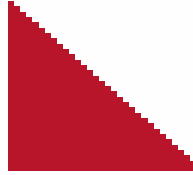


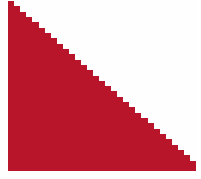
Analysis and Optimization of Data Storage using Enhanced Object Models in the .NET Framework



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Supervisor:
Professor Bill Buchanan

Questions?



- **Which middleware technology is the best Microsoft or IBM?**
- **What are the performance diff. between the .NET Framework 2.0 and 3.0?**
- **How different COM+ applications performs on different volume of data?**
- **Which .NET Framework to choose for small and enterprise applications?**
- **What is the performance difference between the .NET based application and COM+ based application?**

COM+ Object Pool
Max Pool Size = 3
Minimum Pool Size = 2
Creation Timeout = 20 ms

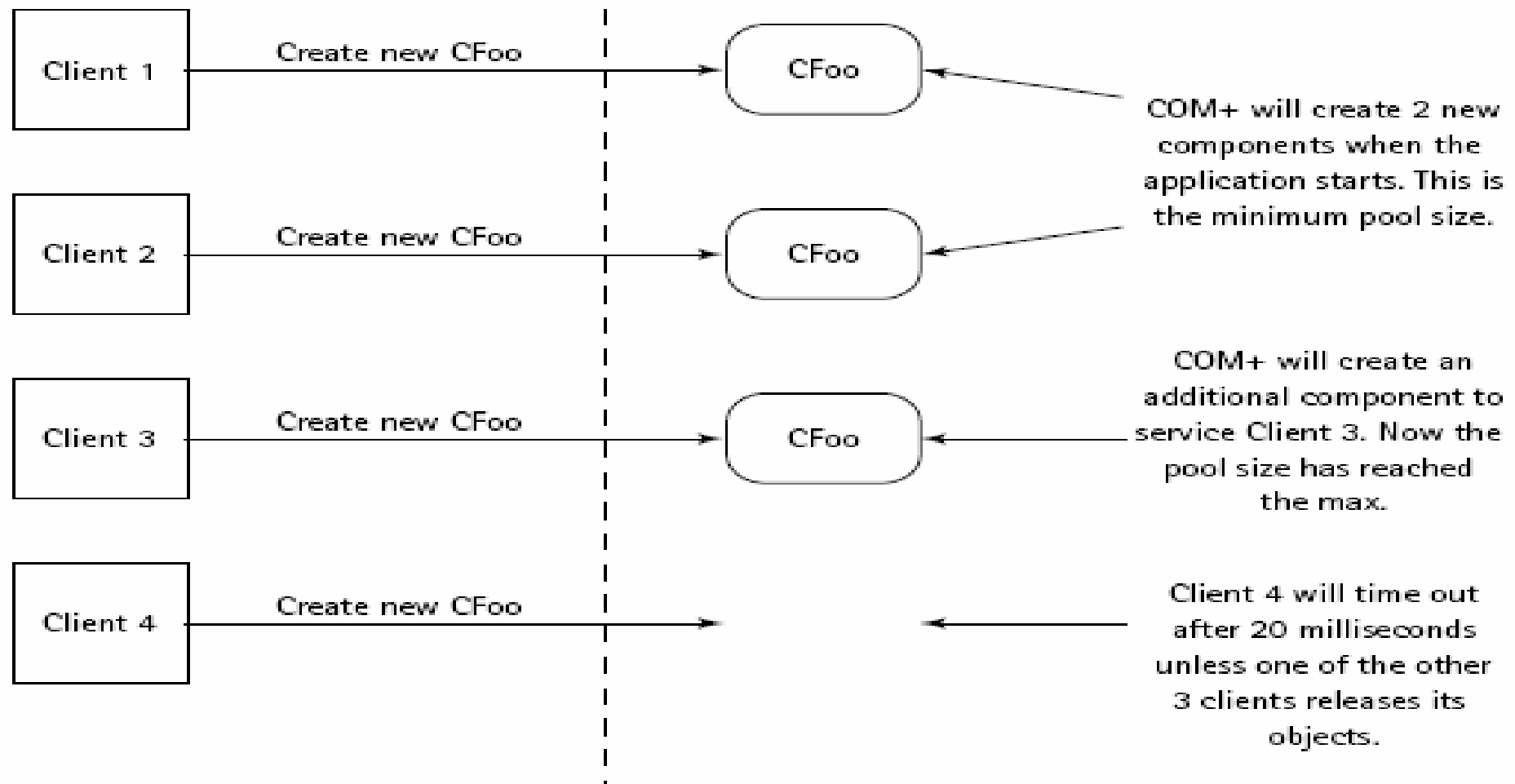
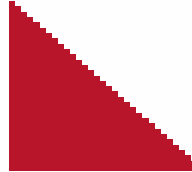


Figure A: Controlling Object Pooling

Interface Option

The image shows a software interface for configuring a test. It is divided into two main sections. The left section, titled 'Test', contains a 'Choose a DB:' dropdown menu set to 'SQL Server', a checked checkbox for 'Show DataGrid', and a 'Data Access Using' group with three radio button options: 'COM+ No Pooling n JIT', 'COM+ Object Pooling n JIT', and '.NET Resource Pooling' (which is selected). The right section contains two groups: 'Rows' with radio buttons for '100 Rows' (selected), '1000 Rows', and '10000 Rows'; and 'Users' with radio buttons for '1 User' (selected), '5 User(s)', and '10 User(s)'. At the bottom of the right section are three buttons: 'Get Data', 'Record', and 'To Matrix'.

Figure B: User options for performing test

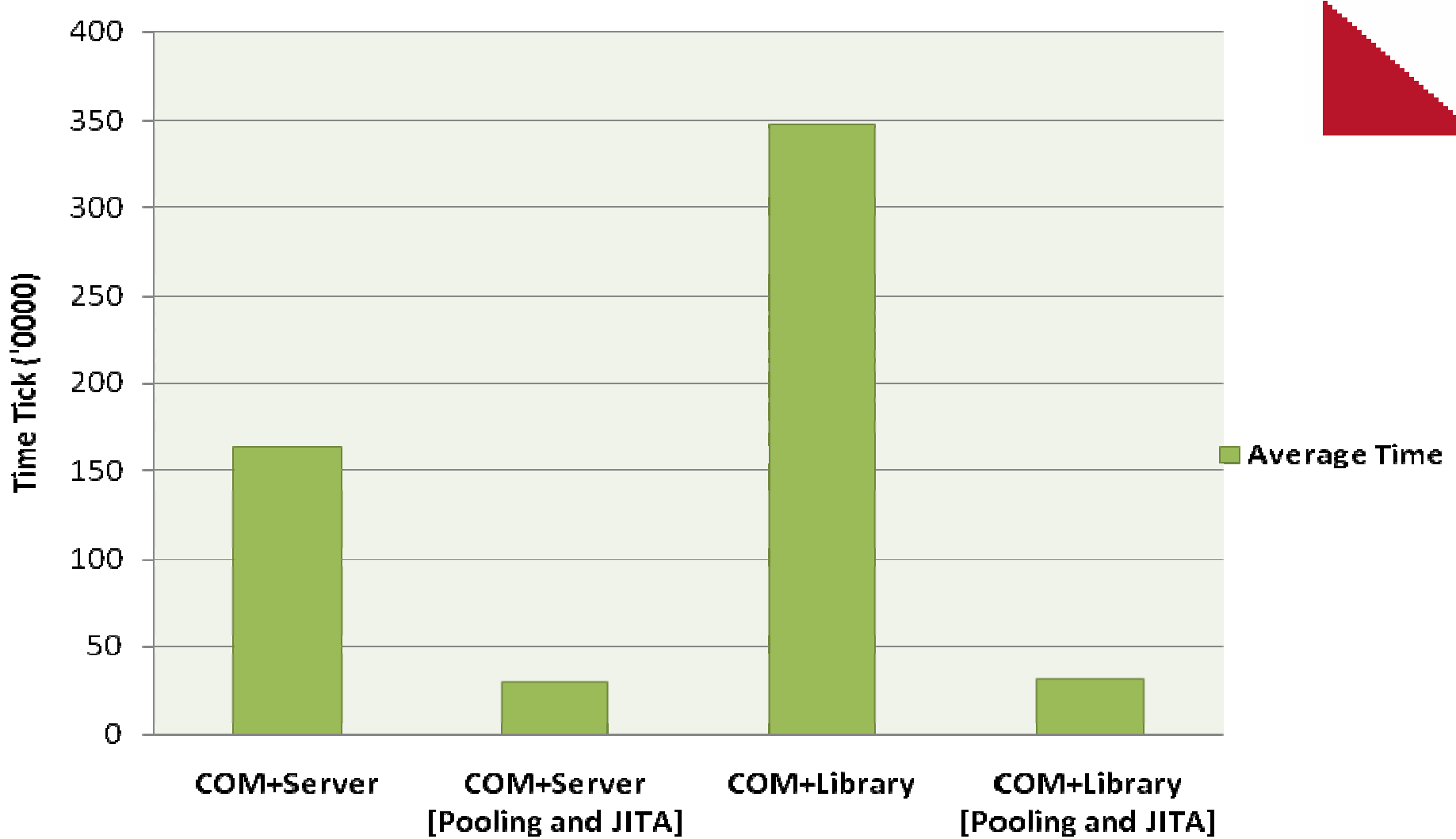
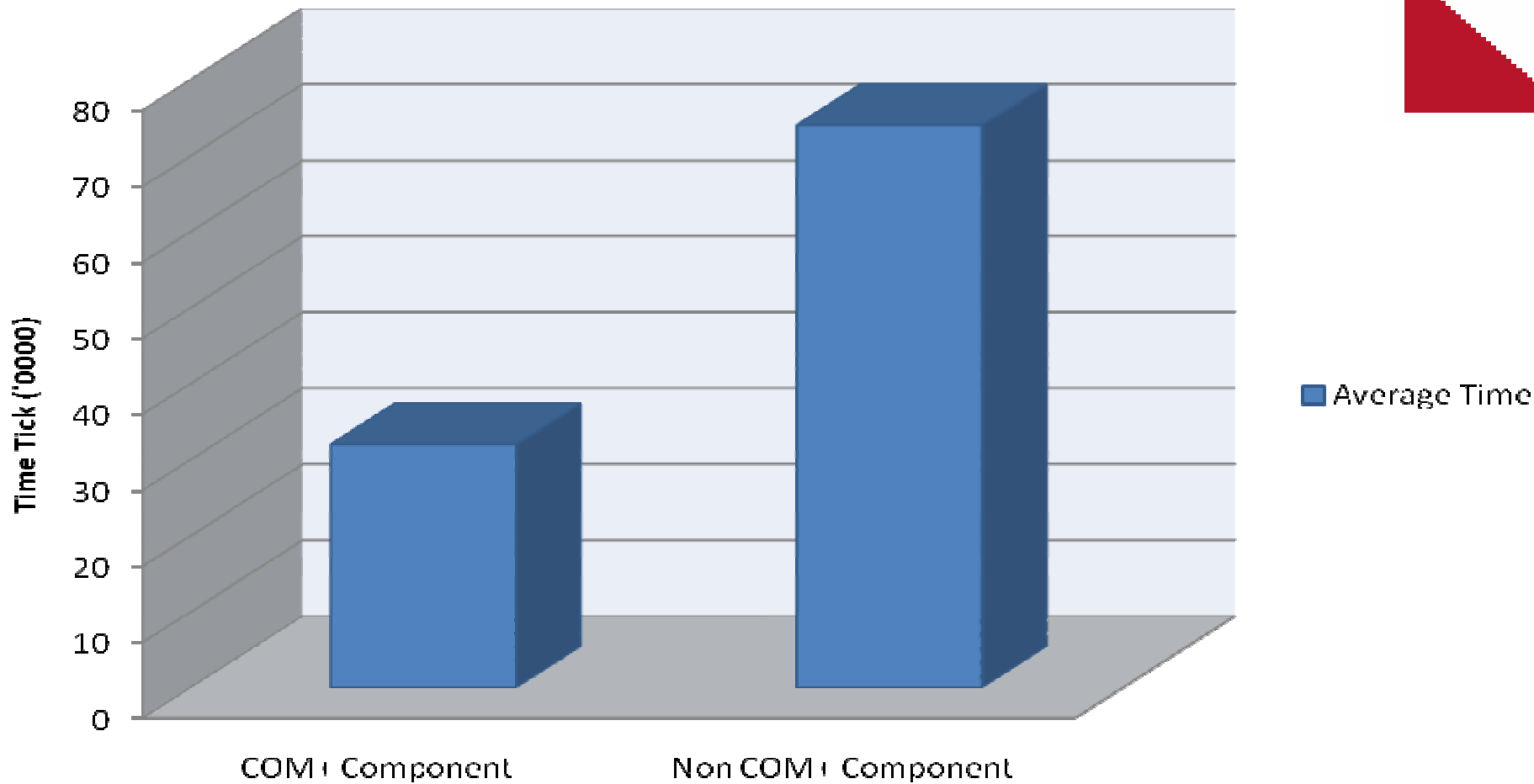


Figure C: 10% performance gain over COM+ Library application



	COM+ Component	Non COM+ Component
Average Time	32	74
% Up	100	232

Figure D: COM+ and non COM+ performance

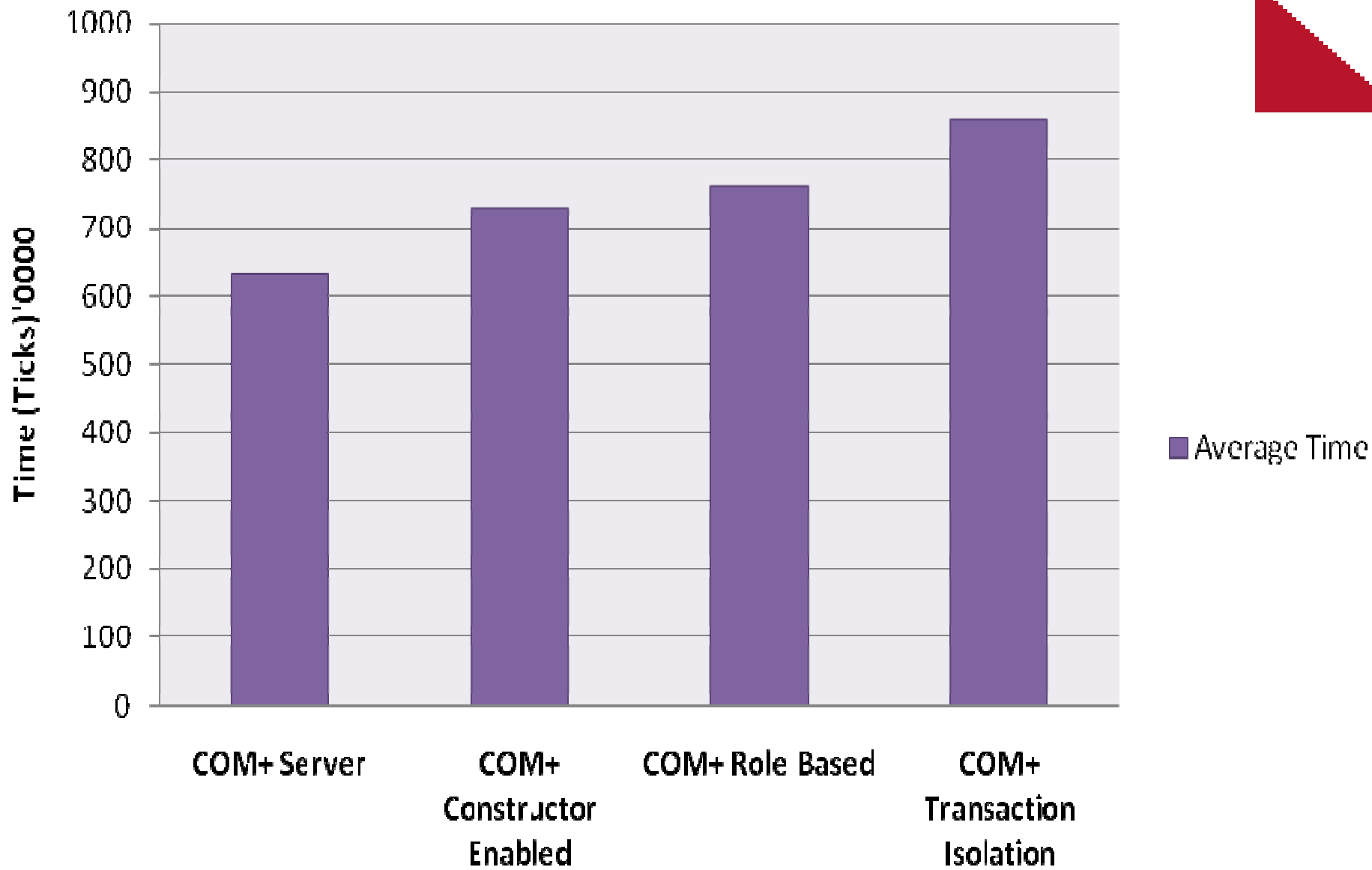


Figure E: COM+ Features comes at a cost

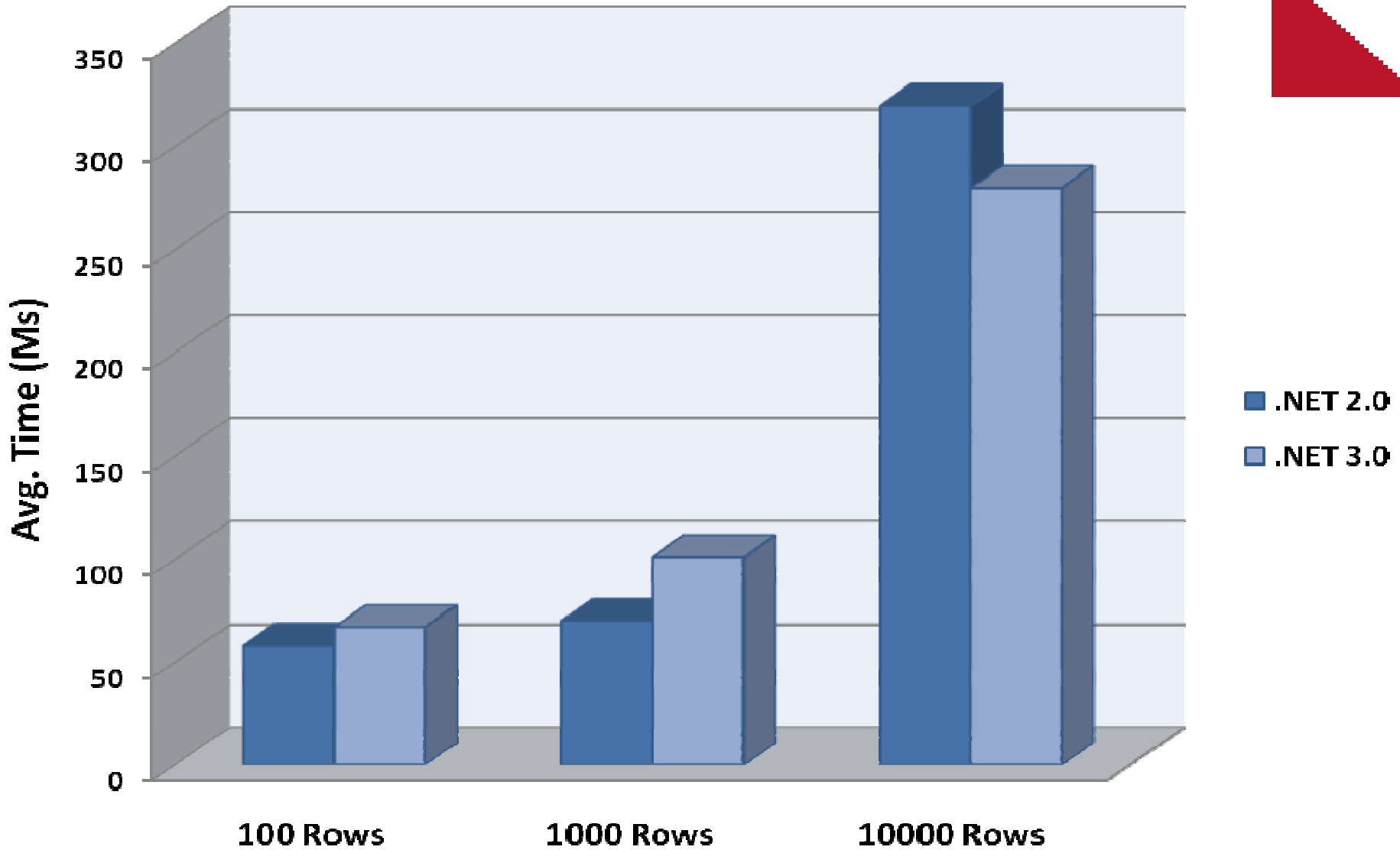


Figure F: COM+ Performance on different Volume of Data

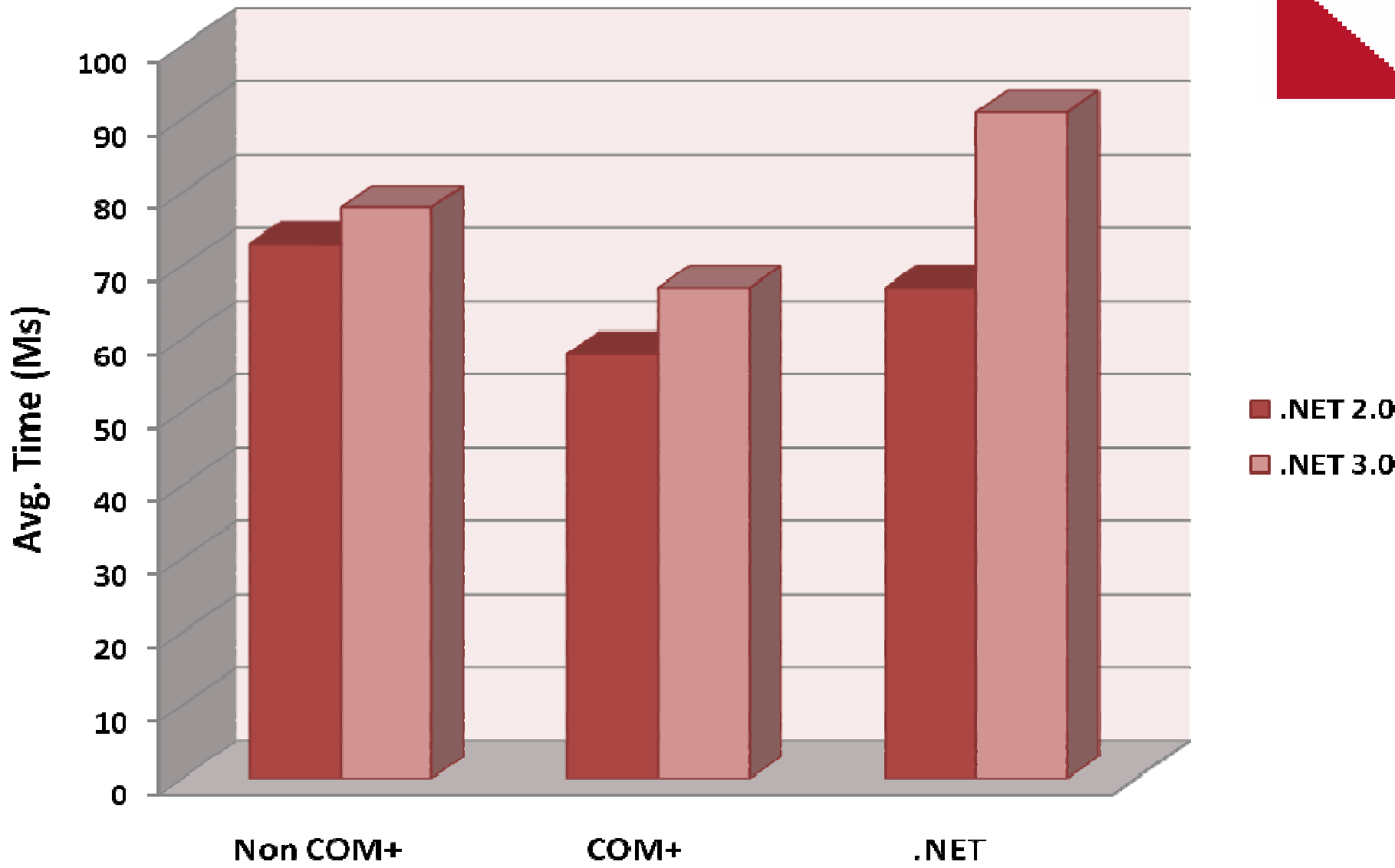


Figure G: Different application type performance on Low Volume of data

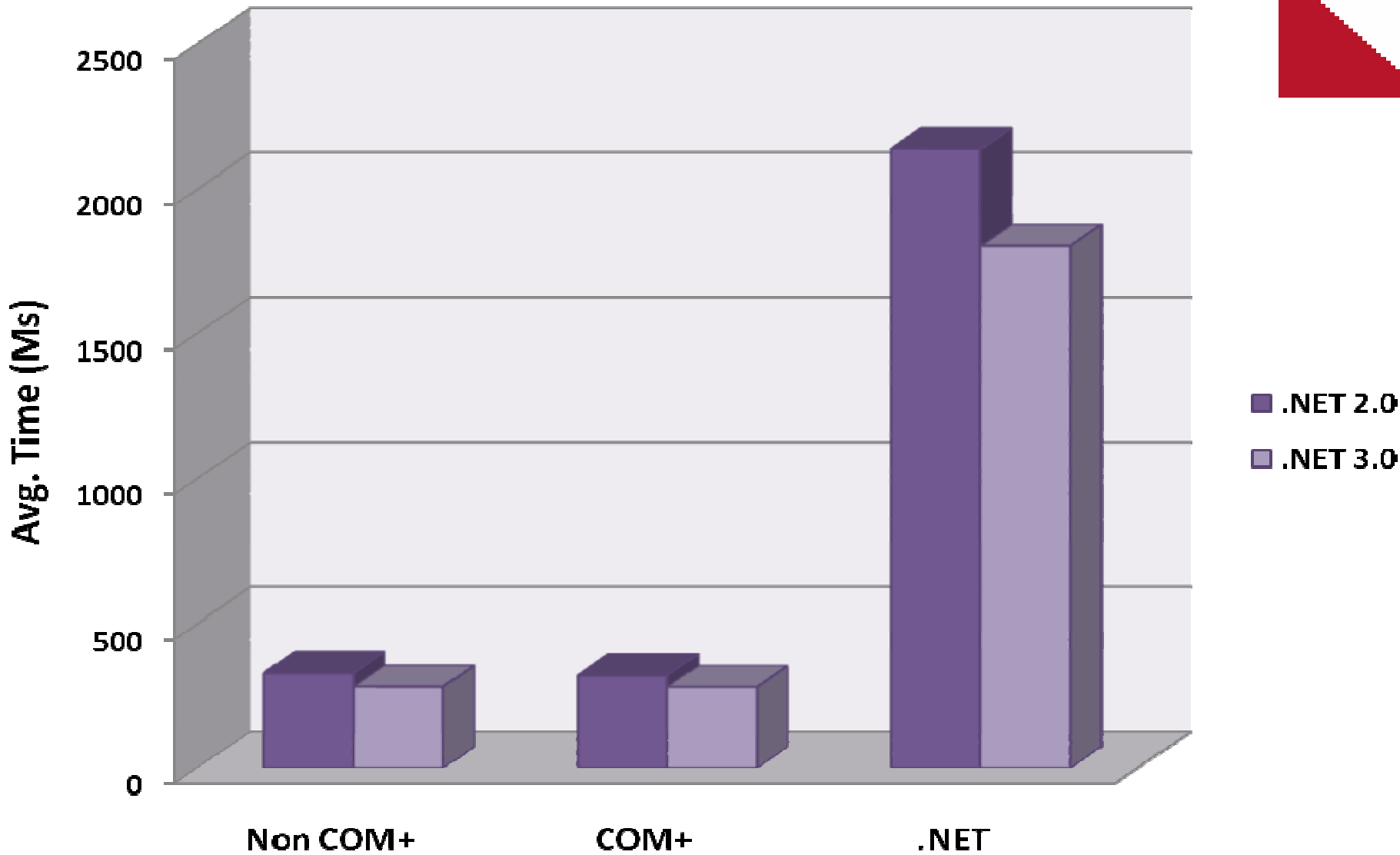


Figure H: Different application type performance on High Volume of data











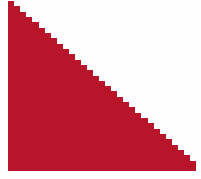
Rank	Company	System	tpmC	Price/tpmC	System Availability	Database	Operating System	TP Monitor	Date Submitted	Cluster
1		HP ProLiant ML350G5	102,454	.73 US \$	12/31/07	Oracle Database 11g Standard Edition One	Microsoft Windows Standard x64 Etd. SP1 R2	Microsoft COM+	09/12/07	N
2		HP ProLiant ML350G5	100,926	.74 US \$	06/08/07	Oracle Database 10g Standard Edition One	Oracle Enterprise Linux	Microsoft COM+	06/08/07	N
3		PowerEdge 2900/1/2.33GHz/2x4M	69,564	.91 US \$	03/09/07	Microsoft SQL Server 2005 Standard Ed.	Microsoft Windows 2003 Server Std Edt SP1	Microsoft COM+	03/09/07	N
4		HP ProLiant ML350G5	82,774	.94 US \$	03/27/07	Microsoft SQL Server 2005 x64 Enterprise Edt. SP1	Microsoft Windows 2003 x64 Server Std. Ed.	Microsoft COM+	03/27/07	N
5		PowerEdge 2900/3.0GHz/4M	65,833	.98 US \$	06/26/06	Microsoft SQL Server 2005 Standard Ed.	Microsoft Windows 2003 Server Std Edt SP1	Microsoft COM+	06/30/06	N
6		PowerEdge 2800/1/2.8GHz/2+2M	38,622	.99 US \$	11/08/05	Microsoft SQL Server 2005 x64 Std. Ed.	Microsoft Windows 2003 x64 Server Std. Ed.	Microsoft COM+	09/26/05	N
7		PowerEdge 2800/1/3.6GHz/2M	28,244	1.29 US \$	02/09/06	Microsoft SQL Server 2005 Workgroup Ed.	Microsoft Windows Server 2003 Standard Edition	Microsoft COM+	02/09/06	N
8		PowerEdge 2900/1/2.66GHz/2x4M	126,371	1.33 US \$	06/08/07	Microsoft SQL Server 2005 x64 Enterprise Edt SP2	Microsoft Windows Server 2003 Enterprise Edition SP1	Microsoft COM+	06/08/07	N
9		PowerEdge 2800/1/3.4GHz/2M	28,122	1.40 US \$	04/30/05	Microsoft SQL Server 2000 Workgroup Ed.	Microsoft Windows Server 2003 Server	Microsoft COM+	02/24/05	N
10		PowerEdge 2850/1/3.4GHz/1M	26,410	1.53 US \$	12/10/04	Microsoft SQL Server 2000 Standard Ed.	Microsoft Windows Server 2003 Server	Microsoft COM+	12/10/04	N

Figure I: Microsoft COM+ Results

Answers



- **Which middleware technology is the best Microsoft or IBM?**

Ans. Microsoft middleware provides better results.

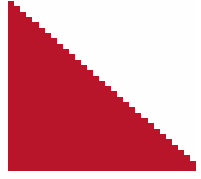
- **What are the performance diff. between the .NET Framework 2.0 and 3.0?**

Ans. As shown in the graphs.

- **How COM+ applications performs on different volume of data?**

Ans. Better on low and medium volume but performance penalty on high volume

Answers



- **What is the performance difference between the .NET based application and COM+ based application?**

Ans. As shown in the graphs.

- **Which .NET Framework to choose for small and enterprise applications?**

Ans. Framework 2.0 for small and 3.0 for enterprise applications.



Thank You