

WYDAJNOŚĆ ZŁĄCZEŃ I ZAGNIEŹDZEŃ DLA SCHEMATÓW ZNORMALIZOWANYCH I ZDENORMALIZOWANYCH

1. Parametry komputera, na którym przeprowadzono testy:
 - CPU: Intel(R) Core(TM) i5-8265U CPU @ 1.60GHz 1.80 GHz
 - RAM: 12,0 GB
 - DYSK: SSD
 - S.O.: Windows 10
2. Systemy zarządzania bazami danych:
 - PostgreSQL, wersja 13.2
 - SQL Server, wersja 15.0.2000.5
3. Wyniki testów. Każdy test wykonano 10 razy, następnie znaleziono wartość najmniejszą oraz średnią.

Tabela 1. Czasy wykonania zapytań 1 ZL, 2 ZL, 3 ZG i 4 ZG [ms]

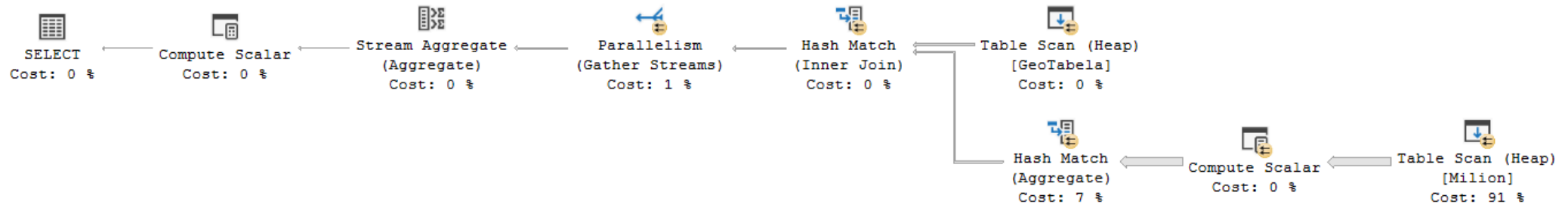
	1 ZL		2 ZL		3 ZG		4 ZG	
BEZ INDEKSÓW	MIN	ŚR	MIN	ŚR	MIN	ŚR	MIN	ŚR
PostgreSQL	180	231	328	365	11973	12106	183	221
SQL Server	32	36	34	39	3819	3898	36	41
Z INDEKSAMI								
PostgreSQL	192	228	246	269	12327	12777	193	234
SQL Server	29	34	62	65	3659	3741	28	32

4. Wyniki użycia opcji *Display Estimated Execution Plan* dla bazy danych SQL Server.

- Bez indeksów

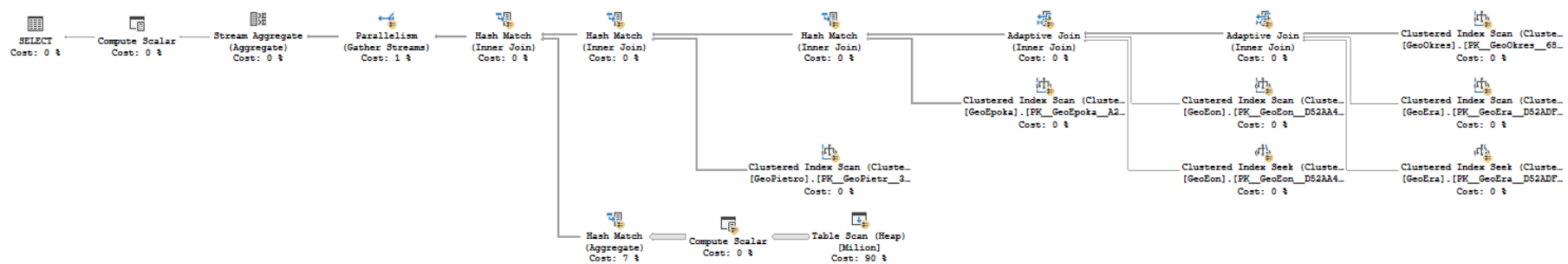
Query 1: Query cost (relative to the batch): 1%

SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoTabela ON ((Milion.liczba%77)=(GeoTabela.id_pietro))



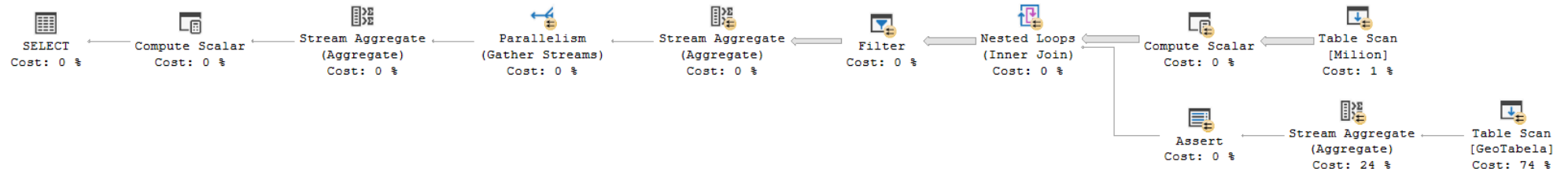
Query 2: Query cost (relative to the batch): 1%

; SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoPietro ON ((Milion.liczba%77)=GeoPietro.id_pietro) JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpoka.id_...



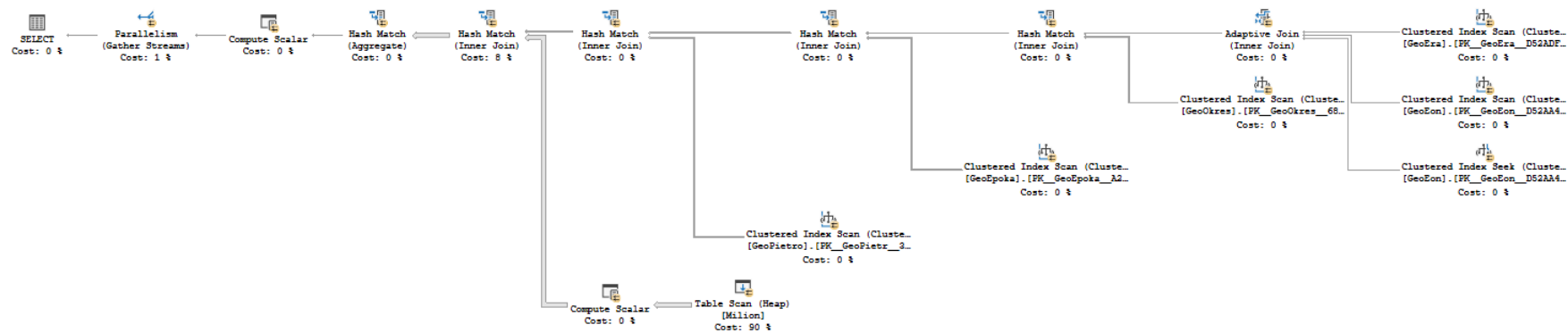
Query 3: Query cost (relative to the batch): 97%

; SELECT COUNT(*) FROM geochro.Milion WHERE (geochro.Milion.liczba%77)= (SELECT id_pietro FROM geochro.GeoTabela WHERE (geochro.Milion.liczba%77)=(id_pietro))



Query 4: Query cost (relative to the batch): 1%

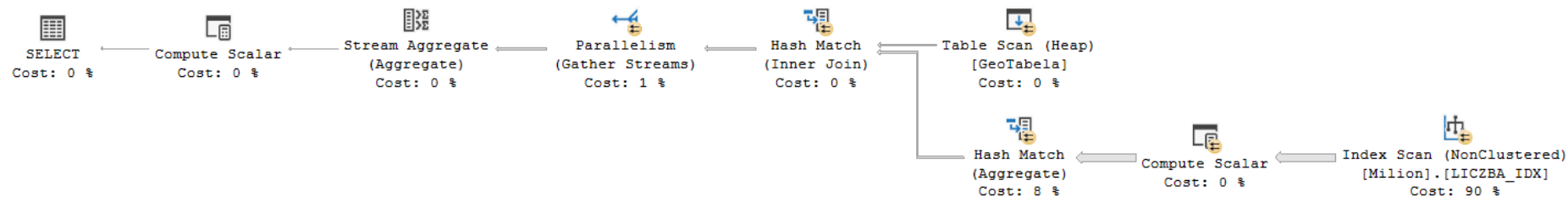
; SELECT COUNT(*) FROM geochro.Milion WHERE (Milion.liczba%77) IN (SELECT GeoPietro.id_pietro FROM geochro.GeoPietro JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpoka...)



- Z indeksami

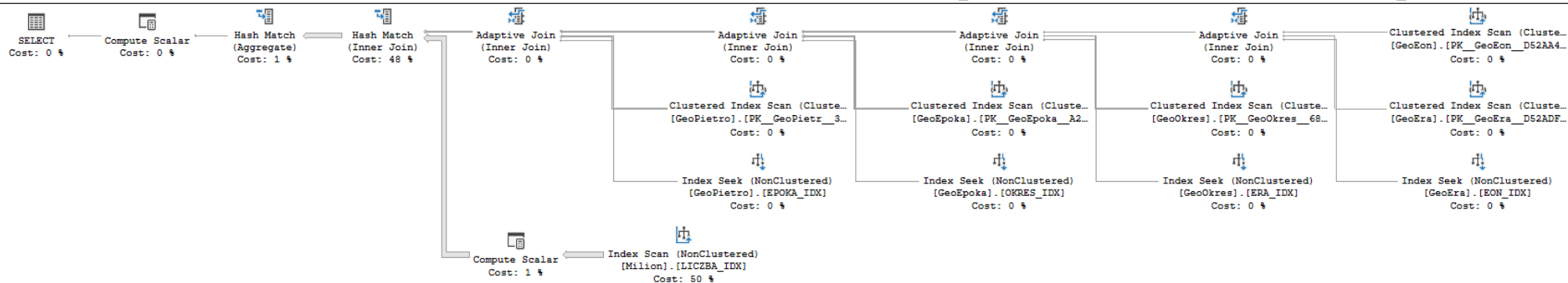
Query 1: Query cost (relative to the batch): 1%

SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoTabela ON ((Milion.liczba%77)=(GeoTabela.id_pietro))



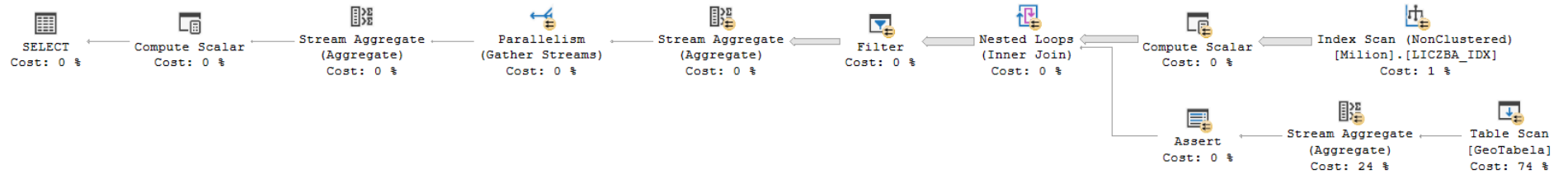
Query 2: Query cost (relative to the batch): 2%

; SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoPietro ON ((Milion.liczba%77)=GeoPietro.id_pietro) JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpoka.id_...



Query 3: Query cost (relative to the batch): 96%

```
; SELECT COUNT(*) FROM geochro.Milion WHERE (geochro.Milion.liczba%77)= (SELECT id_pietro FROM geochro.GeoTabela WHERE (geochro.Milion.liczba%77)=(id_pietro))
```



Query 4: Query cost (relative to the batch): 1%

```
; SELECT COUNT(*) FROM geochro.Milion WHERE (Milion.liczba%77) IN (SELECT GeoPietro.id_pietro FROM geochro.GeoPietro JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpo...
```

