

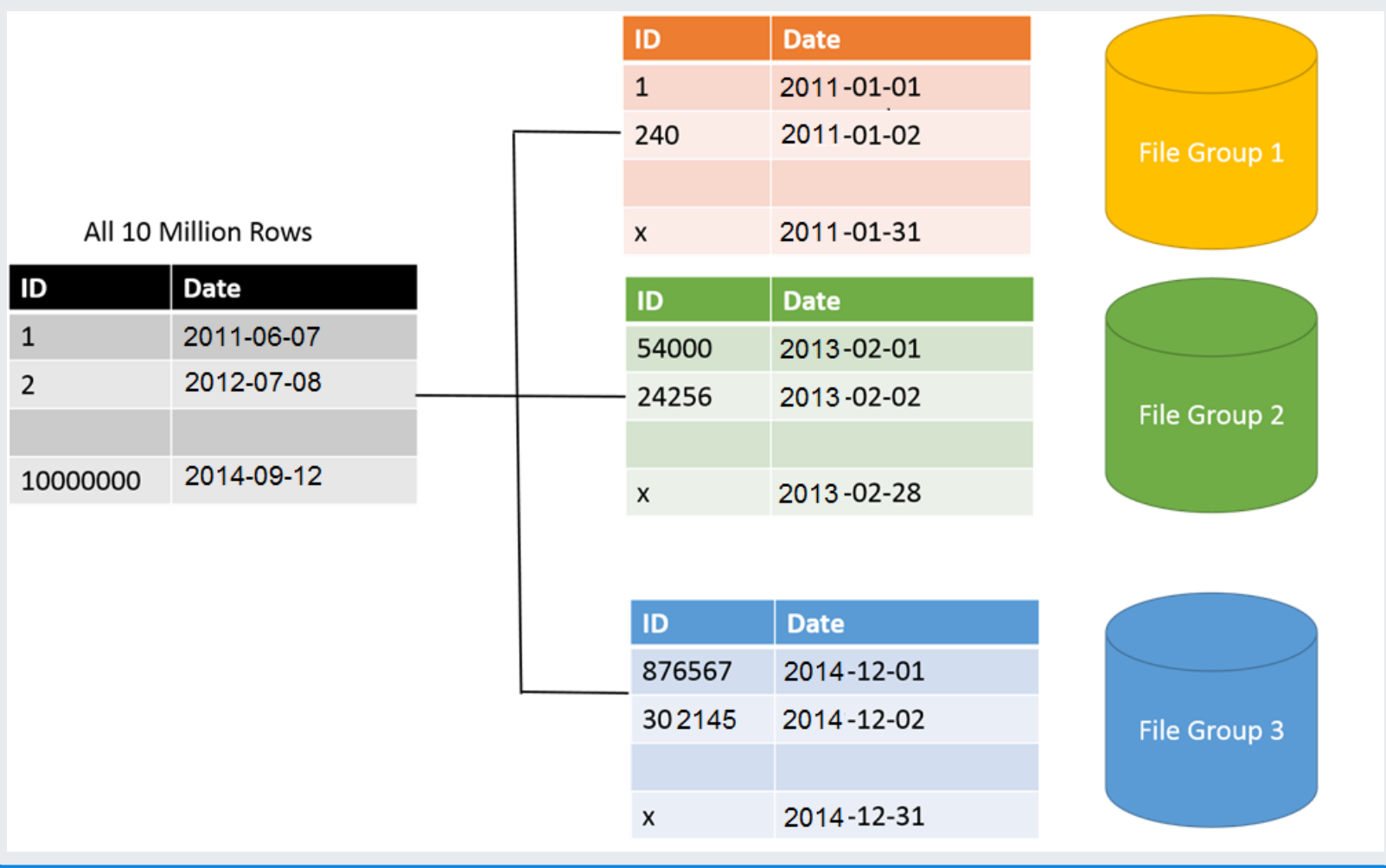
Tuning Problem Queries in Table Partitioning

partition table basic

what is table partitioning?

devide a large normal table into smaller

without to create separate table



example normal table vs partition table

1st choose partition column

for example

all the rows with date column belong to January
rows with date column belong to February

orange partition

stored in filegroup

green partition

how to choose partition column (vip)

"select a column that is almost always used as a filter in queries"

example

```
CREATE DATABASE MyPartDB
GO
USE MyPartDB
GO
CREATE PARTITION FUNCTION MyPartFunc_1(INT) AS RANGE LEFT FOR VALUES (1000, 2000, 3000)
```

Partition	Partition 1	Partition 2	Partition 3	Partition 4
Dải giá trị	giá trị <= 1000	1000 < giá trị <= 2000	2000 < giá trị <= 3000	3000 < giá trị

Ví dụ 2: phân đoạn theo năm

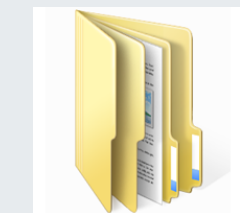
```
CREATE PARTITION FUNCTION MyPartFunc_2(DATETIME) AS RANGE RIGHT FOR VALUES ('2010-01-01', '2011-01-01')
```

Partition	Partition 1	Partition 2	Partition 3
Dải giá trị	giá trị < 01/01/2010	01/01/2010 <= giá trị < 01/01/2011	01/01/2011 <= giá trị

example

2nd create partition function

example



what is this

same like folder in window

data in filegroup(folder) is .ndf file

database has a default filegroup

PRIMARY filegroup

3rd create filegroup

how to create

create yourself

```
CREATE DATABASE PartTest
GO
USE PartTest
GO
-- tạo filegroup
ALTER DATABASE PartTest ADD FILEGROUP FG2009AndBefore
ALTER DATABASE PartTest ADD FILEGROUP FG2010
ALTER DATABASE PartTest ADD FILEGROUP FG2011AndAfter
```

- thêm data file vào mỗi filegroup

```
ALTER DATABASE PartTest ADD FILE (NAME = N'FY2009AndBefore', FILENAME = N'D:\DATA\PartTest\FY2009AndBefore.ndf') TO FILEGROUP FG2009AndBefore
ALTER DATABASE PartTest ADD FILE (NAME = N'FY2010', FILENAME = N'D:\DATA\PartTest\FY2010.ndf') TO FILEGROUP FG2010
ALTER DATABASE PartTest ADD FILE (NAME = N'FY2011AndAfter', FILENAME = N'D:\DATA\PartTest\FY2011AndAfter.ndf') TO FILEGROUP FG2011AndAfter
```

4th create partition scheme

```
USE AdventureWorks2017
GO
CREATE PARTITION FUNCTION PFunc_NGD(DATETIME) AS RANGE RIGHT FOR VALUES ('2010-01-01', '2011-01-01')
GO
CREATE PARTITION SCHEME PScheme_NGD AS PARTITION PFunc_NGD TO (FG2009AndBefore, FG2010, FG2011AndAfter)
--CREATE PARTITION SCHEME PScheme_NGD AS PARTITION PFunc_NGD ALL TO ([PRIMARY])
```

5th add partition features to normal table

new table

```
USE AdventureWorks2017
GO
CREATE TABLE dbo.BanHang(
    BanHang_ID INT IDENTITY,
    NgayGiaoDich DATETIME,
    MaSP INT,
    SoLuong INT,
    ThanhTien INT
) ON PScheme_NGD(NgayGiaoDich)
GO

CREATE CLUSTERED INDEX CI_BanHang_NGD ON dbo.BanHang(NgayGiaoDich) ON PScheme_NGD(NgayGiaoDich)
--CREATE CLUSTERED INDEX CI_BanHang_NGD ON dbo.BanHang(NgayGiaoDich) ON [PRIMARY]
```

current table

sql-server-partition-wizard

<https://www.mssqltips.com/sqlservertip/2856/sql-server-partition-wizard/>

explain later

improve query performance

perform maintenance operations on individual partitions

speed up archiving data

speed up loading data

benefit

partition table vs normal table

example

publish offline database to azure

publish partition table to azure

another resource

basic concept

<https://docs.microsoft.com/en-us/azure/dms/tutorial-sql-server-to-azure-sql>

<https://www.mssqltips.com/sqlservertip/3494/azure-sql-database--table-partitioning/>

<https://littlekendra.com/2015/11/17/did-my-query-eliminate-table-partitions-sql-server/>

<https://www.cathrinewilhelmsen.net/2015/04/12/table-partitioning-in-sql-server/>

<http://www.sqlviet.com/blog/table-partitioning-cac-khai-niem-co-ban#comments>