Steps to Migrate SSISDB – SQL Server – UpSkill 2020.

SISDB isn't the database you just backup on one server and restore on another. There are some more steps to do.

The same procedure will work for migrations from version 2012 to 2017 or 2016 to 2017. Didn't checked for 2014 to 2017. Tested the migration of 2012 to 2016 version but had some problems with this when it came to upgrading database part.

What is a Database Master Key (DMK)?

- It's the main key used for encryption in the database.
- It's a symmetric key, which means it uses one password to encrypt and decrypt the objects.
- By default, it is encrypted using *Service Master Key* (SMK) and a password – that's why we provide the password.
- In SSISDB the DMK is used to encrypt certificates used in the projects and the environments.
- We can use more than one password to encrypt DMK.
- It's a great help for us if we don't remember the password – it makes the migration easier.
- There are more use cases for multiple passwords for DMK like password rotation related to retention policy.
- We may also remove the encryption with Service Master Key and use only the password, but then we always must use OPEN MASTER KEY before decrypting the data. Using SMK performs this operation for us in the background.

The database backup contains also the DMK with all its passwords. And if we didn't change the defaults the DMK is also encrypted with SMK. The SSISDB restore operation is made on another instance with different SMK, so there is a problem with decrypting the DMK – it's encrypted with SMK from original server and we try to decrypt DMK with SMK from new server – it doesn't work. One more time – part of the error:

Please create a master key in the database or open the master key in the session before performing this operation.

If we can't open the DMK with the SMK, we must open it manually using OPEN MASTER KEY <u>with the password</u>. Then we can sign the DMK with the SMK from the new server.

If you know the password – just use it. If not – alter the DMK on the original server by adding new password (optionally removing the binding from SMK) before taking the backup and use it on new server.

The T-SQL code looks like this (let's say we don' t remember/know the password for the DMK in SSISDB):

At Source – SQL Server 2016:

```
USE SSISDB;
GO

-- I forgot the password, add a new one
ALTER MASTER KEY
   ADD ENCRYPTION BY PASSWORD = 'Migration_Password123!';

-- backup the database with DMK signed with new password
USE [master]
BACKUP DATABASE [SSISDB]
TO DISK = N'C:\tmp\SSISDB2016.bak'
WITH
   DESCRIPTION = N'SSISDB Migration demo - SQL2016',
   NOFORMAT, NOINIT,
   NAME = N'SSISDB-Full Database Backup',
   SKIP, NOREWIND,  NOUNLOAD, COMPRESSION,
   STATS = 20, CHECKSUM;
GO
```

At Source – SQL Ser

ver 2017:

```
USE [master]
-- restore from backup, nothing new
go
RESTORE DATABASE [SSISDB]
FROM DISK = N'C:\tmp\SSISDB2016.bak'
WITH
    FILE = 1,
    MOVE N'data' TO N'C:\Program Files\Microsoft SQL Server\MSSQL14.SQL2017\MSSQL\DATA\SSISDB.mdf',
    MOVE N'log'  TO N'C:\Program Files\Microsoft SQL Server\MSSQL14.SQL2017\MSSQL\DATA\SSISDB.ldf',
    NOUNLOAD,
    STATS = 25
;
GO

-- open the DMK using the password I just added on original server

OPEN MASTER KEY DECRYPTION BY PASSWORD = 'Migration_Password123!'

-- encrypt the DMK with SMK of the new server

ALTER MASTER KEY
    ADD ENCRYPTION BY SERVICE MASTER KEY
;

-- clean up
CLOSE MASTER KEY
```

Last thing – at the end we should drop the password we used for migration. We can do this using command

```
Use master
go
ALTER MASTER KEY
DROP ENCRYPTION BY PASSWORD = 'Migration_Password123!'
```

This is just a migration of SSISDB.

Running the packages, upgrading them, solving problems.

Upskill 2020

(IT Freshers & Experienced)

Dear Connections,

This is Praveen here (Sr SQL Server DBA) with 10 plus years' experience in Core SQL Server Administration.

I'm from Hyderabad (India) & have planned an Online program named "**UPSKILL 2020**" for both IT Freshers & Experienced.

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10. For more details, please contact me @ 91-819-729-3434 (or) praveen.madupu@gmail.com

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