



IBM Software Group

2005 B2B Customer Conference

Pioneering New Horizons – Solutions that Evolve

Data Transformation Map Performance

David Hixon

WebSphere. software |



ON DEMAND BUSINESS



Agenda

- § Discussion of factors that affect performance
- § Description of the tests run
- § Results
- § Question and answer session



Key Components Relevant to this Test

§ Control Strings

- ∅ Measure of the complexity of the transformation

§ WDI Adapter

- ∅ Multi-processing adapter

§ Startup Cost

- ∅ DB2 and MQ connections

§ Auditing Information

- ∅ Transaction store, event log, management reporting, etc.

Independent Test Variables

§ Platforms

- Ø Laptop, T41, 1.69GHz, 1 GB RAM, Windows XP/SP2
- Ø SMP Tower, IBM xSeries_255, 2 x 3.0 GHz Power IV, 4 GB RAM, Windows 2003/SP1
- Ø IBM 9113-550 Rack Mount P5 eServer, 2 x 1.65 GHz Processors, 4 GB RAM, AIX 5.2

§ Concurrent Instances of WDI

- Ø Various

§ Number of independent MQ messages

- Ø 10 and 100 messages



Independent Test Variables (cont.)

§ Number of documents in an interchange

- ∅ How does grouping affect performance with EDI data

§ Number of interchanges in an MQ message

- ∅ How does grouping affect performance with MQ

§ Type of map used

- ∅ Send/Recv vs. Data Transformation maps

§ Map complexity

- ∅ Low, normal, high





Independent Test Variables (cont.)

§ Data size

- ∅ Constrained to $\leq 150\%$ of the number of mapped elem

§ Auditing features

- ∅ Transaction Store, Event Log, Management Reporting

§ Persistent MQ messages

- ∅ Persistent vs. non-persistent messaging

§ DB2 binding

- ∅ SYNCPOINT TWOPHASE

§ Functional Acknowledgments



Measured Dependent Variables

§ CPU time

- ∅ Time spent running on the CPU

§ Elapsed time

- ∅ Time on the wall clock





Test Harness

- § Preload WDI input queue with desired number of messages
- § The Message Harness will remove messages from WDI_Output_Q and insert messages in WDI_Input_Q to ensure the Queue does not become empty
- § The harness will process these messages inside syncpoint and will commit messages in groups





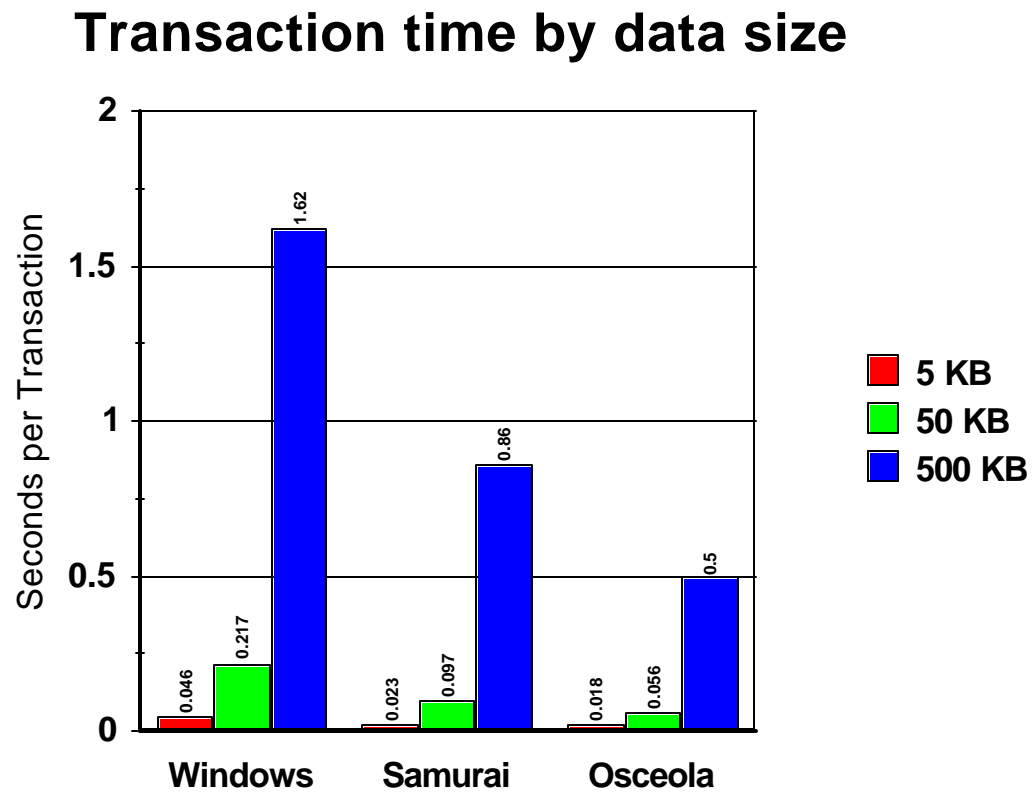
Test Case Descriptions

- § Test 1: EDI to XML DT Map – 5000 all at once
- § Test 2: EDI to XML DT Map – various options
 - ∅ Test 2a: Separate WMQ log files
 - ∅ Test 2b: AIX Ramdisk and WMQ persistent msging
 - ∅ Test 2c: AIX Ramdisk and WMQ non-persistent msging
 - ∅ Test 2d: Varying number of messages
 - ∅ Test 2e: Varying number of threads
- § Test 3: EDI to XML DT Map – various input sizes
- § Test 4: EDI to XML DT Map – Pageable AMM
- § Test 5: EDI to XML DT Map – Varying number of env/interchg



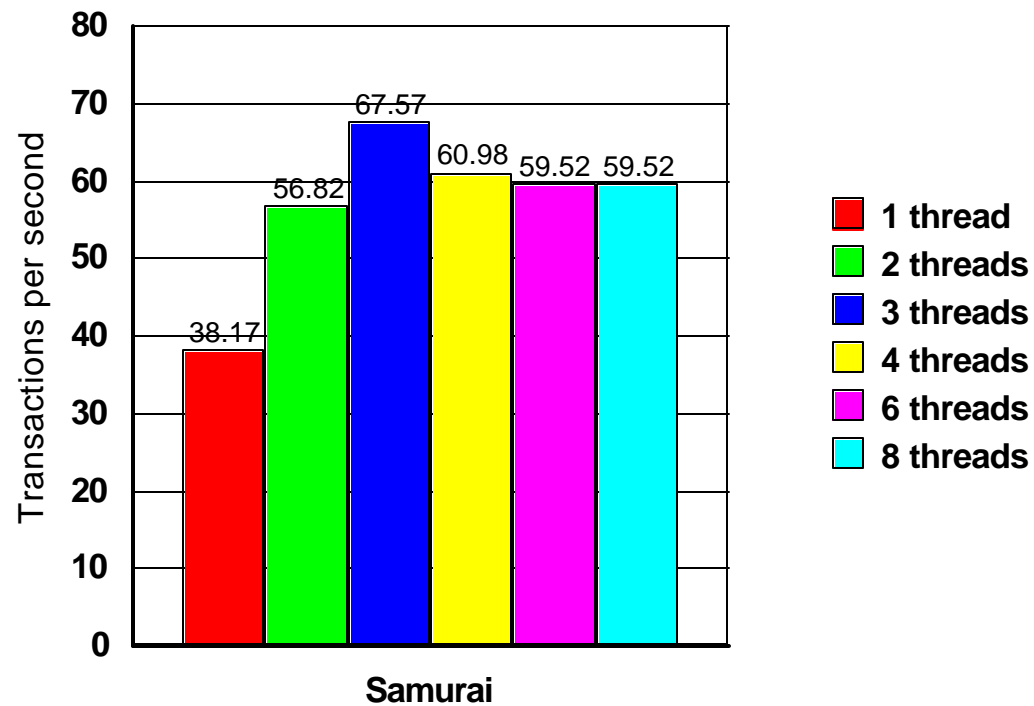


Transaction Time by Data Size

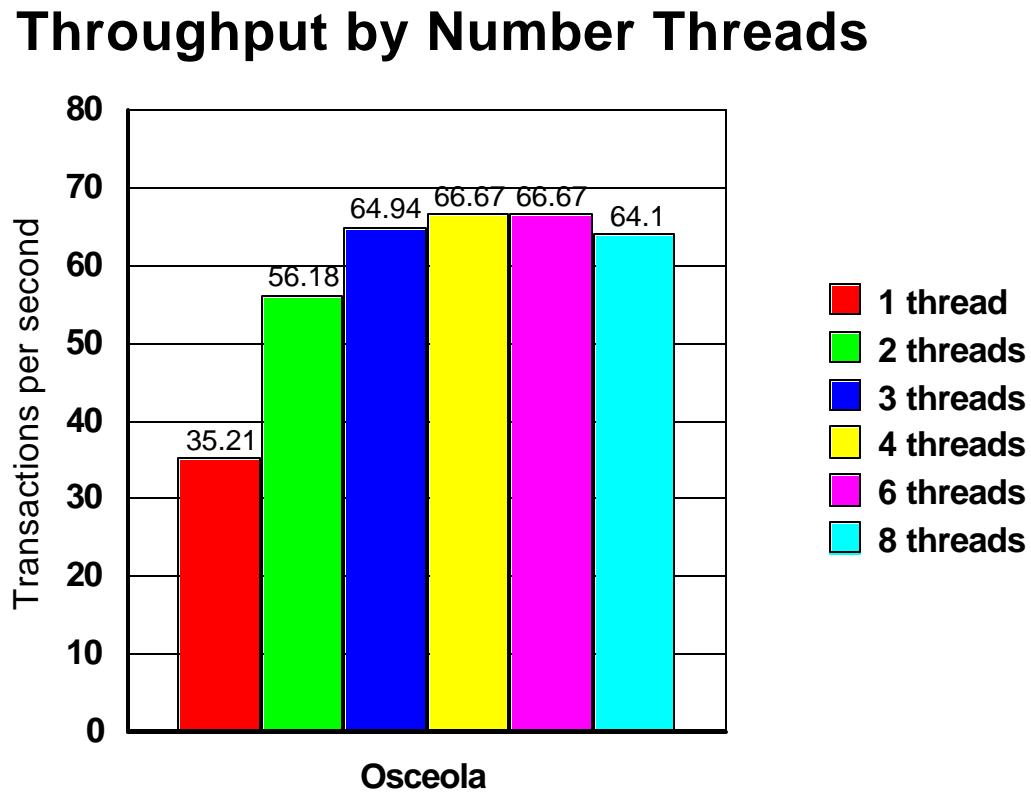


Throughput by Number of Threads

Throughput by Number Threads

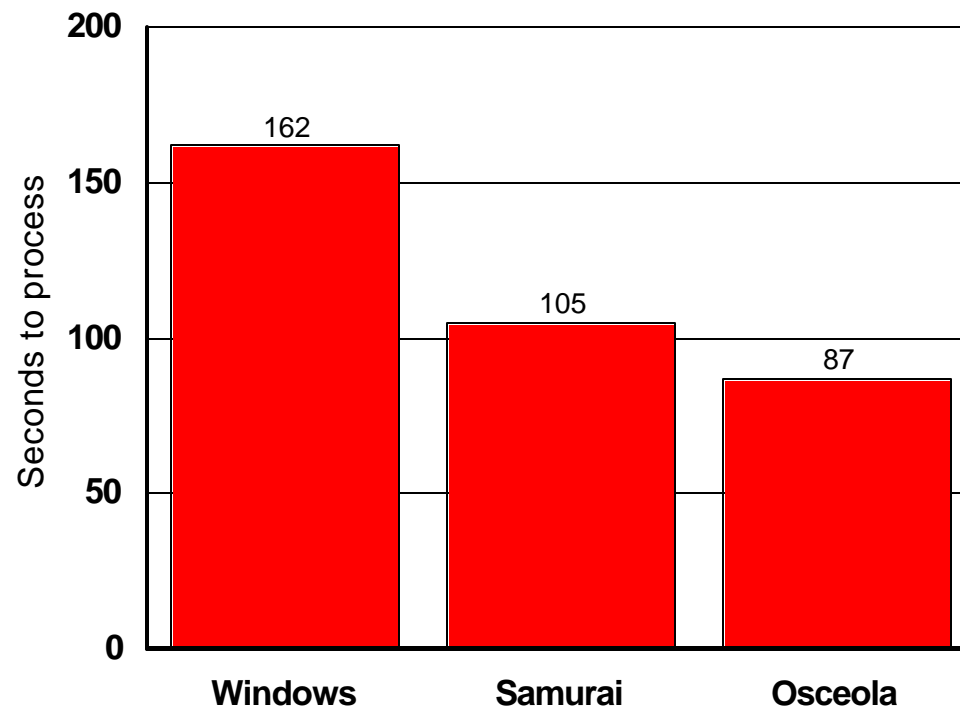


Throughput by Number of Threads



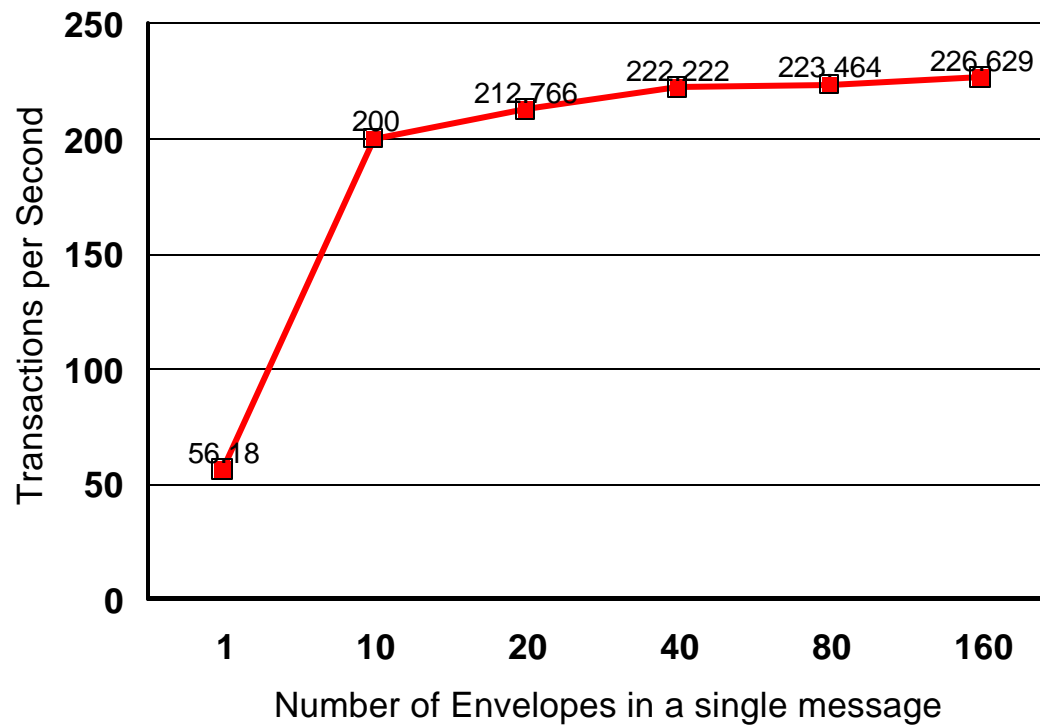
Large Transaction Processing

Large Transaction Processing



Aggregating Messages using Windows

Aggregating Messages using Windows





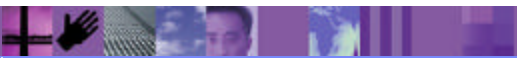
Results

Number MQ Messages	Trx Data Size in Bytes	Time in secs	trx/sec	sec/trx	Trxs./24 hour day	Number Ccmds Executed per Message	Notes	Test-case	Machine	Map	Number Processes
5,000	51,865	1086	18.38	0.054	1,588,235	8,306	Not persistent.	3	Osceola	X12TOXML	4
5,000	51,865	1086	17.79	0.056	1,537,367	8,306	Persistent msg	3	Osceola	X12TOXML	4
5000	51,865	483	10:35	0:097	894,410	8,306		3	Samurai	X12TOXML	3
50	518,888	31	0:02	1:020	53,363	82,079	EDI to XML	3	Windows	X12TOXML	1
50	518,888	43	1.16	0.860	100,465	82,079		3	Samurai	X12TOXML	3
50	518,888	38	0:57	1.760	49,091	82,079	Not Persistent	3	Osceola	X12TOXML	4
50	518,888	25	2.00	0.500	172,800	82,079	Non Persistent	3	Osceola	X12TOXML	4
1	5 MB					17,403,366	EDI to XML No-pagefile	4	Windows	277EDI_XML_V1	1
1	5 MB	162	0.01	162.000	533	17,403,366	pagefile insufficient memory	4	Windows	277EDI_XML_V1	1
1	5 MB	62	0.02	62.000	1,394	17,403,366	no-pagefile	4	Samurai	277EDI_XML_V1	1
1	5 MB	105	0.01	105.000	823	17,403,366	pagefile	4	Samurai	277EDI_XML_V1	1
1	5 MB					17,403,366	No-pagefile insufficient memory	4	Osceola	277EDI_XML_V1	1
0.007	87,000	12,000,000	773	Non-persistent, 1 doc/MQ msg	5a	Windows	R271-FROM-EDI	3	Osceola	277EDI_XML_V1	1
0.005	217,391	18,782,609	773	Non-persistent, 10 docs/MQ msg	5a	Windows	R271-FROM-EDI	3	Osceola	277EDI_XML_V1	1
0.005	219,780	18,989,011	773	Non-persistent, 20 docs/MQ msg	5a	Windows	R271-FROM-EDI	3	Osceola	277EDI_XML_V1	1
0.005	222,222	19,200,000	773	Non-persistent, 40 docs/MQ msg	5a	Windows	R271-FROM-EDI	3	Osceola	277EDI_XML_V1	1
5a	Windows	R271-FROM-EDI	3	500	751	353	0.004	226.629	19,580,737	773	Non-persistent, 160 docs/MQ msg



Results (cont.)

Case	Number	Notes	Test	Machine	Map	Number	Number	Trx Data	Time	Trx/sec	sec/trx	Trxs/
				Processes	MQ	Size	Time	hour	day	Executed		
					Messages	Bytes	secs			per		
										Message		
5b	Windows	R271-FROM-EDI		3	5000	751	89	0.018	56.180	4,853,933	773	persistent, 1 doc/MQ msg
5b	Windows	R271-FROM-EDI		3	500	751	25	0.005	200.000	18,782,609	773	persistent, 10 docs/MQ msg
5b	Windows	R271-FROM-EDI		3	500	751	47	0.005	212.766	18,382,979	773	persistent, 20 docs/MQ msg
5b	Windows	R271-FROM-EDI		3	500	751	90	0.005	222.222	19,200,000	773	persistent, 40 docs/MQ msg
5b	Windows	R271-FROM-EDI		3	500	751	179	0.004	223.464	19,307,263	773	persistent, 80 docs/MQ msg
5b	Windows	R271-FROM-EDI		3	500	751	353	0.004	226.629	19,580,737	773	persistent, 160 docs/MQ msg





Question and Answer Session

§ Any questions?

