

# Change Storage Account Tier or Replication Type

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## Overview

<b>Platform:</b>	<b>Azure</b>
<b>Owner of this SOP:</b>	Fully Managed POD A
<b>Cloud Services:</b>	Instance Management

## Problem

- When requesters are asking for changing the Storage Account Tier or
- When the requester ask us to change the Replication Type

After provisioning the infrastructure we can use the same pipeline we used to provision the resources to update the Storage Account details. It will not destroy the existing configuration rather it will forcefully recreate the Storage account only.

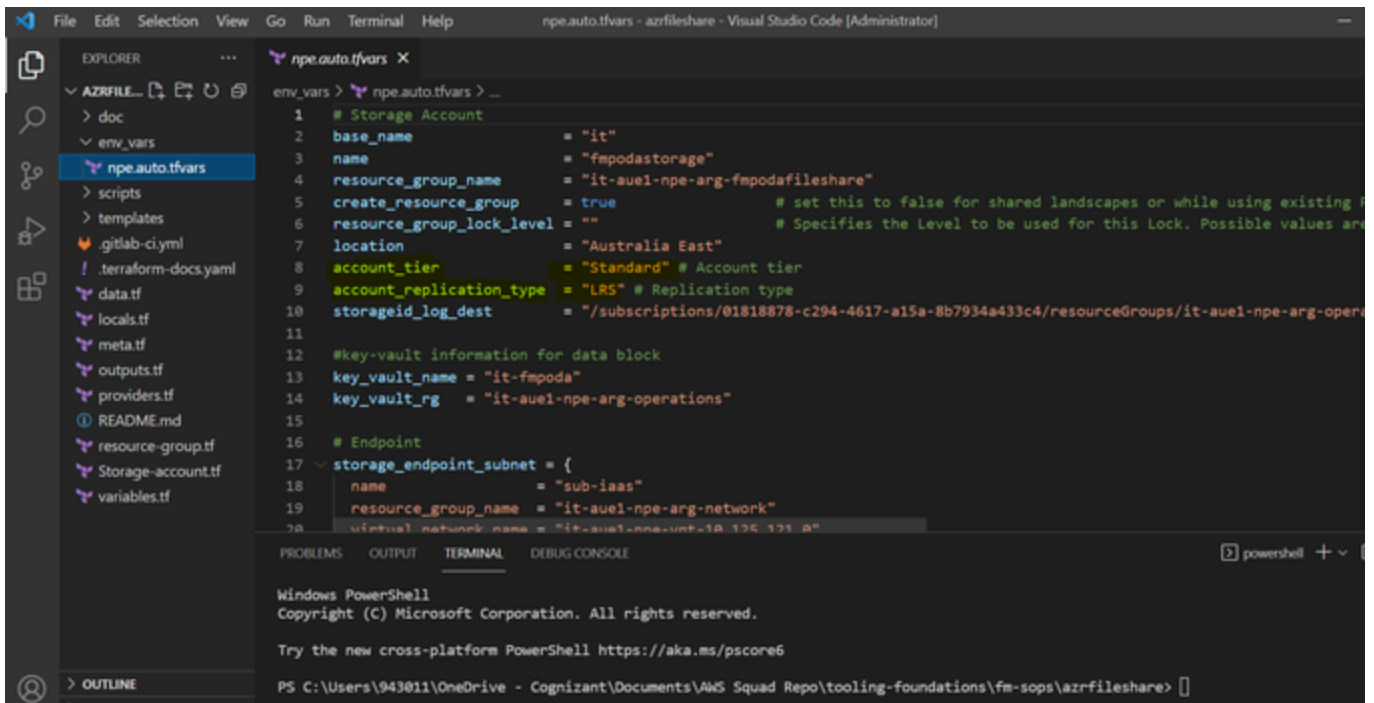
⊗ **Note: Terraform will destroy and recreate the Storage Account for below documented conditions.**

- `account_tier` - (Required) Defines the Tier to use for this storage account. Valid options are `Standard` and `Premium`. For `BlockBlobStorage` and `FileStorage` accounts only `Premium` is valid. Changing this forces a new resource to be created.
- `account_replication_type` - (Required) Defines the type of replication to use for this storage account. Valid options are `LRS`, `GRS`, `RAGRS`, `ZRS`, `GZRS` and `RAGZRS`. Changing this forces a new resource to be created when types `LRS`, `GRS` and `RAGRS` are changed to `ZRS`, `GZRS` or `RAGZRS` and vice versa.

tester	Reviewer
@ Asif Patel (Deactivated)	

## Solution

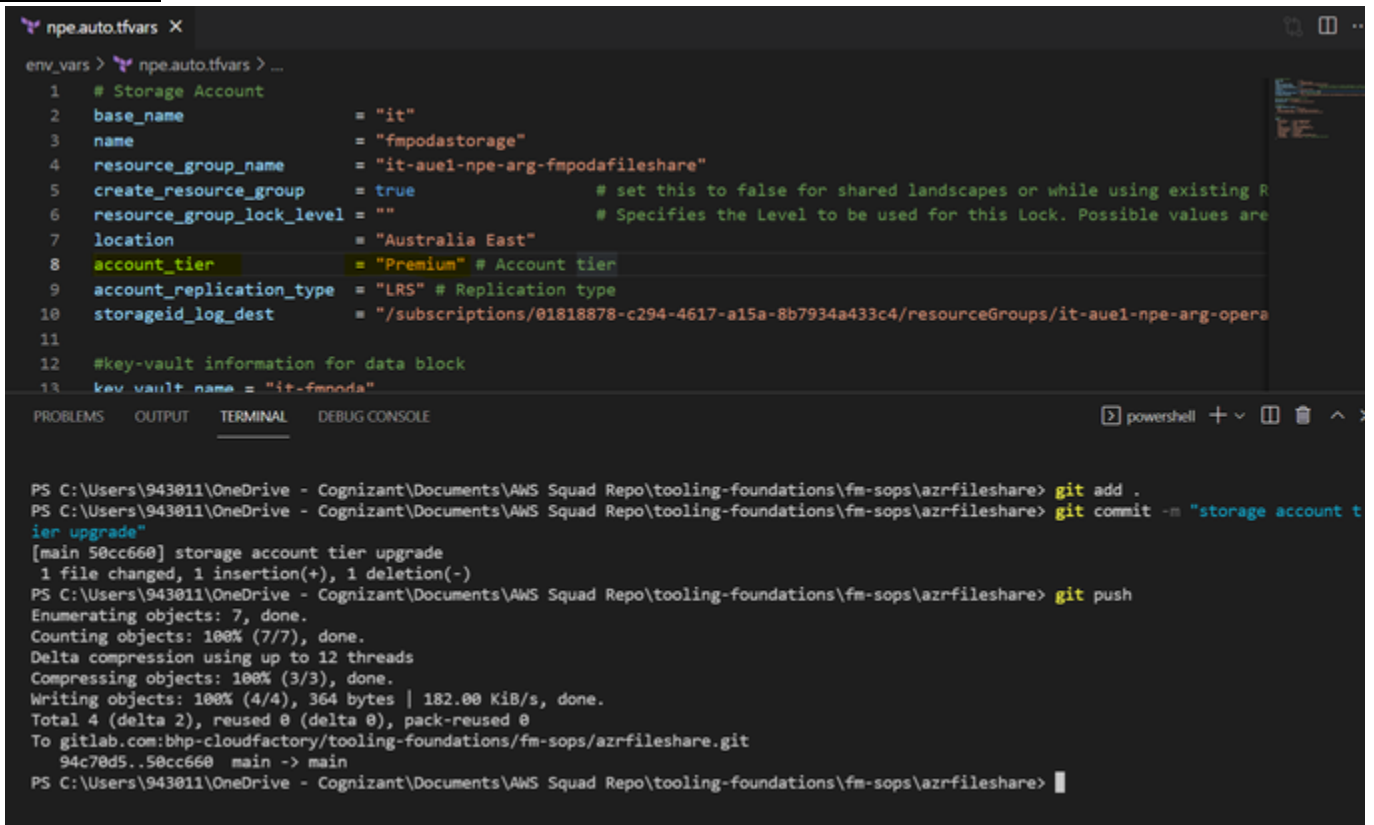
- Log on to Gitlab and go to the respective repo.  
(eg : [Storage-account.tf](#) · [main](#) · [bhp-cloudfactory](#) / [tooling-foundations](#) / [FM-Sops](#) / [Azrfileshare](#) · [GitLab](#))
- Clone the repo to your local machine and update the required field



Change the Account Tier/Replication Type to the requested values and Save them. (ref highlighted section below used while testing)

Push the code to the repository again and it will trigger the pipeline.

For Account Tier:



For Replication Type:

npe.auto.tfvars X

env\_vars > npe.auto.tfvars > ...

```

1 # Storage Account
2 base_name = "it"
3 name = "fmpodastorage"
4 resource_group_name = "it-ae1-npe-arg-fmpodafileshare"
5 create_resource_group = true # set this to false for shared landscapes or while using existing R
6 resource_group_lock_level = "" # Specifies the Level to be used for this Lock. Possible values are
7 location = "Australia East"
8 account_tier = "Standard" # Account tier
9 account_replication_type = "GRS" # Replication type
10 storageid_log_dest = "/subscriptions/01818878-c294-4617-a15a-8b7934a433c4/resourceGroups/it-ae1-npe-arg-opera
11
12 #key-vault information for data block
13 key_vault_name = "it-fmnda"

```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

powerShell + - - -

```

PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare>
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare>
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare>
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare> git add .
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare> git commit -m "upgraded the repl
ication type"
[main fb0933b] upgraded the replication type
 1 file changed, 2 insertions(+), 2 deletions(-)
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare> git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 373 bytes | 373.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
To gitlab.com:bhp-cloudfactory/tooling-foundations/fm-sops/azrfileshare.git
 50cc660..fb0933b main -> main
PS C:\Users\943011\OneDrive - Cognizant\Documents\AWS Squad Repo\tooling-foundations\fm-sops\azrfileshare>

```

All 9 Finished Branches Tags

Clear runner caches CI lint Run pipeline

Filter pipelines

Show Pipeline ID

Status	Pipeline ID	Triggerer	Commit	Stages	Duration	
blocked	#435917858 latest		main -> 0f25d5bb roll back the changes		00:02:23	
blocked	#435913186		main -> a9980bb7 GRS to GZRS		00:02:25	
blocked	#435905474		main -> fb0933b8 upgraded the replication t...		00:05:59	

- Check the respective terraform workspace once the planning stage is completed in the git pipeline. Check the terraform plan and confirm the changes are being updated as per the request.

a\_azr\_toolingdev\_npe\_fmopodastorage\_01818878-c294-4617-a15a-8b7934a433c4

Resources  
23

Terraform version  
1.1.0

Updated  
a few seconds  
ago

No workspace description available.

Overview **Runs** States Variables Settings ▾

Running

Actions ▾

Policy checked Queued from GitLab CI/CD Pipeline

CURRENT

API Integration triggered a run from API 3 minutes ago

Run Details ▾

Plan finished 6 minutes ago

Resources: 8 to add, 1 to change, 8 to destroy ▾

Cost estimation finished 6 minutes ago

Resources: 0 of 10 estimated - \$0.00/mo - +\$0.00 ▾

Policy check passed 6 minutes ago

Policies: 13 passed, 0 failed ▾

Workspace:

Plan finished 4 minutes ago

Resources: 8 to add, 1 to change, 8 to destroy ^

Started 3 minutes ago > Finished 2 minutes ago

+ 8 to create

~ 1 to change

- 8 to destroy

Filter resources by address...

Terraform 1.1.0

Download raw log

> + module.azr\_private\_endpoint.azure\_rm\_private\_endpoint.this

> ~ module.storage\_access\_key.azure\_rm\_key\_vault\_secret.this[1]

> + module.storage\_account.azure\_rm\_monitor\_diagnostic\_setting.storage

> + module.storage\_account.azure\_rm\_monitor\_diagnostic\_setting.storage\_blob

> + module.storage\_account.azure\_rm\_monitor\_diagnostic\_setting.storage\_file

> + module.storage\_account.azure\_rm\_monitor\_diagnostic\_setting.storage\_queue

> + module.storage\_account.azure\_rm\_monitor\_diagnostic\_setting.storage\_table

> + module.storage\_account.azure\_rm\_storage\_account\_network\_rules.config

▼ + module.storage\_account.azure\_rm\_storage\_account.this

~ account\_tier: "Standard" → "Premium" Forces replacement

id: "/subscriptions/01818878-c294-4617-a15a-8b7934a433c4/resourceGroups/it-it-ae1-npe-arg-fmpoda/filespace/providers/Microsoft.Storage/storageAccounts/it1fmpodastorage1d" → Known after apply

Changing the Replication from LRS to GRS or RAGRS will not destroy the Storage account but; if we are changing the types LRS, GRS, and RAGRS are changed to ZRS, GZRS, or RAGZRS then this forces a new Storage account to be created.

ref example: changing from "LRS" to "GRS"

✓ **Plan finished** 3 minutes ago Resources: 8 to add, 1 to change, 7 to destroy ^

Started a minute ago

+ 8 to create

~ 1 to change

- 7 to destroy

Filter resources by address...

Terraform 1.1.0 [Download raw log](#)

>	+	module.azr_private_endpoint.azure_rm_private_endpoint.this
>	~	module.storage_access_key.azure_rm_key_vault_secret.this[1]
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_blob
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_file
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_queue
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_table
>	+	module.storage_account.azure_rm_storage_account_network_rules.config
>	+	module.storage_account.azure_rm_storage_account.this

~ account\_replication\_type : "LRS" → "GRS"

*ref example: changing from "GRS" to "GZRS"*

✓ **Plan finished** 3 minutes ago Resources: 8 to add, 1 to change, 8 to destroy ^

Started 4 minutes ago > Finished 2 minutes ago

+ 8 to create

~ 1 to change

- 8 to destroy

Filter resources by address...

Terraform 1.1.0 [Download raw log](#)

>	+	module.azr_private_endpoint.azure_rm_private_endpoint.this
>	~	module.storage_access_key.azure_rm_key_vault_secret.this[1]
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_blob
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_file
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_queue
>	+	module.storage_account.azure_rm_monitor_diagnostic_setting.storage_table
>	+	module.storage_account.azure_rm_storage_account_network_rules.config
>	+	module.storage_account.azure_rm_storage_account.this

~ account\_replication\_type : "GRS" → "GZRS" Forces replacement

- Manually run the terraform apply stage after plan verification.

[All](#) [8](#) [Finished](#) [Branches](#) [Tags](#)
Clear runner caches CI lint Run pipeline

Filter pipelines  Show Pipeline ID ▾

Status	Pipeline ID	Triggerer	Commit	Stages	Duration	
<span>blocked</span>	#435913186		main → a99b0bb7 GRS to GZRS		00:02:25	
<span>blocked</span>	#435905474		main → fb0933b8 upgraded the replication L...		00:05:59	
<span>failed</span>	#435892940		main → 50cc660b storage account tier upgra...		00:04:45 17 minutes ago	
<span>passed</span>	#433021714		main → 94c70d5b Update scripts/file_share.sh		00:02:21 3 days ago	

Apply finished 11 minutes ago Resources: 8 added, 1 changed, 7 destroyed

Started 15 minutes ago → Finished 11 minutes ago

+ 8 created
~ 1 changed
- 7 destroyed

Filter resources by address... Terraform 1.1.0 Download raw log

Resource	Operation	Address
module.azr_private_endpoint.azure_rm_private_endpoint.this	Created	id=/subscriptions/01818878-c294-4617-...
module.storage_access_key.azure_rm_key_vault_secret.this[1]	Updated	id=https://it-fmpoda.vault.azure.net/...
module.storage_account.azure_rm_monitor_diagnostic_setting.storage	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_monitor_diagnostic_setting.storage_...	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_monitor_diagnostic_setting.storage_f...	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_monitor_diagnostic_setting.storage_...	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_monitor_diagnostic_setting.storage_t...	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_storage_account_network_rules.config	Replaced	id=/subscriptions/01818878-c294-4617-...
module.storage_account.azure_rm_storage_account.this	Replaced	id=/subscriptions/01818878-c294-4617-...

- Verify the Changes in the Azure portal once terraform apply is finished.

Before:

Home > Storage accounts >

### Storage accounts

BHP

[Create](#) [Manage view](#)

Filter for any field...

Name ↑

it1fmpodstorage1ald

it1fmpodstorage1ald

Storage account

[Open in Explorer](#) [Delete](#) [Move](#) [Refresh](#) [Mobile](#) [Feedback](#)

Microsoft recommends upgrading to the new alerts platform to ensure no interruptions in your alerts. Classic alerts will be retired starting in 2021. Upgrade to the new alerts platform. [Learn more](#)

**Essentials**

Resource group (move): it-it-ae1-npe-arg-fmpodafreshare Performance/Access tier: Standard/Hot

Location: Australia East Replication: Locally-redundant storage (LRS)

Subscription (move): it-npe-toolingdev Account kind: StorageV2 (general purpose v2)

Subscription ID: 01818878-c294-4617-a15a-8b7934a433c4 Provisioning state: Succeeded

Disk state: Available Created: 12/13/2021, 3:57:35 PM

Tags (edit): BusinessUnit: Fully Managed POD A, CostCentre: M10.C.50048.0001, CreatedBy: Ramkumar.Samudram@bhp.com

**Properties** **Monitoring** **Capabilities (7)** **Recommendations** **Tutorials** **Developer Tools**

**Blob service**

Hierarchical namespace: Disabled

Default access tier: Hot

Blob public access: Disabled

Blob soft delete: Enabled (7 days)

Container soft delete: Enabled (7 days)

**Security**

Require secure transfer for REST API operations: Enabled

Storage account key access: Enabled

Minimum TLS version: Version 1.2

Infrastructure encryption: Disabled

For Account Tier:



Home > Storage accounts > **Storage accounts**

it1fmpodastorage1ald

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data migration

Storage browser (preview)

Data storage

Containers

Security + networking

Networking

Azure CDN

Access keys

Shared access signature

Encryption

Security

Data management

Open in Explorer

Delete

Move

Refresh

Mobile

Feedback

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JSON View

Essentials

Resource group (move) : it-it-ae1-npe-arg-fmpodafleshare

Location : Australia East

Subscription (move) : it-npe-toolingdev

Subscription ID : 01818878-c294-4617-a15a-8b7934a433c4

Disk state : Available

Performance/Access tier : Premium/Hot

Replication : Locally-redundant storage (LRS)

Account kind : StorageV2 (general purpose v2)

Provisioning state : Succeeded

Created : 12/23/2021, 7:39:20 PM

Tags (edit) : BusinessUnit : Fully Managed POD A CostCentre : 1410.C.50048.0001 CreatedBy : Ramkumar.Samudram@bhp.com

Properties

Monitoring

Capabilities (4)

Recommendations

Tutorials

Developer Tools

Blob service

Hierarchical namespace : Disabled

Default access tier : Hot

Blob public access : Disabled

Blob soft delete : Enabled (7 days)

Container soft delete : Enabled (7 days)

Versioning : Disabled

Change feed : Disabled

Security

Require secure transfer for REST API operations : Enabled

Storage account key access : Enabled

Minimum TLS version : Version 1.2

Infrastructure encryption : Disabled

Networking

Allow access from : Selected networks

### For Account Replication Type:

Home > Storage accounts > **Storage accounts**

it1fmpodastorage1ald

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data migration

Storage browser (preview)

Data storage

Containers

File shares

Queues

Tables

Security + networking

Networking

Azure CDN

Access keys

Shared access signature

Open in Explorer

Delete

Move

Refresh

Mobile

Feedback

Microsoft recommends upgrading to the new alerts platform to ensure no interruptions in your alerts. Classic alerts will be retired starting in 2021. Upgrade to the new alerts platform. [Learn more](#)

JSON View

Essentials

Resource group (move) : it-it-ae1-npe-arg-fmpodafleshare

Location : Australia East

Primary/Secondary Location : Primary: Australia East, Secondary: Australia S...

Subscription (move) : it-npe-toolingdev

Subscription ID : 01818878-c294-4617-a15a-8b7934a433c4...

Disk state : Primary: Available, Secondary: Available

Performance/Access tier : Standard/Hot

Replication : Geo-redundant storage (GRS)

Account kind : StorageV2 (general purpose v2)

Provisioning state : Succeeded

Created : 12/23/2021, 7:49:45 PM

Tags (edit) : BusinessUnit : Fully Managed POD A CostCentre : 1410.C.50048.0001 CreatedBy : Ramkumar.Samudram@bhp.com

Properties

Monitoring

Capabilities (7)

Recommendations

Tutorials

Developer Tools

Blob service

Hierarchical namespace : Disabled

Default access tier : Hot

Blob public access : Disabled

Blob soft delete : Enabled (7 days)

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Versioning : Disabled

Change feed : Disabled

Security

Require secure transfer for REST API operations : Enabled

Storage account key access : Enabled

Minimum TLS version : Version 1.2

Infrastructure encryption : Disabled

Networking

## Related articles

- [AWS VPC Endpoints configuration change](#)
- [Monitoring GitLab Access Audit Report](#)
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- [Update the Task CPU limit](#)