

How to Guide

Azure Migration Scenario
Amazon CDN to Azure CDN



Amazon CDN to Azure CDN Migration

December 2015

OVERVIEW

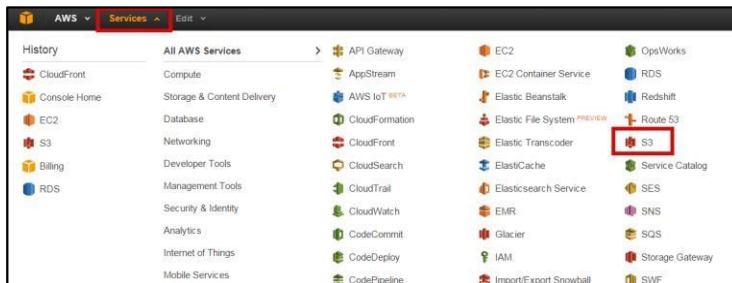
This article illustrates the basics of how to migrate existing content delivery from Amazon CDN to Azure CDN. The article illustrates how to prepare a test environment and perform migration tasks on this environment. The migration can be a partial or a complete one. The partial migration means you keep an origin for CDN in Amazon untouched and use the Azure CDN as content delivery only. The complete migration means you copy the origin data into Azure Storage and Azure CDN uses this storage as its origin. Let's have a look on both solutions.

PREREQUISITES

We need an active Amazon S3 account and Microsoft Azure subscription. Microsoft Windows 7-10 is required to execute PowerShell script.

CREATE A TEST ENVIRONMENT ON AMAZON AWS

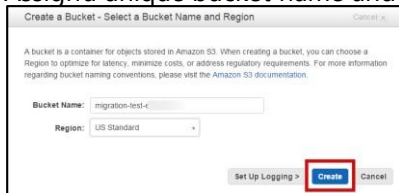
1. Login to <https://console.aws.amazon.com>. To create a test Amazon S3 storage please click on Services and then on S3.



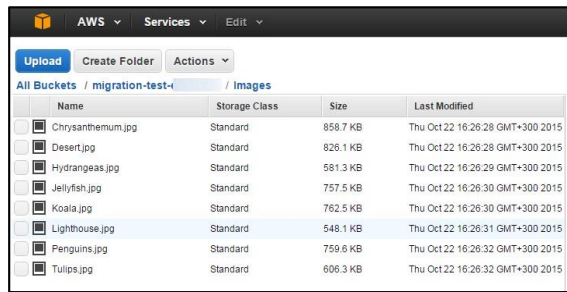
2. Press on Create Bucket



3. Assign a unique bucket name and press Create.

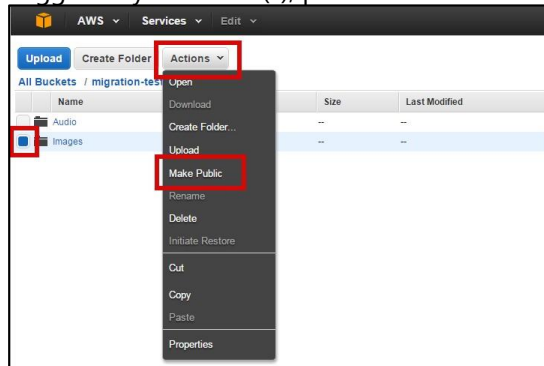


4. Create folders and upload some files. (Below we created a folder named Images and uploaded a set of One Drive's sample images).

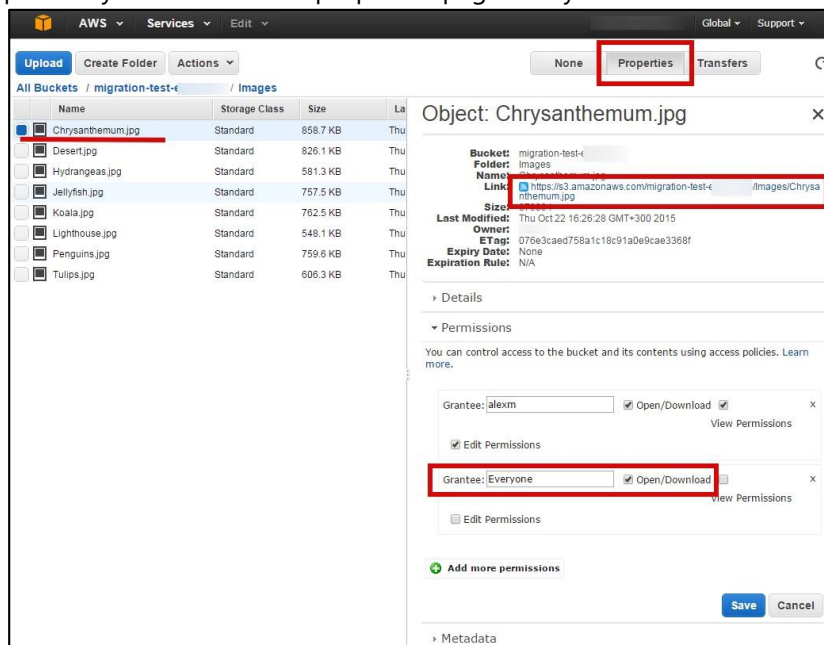


Name	Storage Class	Size	Last Modified
Chrysanthemum.jpg	Standard	858.7 KB	Thu Oct 22 16:26:28 GMT+300 2015
Desert.jpg	Standard	826.1 KB	Thu Oct 22 16:26:28 GMT+300 2015
Hydrangeas.jpg	Standard	581.3 KB	Thu Oct 22 16:26:29 GMT+300 2015
Jellyfish.jpg	Standard	757.5 KB	Thu Oct 22 16:26:30 GMT+300 2015
Koala.jpg	Standard	762.5 KB	Thu Oct 22 16:26:30 GMT+300 2015
Lighthouse.jpg	Standard	548.1 KB	Thu Oct 22 16:26:31 GMT+300 2015
Penguins.jpg	Standard	759.6 KB	Thu Oct 22 16:26:32 GMT+300 2015
Tulips.jpg	Standard	606.3 KB	Thu Oct 22 16:26:32 GMT+300 2015

- Toggle on your folder(s), press on Actions and make the folder publicly available



- Double-check the permissions and address of some of the files in your folder to ensure they are publicly available on the properties page. Everyone should be able to open the hyperlink of this file.



Object: Chrysanthemum.jpg

Bucket: migration-test-4
Folder: Images
Name: Chrysanthemum.jpg
Link: <https://s3.amazonaws.com/migration-test-4/Images/Chrysanthemum.jpg>

Last Modified: Thu Oct 22 16:26:28 GMT+300 2015
Owner: 076e3caed758a1c18c91a0e9cae3368f
ETag: 076e3caed758a1c18c91a0e9cae3368f
Expiry Date: None
Expiration Rule: N/A

Permissions

You can control access to the bucket and its contents using access policies. Learn more.

Grantee: alexm ☒ Open/Download ☒ View Permissions

☒ Edit Permissions

Grantee: Everyone ☒ Open/Download ☒ View Permissions

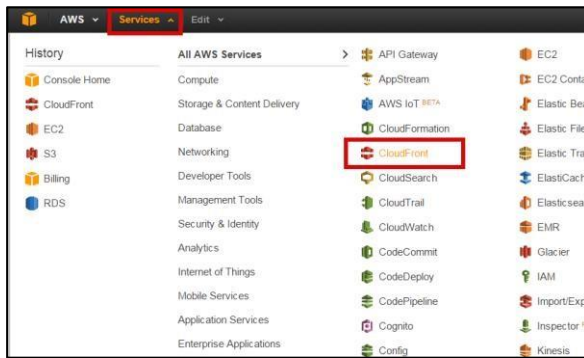
☐ Edit Permissions

☒ Add more permissions

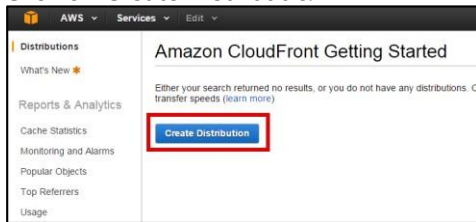
Save Cancel

Metadata

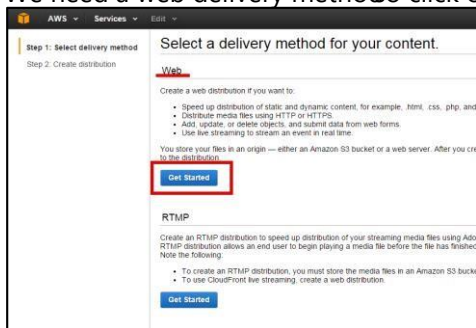
- To create a test Amazon CDN please click on Services and then on CloudFront.



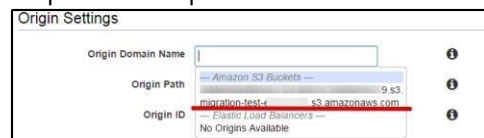
8. Click on Create Distribution



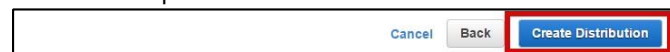
9. We need a web delivery method so click on Get Started



10. Click in the Origin Domain Name on the Create distribution page and select a bucket created during the previous steps.



11. Leave other options untouched and click on Create Distribution.



12. Your distribution is being prepared while the status is 'In Progress'.

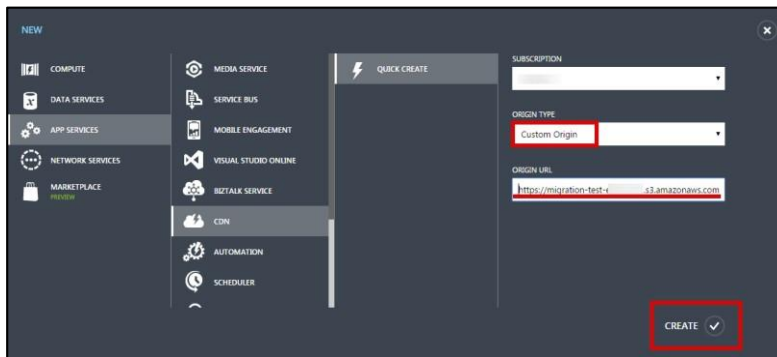


13. Please wait for the Deployed status. You can now check that Amazon Bucket objects are available both directly and through the Amazon CDN.

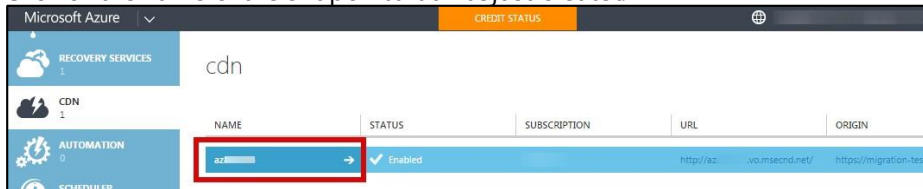


PARTIAL MIGRATION - AZURE CDN WITH AMAZON S3 STORAGE

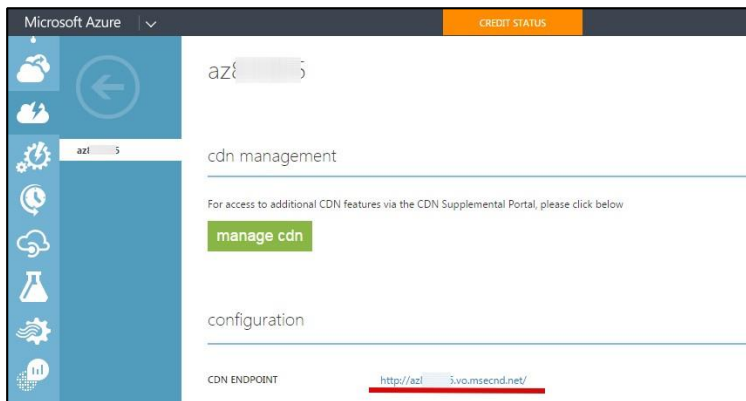
1. Login to <https://manage.windowsazure.com>. To create a new CDN endpoint please click on NEW -> APP SERVICES -> CDN -> QUICK CREATE. Select the ORIGIN TYPE as Custom Origin. Type a S3 bucket URL as ORIGIN URL. Press CREATE.



2. Click on the name of the endpoint that was just created



3. Your CDN address is located at CDN ENDPOINT.



4. Please wait some time while your CDN is preparing. You will get 404 error trying to load the resource by Azure CDN based address at this time.

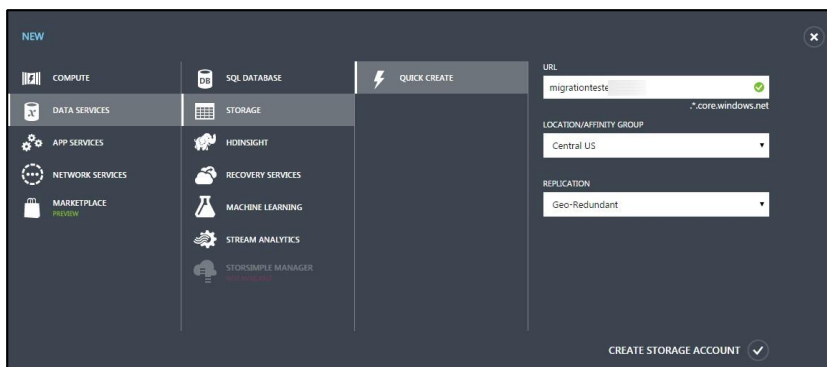


- After 1 hour (in our case) we checked the address and found the image to be available. So now, we have an Azure CDN endpoint using Amazon S3 bucket as an origin.

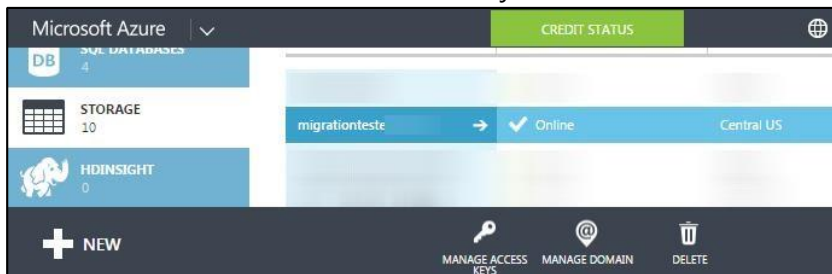


COMPLETE MIGRATION - COPY DATA TO AZURE STORAGE AND USE IT AS AN ORIGIN FOR AZURE CDN

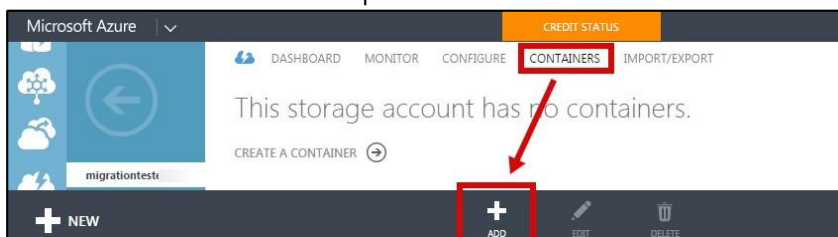
- Login to <https://manage.windowsazure.com>. To create a new storage account, click on NEW -> DATA SERVICES -> STORAGE -> QUICK CREATE. Assign a unique URL, select location and press on CREATE STORAGE ACCOUNT.



- Click on the name of the account that was just created.

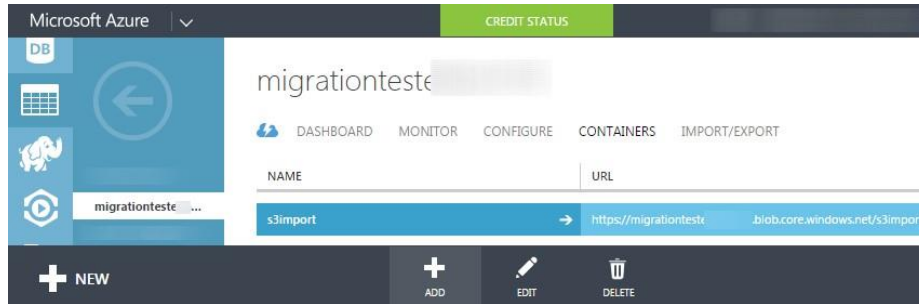


- Select a CONTAINERS tab and press ADD to create a new container.



- Type a NAME for a new container and select ACCESS as Public Container.

- Remember the container's URL. We will use it later on for the CDN endpoint step.



- To copy data from Amazon S3 bucket to Azure Blob Storage I will use a PowerShell script. In order to use PowerShell script, your system should meet the requirements. You should have enough disk space on your user TEMP folder to copy the largest files of the stored ones in the S3 bucket you are going to copy. Prerequisites are AWS Tools for Windows PowerShell and Azure PowerShell.
- Download and install AWS Tools for Windows PowerShell from <http://aws.amazon.com/powershell/>
- Download and install Azure PowerShell as described here: <https://azure.microsoft.com/enus/documentation/articles/powershell-install-configure/>
- Please save a content of subsequent script as a CopyS3ToAzure.ps1 file.

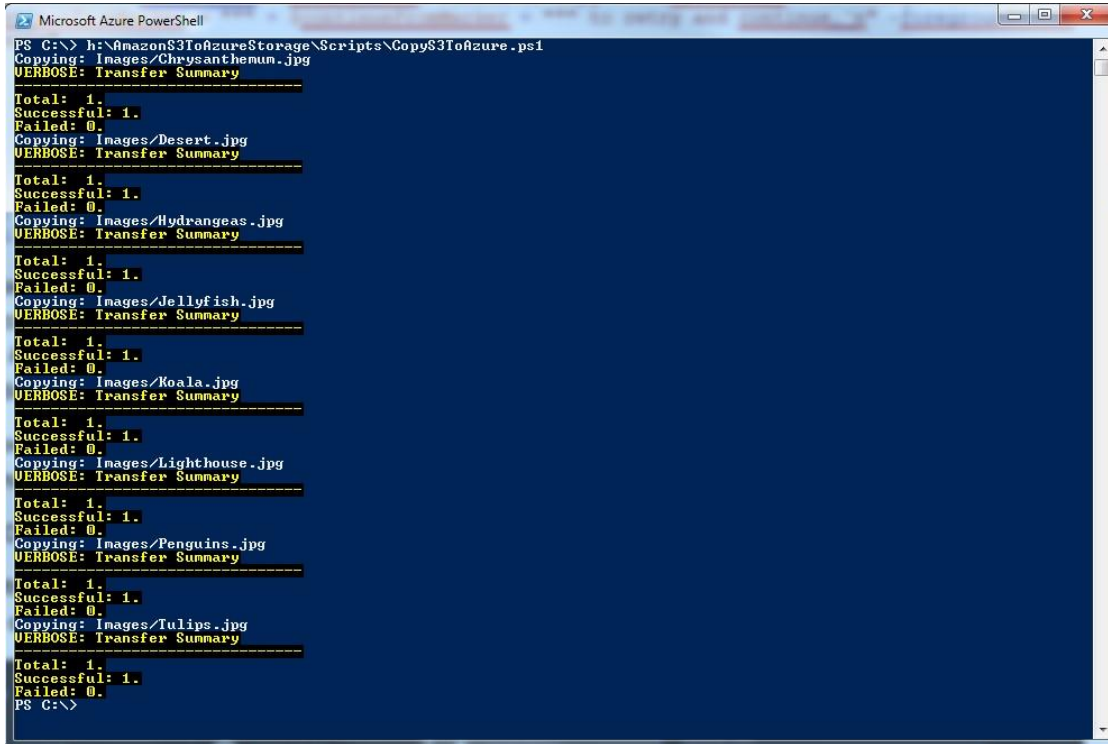
```
#Amazon S3 settings
$accessKey = "YOUR_accessKey"
$secretKey = "YOUR_secretKey"
$bucketName = "YOUR_bucketName"
$keyPrefix = "/" # Use a root folder used for your CDN
$continueFromMarker = $null # Use $null to start from the first object. Object key to start from the subsequent object.

#Azure settings
$storageAccountName = "YOUR_storageAccountName"
$storageAccountKey = "YOUR_storageAccountKey"
$containerName = "YOUR_containerName"

[System.Reflection.Assembly]::LoadWithPartialName("System.Web") | Out-Null
$tempFile = [System.IO.Path]::GetTempFileName()
$blobContext = New-AzureStorageContext -StorageAccountName $storageAccountName -StorageAccountKey
$storageAccountKey do {
    $objects = Get-S3Object -BucketName $bucketName -KeyPrefix $keyPrefix -Marker $continueFromMarker -AccessKey
    $accessKey -SecretKey $secretKey foreach($object in $objects) { if ($object.Size -ne 0) { "Copying: " +
    $object.Key
    try {
        $down = Copy-S3Object -BucketName $bucketName -Key $object.Key -LocalFile $tempFile -AccessKey $accessKey -SecretKey $secretKey
        $props = @{ 'ContentType' = [System.Web.MimeMapping]::GetMimeMapping($object.Key) }
        $up = Set-AzureStorageBlobContent -Properties $props -File $tempFile -Container $containerName -Blob $object.Key -Context $blobContext -Force
    }
    catch [system.exception] {
        write-host "nTerminated. Failed to copy " + $object.Key + ". Change variable `continueFromMarker = "" + $continueFromMarker + "" to retry and
        continue."n -ForegroundColor "magenta" throw
    }
    finally {
        Remove-Item -Path $tempFile
    }
    }
    $continueFromMarker = $object.Key
} } while ($objects)
```

- Please replace YOUR_accessKey, YOUR_secretKey, YOUR_bucketName with S3 storage access keys and source bucket name. Replace YOUR_storageAccountName , YOUR_storageAccountKey,

YOUR_containerName with Azure Storage credentials and container name. Open Microsoft Azure PowerShell from the Windows Start Menu. Type a path to your script and press Enter.

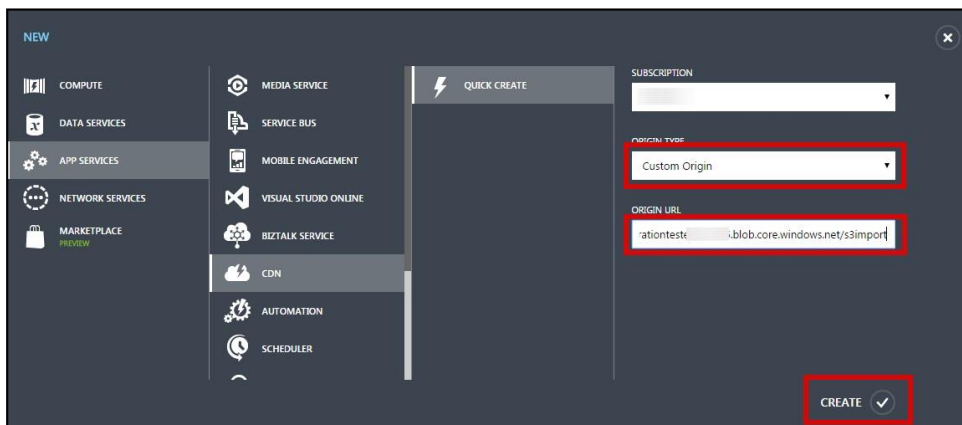


```
Microsoft Azure PowerShell
PS C:\> h:\AmazonS3ToAzureStorage\Scripts\Copys3ToAzure.ps1
Copying: Images\Chrysanthemum.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Desert.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Hydrangeas.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Jellyfish.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Koala.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Lighthouse.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Penguins.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
Copying: Images\Tulips.jpg
VERBOSE: Transfer Summary
-----
Total: 1.
Successful: 1.
Failed: 0.
PS C:\>
```

Please note the script is not intended for huge amount of data and is not performance efficient for many small files.

11. To create a new Azure CDN endpoint using Azure Storage blob container please click on NEW -> APP SERVICES -> CDN -> QUICK CREATE. Select the ORIGIN TYPE as Custom Origin. We will not be using a Storage Accounts origin type because we are going to use a concrete container as a CDN root instead of using all storage account containers. Enter a container URL with replaced https to http in the ORIGIN URL.

Press CREATE.



12. The new endpoint is here. Please wait approx. 1 hour for this step to complete, though time may vary so please be patient.

Microsoft Azure

CREDIT STATUS

0

0

RECOVERY SERVICES

1

CDN

2

0

AUTOMATION

0

SCHEDULER

0

cdn

NAME	STATUS	SUBSCRIPTION	URL	ORIGIN
azf	Enabled	http://azf	vo.msecnd.net/	https://migration-test-e.s3.amazonaws.com/
azf	Enabled	http://azf	vo.msecnd.net/	http://migrationteste.blob.core.windows.net/s3import/

+ NEW

DISABLE ENDPOINT

MANAGE CDN

DELETE

Once complete, we have a migrated Azure powered CDN with Azure storage, as origin. You can now check and see that Azure Blobs are available both directly and via Azure CDN.

