

Implementing Indexed Views



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Overview



Description

Requirements

Recommendations

Considerations

Syntax



Definition

An indexed view is a persisted object stored in the database in the same way that table indexes are stored.



The view does not have to be referenced in the query for the optimizer to consider that view for a substitution.



Clustered
vs.
Nonclustered?



Indexed View Requirements

First index must be a unique clustered index

SET options

View must be deterministic

WITH SCHEMABINDING

Restricted T-SQL elements

GROUP BY



Indexed View Set Options

SET option	Required	Server Default	OLEDB/ODBC Default	DB-library Default
ANSI_NULLS	ON	ON	ON	OFF
ANSI_PADDING	ON	ON	ON	OFF
ANSI_WARNINGS*	ON	ON	ON	OFF
ARITHABORT	ON	ON	OFF	OFF
CONCAT_NULL_YIELDS_NULL	ON	ON	ON	OFF
NUMERIC_ROUNDABORT	OFF	OFF	OFF	OFF
QUOTED_IDENTIFIER	ON	ON	ON	OFF



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Deterministic Views

All Expressions

WHERE, GROUP
BY, ON

Deterministic:
DATEADD

Not Deterministic:
GETDATE

IsDeterministic
property

Precise and
Deterministic



Demo



Determinism



Other Requirements

Forbidden T-SQL Elements

- COUNT, ROWSETs, OUTER JOINS
- Derived tables, self-joins, sub queries
- DISTINCT, TOP, ORDER BY
- UNION, EXCEPT, INTERSECT
- MIN, MAX, PIVOT, UNPIVOT

Details: <https://bit.ly/2yxrKUP>

Search: “Create Indexed Views”



CAST('01/12/2020' AS DATETIME)

CAST('20200112' AS DATETIME)

CAST and CONVERT functions

◀What is the date?

Jan 12 or Dec 1?

◀ISO Format, deterministic

Always Jan 12!

◀Deterministic format styles



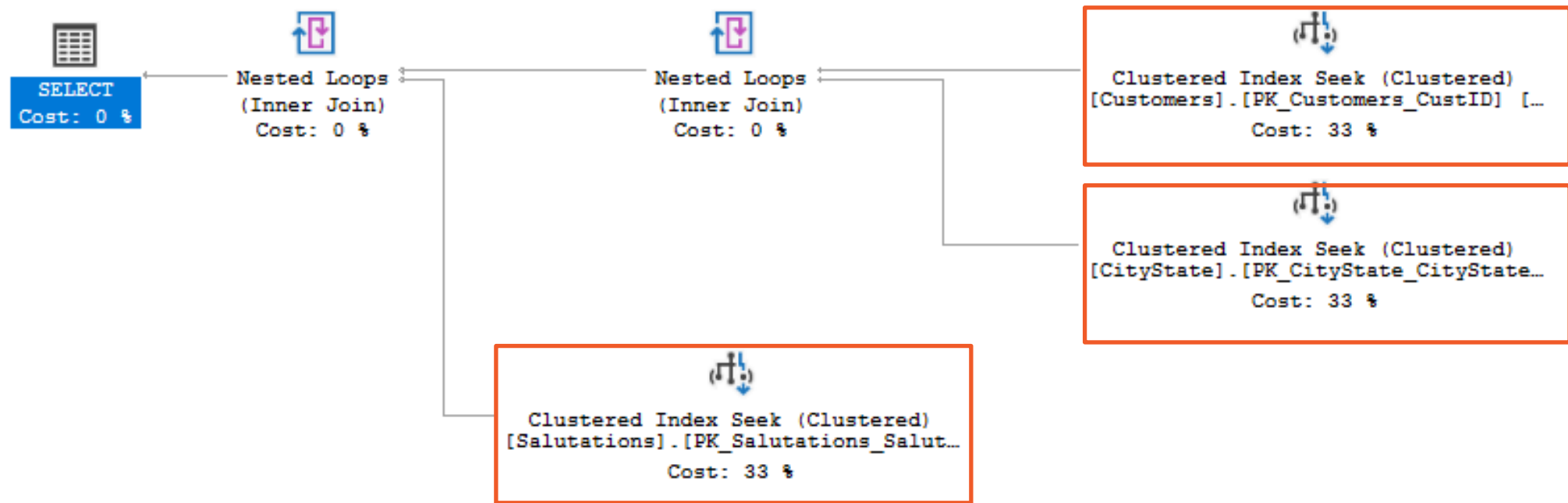
Demo



Customer List Indexes



Execution Plan Using OPTION (EXPAND VIEWS)



Demo



Customer List Indexes



Summary



Views as virtual tables

Requirements and restrictions

Persisted

Increased performance

First index must be **UNIQUE CLUSTERED**

Other indexes are **NONCLUSTERED**

May contain aggregations

Index maintenance

