# Quick Notes on SQL Managed Instances

At the moment, we have four SQL Managed Instances used for SPC Enterprise Datawarehouse:

sqlmi-dev02-az.88cba4ffc344.database.usgovcloudapi.net

sqlmi-test01-az.a47833205e30.database.usgovcloudapi.net

sqlmi-uat01-az.e8ef88fedc11.database.usgovcloudapi.net

sqlmi-prod01-az.b5e9ffa04b3a.database.usgovcloudapi.net

We had a need to backup and restore all of the prod databases down to dev. How to do this? The database needs to get backed up inside storage in the cloud then restored from cloud storage.

The syntax to perform these actions follows. Several things need to be set-up ahead of time before T-SQL commands can be issued.  
  
Step 1: Update and Get Info for Shared Access Token  
  
Login in to <https://portal.azure.com> using your -adm account. Can do a search for “Storage Accounts” if needed.

Navigate to desired Storage account, then click on Containers, then click on the correct name; in this case it is transfer-data-prod:  
  
Graphical user interface, text, application

Description automatically generated

Select the Shared access tokens on the left then add the following five check boxes under the Permissions drop-down: Read, Add, Create, Write, and List:  
  
Graphical user interface, text, application, email

Description automatically generated

You will then need to set a Start and Expiry date; in this example I used the previous day and one day into the future:  
  
Graphical user interface, application

Description automatically generated

Then hit the Generate SAS token and URL; copy the first one called Blob SAS token; use the copy icon found at the end of the text box. Paste and save this link somewhere for use later.  
  


Finally, copy and paste the Blob SAS URL; you just need the https:// all the way to just before the ? in the URL only; paste and save this link too.

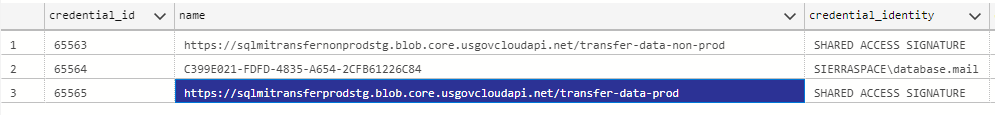
Graphical user interface

Description automatically generated with medium confidence

## Step 2: Create or Alter Credential on Source and Destination

Connect to the prod instance (in this example) and run the following query:

select \* from sys.credentials;

If the name and credential identity already exists, you will run an ALTER CREDENTIAL command else you will run a CREATE CREDENTIAL command; same syntax for both; just change either the word ALTER or CREATE. Please note that even if it already exists, it will probably have already expired; we can’t use permanent Shared Access Tokens:  
  
  
  
A picture containing timeline

Description automatically generated  
  
Then! Perform this procedure on the destination too for either ALTER or CREATE CREDENTIAL.

## Step 3: Remove Encryption, Drop Database Encryption Key (DEK) and Backup the Database then Restore

Before you can backup a SQLMI database, encryption has to be removed. The default behavior when creating new databases in SQLMI is TDE is on. You can’t backup a database with TDE on, hence it needs to be un-encrypted first (status will show DECRYPTION IN PROGRESS) then the DEK has to be dropped before a backup can occur. Also, you can only take a COPY\_ONLY backup once the decryption process has finished. Note the syntax; you are backing up to a URL; the name of the credential + filename.bak.

SELECT name, is\_encrypted

FROM sys.databases

WHERE is\_encrypted = 1

USE master

ALTER DATABASE TESTDELETEWHENDONE SET ENCRYPTION OFF;

-- NOTE!!! You MUST wait until it shows UNENCRYPTED; can take a while, esp on large databases

SELECT DB\_Name(database\_id) AS [DB Name], encryption\_state, encryption\_state\_desc FROM sys.dm\_database\_encryption\_keys;

-- then drop the Database Encryption Key (DEK)

SELECT 'USE ' + [name] + ' DROP DATABASE ENCRYPTION KEY;' FROM sys.databases WHERE database\_id > 4;

Finally! You can backup the database.

BACKUP DATABASE DELTEKCP TO URL = 'https://sqlmitransferprodstg.blob.core.usgovcloudapi.net/transfer-data-prod/DELTEKCP.bak' WITH COPY\_ONLY;

Processed 1369952 pages for database 'DELTEKCP', file 'data\_0' on file 1.

Processed 0 pages for database 'DELTEKCP', file 'XTP' on file 1.

Processed 5 pages for database 'DELTEKCP', file 'log' on file 1.

BACKUP DATABASE successfully processed 1369957 pages in 238.773 seconds (44.824 MB/sec).

Total execution time: 00:03:59.044

Then on the destination system, run the RESTORE. NOTE!!! You have to drop the database first if it exists; SQLMI does not allow you to restore on top of an existing database.

-- 2min51sec 10.46 GB

IF @@SERVERNAME = 'sqlmi-dev02-az.88cba4ffc344.database.usgovcloudapi.net'

BEGIN

    DROP DATABASE IF EXISTS DELTEKCP;

    RESTORE DATABASE DELTEKCP FROM URL = 'https://sqlmitransferprodstg.blob.core.usgovcloudapi.net/transfer-data-prod/DELTEKCP.bak'

END