99d5-7690c08bb7f4",
  "Status": "Enabled",
  "Priority": 10,
  "DeleteMarkerReplication": {
   "Status": "Enabled"
  },
  "DeleteReplication": {
   "Status": "Enabled"
  },
  "Destination": {
   "Bucket": "arn:minio:replication::10599c18-1a8f-44b1-ac30-e80177bb8c82:edoc2"
  },
  "Filter": {
   "And": {},
   "Tag": {}
  },
  "SourceSelectionCriteria": {
   "ReplicaModifications": {
    "Status": "Enabled"
   }
  },
  "ExistingObjectReplication": {
   "Status": "Enabled"
  }
 }
}
```

停止node2 minio后，上传文件到 edoc2，重启 node2 minio，人为造成差异，立马进行差异的重新同步。

```
[root@node2 minio]# mc cp /usr/sbin/mkfs* node1/edoc2
/usr/sbin/mkfs.xfs:          1.07 MiB / 1.07 MiB ┃▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓┃ 24.50 MiB/s 0s
[root@node2 minio]# systemctl start minio
[root@node2 minio]# mc ls node2/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
```

```
[root@node2 minio]# mc ls node1/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 11:20:15 CST]  11KiB STANDARD mkfs
[2022-07-01 11:20:15 CST] 366KiB STANDARD mkfs.btrfs
[2022-07-01 11:20:15 CST]  36KiB STANDARD mkfs.cramfs
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext2
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext3
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext4
[2022-07-01 11:20:15 CST]  36KiB STANDARD mkfs.minix
[2022-07-01 11:20:15 CST] 360KiB STANDARD mkfs.xfs
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
```

```
[root@node2 minio]# mc replicate resync start --remote-bucket "arn:minio:replication::10599c18-1a8f-44b1-ac30-e80177bb8c82:edoc2" node1/edoc2 && mc replicate resync status node1/edoc2
Replication reset started for node1/edoc2 with ID 37f84a76-fdfc-42ed-bb26-345f5a7c0356
Resync status summary:
● arn:minio:replication::10599c18-1a8f-44b1-ac30-e80177bb8c82:edoc2
  Status: Ongoing
  Replication Status | Size (Bytes)    | Count
  Replicated         | 2.2 KiB         | 4
  Failed             | 0 B             | 0

[root@node2 minio]# mc ls node2/edoc2
[2022-07-01 10:55:39 CST]   848B STANDARD ReplicationAdminPolicy.json
[2022-07-01 10:55:39 CST] 1.3KiB STANDARD ReplicationRemoteUserPolicy.json
[2022-07-01 11:20:15 CST]  11KiB STANDARD mkfs
[2022-07-01 11:20:15 CST] 366KiB STANDARD mkfs.btrfs
[2022-07-01 11:20:15 CST]  36KiB STANDARD mkfs.cramfs
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext2
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext3
[2022-07-01 11:20:15 CST]  94KiB STANDARD mkfs.ext4
[2022-07-01 11:20:15 CST]  36KiB STANDARD mkfs.minix
[2022-07-01 11:20:15 CST] 360KiB STANDARD mkfs.xfs
[2022-07-01 10:55:19 CST]   684B STANDARD run.sh
[root@node2 minio]#
```

```
mc replicate resync start --remote-bucket "arn:minio:replication::10599c18-1a8f-44b1-ac30-e80177bb8c82:edoc2" node1/edoc2 && mc replicate resync status node1/edoc2

## ARN 使用 mc replicate ls node1/edoc2 --json 获取
```

或 直接使用 mc mirror 进行同步

```
mc mirror node1/edoc2 node2/edoc2
```