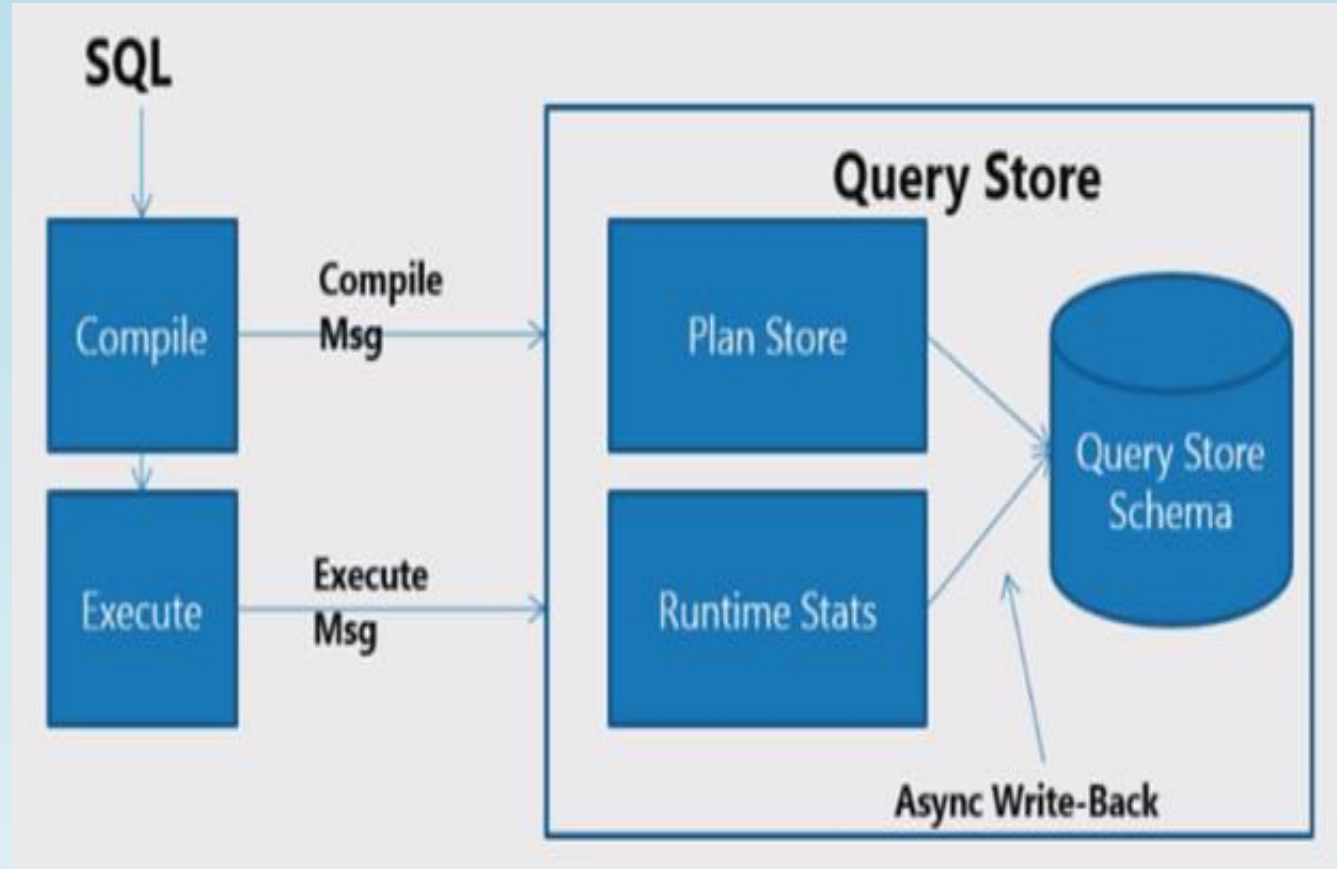


Overview

- Troubleshoot query performance
- Capture every execution plan generated and execution information
- Analysis performance in a given time window and for a particular database
- Easy to force execution plan
- Store the information on disk, accessed through DMVs
- Powerful built-in Query Store reports, developing custom reports
- Available in all edition

Architecture

- Plan Store and Runtime Stats Store
- Stored initially in-memory, async write-back to primary FG
- Default interval 15 minutes, performance overhead 3%-5%
- Access data from disk and in-memory simultaneously by using TDF:
query_store_runtime_stats_in_mem



Options

- Using SSMS or T-SQL
- Example

ALTER DATABASE Demo
SET QUERY_STORE = ON

ALTER DATABASE Demo
SET QUERY_STORE
(MAX_STORAGE_SIZE_MB = 250)

Database Properties - Demo

Select a page

- General
- Files
- Filegroups
- Options
- Change Tracking
- Permissions
- Extended Properties
- Mirroring
- Transaction Log Shipping
- Query Store

Script Help

General

Operation Mode (Actual)	Read Write
Operation Mode (Requested)	Read Write

Monitoring

Data Flush Interval (Minutes)	15
Statistics Collection Interval	5 Minutes

Query Store Retention

Max Size (MB)	100
Query Store Capture Mode	All
Size Based Cleanup Mode	Auto
Stale Query Threshold (Days)	30

Data Flush Interval (Minutes)

The frequency at which query store data is flushed and persisted to disk.

Current Disk Usage

Demo	1.3 GB	Query Store Available	99.0 MB
Query Store Used	1.0 MB	Query Store Used	1.0 MB

Purge Query Data

OK Cancel

Connection

Server:
CN-KUYA

Connection:
FAREAST\kuya

[View connection properties](#)

Progress

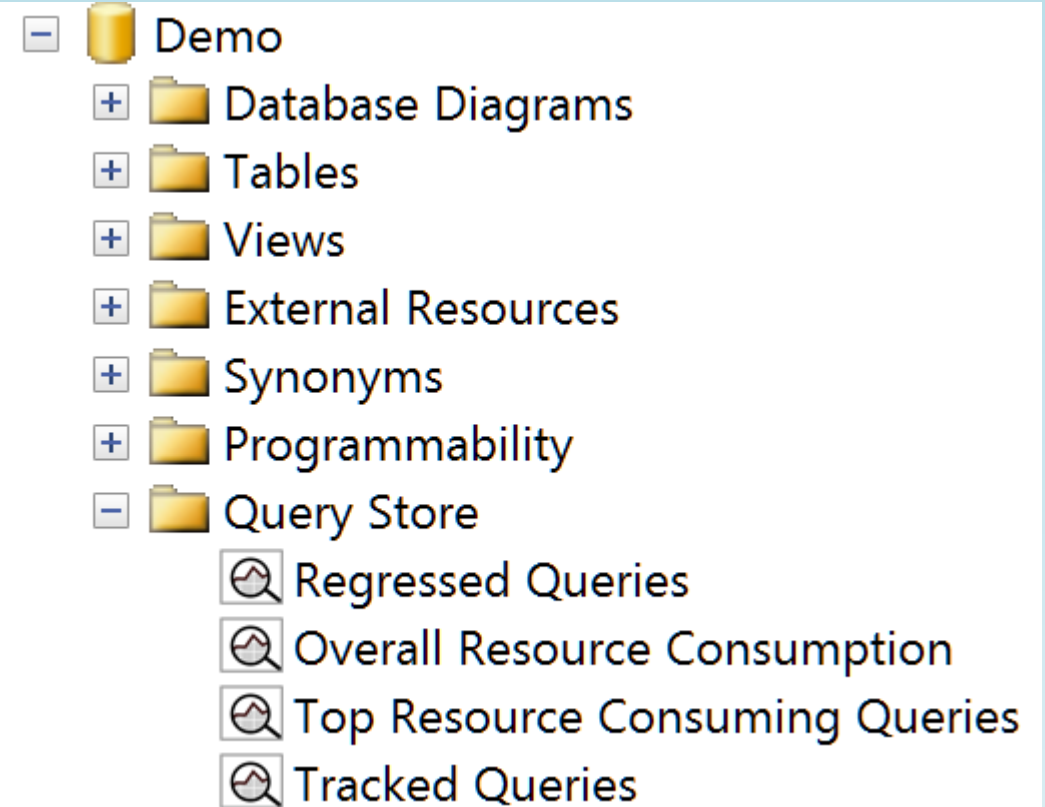
Ready

Options

GUI Option	T-SQL Option
Operation Mode (Requested)	OPERATION_MODE
Data Flush Interval (Minutes)	DATA_FLUSH_INTERVAL_SECONDS
Statistics Collection Interval	INTERVAL_LENGTH_MINUTES
Max Size (MB)	MAX_STORAGE_SIZE_MB
Query Store Capture Mode	QUERY_CAPTURE_MODE
Size Based Cleanup Mode	SIZE_BASED_CLEANUP_MODE
Stale Query Threshold (Days)	CLEANUP_POLICY (STALE_QUERY_THRESHOLD_DAYS)
	MAX_PLANS_PER_QUERY

Built-in Reporting

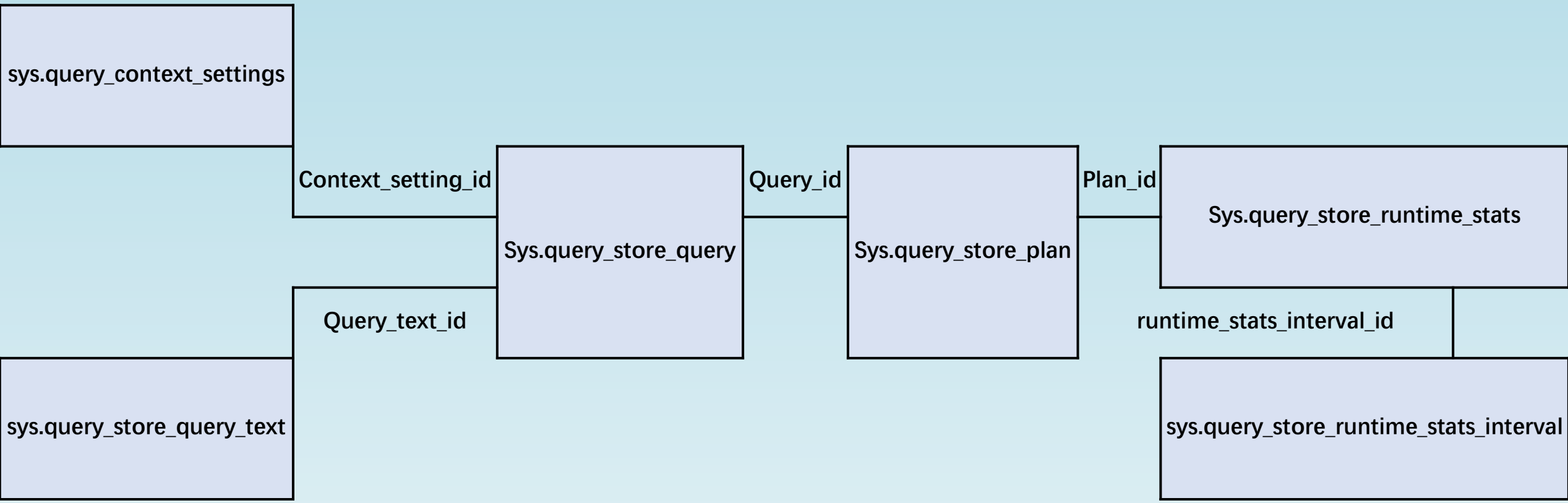
- Regressed Queries
 - metric regressed (recent vs. history)
- Overall Resource Consumption
 - choose proper time interval and aggregation size
- Top Resource Consuming Queries
- Tracked Queries
 - tracking query by ID
 - compare plans
 - force plan



Query Store DMVs

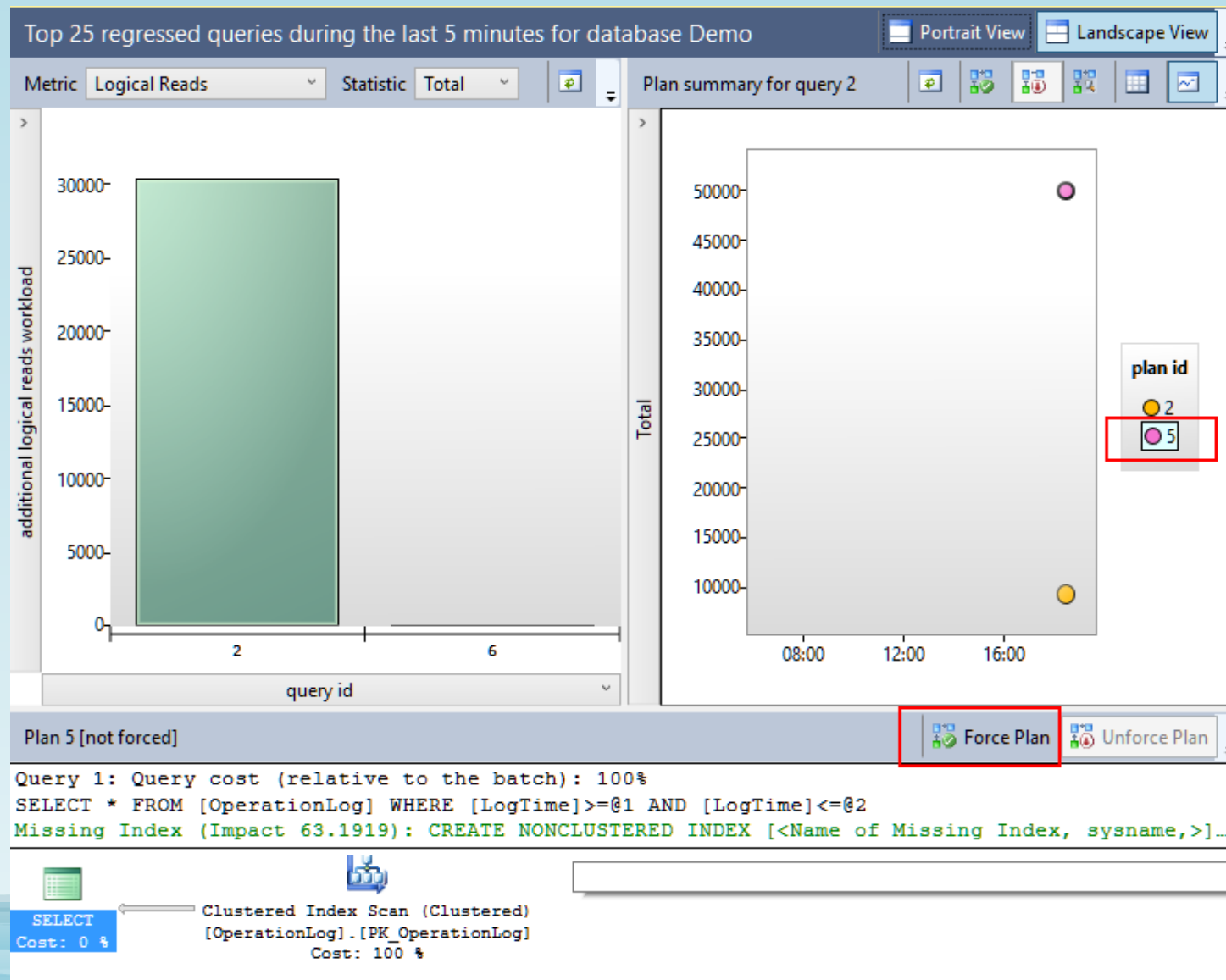
- `sys.database_query_store_options`
 - records all the configuration options and their settings of the Query Store
- `sys.query_store_query`
 - performance metrics of a query, at the level of SQL statement
- `sys.query_store_query_text`
 - query text of the SQL statement and can be joined to the `sys.query_store_query`
- `sys.query_context_settings`
 - returns the context settings under which the SQL statement is executed
- `sys.query_store_plan`
 - stores information about the Execution Plans
- `sys.query_store_runtime_stats`
 - captured and aggregated query performance metrics
- `sys.query_store_runtime_stats_interval`
 - records the start and end time of each interval based on the Statistics Collection Interval setting

Query Store DMVs



Forcing Execution Plans

- Using SSMS
 - Regressed queries report
 - Tracked queries report
- Running T-SQL
 - EXEC sp_query_store_force_plan



Query store performance

- Performance Counter
 - Query Store CPU usage
 - Query Store logical reads
 - Query Store logical writes
 - Query Store physical reads
- Extended Events
- Wait Statistics
 - QDS_XXX

Add Counters

Available counters

Select counters from computer:

<Local computer> Browse...

SQLServer:Plan Cache

SQLServer:Query Store

Query Store CPU usage

Query Store logical reads

Query Store logical writes

Query Store physical reads

SQLServer:Replication Agents

SQLServer:Replication Dist.

Instances of selected object:

Total

<All instances>

AdventureWorks2016CTP3

Demo

Search

Add >>