

Stretch Database

SQL Server 2016

Hariharan

Lead Consultant, Your SQL Man (I) Pvt Ltd

Microsoft Certified Trainer

Microsoft Certified Solution Expert

Business Intelligence & Data Management and Analytics

SAP HANA & Business Objects

Active Speaker in DAGEOP DATA DAY

Blog

<http://dataap.org/author/hariharanr/>

Twitter

 @imhariharanr

Linked In

 hariharan-r-12635640



Topics

- What is Stretch Database
- Benefits & Features
- Limitations
- Identifying qualified tables for Stretch
- Enabling, Pause, Disable & Monitor Stretch
- Stretch DB - Extended Stored Procedures
- Backup & Restore Stretch Database
- Stretch DB – PRICING

Before Stretch Database

- Adding Storage
- Move data to another location – DB, flat files, backups & tapes
- Delete the data if it is not necessary
- Performing maintenance for large tables

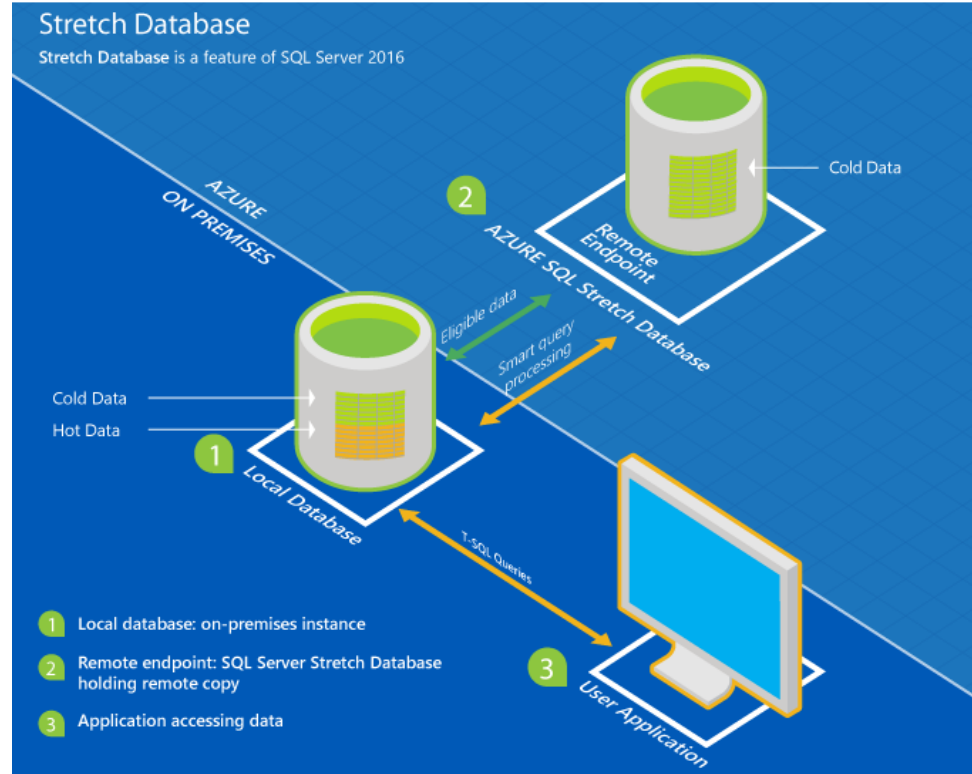
Challenges

- Massive Tables
- Users want to retain data
- Historical data must be online
- Maintenance challenge

Definition



- Stretch Entire Table
- Stretch Cold Rows



Stretch DB Benefits & Features

- Save money on Storage disks
- Improved SLA
- Easy Maintenance
- Entire table is online and remains accessible from existing apps
- No application changes
- Supports always encrypted and row level security

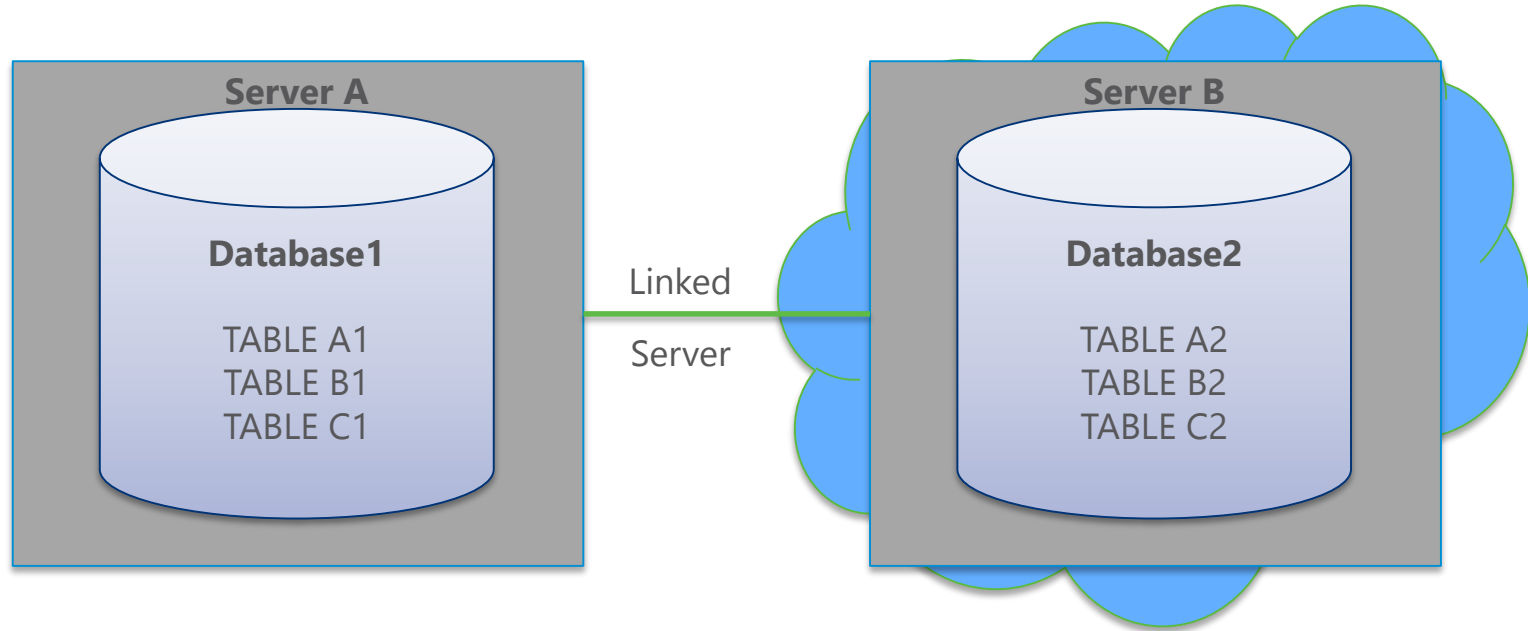
Stretch DB Benefits & Features

- Get as much enterprise-class storage as needed, when it is needed.
- Automated backup and geo-redundancy are available by default.
- Scale compute and storage resources independently based on workload requirements—and only pay for what is consumed.
- Centralize access control via integrated security for customers who federate their on-premises Active Directory with Azure Active Directory.

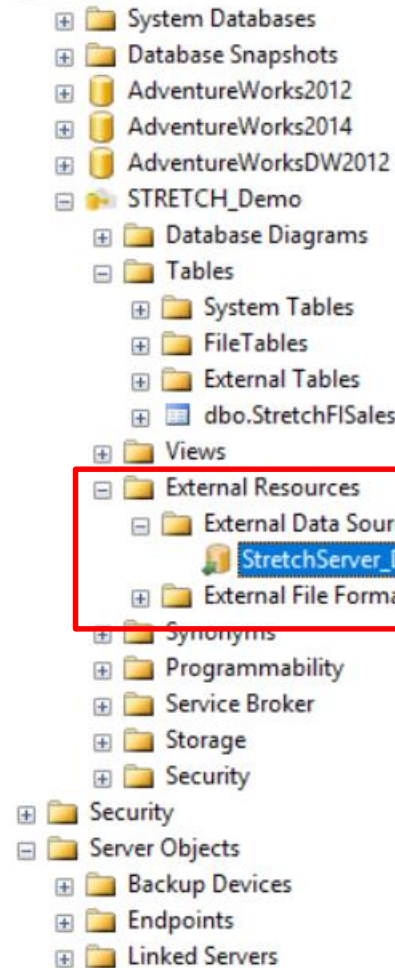
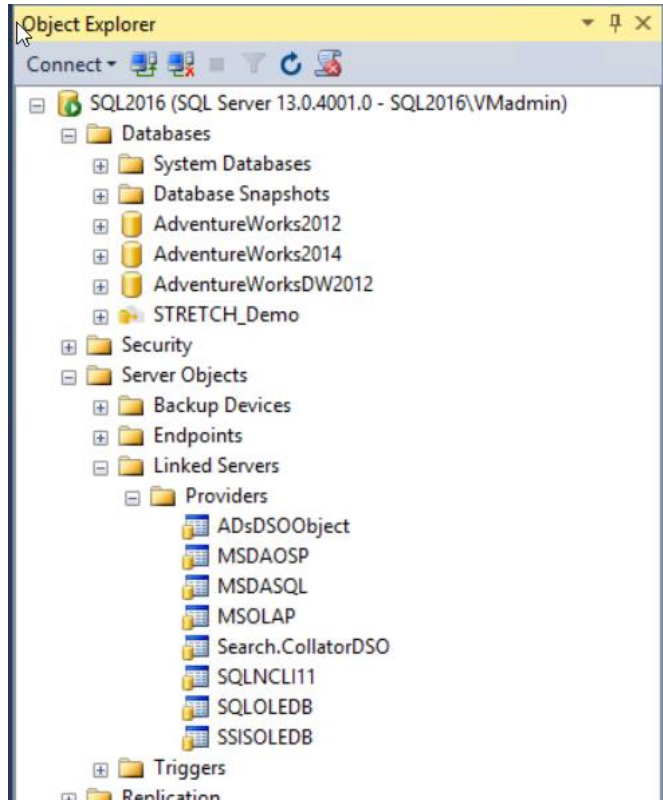
Limitations

LIMITATIONS	Before Stretch DB	After Stretch DB
Column types	Computed Columns COLUMN_SET	
Data types	Text, ntext, image Timestamp XML Geometry, geography, hierarchyid, CLR user-defined types SQL_Variant	
DML Operations		No UPDATE, DELETE, INSERT
Indexes	Full text XML Spatial Indexed views	No Indexing on Views Filtered Indexes
Constraint	Default & Check Foreign key	UNIQUE & PRIMARY KEY
Table	>1,023 columns >998 Indexes FILESTREAM data Memory Optimized Tables CDC	

Comparison with Linked Server




Stretch DB Provider



DEMO


Monitoring Stretch



SQL2016:STRETCHDemo

Last Updated:

Auto Refresh:



You are signed in as rharihara

Source Server

Name SQL2016

Database STRETCHDemo

Size 28.69 MB

Azure Server

Name cssug

Database RDASTRETCHDemo1264261

Service Tier Stretch/DS100

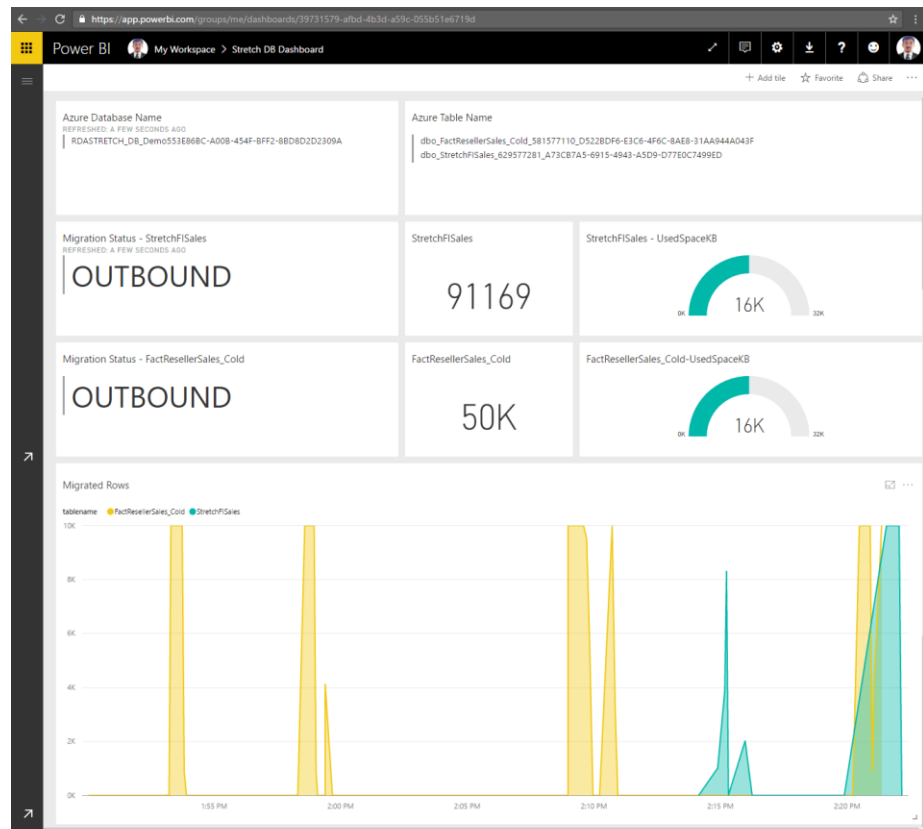
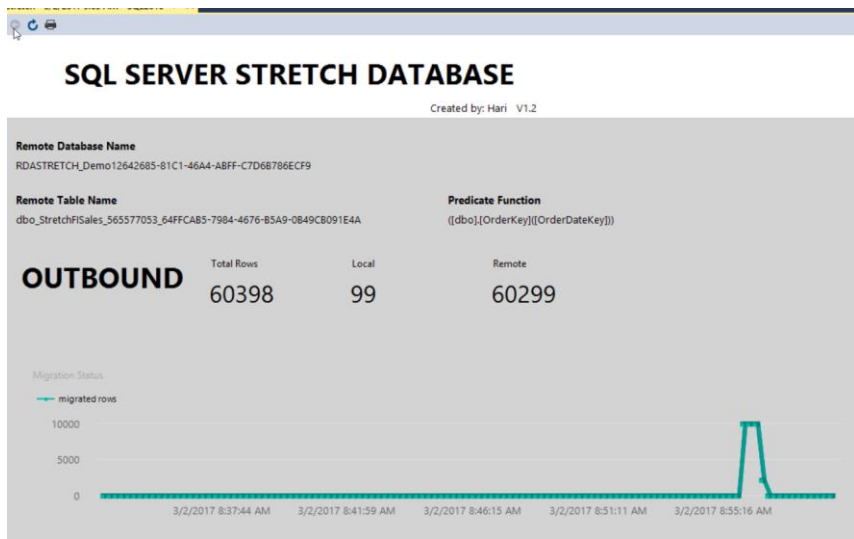
Region Southeast Asia

Stretch Configured Tables

[View Stret](#)

	Name	Migration State	Eligible Rows	Local Rows	Rows In Azure
✓	dbo.StretchFISales	Outbound	60398	32265	28133

Monitoring Stretch



Stretch DB Extended Stored Procedures

- `sys.sp_rda_set_rpo_duration`
- `sys.sp_rda_test_connection`
- `sp_rda_set_query_mode`
- `sys.sp_rda_reconcile_batch`
- `sys.sp_rda_reconcile_columns` & `sys.sp_rda_reconcile_indexes`
- `sys.sp_rda_deauthorize_db` & `sys.sp_rda_reauthorize_db`

DEMO

Backup & Restore

Every **8 Hours** Automatic Storage Snapshots

Retains each snapshot for **7 Days**

Geo-Redundant Azure Storage



Extended Events

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Extended Events' folder is expanded under 'Management'. The 'StretchDatabase_Health' session is selected. The right pane displays a list of 244 events, with the first 10 shown. Below the list, the details for the event 'stretch_index_reconciliation_codegen_completed' are shown.

Displaying 244 Events

name	timestamp
stretch_table_row_migration_event	2016-09-13 11:27:43.6914136
stretch_table_row_migration_event	2016-09-13 11:27:58.6617817
stretch_table_row_migration_event	2016-09-13 11:28:13.8831872
stretch_table_row_migration_event	2016-09-13 11:28:29.7963227
stretch_table_row_migration_event	2016-09-13 11:28:43.7069451
stretch_table_row_migration_event	2016-09-13 11:28:58.8516524
stretch_table_row_migration_event	2016-09-13 11:29:14.0408691
stretch_table_row_migration_event	2016-09-13 11:29:28.9911446
stretch_table_row_migration_event	2016-09-13 11:29:44.1938732
stretch_table_row_migration_event	2016-09-13 11:29:58.9920838
stretch_table_row_migration_event	2016-09-13 11:30:14.0656778

Event: stretch_index_reconciliation_codegen_completed (2016-09-13 11:22:19.5089060)

Details

Field	Value
database_id	12
duration_ms	3093
error_number	0
error_state	0
is_success	True
message	
table_id	629577281

Stretch DB - PRICING

PERFORMANCE (DSU)	Price / Hour *	Price / Month *
100	\$2.50	\$1,860
200	\$5	\$3,720
300	\$7.50	\$5,580
400	\$10	\$7,440
500	\$12.50	\$9,300
600	\$15	\$11,160
1000	\$25	\$18,600
1200	\$30	\$22,320
1500	\$37.50	\$27,900
2000	\$50	\$37,200

Stretch DB - PRICING

Database Size **240 TB**

Regions not support - India South, China North, Brazil South, US North Central, India West, Australia, Japan and US Gov.

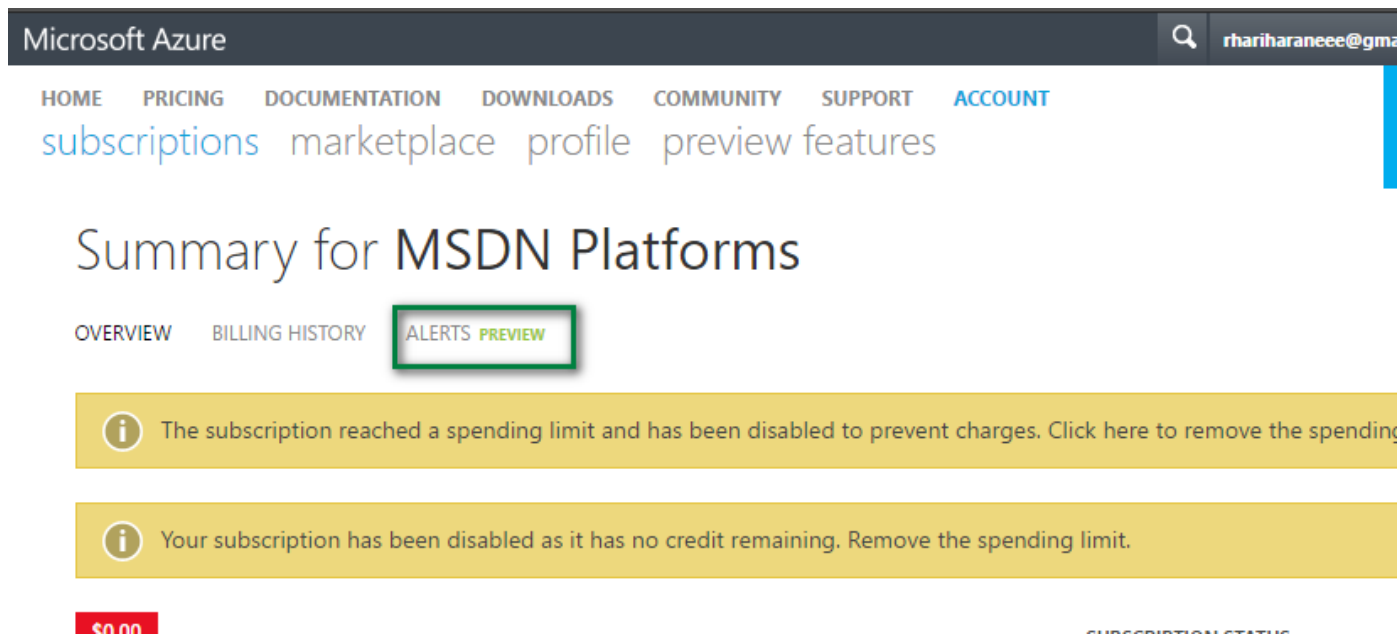
Data storage is charged based at **\$0.16/GB/month**

Storage for geo-redundant copies is billed at Azure Standard Disk RA-GRS of **\$0.12/GB/month**.

Guaranteed **99.99%** uptime.

Outbound data transfers – **First 5 GB Free**

Stretch DB - PRICING



The screenshot shows the Microsoft Azure account management interface. At the top, the 'Microsoft Azure' header includes a search icon and the email 'rhariharaneee@gmail.com'. Below this is a navigation bar with links: HOME, PRICING, DOCUMENTATION, DOWNLOADS, COMMUNITY, SUPPORT, and ACCOUNT. Under the ACCOUNT link, there are sub-links: subscriptions, marketplace, profile, preview, and features. The main heading is 'Summary for MSDN Platforms'. Below this heading are three tabs: OVERVIEW, BILLING HISTORY, and ALERTS PREVIEW. The ALERTS PREVIEW tab is selected and highlighted with a green border. Below the tabs are two yellow alert boxes. The first alert box contains an information icon and the text: 'The subscription reached a spending limit and has been disabled to prevent charges. Click here to remove the spending limit.' The second alert box contains an information icon and the text: 'Your subscription has been disabled as it has no credit remaining. Remove the spending limit.' At the bottom left, there is a red box with the text '\$0.00'. At the bottom right, there is a link labeled 'SUBSCRIPTION STATUS'.

Microsoft Azure

rhariharaneee@gmail.com

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Summary for MSDN Platforms

OVERVIEW BILLING HISTORY ALERTS PREVIEW

The subscription reached a spending limit and has been disabled to prevent charges. Click here to remove the spending limit.

Your subscription has been disabled as it has no credit remaining. Remove the spending limit.

\$0.00

SUBSCRIPTION STATUS

Thank You