



# Performance Engineering example

# Pre-req (Setup SQL Server and SSMS)

- Setup SQL Server using the below link

<https://www.microsoft.com/en-in/download/details.aspx?id=101064>

- Setup SQL Server Management Studio(IDE) using the below link

<https://www.microsoft.com/en-in/download/details.aspx?id=101064>

- Setup SQL Stress Test using the below link

<https://github.com/ErikEJ/SqlQueryStress/releases>

# Setup the Table and add the data

- Execute the below queries in SSMS

```
create Table Employee(id int identity(1,1) primary key, EmployeeId int, FirstName  
Varchar(max), LastName Varchar(max))
```

```
Declare @i as int=100
```

```
while @i<100000
```

```
begin
```

```
Declare @FN as varchar(max)='TesttFN'+cast(@i as Varchar(max))
```

```
Declare @LN as varchar(max)='TesttLN'+cast(@i as Varchar(max))
```

```
insert into Employee(EmployeeId,FirstName,LastName) values(@i,@FN,@LN)
```

```
set @i=@i+1
```

```
end
```

# Load Tests without Index Column

➤ Run the below query in SQL Stress test and note the timings

**select** FirstName **from** Employee **where** EmployeeId=1001

The screenshot displays the SQLQueryStress application window. The query editor on the left contains the SQL query: `1 from Employee where EmployeeId=1001`. The right-hand panel shows various configuration options and performance metrics. The 'GO' button is visible, indicating the test has been executed. The performance metrics are displayed in a grid:

Metric	Value
Elapsed Time	00:00:03.3877
Iterations Completed	1000
Client Seconds/Iteration (Avg)	0.0770
Total Exceptions	0
CPU Seconds/Iteration (Avg)	0.0204
Logical Reads/Iteration (Avg)	581.0000
Actual Seconds/Iteration (Avg)	0.0664
Active Threads	0

# Load Tests with Index Column

- Add an Index on Employee Id and now run the below query in SQL Stress test and note the timings

Create nonclustered index emp\_in on Employee(EmployeeId)

select FirstName from Employee where EmployeeId=1001

The screenshot shows the SQLQueryStress application window. The query editor on the left contains the query: `1 from Employee where EmployeeId=1001`. The right panel displays various test parameters and results. The 'GO' button is visible, indicating the test has been executed. The results section shows the following values:

Parameter	Value
Database	
Parameter Substitution	
Number of Iterations	10
Number of Threads	100
Delay between queries (ms)	0
CPU Seconds/Iteration (Avg)	0.0000
Actual Seconds/Iteration (Avg)	0.0020
Elapsed Time	00:00:00.0994
Iterations Completed	1000
Client Seconds/Iteration (Avg)	0.0006
Total Exceptions	0
Logical Reads/Iteration (Avg)	4.0000
Active Threads	0