Dell Compellent Storage Center (SC8000)

50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Dell Compellent Technical Solutions

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Contents

Introduction

Simulated Environment

The solution presented in this document is designed to simulate a very large number of mailboxes hosted on highly redundant hardware. Application level redundancy is augmented with redundant storage to create a highly available and fault tolerant solution.

The Mailbox Resiliency features of Exchange 2010 have greatly enhanced the availability of Exchange 2010, while also improving I/O performance. The solution presented here is a Mailbox Resiliency solution utilizing 2 Database Availability Groups (DAGs) and 2 copies of every database. The tested environment simulates all users in these DAGs running on a single Storage Center of the 2 Storage Center configurations, as in a failover event. The number of users simulated was 50,000 across 10 servers, (5 servers per DAG), with 5,000 users per server. The mailbox size was 2GB per user. Each server has 5 databases, with one copy local and the second copy replicated to a second server on a second Storage Center. This provides redundancy through hardware and software.

The replication mechanism is the native Exchange 2010 DAG log shipping engine. This is a very efficient and reliable replication mechanism and is the recommended method for providing highly-available and redundant Exchange solutions.

Solution Description

The storage hardware tested was a Dell Compellent Storage Center (SC8000). This is a redundant controller pair, with redundant front-end and back-end connections. The front-end connections were fiber-channel based, over redundant fabrics, with 2 ports per server, and 4 ports per controller.

The disk connectivity is SAS 6Gbps. The spindle count is 177 disks for database, and 22 for logs, in each Storage Center. There are 2 Storage Centers, with independent disks, for complete isolation of database copies providing complete mailbox resiliency.

For information about compatibility please use the following link:

http://windowsservercatalog.com/item.aspx?idItem=448940bb-906b-e1b6-540d-bbb381bcda22&bCatID=1282.
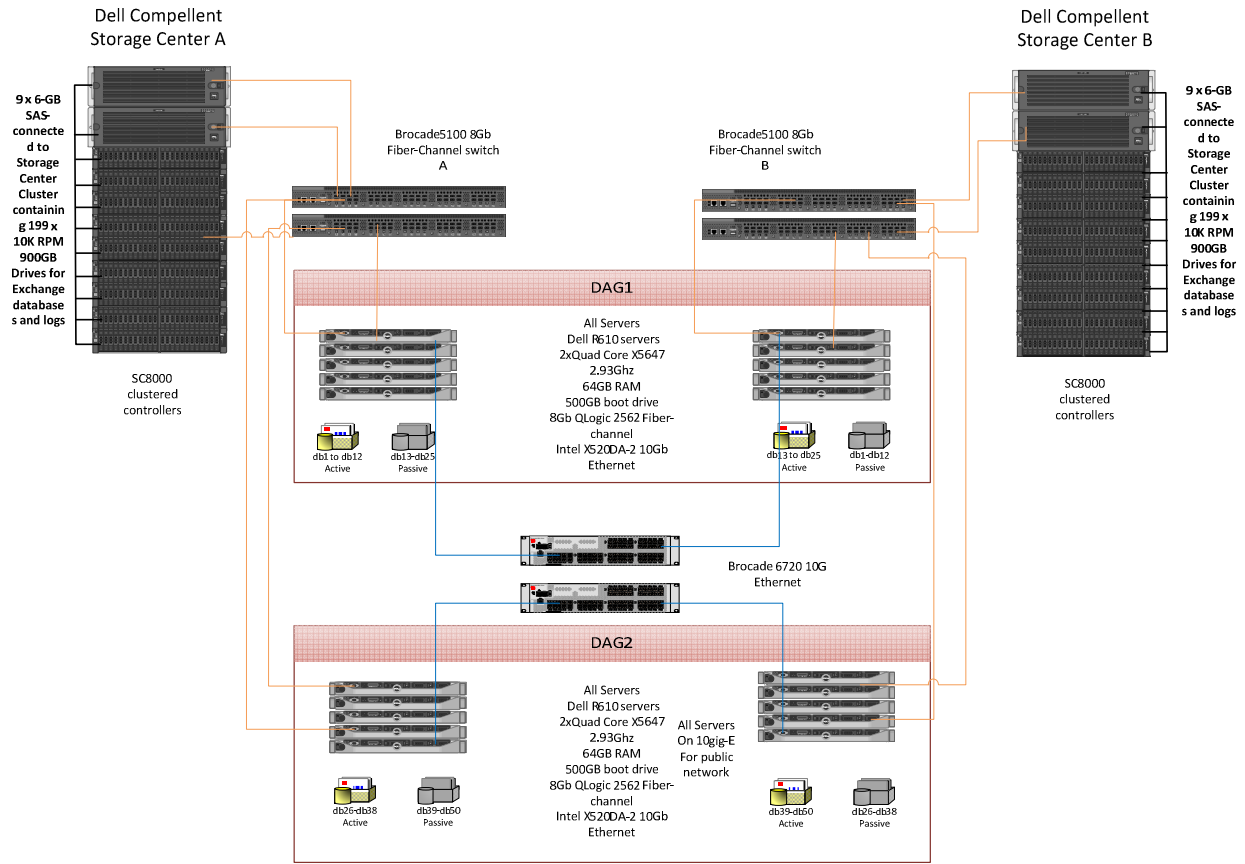
Figure 1 – Highly Available Data Center Design

The solution is designed around a highly available data center model (Figure 1). There are 2 disk arrays, for complete redundancy. The Exchange configuration is 2 DAGs, with half the servers and databases in each DAG. The LAN ports are in a dedicated replication VLAN, for traffic isolation. There are 2 networks for redundancy.
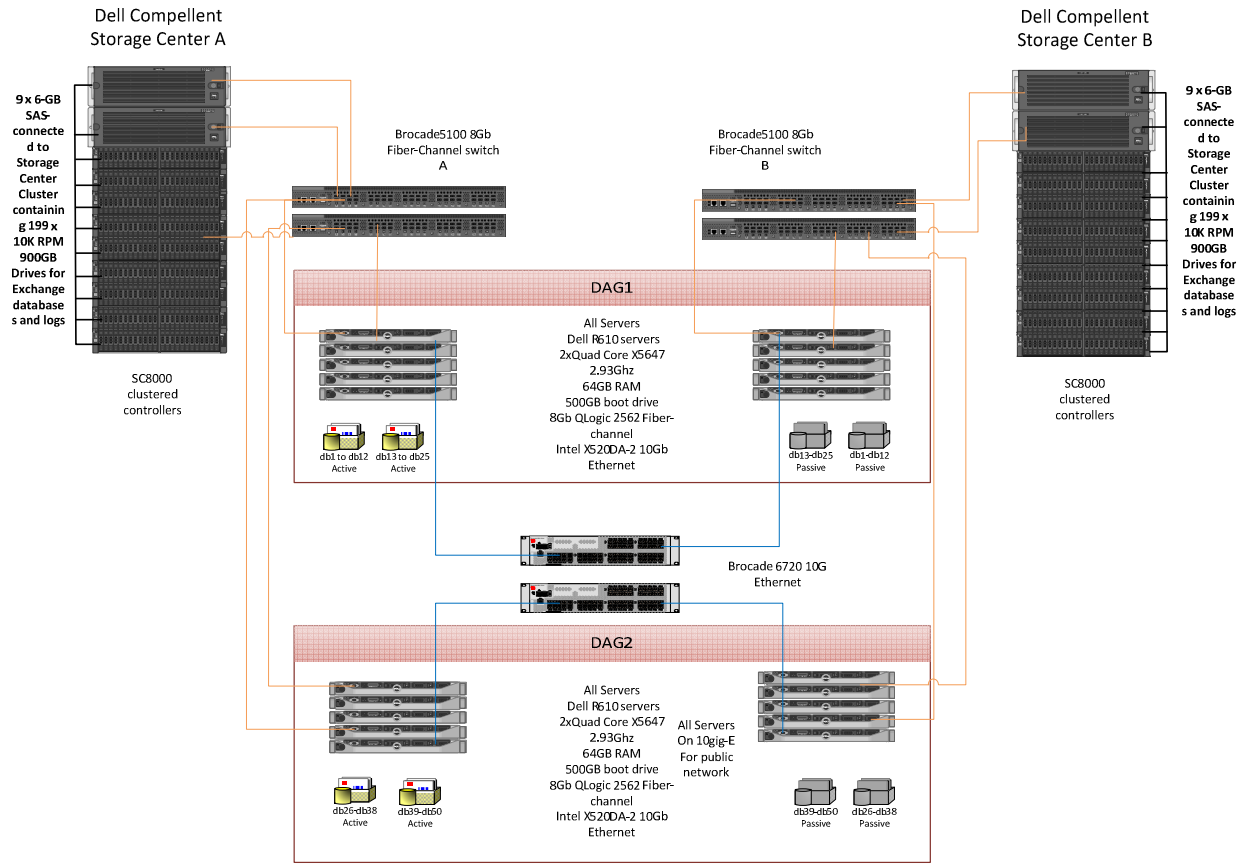
Figure 2 – Tested configuration with Storage Center A with Full user Load and Storage Center B offline

The tested configuration was a single Storage Center array (Figure 2), running with the full user load. This is to clearly show a single array can handle the user load in an array failure scenario. Under normal operating conditions the preferred activation scenario would be to run half of the mailbox databases active on each Storage Center array, while either array could handle the entire workload at any given time.

The ability to handle the entire workload on a single Storage Center array means no IO performance degradation will occur if an array or any volume(s) were to fail. All mailbox servers would have volumes mapped to both arrays, with 1 copy of each database on each array.

The Dell Compellent Storage Center (SC8000) Solution

A Modular Hardware Design

The hardware design consists of Dell 12G server-based clustered controllers providing automatic failover. Dell Compellent can seamlessly connect to any open-systems server without the need for server side agents. Organizations can mix and match Fiber Channel and iSCSI server connectivity, and disk enclosures support any external interface and disks based on Solid State, Fiber Channel, and/or Serial ATA.

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Next-generation SC8000 controllers combine the benefits of proven Dell™ Fluid Data™ architecture with resilient Dell hardware design to provide efficiency, quality and durability. Compared with previous generations of Compellent controllers, the SC8000 offers increased density, exceptional processing power, greater memory, and faster PCIe Gen3 I/O bus — making the SC8000 the scalability and performance platform choice for the future.

Powerful Suite of Software

Storage Center offers a powerful suite of enterprise capabilities to manage data differently. Building on Dell Compellent's Dynamic Block Architecture, Storage Center software intelligently optimizes data movement and access at the block-level to maximize utilization, automate tiered storage, simplify replication and speed data recovery.

Intuitive, Unified Interface

A centralized management interface streamlines administration and speeds common storage management tasks. The interface features a point-and-click wizard-based setup and management, comprehensive Phone Home capabilities, automatic notification when user-defined capacity thresholds are reached, and advanced storage consumption and chargeback reporting.

Dell Compellent's Enterprise Manager further simplifies storage management by providing comprehensive monitoring of all local and remote Storage Center environments.

Enterprise Manager allows you to gain better insight into your Storage Center deployments and reduces planning and configuration time for remote replications.

The ESRP-Storage program focuses on storage solution testing to address performance and reliability issues with storage design. However, storage is not the only factor to take into consideration when designing a scale up Exchange solution. Other factors which affect the server scalability are: server processor utilization, server physical and virtual memory limitations, resource requirements for other applications, directory and network service latencies, network infrastructure limitations, replication and recovery requirements, and client usage profiles. All these factors are beyond the scope for ESRP-Storage. Therefore, the number of mailboxes hosted per server as part of the tested configuration may not necessarily be viable for some customer deployment.

For more information on identifying and addressing performance bottlenecks in an Exchange system, please refer to Microsoft's Troubleshooting Microsoft Exchange Server Performance, available at http://go.microsoft.com/fwlink/?LinkId=23454.

Targeted Customer Profile

This solution is targeted for users large and small. Capacity can be dynamically scaled from 1TB to hundreds of terabytes. This provides excellent growth potential with no downtime required for upgrades.

- A Storage Center solution can be sized for any size organization
- Unlimited number of hosts can be attached, via Fiber-Channel and iSCSI
- User IO profile (.12 IOPS per user, .15 tested).
- User mailbox size (2 GB quota)
- Backup strategy - VSS backup using SAN based snapshots, use Mailbox Resiliency as primary data protection mechanism.
- Using SAN based snapshots, and boot from SAN, a complete server can be restored in minutes.
- The tested RAID type was RAID 5 for database volumes and RAID10 for log volumes, while a mix of RAID10, RAID5, and RAID6 can be blended, with fully automated tiered storage providing the most efficient and best performing storage where needed.

Volume sizing

- The volume size tested was just large enough to support the database size. Volumes on Dell Compellent storage can be grown dynamically, without affecting service. As database sizes approach volume sizes, any volume can be automatically increased on demand. This simplifies sizing, as capacity can be added as needed.
- Using Dell Compellent Dynamic Capacity and hot upgrades additional disk capacity can be added as needed. If more spindles are required to accommodate growth they can simply be cabled and added to the disk pool to grow volume space. Since volumes are not tied to spindle boundaries adding spindles will increase performance and capacity as the system grows.
- The testing environment was configured for 67% storage utilization. If the storage requirement grows beyond the design specified, additional spindles will provide additional capacity for any volume to be expanded.

Tested Deployment

The following tables summarize the testing environment.

Simulated Exchange Configuration

Number of Exchange mailboxes simulated	50,000
Number of Database Availability Groups (DAGs)	1
Number of servers/DAG	10
Number of active mailboxes/server	5000
Number of databases/host	5
Number of copies/database	2
Number of mailboxes/database	1,000
Simulated profile: I/O's per second per mailbox (IOPS, include 20% headroom)	.12 (.15 tested)
Database LUN size	2 TB
Log LUN size	250 GB
Total database size for performance testing	96.3 TB
% storage capacity used by Exchange database**	66.7%

Note: Database size and capacity utilized may not match on a thin-provisioned system, as only used pages will consume space. Pages that are allocated, but contain blank data, may not use disk.

Primary Storage Hardware

Storage Connectivity (Fiber Channel, SAS, SATA, iSCSI)	SAS
Storage model and OS/firmware revision	Dell Compellent Storage Center (SC8000) http://windowsservercatalog.com/item.aspx?idItem=c5f30a38 -a1d4-08c8-45a3-39d1574e165e&bCatID=1282
Storage cache	16 GB
Number of storage controllers	2
Number of storage ports	8 active ports per controller
Maximum bandwidth of storage connectivity to host	64 Gb/sec (8x8Gb GB HBA)
Switch type/model/firmware revision	Brocade 510 rev 7.0.0b
HBA model and firmware	QLogic QMH2564 (Driver FW 5.04.04, Flash FW 4.04.02)
Number of HBA's/host	1 Dual-port QLogic 2562 8Gb HBA
Host server type	2xQuad Core Xeon X5647 2.93Ghz 64GB RAM

Total number of disks tested in solution	177 Active for DB, 22 active for log, 6 hot spares = 205 total spindles
Maximum number of spindles can be hosted in the storage	960

Primary Storage Software

HBA driver	QLogic StorPort FC HBA Driver 9.1.9.27
HBA Queue Depth Setting	65535
Multi-Pathing	Microsoft Windows 2008 R2 MPIO Round-Robin(In-Box DSM)
Host OS	Microsoft Windows 2008 R2
ESE.dll file version	14.02.0247.001
Replication solution name/version	Microsoft Exchange Server 2010 DAG replication

Primary Storage Disk Configuration (Mailbox Store Disks)

Disk type, speed and firmware revision	SAS 10k 900GB, XRC0
Raw capacity per disk (GB)	838.36 GB
Number of physical disks in test	177
Total raw storage capacity (GB)	144.91 TB
Raid level	RAID5
Total formatted capacity	116 TB
Storage capacity utilization	80 %
Database capacity utilization	66.7 %

Storage Disk Configuration (Transaction Log Disks)

Disk type, speed and firmware revision	SAS 10k 900GB, XRC0
Raw capacity per disk (GB)	838.36 GB
Number of Spindles in test	22
total raw storage capacity (GB)	18.01 TB
Raid level	RAID10
Total formatted capacity	9 TB

Best Practices

Exchange Server 2010 has changed dramatically from previous versions. For a list of what has changed see the following: http://technet.microsoft.com/en-us/library/dd298136.aspx

The best practices have also changed, based on the changes in behavior in Exchange 2010. A big part of the change is the shift away from Single Instance Storage. This allows greater control over disk IO, as a mailbox is more self-contained within the database, changing reads and writes to or from a mailbox to be much more sequential. This greatly improves throughput.

The increase in database size is offset by inline page compression, so that database sizes in Exchange 2010 are similar to Exchange 2007 sizes. This does have an impact on processor and memory load. Because processor performance has increased dramatically, and servers support much larger memory models, sizing requirements for servers have changed to reflect this. For server sizing please refer to the Microsoft Mailbox Role Calculator.

For general sizing and requirements please visit the following link:

http://technet.microsoft.com/en-us/library/aa996719.aspx

One of the Microsoft best practices states that transaction logs and databases be separated from each other and dedicated to their own set of spindles. Dell Compellent virtualizes at the disk level within Storage Center, accelerating data access by spreading read/write operations across all disk drives in the SAN so multiple requests are processed in parallel. Dell Compellent virtualization allows the creation of high performance, highly efficient virtual volumes in just seconds without allocating drives to specific servers, without complicated capacity planning and without manual performance tuning. By managing disk drives as a single resource, Dell Compellent provides increased storage performance, availability and utilization.

Dell Compellent's storage virtualization is optimized to take advantage of all available spindles as part of a single disk folder, but is flexible enough to be configured allowing storage configurations where specific spindles are dedicated to a particular volume.

Another best practice in past versions of Exchange Server has been to align Exchange IO with disk page boundaries. With Windows Server 2008 this is no longer required, as Windows 2008 automatically aligns to a 1024k page boundary.

The volume on which transaction logs are stored is critical to a well performing Exchange environment. Since all transactions are first written to a transaction log before being committed to the information store database, it is important that this volume has the lowest possible write latency. Transaction logs should be placed on volumes with faster rotational speeds. For optimal transaction log performance, consider using drives with a rotational speed of 10,000 RPM or greater. RAID 10 is also recommended for these volumes. Exchange 2010 no longer requires log files to be stored on a volume separate from the database

volumes; The Dell Compellent Storage Center can be flexibly designed for separate disk folders or as a single disk folder configuration.

For issues related to performance and event monitoring please see the following: http://technet.microsoft.com/en-us/library/ee332313.aspx

For more information on Exchange best practices when implemented with Dell Compellent Storage Center, visit the Dell Compellent Knowledge Center at http://kc.compellent.com/.

Using Dell Compellent Storage Center Data Progression

Industry studies show that as much of 80% of Exchange data is inactive. This means that a lot of fast, higher-cost storage is being unnecessarily utilized.

Storage Center's Data Progression is a complete hardware and software architecture that delivers fully automated tiered storage. This patented technology cuts administrative time and reduces overall storage costs by dynamically classifying and moving data at the block-level between tiers of storage based on frequency of access. This complete Automated Tiered Storage solution does not require time consuming data classification and the repetitive manual transfer of data between tiers.

Each volume is configured by default with a recommended storage profile that manages the RAID configuration and provides optimal operation and performance for Exchange on the Dell Compellent Storage Center. With this configuration all data written to each volume is written at RAID10 providing the best possible I/O performance for Exchange database and log operations.

Snapshots, known as Replays on the Dell Compellent Storage Center, are an integral part of the Data Progression solution. As data grows and usage patterns change, Data Progression can automatically move inactive blocks of data to a lower tier of storage (both disk class and RAID level) on-the-fly. With the recommended storage profile, active data is always written at RAID10, while any replays are initially stored at Tier 1 on RAID-5. This data eventually makes its way down the RAID levels and tiers.

The following chart is an example of how Data Progression moves data to the most appropriate tier:
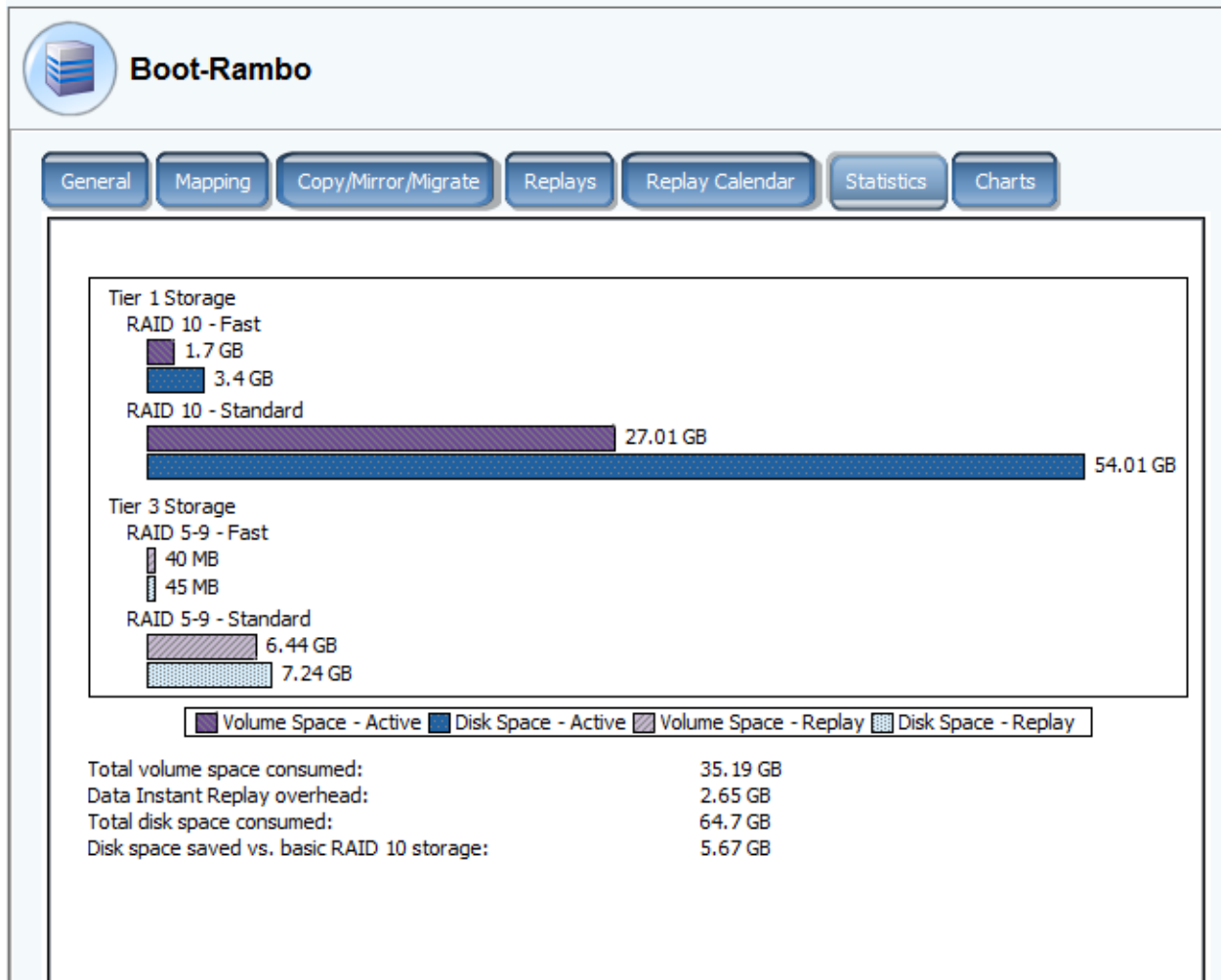
Core Storage

1. Dell Compellent storage by its nature does not need disk sector alignment to perform properly. Dell Compellent virtualizes all disk reads and writes, and applies them across system managed data pages, so by nature isolates disk IOs from sector boundaries. The page to sector alignment for all volumes and data pages is handled automatically by the system.

2. The Dell Compellent method of IO and disk capacity aggregation provides maximum IO to all hosted applications. All the IOPS for all of the assigned drives can be applied to all applications hosted on a Storage Center. If IOPS need to be dedicated to an application, such as Exchange, a dedicated disk pool can be created for each IO type, such as database or log files. As Exchange 2010 IO is mostly sequential, using a smaller number of database files will greatly improve the performance. This is due to the fact that the more sequential streams you have, the more random it looks. Minimizing the number of file streams while meeting business requirements will provide a more

responsive solution. Isolating the log files can also provide a performance benefit in an IO constrained system. Using Dell Compellent Dynamic Storage, a small system can start with all volumes sharing spindles, and volumes can dynamically be moved to dedicated spindles and load increases.

3. Dell Compellent Storage Center is a true thin provisioned system. This means that volumes will truly only consume space when and where data is written. The volume sizes should be created to reflect the maximum size they will achieve. The volumes will only consume the space actually used by data, so the storage can be sized to host the actual storage requirement, rather than the volume sizes allocated. This allows the volumes to be sized properly to meet growth while requiring the minimum number of disks to meet the storage and IOP requirement.

4. Dell Compellent's Fluid Data architecture uses an IOP and storage aggregation model. This means that the IOPS and storage capacity of all available disks will be available to the entire disk pool. This provides a huge performance boost to all applications and all LUNs, as the combined IO performance of all spindles will apply to all configured storage. If dedicated spindles are desired, a disk pool can be created that will dedicate those spindles to the LUNs created in that pool. All disks in a disk pool will have multiple RAID types applied to them. This is done by virtualizing the RAID pools on the disks. For example, a write could come in on RAID 10, and would be mirrored at the block level, across a pair of disks. In essence each write could hit a different pair of disks, dramatically improving performance. The next write could be a RAID5 block, with the blocks striped across all the disks available to the pool. In this method a disk pool will balance the IO across all the available spindles.

5. Latency and IO load can be measured real-time, or logged historically for reporting purposes. This means if a volume is performing poorly, its IO can be reported over time, and compared to IO load on the server, for any length of time you wish to store. If you need to report on the last month of IO history, a report can be generated showing the IO graphically or as a summary chart. This provides the ability to trend and determine when IO performance changed. Volumes can also be summarized as a group, to determine if IO load is shifting, increasing, or disk performance is changing. Reporting can be done at any level, including at the disk device level. This allows reporting on the latency at the Server, LUN, or disk level to provide more accurate performance monitoring and diagnostics.

6. Because Storage Center manages block placement, defragmentation is not required. Dell Compellent Data Progression computes block placement and optimizes block placement based on access patterns. Because block placement is relative to other stored blocks Exchange On-line defragmentation is accounted for.

7. Dell Compellent Fluid Data also allows disks to be added to a pool to increase performance dynamically. This allows for accurate sizing on day one and disks to be

added as performance requirements increase. If after one year IO requirements double, additional disks could simply be added (without any downtime), and RAID stripes rebalanced.

8. The most common cause of performance issues is low spindle count. To achieve a given IO level requires a spindle count equal to or greater than the IOP target. If the IO load exceeds the capabilities of the spindles poor performance will result. Dell Compellent, along with a business partner, will work with customers to determine the correct spindle count. As IO load grows the spindle count must increase to maintain performance. Using Dell Compellent Enterprise Manager, current IO loads can be tracked, and thresholds can be set for alerting, to warn of IO usage approaching or exceeding acceptable performance levels. Because IO patterns can be very diverse, creating a baseline and using historical reporting will be a key strategy for planning for and managing growth. With an accurate growth plan, disk can be added before it is needed, and performance as well as capacity can be increased with down time.

Backup Strategy

1. The Dell Compellent Storage Center has an integrated snapshot facility that provides basic volume based snapshots. In order to provide VSS integration with a graphical management interface, Dell Compellent Replay Manager for Microsoft Servers should be implemented. This provides a full interface for scheduling database backups. Using Replay Manger Exchange Servers can be restored in less than a minute to any available restore point. It also provides detailed reporting on snapshots. Because Dell Compellent Storage Center has the ability to manage thousands of snapshots, a fine grained backup strategy can be defined to greatly reduce reliance on tape for historical data recovery. Combined with a lagged database copy, data can be recovered very quickly with minimal administrative effort.

2. Since Dell Compellent Replays take do not require page pre-allocation or disk allocation disk space requirements are much smaller for snapshots. Backup verification can also be passed to a secondary server to isolate the impact of backups on the production Exchange environment. By automating the creation and verification process using a secondary server, more frequent database backups and more frequent database scans can be implemented reducing exposure.

3. Replay restore points can also be replicated and tested in a remote environment without breaking replication. This allows Disaster Recovery testing of a production restore point without pausing replication, reducing exposure even further.

Additional Information

For more information on Dell Compellent Storage Center and other Dell Compellent solutions, visit our website at http://www.compellent.com.

Test Results Summary

This section provides a high level summary of the test data from ESRP and the link to the detailed html reports which are generated by ESRP testing framework. Please click on the underlined headings below to view the html report for each test.

Reliability

A number of tests in the framework are to check Reliability tests runs for 24 hours. The goal is to verify the storage can handle high IO load for a long period of time. Both log and database files will be analyzed for integrity after the stress test to ensure no database/log corruption.

The following list provides an overview: (click on the underlined word will show the html report after the reliability tests run)

- No errors were reported in either the application or system log
- No errors were reported during the database and log checksum process
- No errors were reported during either the backup or restore process

Storage Performance Results

The Primary Storage performance testing is designed to exercise the storage with maximum sustainable Exchange type of IO for 2 hours. The test is to show how long it takes for the storage to respond to an IO under load. The data below is the sum of all of the logical disk I/O's and average of all the logical disks I/O latency in the 2 hours test duration.   Each server is listed separately and the aggregate numbers across all servers is listed as well.

Individual Server Metrics:

The sum of I/O's across all Mailbox Databases and the average latency across all Databases on a per server basis.

Server 1 – JS1

Database I/O	
Database Disks Transfers/sec	799.046
Database Disks Reads/sec	506.444
Database Disks Writes/sec	292.602
Average Database Disk Read Latency (ms)	12.98
Average Database Disk Write Latency (ms)	4.67
Transaction Log I/O	
Log Disks Writes/sec	215.046
Average Log Disk Write Latency (ms)	2.71

Server 2 – JS2

Database I/O	

Database Disks Transfers/sec	802.549
Database Disks Reads/sec	505.574
Database Disks Writes/sec	296.975
Average Database Disk Read Latency (ms)	13.07
Average Database Disk Write Latency (ms)	4.77
Transaction Log I/O	
Log Disks Writes/sec	216.834
Average Log Disk Write Latency (ms)	2.77

Server 3 – JS3

Database I/O	
Database Disks Transfers/sec	800.485
Database Disks Reads/sec	504.148
Database Disks Writes/sec	296.337
Average Database Disk Read Latency (ms)	13.08
Average Database Disk Write Latency (ms)	4.65
Transaction Log I/O	
Log Disks Writes/sec	217.749
Average Log Disk Write Latency (ms)	2.72

Server 4 – JS4

Database I/O	
Database Disks Transfers/sec	785.941
Database Disks Reads/sec	495.295
Database Disks Writes/sec	290.646
Average Database Disk Read Latency (ms)	13.23
Average Database Disk Write Latency (ms)	4.70
Transaction Log I/O	
Log Disks Writes/sec	213.817
Average Log Disk Write Latency (ms)	2.73

Server 5 – JS5

Database I/O	
Database Disks Transfers/sec	781.852
Database Disks Reads/sec	492.596
Database Disks Writes/sec	289.256
Average Database Disk Read Latency (ms)	13.22
Average Database Disk Write Latency (ms)	4.69
Transaction Log I/O	
Log Disks Writes/sec	212.48
Average Log Disk Write Latency (ms)	2.76

Server 6 – JS6

Database I/O	
Database Disks Transfers/sec	776.928
Database Disks Reads/sec	489.548
Database Disks Writes/sec	287.38
Average Database Disk Read Latency (ms)	13.32
Average Database Disk Write Latency (ms)	4.69
Transaction Log I/O	
Log Disks Writes/sec	210.374
Average Log Disk Write Latency (ms)	2.78

Server 7 – JS7

Database I/O	
Database Disks Transfers/sec	795.478
Database Disks Reads/sec	501.92
Database Disks Writes/sec	293.558
Average Database Disk Read Latency (ms)	13.15
Average Database Disk Write Latency (ms)	4.72
Transaction Log I/O	
Log Disks Writes/sec	215.887
Average Log Disk Write Latency (ms)	2.72

Server 8 – JS8

Database I/O	
Database Disks Transfers/sec	792.553
Database Disks Reads/sec	500.706
Database Disks Writes/sec	291.847
Average Database Disk Read Latency (ms)	13.14
Average Database Disk Write Latency (ms)	4.68
Transaction Log I/O	
Log Disks Writes/sec	214.542
Average Log Disk Write Latency (ms)	2.72

Server 9 – JS9

Database I/O	
Database Disks Transfers/sec	790.236
Database Disks Reads/sec	497.843
Database Disks Writes/sec	292.393
Average Database Disk Read Latency (ms)	13.18
Average Database Disk Write Latency (ms)	4.76
Transaction Log I/O	
Log Disks Writes/sec	214.529

Average Log Disk Write Latency (ms)	2.75

Server 10 – JS10

Database I/O	
Database Disks Transfers/sec	780.405
Database Disks Reads/sec	491.277
Database Disks Writes/sec	289.128
Average Database Disk Read Latency (ms)	13.35
Average Database Disk Write Latency (ms)	4.70
Transaction Log I/O	
Log Disks Writes/sec	212.905
Average Log Disk Write Latency (ms)	2.72

Aggregate Performance across all servers Metrics

The sum of I/O's across servers in solution and the average latency across all servers in solution.

Database I/O	
Database Disks Transfers/sec	7905.473
Database Disks Reads/sec	4985.351
Database Disks Writes/sec	2920.122
Average Database Disk Read Latency (ms)	13.17
Average Database Disk Write Latency (ms)	4.70
Transaction Log I/O	
Log Disks Writes/sec	2144.163
Average Log Disk Write Latency (ms)	2.74

Database Backup/Recovery Performance

There are two tests reports in this section. The first one is to measure the sequential read rate of the database files, and the second is to measure the recovery/replay performance (playing transaction logs in to the database).

Database Read-only Performance

The test is to measure the maximum rate at which databases could be backed up via VSS. The following table shows the average rate for a single database file.

MB read/sec per database	79.828
MB read/sec total per server	399.14

Transaction Log Recovery/Replay Performance
The purpose of this test is to measure the maximum rate at which the log files can be played against the databases. The following table shows the average rate for 500 log files played in a single storage group. Each log file is 1 MB in size.

Average time to play one Log file (sec)	2.877

Conclusion

The testing shows the scalability and performance of the Dell Compellent Storage Center.

This document is developed by storage solution providers, and reviewed by the Microsoft Exchange Product team. The test results/data presented in this document are based on the tests introduced in the ESRP test framework. Customers should not quote the data directly for his/her pre-deployment verification. It is still necessary to go through the exercises to validate the storage design for a specific customer environment.

The ESRP program is not designed to be a benchmarking program; the tests are not designed for getting the maximum throughput for a given solution. Rather, it is focused on producing recommendations from vendors for the Exchange application. So the data presented in this document should not be used for direct comparisons among the solutions

Appendix A: Performance Testing

Server 1 – JS1

Test Summary

Overall Test Result	Pass
Machine Name	JS1
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:29 PM
Test End Time	5/30/2012 7:25:21 PM
Collection Start Time	5/30/2012 2:17:29 PM
Collection End Time	5/30/2012 4:17:28 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_41.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	799.047
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10647569760256
Final Database Size (bytes)	10653550837760
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3696.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3696.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3696.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3696.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3696.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3696.1	13.415	5.022	101.177	58.468	33710.401	35010.169	0.000	2.691	0.000	42.915	0.000	5201.902
Instance3696.2	12.825	4.686	100.528	58.091	33872.679	35040.520	0.000	2.729	0.000	42.853	0.000	5246.570
Instance3696.3	12.955	4.808	102.335	59.055	33864.052	34993.857	0.000	2.693	0.000	43.463	0.000	5179.612
Instance3696.4	12.845	4.455	101.471	58.637	33829.399	35036.429	0.000	2.749	0.000	42.958	0.000	5255.008
Instance3696.5	12.900	4.403	100.933	58.351	34016.158	35022.366	0.000	2.707	0.000	42.857	0.000	5212.134

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3696.1	31.616	261922.122
Instance3696.2	31.699	261979.087
Instance3696.3	31.690	261941.332
Instance3696.4	31.690	261939.693
Instance3696.5	31.736	261976.439

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3696.1	0.916	232538.438
Instance3696.2	0.922	232561.778
Instance3696.3	0.923	231105.232
Instance3696.4	0.926	232073.057
Instance3696.5	0.917	232566.922

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3696.1	13.415	5.022	132.793	58.468	88044.400	35010.169	4.463	2.691	0.916	42.915	232538.438	5201.902
Instance3696.2	12.825	4.686	132.227	58.091	88557.152	35040.520	4.443	2.729	0.922	42.853	232561.778	5246.570
Instance3696.3	12.955	4.808	134.025	59.055	87792.539	34993.857	4.321	2.693	0.923	43.463	231105.232	5179.612
Instance3696.4	12.845	4.455	133.161	58.637	88115.816	35036.429	4.536	2.749	0.926	42.958	232073.057	5255.008
Instance3696.5	12.900	4.403	132.669	58.351	88546.397	35022.366	4.420	2.707	0.917	42.857	232566.922	5212.134

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.976	0.432	2.534
Available MBytes	60552.985	60432.000	60686.000
Free System Page Table Entries	33555608.129	33555607.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53717649.067	53698560.000	53850112.000
Pool Paged Bytes	108520320.000	102313984.000	150360064.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:40 AM -- Jetstress testing begins ...
5/30/2012 8:57:40 AM -- Preparing for testing ...
5/30/2012 8:57:46 AM -- Attaching databases ...
5/30/2012 8:57:46 AM -- Preparations for testing are complete.
5/30/2012 8:57:46 AM -- Starting transaction dispatch ..
5/30/2012 8:57:46 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:46 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:53 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:53 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:59 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:59 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:59 AM -- Attaining prerequisites:
5/30/2012 9:00:02 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216770000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 11:00:03 AM -- Performance logging has ended.
5/30/2012 11:23:25 AM -- JetInterop batch transaction stats: 38114, 38106, 38019, 37842 and 37789.
5/30/2012 11:23:25 AM -- Dispatching transactions ends.
5/30/2012 11:23:25 AM -- Shutting down databases ...
5/30/2012 11:23:33 AM -- Instance3696.1 (complete), Instance3696.2 (complete), Instance3696.3 (complete), Instance3696.4 (complete) and Instance3696.5 (complete)
5/30/2012 11:23:33 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_53.blg has 487 samples.
5/30/2012 11:23:33 AM -- Creating test report ...
5/30/2012 11:23:36 AM -- Instance3696.1 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.1 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.1 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.2 has 13.3 for I/O Database Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.3 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.3 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.3 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.4 has 13.3 for I/O Database Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.5 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.5 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:36 AM -- Instance3696.5 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:36 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:36 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:36 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_53.xml has 478 samples queried.
5/30/2012 11:23:37 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_53.html was saved.
5/30/2012 11:23:38 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:38 AM -- Verifying database checksums ...
5/30/2012 2:06:01 PM -- C:\dbroot\db1 (32% processed), C:\dbroot\db2 (31% processed), C:\dbroot\db3 (33% processed), C:\dbroot\db4 (31% processed) and C:\dbroot\db5 (33% processed)
5/30/2012 2:06:01 PM -- Verifying log checksums ...
5/30/2012 2:06:01 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:01 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_1.evt is saved.
5/30/2012 2:06:01 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_1.evt is saved.
5/30/2012 2:06:01 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_1.xml was saved.
5/30/2012 2:06:01 PM -- Jetstress testing has ended.
5/30/2012 2:15:29 PM -- Jetstress testing begins ...
5/30/2012 2:15:30 PM -- Preparing for testing ...
5/30/2012 2:15:35 PM -- Attaching databases ...
5/30/2012 2:15:35 PM -- Preparations for testing are complete.
5/30/2012 2:15:35 PM -- Starting transaction dispatch ..
5/30/2012 2:15:35 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:35 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:15:41 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:15:41 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:15:46 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:15:46 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:15:46 PM -- Attaining prerequisites:
5/30/2012 2:17:29 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1215422000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:17:30 PM -- Performance logging has ended.
5/30/2012 7:25:15 PM -- JetInterop batch transaction stats: 81564, 81142, 81499, 82006 and 81423.
5/30/2012 7:25:16 PM -- Dispatching transactions ends.
5/30/2012 7:25:16 PM -- Shutting down databases ...
5/30/2012 7:25:21 PM -- Instance3696.1 (complete), Instance3696.2 (complete), Instance3696.3 (complete), Instance3696.4 (complete) and Instance3696.5 (complete)
5/30/2012 7:25:21 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_41.blg has 486 samples.
5/30/2012 7:25:21 PM -- Creating test report ...
5/30/2012 7:25:24 PM -- Instance3696.1 has 13.4 for I/O Database Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.2 has 12.8 for I/O Database Reads Average Latency.

5/30/2012 7:25:24 PM -- Instance3696.2 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.2 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.3 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.4 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.4 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.4 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.5 has 12.9 for I/O Database Reads Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:24 PM -- Instance3696.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:24 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:25:24 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:25:24 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_41.xml has 479 samples queried.

Server 2 – JS2

Test Summary

Overall Test Result	Pass
Machine Name	JS2
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:33 PM
Test End Time	5/30/2012 7:25:12 PM
Collection Start Time	5/30/2012 2:17:37 PM
Collection End Time	5/30/2012 4:17:31 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_44.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	802.549
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10642603704320
Final Database Size (bytes)	10648442175488
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2072.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2072.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2072.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2072.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2072.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2072.1	13.485	5.142	100.753	59.128	33643.869	34906.406	0.000	2.783	0.000	43.180	0.000	5130.944
Instance2072.2	12.980	4.766	101.181	59.437	33771.668	34915.325	0.000	2.754	0.000	43.392	0.000	5126.241
Instance2072.3	12.958	4.927	101.357	59.554	33726.870	34913.006	0.000	2.798	0.000	43.329	0.000	5128.960
Instance2072.4	12.959	4.512	101.245	59.526	33808.714	34933.564	0.000	2.764	0.000	43.578	0.000	5150.590
Instance2072.5	12.966	4.515	101.038	59.330	33766.132	34913.818	0.000	2.781	0.000	43.355	0.000	5152.328

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2072.1	31.590	261942.078
Instance2072.2	31.642	261949.651
Instance2072.3	31.677	261975.981
Instance2072.4	31.669	261931.052
Instance2072.5	31.632	261944.844

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2072.1	0.907	231570.993
Instance2072.2	0.912	232554.269
Instance2072.3	0.912	232566.050
Instance2072.4	0.920	232560.172
Instance2072.5	0.915	232552.688

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2072.1	13.485	5.142	132.343	59.128	88137.878	34906.406	4.496	2.783	0.907	43.180	231570.993	5130.944
Instance2072.2	12.980	4.766	132.823	59.437	88130.233	34915.325	4.458	2.754	0.912	43.392	232554.269	5126.241
Instance2072.3	12.958	4.927	133.034	59.554	88076.402	34913.006	4.571	2.798	0.912	43.329	232566.050	5128.960
Instance2072.4	12.959	4.512	132.914	59.526	88162.583	34933.564	4.470	2.764	0.920	43.578	232560.172	5150.590
Instance2072.5	12.966	4.515	132.671	59.330	88170.285	34913.818	4.460	2.781	0.915	43.355	232552.688	5152.328

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.030	0.000	3.971
Available MBytes	60593.493	60475.000	60613.000
Free System Page Table Entries	33555608.319	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52718658.271	52658176.000	52936704.000
Pool Paged Bytes	105352677.278	100126720.000	148316160.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

Test Log5/30/2012 8:57:37 AM -- Jetstress testing begins ...

5/30/2012 8:57:37 AM -- Preparing for testing ...

5/30/2012 8:57:43 AM -- Attaching databases ...

5/30/2012 8:57:43 AM -- Preparations for testing are complete.

5/30/2012 8:57:43 AM -- Starting transaction dispatch ..

5/30/2012 8:57:43 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

5/30/2012 8:57:43 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

5/30/2012 8:57:50 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

5/30/2012 8:57:50 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

5/30/2012 8:57:56 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

5/30/2012 8:57:56 AM -- Performance logging started (interval: 15000 ms).

5/30/2012 8:57:56 AM -- Attaining prerequisites:

5/30/2012 8:59:59 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1212551000.0 (lower bound: 1207960000.0, upper bound: none)

5/30/2012 11:00:00 AM -- Performance logging has ended.

5/30/2012 11:22:51 AM -- JetInterop batch transaction stats: 38137, 38284, 37978, 38453 and 37851.

5/30/2012 11:22:51 AM -- Dispatching transactions ends.

5/30/2012 11:22:51 AM -- Shutting down databases ...

5/30/2012 11:22:53 AM -- Instance2072.1 (complete), Instance2072.2 (complete), Instance2072.3 (complete), Instance2072.4 (complete) and Instance2072.5 (complete)

5/30/2012 11:22:53 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_50.blg has 487 samples.

5/30/2012 11:22:53 AM -- Creating test report ...

5/30/2012 11:22:56 AM -- Instance2072.1 has 13.9 for I/O Database Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.1 has 2.9 for I/O Log Writes Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.1 has 2.9 for I/O Log Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.2 has 12.8 for I/O Database Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.2 has 3.2 for I/O Log Writes Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.2 has 3.2 for I/O Log Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.3 has 13.4 for I/O Database Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.3 has 2.9 for I/O Log Writes Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.3 has 2.9 for I/O Log Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.4 has 12.9 for I/O Database Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.4 has 3.2 for I/O Log Writes Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.4 has 3.2 for I/O Log Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.5 has 13.3 for I/O Database Reads Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.5 has 2.9 for I/O Log Writes Average Latency.

5/30/2012 11:22:56 AM -- Instance2072.5 has 2.9 for I/O Log Reads Average Latency.

5/30/2012 11:22:56 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:22:56 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:22:56 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_50.xml has 478 samples queried.
5/30/2012 11:22:57 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_50.html was saved.
5/30/2012 11:22:58 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:22:58 AM -- Verifying database checksums ...
5/30/2012 2:06:04 PM -- C:\dbroot\db1 (31% processed), C:\dbroot\db2 (33% processed), C:\dbroot\db3 (31% processed), C:\dbroot\db4 (33% processed) and C:\dbroot\db5 (31% processed)
5/30/2012 2:06:05 PM -- Verifying log checksums ...
5/30/2012 2:06:05 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:05 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_5.evt is saved.
5/30/2012 2:06:05 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_5.evt is saved.
5/30/2012 2:06:05 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_5.xml was saved.
5/30/2012 2:06:05 PM -- Jetstress testing has ended.
5/30/2012 2:15:33 PM -- Jetstress testing begins ...
5/30/2012 2:15:33 PM -- Preparing for testing ...
5/30/2012 2:15:38 PM -- Attaching databases ...
5/30/2012 2:15:38 PM -- Preparations for testing are complete.
5/30/2012 2:15:38 PM -- Starting transaction dispatch ..
5/30/2012 2:15:38 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:38 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:15:44 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:15:44 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:15:50 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:15:50 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:15:50 PM -- Attaining prerequisites:
5/30/2012 2:17:37 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210008000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:17:38 PM -- Performance logging has ended.
5/30/2012 7:25:07 PM -- JetInterop batch transaction stats: 82873, 82540, 81909, 82318 and 82659.
5/30/2012 7:25:08 PM -- Dispatching transactions ends.
5/30/2012 7:25:08 PM -- Shutting down databases ...
5/30/2012 7:25:12 PM -- Instance2072.1 (complete), Instance2072.2 (complete), Instance2072.3 (complete), Instance2072.4 (complete) and Instance2072.5 (complete)
5/30/2012 7:25:12 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_44.blg has 486 samples.
5/30/2012 7:25:12 PM -- Creating test report ...
5/30/2012 7:25:15 PM -- Instance2072.1 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.1 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.1 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 7:25:15 PM -- Instance2072.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.3 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.3 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.3 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.5 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.5 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:15 PM -- Instance2072.5 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:15 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:25:15 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:25:15 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_44.xml has 478 samples queried.

Server 3 – JS3

Test Summary

Overall Test Result	Pass
Machine Name	JS3
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:36 PM
Test End Time	5/30/2012 7:25:07 PM
Collection Start Time	5/30/2012 2:17:47 PM
Collection End Time	5/30/2012 4:17:34 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_47.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	800.484
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10642830196736
Final Database Size (bytes)	10648643502080
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2400.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2400.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2400.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2400.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2400.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2400.1	13.405	4.989	101.024	59.480	33829.857	34933.524	0.000	2.714	0.000	43.661	0.000	5109.412
Instance2400.2	13.041	4.669	100.513	59.138	33899.058	34893.580	0.000	2.746	0.000	43.127	0.000	5107.326
Instance2400.3	12.962	4.809	100.870	59.229	33759.514	34926.140	0.000	2.709	0.000	43.508	0.000	5091.329
Instance2400.4	13.032	4.404	100.364	58.934	33799.020	34935.516	0.000	2.753	0.000	43.488	0.000	5151.595
Instance2400.5	12.956	4.408	101.377	59.556	33809.549	34909.916	0.000	2.699	0.000	43.965	0.000	5132.461

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2400.1	31.553	261901.605
Instance2400.2	31.583	261932.346
Instance2400.3	31.640	261956.472
Instance2400.4	31.613	261948.225
Instance2400.5	31.738	261982.759

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2400.1	0.915	232078.755
Instance2400.2	0.901	231589.305
Instance2400.3	0.907	232062.348
Instance2400.4	0.919	232062.410
Instance2400.5	0.924	232560.461

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2400.1	13.405	4.989	132.577	59.480	88110.263	34933.524	4.270	2.714	0.915	43.661	232078.755	5109.412
Instance2400.2	13.041	4.669	132.096	59.138	88420.162	34893.580	4.442	2.746	0.901	43.127	231589.305	5107.326
Instance2400.3	12.962	4.809	132.511	59.229	88247.592	34926.140	4.479	2.709	0.907	43.508	232062.348	5091.329
Instance2400.4	13.032	4.404	131.977	58.934	88448.839	34935.516	4.501	2.753	0.919	43.488	232062.410	5151.595
Instance2400.5	12.956	4.408	133.115	59.556	88212.566	34909.916	4.474	2.699	0.924	43.965	232560.461	5132.461

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.948	0.597	2.110
Available MBytes	60598.693	60477.000	60695.000
Free System Page Table Entries	33555609.555	33555608.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53029398.447	53006336.000	53149696.000
Pool Paged Bytes	103126796.292	98484224.000	150355968.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:35 AM -- Jetstress testing begins ...
5/30/2012 8:57:35 AM -- Preparing for testing ...
5/30/2012 8:57:40 AM -- Attaching databases ...
5/30/2012 8:57:40 AM -- Preparations for testing are complete.
5/30/2012 8:57:40 AM -- Starting transaction dispatch ..
5/30/2012 8:57:41 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:41 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:47 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:47 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:53 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:53 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:53 AM -- Attaining prerequisites:
5/30/2012 8:59:59 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210716000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 11:00:00 AM -- Performance logging has ended.
5/30/2012 11:23:01 AM -- JetInterop batch transaction stats: 38053, 38199, 38101, 37899 and 38106.
5/30/2012 11:23:02 AM -- Dispatching transactions ends.
5/30/2012 11:23:02 AM -- Shutting down databases ...
5/30/2012 11:23:03 AM -- Instance2400.1 (complete), Instance2400.2 (complete), Instance2400.3 (complete), Instance2400.4 (complete) and Instance2400.5 (complete)
5/30/2012 11:23:03 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_47.blg has 487 samples.
5/30/2012 11:23:03 AM -- Creating test report ...
5/30/2012 11:23:07 AM -- Instance2400.1 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.1 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.1 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.2 has 13.4 for I/O Database Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.3 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.3 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.3 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.4 has 13.4 for I/O Database Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.5 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.5 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:07 AM -- Instance2400.5 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:07 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:07 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:07 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_47.xml has 478 samples queried.
5/30/2012 11:23:08 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_47.html was saved.
5/30/2012 11:23:08 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:08 AM -- Verifying database checksums ...
5/30/2012 2:06:09 PM -- C:\dbroot\db1 (33% processed), C:\dbroot\db2 (32% processed), C:\dbroot\db3 (33% processed), C:\dbroot\db4 (31% processed) and C:\dbroot\db5 (33% processed)
5/30/2012 2:06:10 PM -- Verifying log checksums ...
5/30/2012 2:06:10 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:10 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_10.evt is saved.
5/30/2012 2:06:10 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_10.evt is saved.
5/30/2012 2:06:10 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_10.xml was saved.
5/30/2012 2:06:10 PM -- Jetstress testing has ended.
5/30/2012 2:15:36 PM -- Jetstress testing begins ...
5/30/2012 2:15:36 PM -- Preparing for testing ...
5/30/2012 2:15:41 PM -- Attaching databases ...
5/30/2012 2:15:41 PM -- Preparations for testing are complete.
5/30/2012 2:15:41 PM -- Starting transaction dispatch ..
5/30/2012 2:15:41 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:41 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:15:47 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:15:47 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:15:53 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:15:53 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:15:53 PM -- Attaining prerequisites:
5/30/2012 2:17:47 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208603000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:17:47 PM -- Performance logging has ended.
5/30/2012 7:25:02 PM -- JetInterop batch transaction stats: 82111, 81953, 82218, 81735 and 81929.
5/30/2012 7:25:03 PM -- Dispatching transactions ends.
5/30/2012 7:25:03 PM -- Shutting down databases ...
5/30/2012 7:25:07 PM -- Instance2400.1 (complete), Instance2400.2 (complete), Instance2400.3 (complete), Instance2400.4 (complete) and Instance2400.5 (complete)
5/30/2012 7:25:07 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_47.blg has 486 samples.
5/30/2012 7:25:07 PM -- Creating test report ...
5/30/2012 7:25:10 PM -- Instance2400.1 has 13.4 for I/O Database Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 7:25:10 PM -- Instance2400.2 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.2 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.3 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.5 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:10 PM -- Instance2400.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:10 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:25:10 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:25:10 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_47.xml has 478 samples queried.

Server 4 – JS4

Test Summary

Overall Test Result	Pass
Machine Name	JS4
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:38 PM
Test End Time	5/30/2012 7:25:01 PM
Collection Start Time	5/30/2012 2:17:53 PM
Collection End Time	5/30/2012 4:17:53 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_50.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	785.942
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10640959537152
Final Database Size (bytes)	10646663790592
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3708.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3708.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3708.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3708.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3708.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	13.450	5.059	98.859	58.172	33734.559	34878.085	0.000	2.754	0.000	42.596	0.000	5110.554
Instance3708.2	13.132	4.701	98.940	58.029	33984.387	34929.394	0.000	2.720	0.000	42.855	0.000	5119.057
Instance3708.3	13.235	4.883	99.147	58.199	33717.644	34932.611	0.000	2.755	0.000	42.900	0.000	5119.496
Instance3708.4	13.124	4.447	98.180	57.520	33866.657	34935.666	0.000	2.711	0.000	42.475	0.000	5091.178
Instance3708.5	13.218	4.420	100.169	58.726	33786.644	34896.871	0.000	2.753	0.000	42.991	0.000	5116.735

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3708.1	31.574	261905.690
Instance3708.2	31.696	261911.970
Instance3708.3	31.646	261935.337
Instance3708.4	31.672	261918.944
Instance3708.5	31.649	261942.208

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3708.1	0.891	232055.020
Instance3708.2	0.899	230656.325
Instance3708.3	0.899	232550.872
Instance3708.4	0.884	230619.717
Instance3708.5	0.901	232561.778

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	13.450	5.059	130.434	58.172	88968.709	34878.085	4.509	2.754	0.891	42.596	232055.020	5110.554
Instance3708.2	13.132	4.701	130.635	58.029	89285.986	34929.394	4.564	2.720	0.899	42.855	230656.325	5119.057
Instance3708.3	13.235	4.883	130.793	58.199	88935.466	34932.611	4.504	2.755	0.899	42.900	232550.872	5119.496
Instance3708.4	13.124	4.447	129.853	57.520	89491.052	34935.666	4.347	2.711	0.884	42.475	230619.717	5091.178
Instance3708.5	13.218	4.420	131.819	58.726	88566.251	34896.871	4.423	2.753	0.901	42.991	232561.778	5116.735

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.944	0.000	2.456
Available MBytes	60602.750	60483.000	60741.000
Free System Page Table Entries	33555608.479	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52925934.933	52846592.000	52998144.000
Pool Paged Bytes	102087654.400	97951744.000	145723392.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:31 AM -- Jetstress testing begins ...
5/30/2012 8:57:31 AM -- Preparing for testing ...
5/30/2012 8:57:37 AM -- Attaching databases ...
5/30/2012 8:57:37 AM -- Preparations for testing are complete.
5/30/2012 8:57:37 AM -- Starting transaction dispatch ..
5/30/2012 8:57:37 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:37 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:43 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:43 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:50 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:50 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:50 AM -- Attaining prerequisites:
5/30/2012 8:59:50 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1214218000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:51 AM -- Performance logging has ended.
5/30/2012 11:23:04 AM -- JetInterop batch transaction stats: 37056, 37153, 37220, 36980 and 37546.
5/30/2012 11:23:04 AM -- Dispatching transactions ends.
5/30/2012 11:23:04 AM -- Shutting down databases ...
5/30/2012 11:23:06 AM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
5/30/2012 11:23:06 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_43.blg has 487 samples.
5/30/2012 11:23:06 AM -- Creating test report ...
5/30/2012 11:23:09 AM -- Instance3708.1 has 13.9 for I/O Database Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.1 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.1 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.2 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.2 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.2 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.3 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.3 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.3 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.4 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.4 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.5 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.5 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:09 AM -- Instance3708.5 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:09 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:09 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:09 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_43.xml has 478 samples queried.
5/30/2012 11:23:10 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_43.html was saved.
5/30/2012 11:23:11 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:11 AM -- Verifying database checksums ...
5/30/2012 2:06:19 PM -- C:\dbroot\db1 (31% processed), C:\dbroot\db2 (33% processed), C:\dbroot\db3 (31% processed), C:\dbroot\db4 (32% processed) and C:\dbroot\db5 (31% processed)
5/30/2012 2:06:19 PM -- Verifying log checksums ...
5/30/2012 2:06:19 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:19 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_19.evt is saved.
5/30/2012 2:06:19 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_19.evt is saved.
5/30/2012 2:06:19 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_19.xml was saved.
5/30/2012 2:06:19 PM -- Jetstress testing has ended.
5/30/2012 2:15:38 PM -- Jetstress testing begins ...
5/30/2012 2:15:38 PM -- Preparing for testing ...
5/30/2012 2:15:44 PM -- Attaching databases ...
5/30/2012 2:15:44 PM -- Preparations for testing are complete.
5/30/2012 2:15:44 PM -- Starting transaction dispatch ..
5/30/2012 2:15:44 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:44 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:15:50 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:15:50 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:15:56 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:15:56 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:15:56 PM -- Attaining prerequisites:
5/30/2012 2:17:53 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209946000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:17:53 PM -- Performance logging has ended.
5/30/2012 7:24:57 PM -- JetInterop batch transaction stats: 80323, 80529, 80178, 80613 and 80618.
5/30/2012 7:24:58 PM -- Dispatching transactions ends.
5/30/2012 7:24:58 PM -- Shutting down databases ...
5/30/2012 7:25:01 PM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
5/30/2012 7:25:01 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_50.blg has 487 samples.
5/30/2012 7:25:01 PM -- Creating test report ...
5/30/2012 7:25:04 PM -- Instance3708.1 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.1 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.1 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.2 has 13.1 for I/O Database Reads Average Latency.

5/30/2012 7:25:04 PM -- Instance3708.2 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.2 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.3 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.3 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.3 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.4 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.4 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.4 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.5 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.5 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:04 PM -- Instance3708.5 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:04 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:25:04 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:25:04 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_50.xml has 479 samples queried.

Server 5 – JS5

Test Summary

Overall Test Result	Pass
Machine Name	JS5
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:41 PM
Test End Time	5/30/2012 7:24:58 PM
Collection Start Time	5/30/2012 2:17:53 PM
Collection End Time	5/30/2012 4:17:40 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_53.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	781.852
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10641957781504
Final Database Size (bytes)	10647636869120
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2380.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2380.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2380.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2380.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2380.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2380.1	13.641	5.022	98.962	58.089	33714.156	34909.708	0.000	2.738	0.000	42.674	0.000	5102.357
Instance2380.2	13.114	4.710	98.534	57.821	34002.271	34929.974	0.000	2.776	0.000	42.427	0.000	5135.974
Instance2380.3	13.162	4.846	99.034	58.084	33956.637	34944.764	0.000	2.744	0.000	42.692	0.000	5129.284
Instance2380.4	13.031	4.469	97.514	57.287	33954.921	34961.234	0.000	2.799	0.000	42.062	0.000	5193.674
Instance2380.5	13.171	4.397	98.552	57.975	33878.010	34928.713	0.000	2.746	0.000	42.625	0.000	5127.535

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2380.1	31.660	261979.326
Instance2380.2	31.628	261959.021
Instance2380.3	31.747	261974.751
Instance2380.4	31.745	261953.831
Instance2380.5	31.687	261963.936

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2380.1	0.891	232076.560
Instance2380.2	0.894	231093.652
Instance2380.3	0.897	231603.938
Instance2380.4	0.896	232561.778
Instance2380.5	0.896	231571.987

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2380.1	13.641	5.022	130.621	58.089	89040.839	34909.708	4.517	2.738	0.891	42.674	232076.560	5102.357
Instance2380.2	13.114	4.710	130.162	57.821	89393.782	34929.974	4.533	2.776	0.894	42.427	231093.652	5135.974
Instance2380.3	13.162	4.846	130.781	58.084	89307.726	34944.764	4.504	2.744	0.897	42.692	231603.938	5129.284
Instance2380.4	13.031	4.469	129.259	57.287	89949.536	34961.234	4.493	2.799	0.896	42.062	232561.778	5193.674
Instance2380.5	13.171	4.397	130.239	57.975	89371.596	34928.713	4.540	2.746	0.896	42.625	231571.987	5127.535

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.980	0.000	2.106
Available MBytes	60606.802	60498.000	60715.000
Free System Page Table Entries	33555609.390	33555607.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52763372.225	52699136.000	52981760.000
Pool Paged Bytes	102986728.484	97976320.000	155131904.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:29 AM -- Jetstress testing begins ...
5/30/2012 8:57:29 AM -- Preparing for testing ...
5/30/2012 8:57:34 AM -- Attaching databases ...
5/30/2012 8:57:34 AM -- Preparations for testing are complete.
5/30/2012 8:57:34 AM -- Starting transaction dispatch ..
5/30/2012 8:57:34 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:34 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:41 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:41 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:47 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:47 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:47 AM -- Attaining prerequisites:
5/30/2012 8:59:52 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210819000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:52 AM -- Performance logging has ended.
5/30/2012 11:23:06 AM -- JetInterop batch transaction stats: 37341, 37023, 37383, 37181 and 37340.
5/30/2012 11:23:06 AM -- Dispatching transactions ends.
5/30/2012 11:23:06 AM -- Shutting down databases ...
5/30/2012 11:23:10 AM -- Instance2380.1 (complete), Instance2380.2 (complete), Instance2380.3 (complete), Instance2380.4 (complete) and Instance2380.5 (complete)
5/30/2012 11:23:10 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_41.blg has 487 samples.
5/30/2012 11:23:10 AM -- Creating test report ...
5/30/2012 11:23:14 AM -- Instance2380.1 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.1 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.1 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.2 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.2 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.2 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.3 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.3 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.3 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.4 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.4 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.4 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.5 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.5 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:14 AM -- Instance2380.5 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:14 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:14 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:14 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_41.xml has 478 samples queried.
5/30/2012 11:23:14 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_41.html was saved.
5/30/2012 11:23:15 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:15 AM -- Verifying database checksums ...
5/30/2012 2:06:27 PM -- C:\dbroot\db1 (33% processed), C:\dbroot\db2 (31% processed), C:\dbroot\db3 (32% processed), C:\dbroot\db4 (31% processed) and C:\dbroot\db5 (32% processed)
5/30/2012 2:06:27 PM -- Verifying log checksums ...
5/30/2012 2:06:27 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:27 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_27.evt is saved.
5/30/2012 2:06:27 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_27.evt is saved.
5/30/2012 2:06:27 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_27.xml was saved.
5/30/2012 2:06:27 PM -- Jetstress testing has ended.
5/30/2012 2:15:41 PM -- Jetstress testing begins ...
5/30/2012 2:15:41 PM -- Preparing for testing ...
5/30/2012 2:15:47 PM -- Attaching databases ...
5/30/2012 2:15:47 PM -- Preparations for testing are complete.
5/30/2012 2:15:47 PM -- Starting transaction dispatch ..
5/30/2012 2:15:47 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:47 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:15:53 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:15:53 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:15:58 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:15:58 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:15:58 PM -- Attaining prerequisites:
5/30/2012 2:17:53 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1212973000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:17:53 PM -- Performance logging has ended.
5/30/2012 7:24:54 PM -- JetInterop batch transaction stats: 80098, 80537, 80831, 80100 and 80324.
5/30/2012 7:24:54 PM -- Dispatching transactions ends.
5/30/2012 7:24:54 PM -- Shutting down databases ...
5/30/2012 7:24:58 PM -- Instance2380.1 (complete), Instance2380.2 (complete), Instance2380.3 (complete), Instance2380.4 (complete) and Instance2380.5 (complete)
5/30/2012 7:24:58 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_53.blg has 486 samples.
5/30/2012 7:24:58 PM -- Creating test report ...
5/30/2012 7:25:01 PM -- Instance2380.1 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.2 has 13.1 for I/O Database Reads Average Latency.

5/30/2012 7:25:01 PM -- Instance2380.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.3 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.5 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:25:01 PM -- Instance2380.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:25:01 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:25:01 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:25:01 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_53.xml has 478 samples queried.

Server 6 – JS6

Test Summary

Overall Test Result	Pass
Machine Name	JS6
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:45 PM
Test End Time	5/30/2012 7:24:46 PM
Collection Start Time	5/30/2012 2:18:05 PM
Collection End Time	5/30/2012 4:17:59 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_57.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	776.929
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10640363945984
Final Database Size (bytes)	10646043033600
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3928.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3928.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3928.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3928.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3928.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3928.1	13.745	5.029	97.375	57.148	33965.189	34961.058	0.000	2.797	0.000	41.940	0.000	5131.321
Instance3928.2	13.218	4.683	98.171	57.600	33895.716	34910.279	0.000	2.763	0.000	42.245	0.000	5131.242
Instance3928.3	13.230	4.869	97.378	57.115	33907.837	34895.459	0.000	2.798	0.000	41.733	0.000	5106.875
Instance3928.4	13.198	4.447	98.566	57.906	33897.742	34917.112	0.000	2.760	0.000	42.364	0.000	5114.750
Instance3928.5	13.203	4.421	98.058	57.611	33893.917	34927.984	0.000	2.789	0.000	42.092	0.000	5150.347

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3928.1	31.656	261968.368
Instance3928.2	31.721	261936.279
Instance3928.3	31.700	261959.856
Instance3928.4	31.649	261927.241
Instance3928.5	31.645	261968.692

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3928.1	0.882	232056.879
Instance3928.2	0.887	232078.520
Instance3928.3	0.874	231099.233
Instance3928.4	0.887	231964.389
Instance3928.5	0.889	231588.423

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3928.1	13.745	5.029	129.032	57.148	89903.081	34961.058	4.674	2.797	0.882	41.940	232056.879	5131.321
Instance3928.2	13.218	4.683	129.892	57.600	89585.166	34910.279	4.439	2.763	0.887	42.245	232078.520	5131.242
Instance3928.3	13.230	4.869	129.078	57.115	89914.622	34895.459	4.570	2.798	0.874	41.733	231099.233	5106.875
Instance3928.4	13.198	4.447	130.214	57.906	89320.657	34917.112	4.424	2.760	0.887	42.364	231964.389	5114.750
Instance3928.5	13.203	4.421	129.702	57.611	89539.334	34927.984	4.472	2.789	0.889	42.092	231588.423	5150.347

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.959	0.000	2.280
Available MBytes	60603.804	60491.000	60653.000
Free System Page Table Entries	33555609.182	33555579.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52853330.305	52793344.000	52920320.000
Pool Paged Bytes	103860843.958	98041856.000	148451328.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:26 AM -- Jetstress testing begins ...
5/30/2012 8:57:26 AM -- Preparing for testing ...
5/30/2012 8:57:32 AM -- Attaching databases ...
5/30/2012 8:57:32 AM -- Preparations for testing are complete.
5/30/2012 8:57:32 AM -- Starting transaction dispatch ..
5/30/2012 8:57:32 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:32 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:38 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:38 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:44 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:44 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:44 AM -- Attaining prerequisites:
5/30/2012 8:59:43 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1217651000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:44 AM -- Performance logging has ended.
5/30/2012 11:23:08 AM -- JetInterop batch transaction stats: 36673, 37055, 36588, 37018 and 36892.
5/30/2012 11:23:09 AM -- Dispatching transactions ends.
5/30/2012 11:23:09 AM -- Shutting down databases ...
5/30/2012 11:23:13 AM -- Instance3928.1 (complete), Instance3928.2 (complete), Instance3928.3 (complete), Instance3928.4 (complete) and Instance3928.5 (complete)
5/30/2012 11:23:13 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_38.blg has 487 samples.
5/30/2012 11:23:13 AM -- Creating test report ...
5/30/2012 11:23:16 AM -- Instance3928.1 has 14.2 for I/O Database Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.1 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.1 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.2 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.2 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.2 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.3 has 13.7 for I/O Database Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.3 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.3 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.4 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.4 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.5 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.5 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:16 AM -- Instance3928.5 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:16 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:16 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

5/30/2012 11:23:16 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_38.xml has 479 samples queried.

5/30/2012 11:23:17 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_38.html was saved.

5/30/2012 11:23:18 AM -- Performance logging started (interval: 30000 ms).

5/30/2012 11:23:18 AM -- Verifying database checksums ...

5/30/2012 2:06:34 PM -- C:\dbroot\db1 (31% processed), C:\dbroot\db2 (32% processed), C:\dbroot\db3 (31% processed), C:\dbroot\db4 (32% processed) and C:\dbroot\db5 (30% processed)

5/30/2012 2:06:34 PM -- Verifying log checksums ...

5/30/2012 2:06:34 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)

5/30/2012 2:06:34 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_34.evt is saved.

5/30/2012 2:06:34 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_34.evt is saved.

5/30/2012 2:06:34 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_34.xml was saved.

5/30/2012 2:06:34 PM -- Jetstress testing has ended.

5/30/2012 2:15:45 PM -- Jetstress testing begins ...

5/30/2012 2:15:45 PM -- Preparing for testing ...

5/30/2012 2:15:51 PM -- Attaching databases ...

5/30/2012 2:15:51 PM -- Preparations for testing are complete.

5/30/2012 2:15:51 PM -- Starting transaction dispatch ..

5/30/2012 2:15:51 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

5/30/2012 2:15:51 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

5/30/2012 2:15:57 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

5/30/2012 2:15:57 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

5/30/2012 2:16:02 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

5/30/2012 2:16:02 PM -- Performance logging started (interval: 15000 ms).

5/30/2012 2:16:02 PM -- Attaining prerequisites:

5/30/2012 2:18:05 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216606000.0 (lower bound: 1207960000.0, upper bound: none)

5/30/2012 4:18:05 PM -- Performance logging has ended.

5/30/2012 7:24:43 PM -- JetInterop batch transaction stats: 79785, 79975, 79815, 79979 and 79834.

5/30/2012 7:24:44 PM -- Dispatching transactions ends.

5/30/2012 7:24:44 PM -- Shutting down databases ...

5/30/2012 7:24:46 PM -- Instance3928.1 (complete), Instance3928.2 (complete), Instance3928.3 (complete), Instance3928.4 (complete) and Instance3928.5 (complete)

5/30/2012 7:24:46 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_57.blg has 487 samples.

5/30/2012 7:24:46 PM -- Creating test report ...

5/30/2012 7:24:49 PM -- Instance3928.1 has 13.7 for I/O Database Reads Average Latency.

5/30/2012 7:24:49 PM -- Instance3928.1 has 2.8 for I/O Log Writes Average Latency.

5/30/2012 7:24:49 PM -- Instance3928.1 has 2.8 for I/O Log Reads Average Latency.

5/30/2012 7:24:49 PM -- Instance3928.2 has 13.2 for I/O Database Reads Average Latency.

5/30/2012 7:24:49 PM -- Instance3928.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.3 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.3 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.3 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.4 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.5 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.5 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:49 PM -- Instance3928.5 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:49 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:24:49 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:24:49 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_15_57.xml has 478 samples queried.

Server 7 – JS7

Test Summary

Overall Test Result	Pass
Machine Name	JS7
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:48 PM
Test End Time	5/30/2012 7:24:50 PM
Collection Start Time	5/30/2012 2:18:05 PM
Collection End Time	5/30/2012 4:18:02 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_0.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	795.476
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10642284937216
Final Database Size (bytes)	10648064688128
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3380.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3380.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3380.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3380.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3380.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3380.1	13.714	5.055	100.261	58.598	33715.221	34903.587	0.000	2.699	0.000	43.181	0.000	5067.110
Instance3380.2	12.959	4.744	100.651	58.839	33739.183	34976.872	0.000	2.751	0.000	43.038	0.000	5195.605
Instance3380.3	13.043	4.860	100.371	58.776	33890.422	34964.371	0.000	2.698	0.000	43.336	0.000	5137.450
Instance3380.4	12.957	4.498	99.690	58.302	33743.224	34929.031	0.000	2.749	0.000	42.943	0.000	5193.785
Instance3380.5	13.069	4.478	100.947	59.043	33697.779	34905.871	0.000	2.704	0.000	43.389	0.000	5088.038

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3380.1	31.580	261958.958
Instance3380.2	31.705	261959.469
Instance3380.3	31.660	261924.093
Instance3380.4	31.677	261939.308
Instance3380.5	31.677	261943.158

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3380.1	0.897	232074.660
Instance3380.2	0.917	232565.279
Instance3380.3	0.913	231096.382
Instance3380.4	0.914	232089.562
Instance3380.5	0.906	231578.952

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3380.1	13.714	5.055	131.841	58.598	88387.106	34903.587	4.436	2.699	0.897	43.181	232074.660	5067.110
Instance3380.2	12.959	4.744	132.356	58.839	88407.768	34976.872	4.460	2.751	0.917	43.038	232565.279	5195.605
Instance3380.3	13.043	4.860	132.032	58.776	88571.389	34964.371	4.496	2.698	0.913	43.336	231096.382	5137.450
Instance3380.4	12.957	4.498	131.367	58.302	88768.612	34929.031	4.479	2.749	0.914	42.943	232089.562	5193.785
Instance3380.5	13.069	4.478	132.623	59.043	88213.311	34905.871	4.220	2.704	0.906	43.389	231578.952	5088.038

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.975	0.373	1.772
Available MBytes	60442.763	60402.000	60570.000
Free System Page Table Entries	33555608.000	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53185783.467	53104640.000	53252096.000
Pool Paged Bytes	145655662.933	145469440.000	145858560.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:23 AM -- Jetstress testing begins ...
5/30/2012 8:57:24 AM -- Preparing for testing ...
5/30/2012 8:57:29 AM -- Attaching databases ...
5/30/2012 8:57:29 AM -- Preparations for testing are complete.
5/30/2012 8:57:29 AM -- Starting transaction dispatch ..
5/30/2012 8:57:29 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:29 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:35 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:35 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:41 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:41 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:41 AM -- Attaining prerequisites:
5/30/2012 8:59:42 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1211675000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:43 AM -- Performance logging has ended.
5/30/2012 11:23:13 AM -- JetInterop batch transaction stats: 37217, 37454, 37414, 37162 and 37557.
5/30/2012 11:23:13 AM -- Dispatching transactions ends.
5/30/2012 11:23:13 AM -- Shutting down databases ...
5/30/2012 11:23:16 AM -- Instance3380.1 (complete), Instance3380.2 (complete), Instance3380.3 (complete), Instance3380.4 (complete) and Instance3380.5 (complete)
5/30/2012 11:23:16 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_35.blg has 487 samples.
5/30/2012 11:23:16 AM -- Creating test report ...
5/30/2012 11:23:20 AM -- Instance3380.1 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.1 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.1 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.2 has 13.4 for I/O Database Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.3 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.3 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.3 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.4 has 13.3 for I/O Database Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.5 has 12.9 for I/O Database Reads Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.5 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:20 AM -- Instance3380.5 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:20 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:20 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:20 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_35.xml has 478 samples queried.
5/30/2012 11:23:20 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_35.html was saved.
5/30/2012 11:23:21 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:21 AM -- Verifying database checksums ...
5/30/2012 2:06:39 PM -- C:\dbroot\db1 (32% processed), C:\dbroot\db2 (31% processed), C:\dbroot\db3 (32% processed), C:\dbroot\db4 (31% processed) and C:\dbroot\db5 (32% processed)
5/30/2012 2:06:39 PM -- Verifying log checksums ...
5/30/2012 2:06:39 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:39 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_39.evt is saved.
5/30/2012 2:06:39 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_39.evt is saved.
5/30/2012 2:06:39 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_39.xml was saved.
5/30/2012 2:06:39 PM -- Jetstress testing has ended.
5/30/2012 2:15:48 PM -- Jetstress testing begins ...
5/30/2012 2:15:48 PM -- Preparing for testing ...
5/30/2012 2:15:54 PM -- Attaching databases ...
5/30/2012 2:15:54 PM -- Preparations for testing are complete.
5/30/2012 2:15:54 PM -- Starting transaction dispatch ..
5/30/2012 2:15:54 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:54 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:16:00 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:16:00 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:16:06 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:16:06 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:16:06 PM -- Attaining prerequisites:
5/30/2012 2:18:05 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1217073000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:18:05 PM -- Performance logging has ended.
5/30/2012 7:24:48 PM -- JetInterop batch transaction stats: 81372, 81627, 81207, 81119 and 81418.
5/30/2012 7:24:48 PM -- Dispatching transactions ends.
5/30/2012 7:24:48 PM -- Shutting down databases ...
5/30/2012 7:24:50 PM -- Instance3380.1 (complete), Instance3380.2 (complete), Instance3380.3 (complete), Instance3380.4 (complete) and Instance3380.5 (complete)
5/30/2012 7:24:50 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_0.blg has 487 samples.
5/30/2012 7:24:50 PM -- Creating test report ...
5/30/2012 7:24:53 PM -- Instance3380.1 has 13.7 for I/O Database Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 7:24:53 PM -- Instance3380.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.3 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.4 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.4 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.5 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:53 PM -- Instance3380.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:53 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:24:53 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:24:53 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_0.xml has 479 samples queried.

Server 8 – JS8

Test Summary

Overall Test Result	Pass
Machine Name	JS8
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:51 PM
Test End Time	5/30/2012 7:24:35 PM
Collection Start Time	5/30/2012 2:18:10 PM
Collection End Time	5/30/2012 4:18:05 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_3.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	792.553
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10641035034624
Final Database Size (bytes)	10646898671616
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2580.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2580.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2580.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2580.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2580.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2580.1	13.129	5.040	99.913	58.227	33824.141	35007.482	0.000	2.742	0.000	43.047	0.000	5206.723
Instance2580.2	12.972	4.681	99.250	57.709	33802.686	34979.278	0.000	2.694	0.000	42.492	0.000	5193.386
Instance2580.3	13.159	4.868	100.693	58.761	33848.788	34965.398	0.000	2.740	0.000	42.852	0.000	5168.968
Instance2580.4	13.239	4.419	100.989	58.963	33840.804	34982.691	0.000	2.699	0.000	43.329	0.000	5168.285
Instance2580.5	13.203	4.396	99.861	58.187	33939.883	34963.729	0.000	2.738	0.000	42.822	0.000	5158.194

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2580.1	31.655	261946.044
Instance2580.2	31.602	261942.678
Instance2580.3	31.613	261978.636
Instance2580.4	31.546	261956.420
Instance2580.5	31.614	261952.624

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2580.1	0.919	231542.457
Instance2580.2	0.904	232561.778
Instance2580.3	0.907	231576.896
Instance2580.4	0.917	232570.206
Instance2580.5	0.905	232058.518

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2580.1	13.129	5.040	131.568	58.227	88709.861	35007.482	4.325	2.742	0.919	43.047	231542.457	5206.723
Instance2580.2	12.972	4.681	130.852	57.709	88900.407	34979.278	4.400	2.694	0.904	42.492	232561.778	5193.386
Instance2580.3	13.159	4.868	132.306	58.761	88357.901	34965.398	4.562	2.740	0.907	42.852	231576.896	5168.968
Instance2580.4	13.239	4.419	132.535	58.963	88136.132	34982.691	4.352	2.699	0.917	43.329	232570.206	5168.285
Instance2580.5	13.203	4.396	131.476	58.187	88767.581	34963.729	4.446	2.738	0.905	42.822	232058.518	5158.194

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.957	0.000	2.430
Available MBytes	60590.486	60485.000	60640.000
Free System Page Table Entries	33555608.781	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52912247.716	52723712.000	53088256.000
Pool Paged Bytes	101639272.752	97468416.000	153571328.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:17 AM -- Jetstress testing begins …
5/30/2012 8:57:17 AM -- Preparing for testing …
5/30/2012 8:57:22 AM -- Attaching databases …
5/30/2012 8:57:22 AM -- Preparations for testing are complete.
5/30/2012 8:57:22 AM -- Starting transaction dispatch ..
5/30/2012 8:57:22 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:22 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:29 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:29 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:35 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:35 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:35 AM -- Attaining prerequisites:
5/30/2012 8:59:26 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216254000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:27 AM -- Performance logging has ended.
5/30/2012 11:23:17 AM -- JetInterop batch transaction stats: 37030, 37517, 37438, 37347 and 37461.
5/30/2012 11:23:17 AM -- Dispatching transactions ends.
5/30/2012 11:23:17 AM -- Shutting down databases …
5/30/2012 11:23:21 AM -- Instance2580.1 (complete), Instance2580.2 (complete), Instance2580.3 (complete), Instance2580.4 (complete) and Instance2580.5 (complete)
5/30/2012 11:23:21 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_29.blg has 486 samples.
5/30/2012 11:23:21 AM -- Creating test report …
5/30/2012 11:23:24 AM -- Instance2580.1 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.1 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.1 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.2 has 12.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.2 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.2 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.3 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.3 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.3 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.4 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.4 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.5 has 13.6 for I/O Database Reads Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.5 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:24 AM -- Instance2580.5 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:24 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:24 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:24 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_29.xml has 478 samples queried.
5/30/2012 11:23:25 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_29.html was saved.
5/30/2012 11:23:26 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:26 AM -- Verifying database checksums ...
5/30/2012 2:06:44 PM -- C:\dbroot\db1 (32% processed), C:\dbroot\db2 (34% processed), C:\dbroot\db3 (32% processed), C:\dbroot\db4 (33% processed) and C:\dbroot\db5 (32% processed)
5/30/2012 2:06:44 PM -- Verifying log checksums ...
5/30/2012 2:06:44 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:44 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_44.evt is saved.
5/30/2012 2:06:44 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_44.evt is saved.
5/30/2012 2:06:44 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_44.xml was saved.
5/30/2012 2:06:44 PM -- Jetstress testing has ended.
5/30/2012 2:15:51 PM -- Jetstress testing begins ...
5/30/2012 2:15:51 PM -- Preparing for testing ...
5/30/2012 2:15:57 PM -- Attaching databases ...
5/30/2012 2:15:57 PM -- Preparations for testing are complete.
5/30/2012 2:15:57 PM -- Starting transaction dispatch ..
5/30/2012 2:15:57 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:15:57 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:16:03 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:16:03 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:16:08 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:16:08 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:16:08 PM -- Attaining prerequisites:
5/30/2012 2:18:10 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213854000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:18:10 PM -- Performance logging has ended.
5/30/2012 7:24:33 PM -- JetInterop batch transaction stats: 81591, 80743, 81207, 81489 and 81112.
5/30/2012 7:24:34 PM -- Dispatching transactions ends.
5/30/2012 7:24:34 PM -- Shutting down databases ...
5/30/2012 7:24:35 PM -- Instance2580.1 (complete), Instance2580.2 (complete), Instance2580.3 (complete), Instance2580.4 (complete) and Instance2580.5 (complete)
5/30/2012 7:24:35 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_3.blg has 487 samples.
5/30/2012 7:24:35 PM -- Creating test report ...
5/30/2012 7:24:38 PM -- Instance2580.1 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 7:24:38 PM -- Instance2580.2 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.2 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.3 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.4 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.4 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.4 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.5 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:38 PM -- Instance2580.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:38 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:24:38 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:24:38 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_3.xml has 478 samples queried.

Server 9 – JS9

Test Summary

Overall Test Result	Pass
Machine Name	JS9
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:56 PM
Test End Time	5/30/2012 7:24:41 PM
Collection Start Time	5/30/2012 2:18:16 PM
Collection End Time	5/30/2012 4:18:10 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_7.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	790.236
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10641873895424
Final Database Size (bytes)	10647620091904
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2108.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2108.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2108.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2108.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2108.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2108.1	13.837	5.106	100.539	59.046	33776.914	34908.735	0.000	2.740	0.000	43.352	0.000	5095.060
Instance2108.2	12.957	4.770	99.170	58.184	33834.746	34920.130	0.000	2.763	0.000	42.573	0.000	5144.574
Instance2108.3	13.025	4.930	99.304	58.347	33920.172	34915.632	0.000	2.731	0.000	42.892	0.000	5126.677
Instance2108.4	12.993	4.505	99.257	58.345	33869.277	34937.222	0.000	2.764	0.000	42.616	0.000	5159.267
Instance2108.5	13.077	4.492	99.573	58.471	33914.455	34956.041	0.000	2.732	0.000	43.096	0.000	5138.674

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2108.1	31.623	261988.882
Instance2108.2	31.703	261933.697
Instance2108.3	31.708	261937.510
Instance2108.4	31.704	261926.205
Instance2108.5	31.673	261967.460

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2108.1	0.905	232563.973
Instance2108.2	0.899	231406.683
Instance2108.3	0.901	231588.716
Instance2108.4	0.900	231588.423
Instance2108.5	0.907	232561.778

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2108.1	13.837	5.106	132.162	59.046	88382.357	34908.735	4.412	2.740	0.905	43.352	232563.973	5095.060
Instance2108.2	12.957	4.770	130.873	58.184	89089.665	34920.130	4.426	2.763	0.899	42.573	231406.683	5144.574
Instance2108.3	13.025	4.930	131.012	58.347	89105.813	34915.632	4.466	2.731	0.901	42.892	231588.716	5126.677
Instance2108.4	12.993	4.505	130.961	58.345	89078.637	34937.222	4.355	2.764	0.900	42.616	231588.423	5159.267
Instance2108.5	13.077	4.492	131.246	58.471	88949.278	34956.041	4.447	2.732	0.907	43.096	232561.778	5138.674

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.971	0.000	2.534
Available MBytes	60591.643	60470.000	60614.000
Free System Page Table Entries	33555608.900	33555606.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	52792001.470	52768768.000	52916224.000
Pool Paged Bytes	105066025.687	97566720.000	147451904.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:20 AM -- Jetstress testing begins …
5/30/2012 8:57:20 AM -- Preparing for testing …
5/30/2012 8:57:26 AM -- Attaching databases …
5/30/2012 8:57:26 AM -- Preparations for testing are complete.
5/30/2012 8:57:26 AM -- Starting transaction dispatch ..
5/30/2012 8:57:26 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 8:57:26 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 8:57:32 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 8:57:32 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 8:57:39 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 8:57:39 AM -- Performance logging started (interval: 15000 ms).
5/30/2012 8:57:39 AM -- Attaining prerequisites:
5/30/2012 8:59:32 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209950000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 10:59:33 AM -- Performance logging has ended.
5/30/2012 11:23:18 AM -- JetInterop batch transaction stats: 37869, 38058, 37960, 37858 and 37754.
5/30/2012 11:23:19 AM -- Dispatching transactions ends.
5/30/2012 11:23:19 AM -- Shutting down databases …
5/30/2012 11:23:27 AM -- Instance2108.1 (complete), Instance2108.2 (complete), Instance2108.3 (complete), Instance2108.4 (complete) and Instance2108.5 (complete)
5/30/2012 11:23:27 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_32.blg has 486 samples.
5/30/2012 11:23:27 AM -- Creating test report …
5/30/2012 11:23:30 AM -- Instance2108.1 has 13.8 for I/O Database Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.1 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.1 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.2 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.2 has 2.9 for I/O Log Writes Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.2 has 2.9 for I/O Log Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.3 has 12.9 for I/O Database Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.3 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.3 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.4 has 13.5 for I/O Database Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.5 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.5 has 3.2 for I/O Log Writes Average Latency.
5/30/2012 11:23:30 AM -- Instance2108.5 has 3.2 for I/O Log Reads Average Latency.
5/30/2012 11:23:30 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:30 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:30 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_32.xml has 478 samples queried.
5/30/2012 11:23:31 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_32.html was saved.
5/30/2012 11:23:32 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:32 AM -- Verifying database checksums ...
5/30/2012 2:06:48 PM -- C:\dbroot\db1 (33% processed), C:\dbroot\db2 (31% processed), C:\dbroot\db3 (32% processed), C:\dbroot\db4 (30% processed) and C:\dbroot\db5 (32% processed)
5/30/2012 2:06:49 PM -- Verifying log checksums ...
5/30/2012 2:06:49 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:49 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_49.evt is saved.
5/30/2012 2:06:49 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_49.evt is saved.
5/30/2012 2:06:49 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_49.xml was saved.
5/30/2012 2:06:49 PM -- Jetstress testing has ended.
5/30/2012 2:15:56 PM -- Jetstress testing begins ...
5/30/2012 2:15:56 PM -- Preparing for testing ...
5/30/2012 2:16:01 PM -- Attaching databases ...
5/30/2012 2:16:01 PM -- Preparations for testing are complete.
5/30/2012 2:16:01 PM -- Starting transaction dispatch ..
5/30/2012 2:16:01 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:16:01 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:16:07 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:16:07 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:16:13 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:16:13 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:16:13 PM -- Attaining prerequisites:
5/30/2012 2:18:16 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213280000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:18:17 PM -- Performance logging has ended.
5/30/2012 7:24:36 PM -- JetInterop batch transaction stats: 81813, 80968, 80521, 81378 and 80880.
5/30/2012 7:24:37 PM -- Dispatching transactions ends.
5/30/2012 7:24:37 PM -- Shutting down databases ...
5/30/2012 7:24:41 PM -- Instance2108.1 (complete), Instance2108.2 (complete), Instance2108.3 (complete), Instance2108.4 (complete) and Instance2108.5 (complete)
5/30/2012 7:24:41 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_7.blg has 487 samples.
5/30/2012 7:24:41 PM -- Creating test report ...
5/30/2012 7:24:44 PM -- Instance2108.1 has 13.8 for I/O Database Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 7:24:44 PM -- Instance2108.2 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.2 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.3 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.4 has 13.0 for I/O Database Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.4 has 2.8 for I/O Log Writes Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.4 has 2.8 for I/O Log Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.5 has 13.1 for I/O Database Reads Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:44 PM -- Instance2108.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:44 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:24:44 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:24:44 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_7.xml has 478 samples queried.

Server 10 – JS10

Test Summary

Overall Test Result	Pass
Machine Name	JS10
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	5/30/2012 2:15:59 PM
Test End Time	5/30/2012 7:24:42 PM
Collection Start Time	5/30/2012 2:18:17 PM
Collection End Time	5/30/2012 4:18:12 PM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_10.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	780.404
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10640028401664
Final Database Size (bytes)	10645724266496
Database Files (Count)	5

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3876.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3876.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3876.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3876.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3876.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3876.1	13.893	5.071	97.982	57.753	33808.408	34923.516	0.000	2.738	0.000	42.812	0.000	5089.931
Instance3876.2	13.180	4.680	98.193	57.732	33792.449	34920.697	0.000	2.702	0.000	42.226	0.000	5112.471
Instance3876.3	13.208	4.888	98.634	58.034	33831.746	34951.407	0.000	2.743	0.000	42.638	0.000	5112.213
Instance3876.4	13.179	4.448	97.662	57.483	33912.745	34934.684	0.000	2.697	0.000	42.444	0.000	5145.467
Instance3876.5	13.269	4.455	98.806	58.126	33721.164	34902.883	0.000	2.735	0.000	42.785	0.000	5124.972

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3876.1	31.582	261941.557
Instance3876.2	31.713	261952.456
Instance3876.3	31.631	261934.161
Instance3876.4	31.666	261934.510
Instance3876.5	31.575	261942.538

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3876.1	0.894	231593.302
Instance3876.2	0.885	231587.110
Instance3876.3	0.894	232561.485
Instance3876.4	0.894	232069.040
Instance3876.5	0.899	232075.247

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3876.1	13.893	5.071	129.564	57.753	89417.491	34923.516	4.545	2.738	0.894	42.812	231593.302	5089.931
Instance3876.2	13.180	4.680	129.906	57.732	89491.539	34920.697	4.385	2.702	0.885	42.226	231587.110	5112.471
Instance3876.3	13.208	4.888	130.265	58.034	89219.553	34951.407	4.471	2.743	0.894	42.638	232561.485	5112.213
Instance3876.4	13.179	4.448	129.328	57.483	89743.579	34934.684	4.456	2.697	0.894	42.444	232069.040	5145.467
Instance3876.5	13.269	4.455	130.381	58.126	88990.635	34902.883	4.309	2.735	0.899	42.785	232075.247	5124.972

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	0.952	0.522	2.358
Available MBytes	60590.023	60471.000	60636.000
Free System Page Table Entries	33555610.050	33555603.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53022925.228	53006336.000	53088256.000
Pool Paged Bytes	101580902.614	97529856.000	145264640.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

5/30/2012 8:57:11 AM -- Jetstress testing begins …

5/30/2012 8:57:11 AM -- Preparing for testing …

5/30/2012 8:57:17 AM -- Attaching databases …

5/30/2012 8:57:17 AM -- Preparations for testing are complete.

5/30/2012 8:57:17 AM -- Starting transaction dispatch ..

5/30/2012 8:57:17 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

5/30/2012 8:57:17 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

5/30/2012 8:57:23 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

5/30/2012 8:57:23 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

5/30/2012 8:57:29 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

5/30/2012 8:57:29 AM -- Performance logging started (interval: 15000 ms).

5/30/2012 8:57:29 AM -- Attaining prerequisites:

5/30/2012 8:59:19 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216291000.0 (lower bound: 1207960000.0, upper bound: none)

5/30/2012 10:59:20 AM -- Performance logging has ended.

5/30/2012 11:23:21 AM -- JetInterop batch transaction stats: 36669, 37002, 36832, 36930 and 37129.

5/30/2012 11:23:21 AM -- Dispatching transactions ends.

5/30/2012 11:23:21 AM -- Shutting down databases …

5/30/2012 11:23:30 AM -- Instance3876.1 (complete), Instance3876.2 (complete), Instance3876.3 (complete), Instance3876.4 (complete) and Instance3876.5 (complete)

5/30/2012 11:23:30 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_23.blg has 486 samples.

5/30/2012 11:23:30 AM -- Creating test report …

5/30/2012 11:23:33 AM -- Instance3876.1 has 14.2 for I/O Database Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.1 has 2.8 for I/O Log Writes Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.1 has 2.8 for I/O Log Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.2 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.2 has 3.2 for I/O Log Writes Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.2 has 3.2 for I/O Log Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.3 has 13.6 for I/O Database Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.3 has 2.8 for I/O Log Writes Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.3 has 2.8 for I/O Log Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.4 has 13.0 for I/O Database Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.4 has 3.2 for I/O Log Writes Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.4 has 3.2 for I/O Log Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.5 has 13.6 for I/O Database Reads Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.5 has 2.8 for I/O Log Writes Average Latency.

5/30/2012 11:23:33 AM -- Instance3876.5 has 2.8 for I/O Log Reads Average Latency.

5/30/2012 11:23:33 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

5/30/2012 11:23:33 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 11:23:33 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_23.xml has 478 samples queried.
5/30/2012 11:23:34 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_8_57_23.html was saved.
5/30/2012 11:23:35 AM -- Performance logging started (interval: 30000 ms).
5/30/2012 11:23:35 AM -- Verifying database checksums ...
5/30/2012 2:06:54 PM -- C:\dbroot\db1 (31% processed), C:\dbroot\db2 (32% processed), C:\dbroot\db3 (30% processed), C:\dbroot\db4 (32% processed) and C:\dbroot\db5 (30% processed)
5/30/2012 2:06:55 PM -- Verifying log checksums ...
5/30/2012 2:06:55 PM -- C:\logroot\log1 (0 logs processed), C:\logroot\log2 (0 logs processed), C:\logroot\log3 (0 logs processed), C:\logroot\log4 (0 logs processed) and C:\logroot\log5 (0 logs processed)
5/30/2012 2:06:55 PM -- C:\Program Files\Exchange Jetstress\Application_2012_5_30_14_6_55.evt is saved.
5/30/2012 2:06:55 PM -- C:\Program Files\Exchange Jetstress\System_2012_5_30_14_6_55.evt is saved.
5/30/2012 2:06:55 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_5_30_14_6_55.xml was saved.
5/30/2012 2:06:55 PM -- Jetstress testing has ended.
5/30/2012 2:15:59 PM -- Jetstress testing begins ...
5/30/2012 2:15:59 PM -- Preparing for testing ...
5/30/2012 2:16:04 PM -- Attaching databases ...
5/30/2012 2:16:04 PM -- Preparations for testing are complete.
5/30/2012 2:16:04 PM -- Starting transaction dispatch ..
5/30/2012 2:16:04 PM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
5/30/2012 2:16:04 PM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
5/30/2012 2:16:10 PM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
5/30/2012 2:16:10 PM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
5/30/2012 2:16:16 PM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
5/30/2012 2:16:16 PM -- Performance logging started (interval: 15000 ms).
5/30/2012 2:16:16 PM -- Attaining prerequisites:
5/30/2012 2:18:17 PM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210524000.0 (lower bound: 1207960000.0, upper bound: none)
5/30/2012 4:18:17 PM -- Performance logging has ended.
5/30/2012 7:24:39 PM -- JetInterop batch transaction stats: 80434, 80197, 80492, 80435 and 80684.
5/30/2012 7:24:40 PM -- Dispatching transactions ends.
5/30/2012 7:24:40 PM -- Shutting down databases ...
5/30/2012 7:24:42 PM -- Instance3876.1 (complete), Instance3876.2 (complete), Instance3876.3 (complete), Instance3876.4 (complete) and Instance3876.5 (complete)
5/30/2012 7:24:42 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_10.blg has 487 samples.
5/30/2012 7:24:42 PM -- Creating test report ...
5/30/2012 7:24:45 PM -- Instance3876.1 has 13.9 for I/O Database Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.1 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.1 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.2 has 13.2 for I/O Database Reads Average Latency.

5/30/2012 7:24:45 PM -- Instance3876.2 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.2 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.3 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.3 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.3 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.4 has 13.2 for I/O Database Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.4 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.4 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.5 has 13.3 for I/O Database Reads Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.5 has 2.7 for I/O Log Writes Average Latency.
5/30/2012 7:24:45 PM -- Instance3876.5 has 2.7 for I/O Log Reads Average Latency.
5/30/2012 7:24:45 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
5/30/2012 7:24:45 PM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
5/30/2012 7:24:45 PM -- C:\Program Files\Exchange Jetstress\Performance_2012_5_30_14_16_10.xml has 478 samples queried.

Appendix B: Stress Testing

Server 1 – JS1

Test Summary

Overall Test Result	Pass
Machine Name	JS1
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:24 AM
Test End Time	6/5/2012 9:55:13 AM
Collection Start Time	6/4/2012 9:53:23 AM
Collection End Time	6/5/2012 9:53:13 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_36.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	807.067
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513704353792
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance488.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance488.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance488.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance488.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance488.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance488.1	13.314	4.824	102.029	59.089	33733.795	35784.538	0.000	2.684	0.000	45.145	0.000	5166.276
Instance488.2	12.782	4.542	102.422	59.352	33823.896	35760.775	0.000	2.670	0.000	45.135	0.000	5186.408
Instance488.3	12.759	4.633	102.087	59.142	33833.781	35792.431	0.000	2.686	0.000	44.908	0.000	5179.793
Instance488.4	12.764	4.286	102.068	59.132	33841.502	35779.295	0.000	2.674	0.000	44.984	0.000	5188.371
Instance488.5	12.759	4.235	102.397	59.349	33858.094	35776.507	0.000	2.688	0.000	45.089	0.000	5190.679

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance488.1	31.634	261942.718
Instance488.2	31.688	261939.613
Instance488.3	31.680	261944.928
Instance488.4	31.692	261948.735
Instance488.5	31.694	261948.592

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance488.1	0.956	232148.499
Instance488.2	0.960	232356.876
Instance488.3	0.953	232352.308
Instance488.4	0.957	232273.920
Instance488.5	0.959	232228.228

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance488.1	13.314	4.824	133.663	59.089	87744.549	35784.538	4.514	2.684	0.956	45.145	232148.499	5166.276
Instance488.2	12.782	4.542	134.109	59.352	87723.351	35760.775	4.392	2.670	0.960	45.135	232356.876	5186.408
Instance488.3	12.759	4.633	133.767	59.142	87857.076	35792.431	4.394	2.686	0.953	44.908	232352.308	5179.793
Instance488.4	12.764	4.286	133.760	59.132	87886.780	35779.295	4.394	2.674	0.957	44.984	232273.920	5188.371
Instance488.5	12.759	4.235	134.091	59.349	87770.247	35776.507	4.494	2.688	0.959	45.089	232228.228	5190.679

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.033	0.000	5.215
Available MBytes	60206.225	60138.000	60387.000
Free System Page Table Entries	33555607.974	33555576.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	57178989.816	57077760.000	57360384.000
Pool Paged Bytes	162603165.401	160587776.000	172171264.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

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Test Log

6/1/2012 8:24:33 PM -- Preparing for testing ...
6/1/2012 8:26:53 PM -- Preparing for testing ...
6/1/2012 8:26:53 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:26:53 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:26:53 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 6:12:10 PM -- 100.0% of 1.9 TB complete (667498972 records inserted).
6/2/2012 6:12:11 PM -- 100.0% of 1.9 TB complete (667498975 records inserted).
6/2/2012 6:12:13 PM -- Duplicating 4 databases:
6/3/2012 10:40:07 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:40:12 PM -- Attaching databases ...
6/3/2012 10:40:12 PM -- Preparations for testing are complete.
6/4/2012 9:51:24 AM -- Jetstress testing begins ...
6/4/2012 9:51:24 AM -- Preparing for testing ...
6/4/2012 9:51:30 AM -- Attaching databases ...
6/4/2012 9:51:30 AM -- Preparations for testing are complete.
6/4/2012 9:51:30 AM -- Starting transaction dispatch ..
6/4/2012 9:51:30 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:30 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:36 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:36 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:41 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:41 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:41 AM -- Attaining prerequisites:
6/4/2012 9:53:23 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1211773000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:23 AM -- Performance logging has ended.
6/5/2012 9:55:11 AM -- JetInterop batch transaction stats: 399729, 400602, 400258, 399999 and 401168.
6/5/2012 9:55:12 AM -- Dispatching transactions ends.
6/5/2012 9:55:12 AM -- Shutting down databases ...
6/5/2012 9:55:13 AM -- Instance488.1 (complete), Instance488.2 (complete), Instance488.3 (complete), Instance488.4 (complete) and Instance488.5 (complete)
6/5/2012 9:55:13 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_36.blg has 5757 samples.
6/5/2012 9:55:13 AM -- Creating test report ...
6/5/2012 9:55:46 AM -- Instance488.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:46 AM -- Instance488.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.2 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:46 AM -- Instance488.2 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:46 AM -- Instance488.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:46 AM -- Instance488.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:46 AM -- Instance488.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:46 AM -- Instance488.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:46 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:55:46 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:55:46 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_36.xml has 5750 samples queried.
6/5/2012 9:55:47 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_36.html was saved.
6/5/2012 9:55:48 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:55:48 AM -- Verifying database checksums ...
6/5/2012 5:57:19 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 5:57:19 PM -- Performance logging has ended.
6/5/2012 5:57:19 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_47.blg has 962 samples.

Server 2 – JS2

Test Summary

Overall Test Result	Pass
Machine Name	JS2
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:31 AM
Test End Time	6/5/2012 9:55:22 AM
Collection Start Time	6/4/2012 9:53:35 AM
Collection End Time	6/5/2012 9:53:34 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	805.902
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513771462656
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3708.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3708.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3708.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3708.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3708.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	13.413	4.884	102.134	59.261	33726.025	35793.807	0.000	2.713	0.000	45.078	0.000	5200.748
Instance3708.2	12.747	4.529	102.077	59.227	33835.036	35769.851	0.000	2.734	0.000	44.849	0.000	5208.477
Instance3708.3	12.820	4.694	102.122	59.253	33814.314	35791.888	0.000	2.713	0.000	44.914	0.000	5213.589
Instance3708.4	12.719	4.266	101.796	59.044	33840.658	35800.593	0.000	2.735	0.000	44.801	0.000	5212.009
Instance3708.5	12.826	4.271	101.884	59.104	33811.762	35783.636	0.000	2.715	0.000	44.897	0.000	5200.542

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3708.1	31.661	261941.584
Instance3708.2	31.693	261942.096
Instance3708.3	31.704	261937.325
Instance3708.4	31.714	261953.732
Instance3708.5	31.683	261939.577

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3708.1	0.961	232313.962
Instance3708.2	0.958	232194.421
Instance3708.3	0.960	232269.379
Instance3708.4	0.957	232109.687
Instance3708.5	0.958	232355.282

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	13.413	4.884	133.794	59.261	87730.468	35793.807	4.468	2.713	0.961	45.078	232313.962	5200.748
Instance3708.2	12.747	4.529	133.770	59.227	87879.000	35769.851	4.581	2.734	0.958	44.849	232194.421	5208.477
Instance3708.3	12.820	4.694	133.826	59.253	87857.203	35791.888	4.503	2.713	0.960	44.914	232269.379	5213.589
Instance3708.4	12.719	4.266	133.510	59.044	88027.352	35800.593	4.511	2.735	0.957	44.801	232109.687	5212.009
Instance3708.5	12.826	4.271	133.567	59.104	87925.982	35783.636	4.471	2.715	0.958	44.897	232355.282	5200.542

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.043	0.000	4.052
Available MBytes	60248.288	60183.000	60344.000
Free System Page Table Entries	33555608.970	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53906948.897	53579776.000	54046720.000
Pool Paged Bytes	147324120.338	145358848.000	151920640.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:30:21 PM -- Preparing for testing ...
6/1/2012 8:30:21 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:30:21 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:30:21 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499232 records inserted).
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499672 records inserted).
6/2/2012 5:49:42 PM -- Duplicating 4 databases:
6/3/2012 10:02:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:02:29 PM -- Attaching databases ...
6/3/2012 10:02:29 PM -- Preparations for testing are complete.
6/4/2012 9:51:31 AM -- Jetstress testing begins ...
6/4/2012 9:51:31 AM -- Preparing for testing ...
6/4/2012 9:51:36 AM -- Attaching databases ...
6/4/2012 9:51:36 AM -- Preparations for testing are complete.
6/4/2012 9:51:36 AM -- Starting transaction dispatch ..
6/4/2012 9:51:37 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:37 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:42 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:42 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:49 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:49 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:49 AM -- Attaining prerequisites:
6/4/2012 9:53:35 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210589000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:36 AM -- Performance logging has ended.
6/5/2012 9:55:21 AM -- JetInterop batch transaction stats: 400717, 400984, 400902, 399809 and 400181.
6/5/2012 9:55:21 AM -- Dispatching transactions ends.
6/5/2012 9:55:21 AM -- Shutting down databases ...
6/5/2012 9:55:22 AM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
6/5/2012 9:55:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.blg has 5758 samples.
6/5/2012 9:55:22 AM -- Creating test report ...
6/5/2012 9:55:55 AM -- Instance3708.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.4 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:55:55 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:55:55 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.xml has 5750 samples queried.
6/5/2012 9:55:56 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.html was saved.
6/5/2012 9:55:57 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:55:57 AM -- Verifying database checksums ...
6/5/2012 6:01:41 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:41 PM -- Performance logging has ended.
6/5/2012 6:01:41 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_56.blg has 970 samples.

Server 3 – JS3

Test Summary

Overall Test Result	Pass
Machine Name	JS3
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:39 AM
Test End Time	6/5/2012 9:55:32 AM
Collection Start Time	6/4/2012 9:53:54 AM
Collection End Time	6/5/2012 9:53:40 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	805.71
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513788239872
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3332.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3332.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3332.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3332.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3332.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3332.1	13.382	4.858	101.894	59.099	33735.041	35783.734	0.000	2.730	0.000	44.910	0.000	5191.532
Instance3332.2	12.773	4.565	102.093	59.241	33802.413	35792.068	0.000	2.715	0.000	44.964	0.000	5224.991
Instance3332.3	12.758	4.678	101.877	59.087	33851.078	35800.998	0.000	2.734	0.000	44.759	0.000	5208.323
Instance3332.4	12.787	4.306	102.099	59.243	33772.340	35782.594	0.000	2.718	0.000	44.935	0.000	5212.601
Instance3332.5	12.779	4.252	101.931	59.146	33826.275	35793.623	0.000	2.738	0.000	44.827	0.000	5219.415

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3332.1	31.654	261947.093
Instance3332.2	31.730	261943.259
Instance3332.3	31.726	261961.768
Instance3332.4	31.695	261947.021
Instance3332.5	31.688	261926.212

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3332.1	0.956	232190.171
Instance3332.2	0.964	232517.428
Instance3332.3	0.956	232074.578
Instance3332.4	0.961	232311.480
Instance3332.5	0.960	232196.323

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3332.1	13.382	4.858	133.548	59.099	87826.929	35783.734	4.501	2.730	0.956	44.910	232190.171	5191.532
Instance3332.2	12.773	4.565	133.823	59.241	87896.221	35792.068	4.439	2.715	0.964	44.964	232517.428	5224.991
Instance3332.3	12.758	4.678	133.603	59.087	88019.270	35800.998	4.511	2.734	0.956	44.759	232074.578	5208.323
Instance3332.4	12.787	4.306	133.794	59.243	87826.059	35782.594	4.434	2.718	0.961	44.935	232311.480	5212.601
Instance3332.5	12.779	4.252	133.618	59.146	87920.094	35793.623	4.500	2.738	0.960	44.827	232196.323	5219.415

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.050	0.000	4.727
Available MBytes	60267.276	60180.000	60445.000
Free System Page Table Entries	33555607.978	33555575.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53675998.882	53481472.000	53870592.000
Pool Paged Bytes	147043405.810	144338944.000	150618112.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:33:00 PM -- Preparing for testing ...
6/1/2012 8:33:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:33:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:33:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667497883 records inserted).
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667498968 records inserted).
6/2/2012 7:28:55 PM -- Duplicating 4 databases:
6/3/2012 11:05:42 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:48 PM -- Attaching databases ...
6/3/2012 11:05:48 PM -- Preparations for testing are complete.
6/4/2012 9:51:39 AM -- Jetstress testing begins ...
6/4/2012 9:51:39 AM -- Preparing for testing ...
6/4/2012 9:51:44 AM -- Attaching databases ...
6/4/2012 9:51:44 AM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Starting transaction dispatch ..
6/4/2012 9:51:44 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:44 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:50 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:50 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:56 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:56 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:56 AM -- Attaining prerequisites:
6/4/2012 9:53:54 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216696000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:55 AM -- Performance logging has ended.
6/5/2012 9:55:30 AM -- JetInterop batch transaction stats: 399233, 401291, 399511, 400818 and 399793.
6/5/2012 9:55:30 AM -- Dispatching transactions ends.
6/5/2012 9:55:30 AM -- Shutting down databases ...
6/5/2012 9:55:32 AM -- Instance3332.1 (complete), Instance3332.2 (complete), Instance3332.3 (complete), Instance3332.4 (complete) and Instance3332.5 (complete)
6/5/2012 9:55:32 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.blg has 5758 samples.
6/5/2012 9:55:32 AM -- Creating test report ...
6/5/2012 9:56:04 AM -- Instance3332.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:04 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:04 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.xml has 5750 samples queried.
6/5/2012 9:56:05 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.html was saved.
6/5/2012 9:56:06 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:06 AM -- Verifying database checksums ...
6/5/2012 5:57:48 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 5:57:48 PM -- Performance logging has ended.
6/5/2012 5:57:48 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_5.blg has 962 samples.

Server 4 – JS4

Test Summary

Overall Test Result	Pass
Machine Name	JS4
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:44 AM
Test End Time	6/5/2012 9:55:37 AM
Collection Start Time	6/4/2012 9:53:56 AM
Collection End Time	6/5/2012 9:53:48 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	810.844
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485820620800
Final Database Size (bytes)	10513872125952
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3232.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3232.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3232.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3232.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3232.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3232.1	13.344	4.867	102.525	59.384	33715.218	35777.306	0.000	2.683	0.000	45.331	0.000	5175.320
Instance3232.2	12.670	4.523	102.898	59.626	33808.395	35776.082	0.000	2.702	0.000	45.272	0.000	5189.834
Instance3232.3	12.733	4.685	102.373	59.311	33833.317	35771.093	0.000	2.684	0.000	45.073	0.000	5202.646
Instance3232.4	12.648	4.264	102.993	59.678	33814.643	35778.608	0.000	2.703	0.000	45.145	0.000	5199.410
Instance3232.5	12.737	4.280	102.624	59.433	33819.247	35777.130	0.000	2.686	0.000	45.129	0.000	5196.963

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3232.1	31.637	261947.727
Instance3232.2	31.671	261947.379
Instance3232.3	31.682	261951.908
Instance3232.4	31.716	261946.543
Instance3232.5	31.677	261940.998

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3232.1	0.962	232270.705
Instance3232.2	0.963	232185.976
Instance3232.3	0.961	232312.312
Instance3232.4	0.962	232385.918
Instance3232.5	0.962	231826.201

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3232.1	13.344	4.867	134.162	59.384	87534.574	35777.306	4.464	2.683	0.962	45.331	232270.705	5175.320
Instance3232.2	12.670	4.523	134.569	59.626	87501.477	35776.082	4.405	2.702	0.963	45.272	232185.976	5189.834
Instance3232.3	12.733	4.685	134.054	59.311	87745.614	35771.093	4.433	2.684	0.961	45.073	232312.312	5202.646
Instance3232.4	12.648	4.264	134.710	59.678	87526.324	35778.608	4.475	2.703	0.962	45.145	232385.918	5199.410
Instance3232.5	12.737	4.280	134.302	59.433	87625.827	35777.130	4.423	2.686	0.962	45.129	231826.201	5196.963

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.037	0.000	2.820
Available MBytes	60272.696	60210.000	60423.000
Free System Page Table Entries	33555608.989	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53466216.163	53178368.000	53587968.000
Pool Paged Bytes	145694358.902	144379904.000	150097920.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:35:00 PM -- Preparing for testing ...
6/1/2012 8:35:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:35:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:35:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667499830 records inserted).
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667500307 records inserted).
6/2/2012 5:47:43 PM -- Duplicating 4 databases:
6/3/2012 9:39:36 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:39:42 PM -- Attaching databases ...
6/3/2012 9:39:42 PM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Jetstress testing begins ...
6/4/2012 9:51:44 AM -- Preparing for testing ...
6/4/2012 9:51:50 AM -- Attaching databases ...
6/4/2012 9:51:50 AM -- Preparations for testing are complete.
6/4/2012 9:51:50 AM -- Starting transaction dispatch ..
6/4/2012 9:51:50 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:50 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:56 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:56 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:02 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:02 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:02 AM -- Attaining prerequisites:
6/4/2012 9:53:56 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213149000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:57 AM -- Performance logging has ended.
6/5/2012 9:55:36 AM -- JetInterop batch transaction stats: 401931, 402900, 402503, 402958 and 401982.
6/5/2012 9:55:36 AM -- Dispatching transactions ends.
6/5/2012 9:55:36 AM -- Shutting down databases ...
6/5/2012 9:55:37 AM -- Instance3232.1 (complete), Instance3232.2 (complete), Instance3232.3 (complete), Instance3232.4 (complete) and Instance3232.5 (complete)
6/5/2012 9:55:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.blg has 5758 samples.
6/5/2012 9:55:37 AM -- Creating test report ...
6/5/2012 9:56:10 AM -- Instance3232.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.4 has 12.6 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.5 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:10 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:10 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.xml has 5750 samples queried.

6/5/2012 9:56:11 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.html was saved.
6/5/2012 9:56:12 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:12 AM -- Verifying database checksums ...
6/5/2012 6:01:10 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:10 PM -- Performance logging has ended.
6/5/2012 6:01:10 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_11.blg has 969 samples.

Server 5 – JS5

Test Summary

Overall Test Result	Pass
Machine Name	JS5
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:47 AM
Test End Time	6/5/2012 9:55:44 AM
Collection Start Time	6/4/2012 9:53:59 AM
Collection End Time	6/5/2012 9:53:50 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	806.143
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513754685440
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3812.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3812.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3812.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3812.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3812.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3812.1	13.366	4.864	102.039	59.177	33721.869	35794.026	0.000	2.733	0.000	45.069	0.000	5200.661
Instance3812.2	12.776	4.564	101.952	59.085	33814.600	35783.001	0.000	2.714	0.000	44.749	0.000	5191.907
Instance3812.3	12.765	4.667	101.912	59.076	33831.231	35786.070	0.000	2.736	0.000	44.734	0.000	5199.463
Instance3812.4	12.783	4.295	102.090	59.218	33797.444	35775.817	0.000	2.719	0.000	44.937	0.000	5209.292
Instance3812.5	12.781	4.255	102.273	59.321	33836.412	35789.134	0.000	2.740	0.000	44.968	0.000	5220.064

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3812.1	31.654	261947.920
Instance3812.2	31.720	261946.362
Instance3812.3	31.728	261950.540
Instance3812.4	31.718	261941.088
Instance3812.5	31.704	261956.243

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3812.1	0.961	232357.181
Instance3812.2	0.952	231984.529
Instance3812.3	0.954	232134.301
Instance3812.4	0.960	232426.463
Instance3812.5	0.963	232385.091

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
nstance3812.1	13.366	4.864	133.693	59.177	87758.172	35794.026	4.576	2.733	0.961	45.069	232357.181	5200.661
Instance3812.2	12.776	4.564	133.672	59.085	87949.941	35783.001	4.436	2.714	0.952	44.749	231984.529	5191.907
Instance3812.3	12.765	4.667	133.640	59.076	87989.444	35786.070	4.534	2.736	0.954	44.734	232134.301	5199.463
Instance3812.4	12.783	4.295	133.808	59.218	87876.862	35775.817	4.471	2.719	0.960	44.937	232426.463	5209.292
Instance3812.5	12.781	4.255	133.977	59.321	87818.314	35789.134	4.549	2.740	0.963	44.968	232385.091	5220.064

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.034	0.000	2.641
Available MBytes	60267.537	60236.000	60430.000
Free System Page Table Entries	33555096.984	33555065.000	33555099.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53474844.756	53039104.000	53612544.000
Pool Paged Bytes	146116709.136	143486976.000	153710592.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:37:25 PM -- Preparing for testing ...
6/1/2012 8:37:25 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:37:25 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:37:25 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499152 records inserted).
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499630 records inserted).
6/2/2012 7:20:48 PM -- Duplicating 4 databases:
6/3/2012 11:02:39 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:02:45 PM -- Attaching databases ...
6/3/2012 11:02:45 PM -- Preparations for testing are complete.
6/4/2012 9:51:47 AM -- Jetstress testing begins ...
6/4/2012 9:51:47 AM -- Preparing for testing ...
6/4/2012 9:51:52 AM -- Attaching databases ...
6/4/2012 9:51:52 AM -- Preparations for testing are complete.
6/4/2012 9:51:52 AM -- Starting transaction dispatch ..
6/4/2012 9:51:52 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:52 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:58 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:58 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:05 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:05 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:05 AM -- Attaining prerequisites:
6/4/2012 9:53:59 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213735000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:59 AM -- Performance logging has ended.
6/5/2012 9:55:43 AM -- JetInterop batch transaction stats: 400501, 399756, 399973, 400712 and 401287.
6/5/2012 9:55:43 AM -- Dispatching transactions ends.
6/5/2012 9:55:43 AM -- Shutting down databases ...
6/5/2012 9:55:44 AM -- Instance3812.1 (complete), Instance3812.2 (complete), Instance3812.3 (complete), Instance3812.4 (complete) and Instance3812.5 (complete)
6/5/2012 9:55:44 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.blg has 5758 samples.
6/5/2012 9:55:44 AM -- Creating test report ...
6/5/2012 9:56:17 AM -- Instance3812.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:17 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:17 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.xml has 5750 samples queried.

Server 6 – JS6

Test Summary

Overall Test Result	Pass
Machine Name	JS6
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:49 AM
Test End Time	6/5/2012 9:56:27 AM
Collection Start Time	6/4/2012 9:54:02 AM
Collection End Time	6/5/2012 9:53:53 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	810.948
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513897291776
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3472.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3472.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3472.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3472.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3472.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3472.1	13.343	4.862	102.637	59.458	33736.914	35770.815	0.000	2.677	0.000	45.304	0.000	5168.993
Instance3472.2	12.667	4.520	102.688	59.540	33785.148	35772.478	0.000	2.699	0.000	45.166	0.000	5201.789
Instance3472.3	12.751	4.677	102.791	59.596	33794.761	35773.726	0.000	2.680	0.000	45.237	0.000	5204.106
Instance3472.4	12.666	4.262	102.658	59.511	33779.534	35777.313	0.000	2.701	0.000	45.118	0.000	5197.986
Instance3472.5	12.751	4.273	102.607	59.461	33787.238	35780.212	0.000	2.681	0.000	45.145	0.000	5180.827

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3472.1	31.644	261950.499
Instance3472.2	31.685	261955.141
Instance3472.3	31.698	261939.890
Instance3472.4	31.706	261941.444
Instance3472.5	31.686	261944.900

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3472.1	0.960	232437.475
Instance3472.2	0.963	232397.046
Instance3472.3	0.966	232273.563
Instance3472.4	0.962	232388.819
Instance3472.5	0.959	232228.184

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3472.1	13.343	4.862	134.281	59.458	87516.627	35770.815	4.463	2.677	0.960	45.304	232437.475	5168.993
Instance3472.2	12.667	4.520	134.373	59.540	87587.793	35772.478	4.389	2.699	0.963	45.166	232397.046	5201.789
Instance3472.3	12.751	4.677	134.489	59.596	87566.770	35773.726	4.332	2.680	0.966	45.237	232273.563	5204.106
Instance3472.4	12.666	4.262	134.364	59.511	87618.990	35777.313	4.438	2.701	0.962	45.118	232388.819	5197.986
Instance3472.5	12.751	4.273	134.293	59.461	87620.237	35780.212	4.455	2.681	0.959	45.145	232228.184	5180.827

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.000	0.000	2.833
Available MBytes	60268.177	60235.000	60426.000
Free System Page Table Entries	33555608.975	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54036695.448	53678080.000	54235136.000
Pool Paged Bytes	145897114.820	144007168.000	149291008.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Test Log

6/1/2012 8:39:46 PM -- Preparing for testing …
6/1/2012 8:39:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:39:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:39:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667499357 records inserted).
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667500385 records inserted).
6/2/2012 5:53:05 PM -- Duplicating 4 databases:
6/3/2012 9:53:18 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:53:24 PM -- Attaching databases …
6/3/2012 9:53:24 PM -- Preparations for testing are complete.
6/4/2012 9:51:49 AM -- Jetstress testing begins …
6/4/2012 9:51:49 AM -- Preparing for testing …
6/4/2012 9:51:55 AM -- Attaching databases …
6/4/2012 9:51:55 AM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Starting transaction dispatch ..
6/4/2012 9:51:55 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:55 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:01 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:01 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:09 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:09 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:09 AM -- Attaining prerequisites:
6/4/2012 9:54:02 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209709000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:04 AM -- Performance logging has ended.
6/5/2012 9:56:22 AM -- JetInterop batch transaction stats: 402156, 402907, 403467, 401528 and 402377.
6/5/2012 9:56:22 AM -- Dispatching transactions ends.
6/5/2012 9:56:22 AM -- Shutting down databases …
6/5/2012 9:56:27 AM -- Instance3472.1 (complete), Instance3472.2 (complete), Instance3472.3 (complete), Instance3472.4 (complete) and Instance3472.5 (complete)
6/5/2012 9:56:27 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.blg has 5758 samples.
6/5/2012 9:56:27 AM -- Creating test report …
6/5/2012 9:57:00 AM -- Instance3472.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.4 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:57:00 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.xml has 5750 samples queried.
6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.html was saved.
6/5/2012 9:57:01 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:57:01 AM -- Verifying database checksums ...
6/5/2012 6:01:18 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:18 PM -- Performance logging has ended.
6/5/2012 6:01:18 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_57_0.blg has 968 samples.

Server 7 – JS7

Test Summary

Overall Test Result	Pass
Machine Name	JS7
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:53 AM
Test End Time	6/5/2012 9:55:51 AM
Collection Start Time	6/4/2012 9:54:13 AM
Collection End Time	6/5/2012 9:54:12 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	808.862
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485820620800
Final Database Size (bytes)	10513872125952
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3088.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3088.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3088.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3088.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3088.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3088.1	13.375	4.846	102.389	59.383	33709.168	35789.888	0.000	2.712	0.000	45.202	0.000	5198.737
Instance3088.2	12.765	4.544	102.327	59.351	33818.174	35779.253	0.000	2.693	0.000	44.977	0.000	5206.813
Instance3088.3	12.775	4.653	102.318	59.344	33807.005	35778.683	0.000	2.713	0.000	44.911	0.000	5217.894
Instance3088.4	12.771	4.276	102.371	59.414	33795.501	35781.324	0.000	2.695	0.000	45.078	0.000	5207.730
Instance3088.5	12.777	4.222	102.496	59.469	33831.798	35774.296	0.000	2.715	0.000	45.037	0.000	5209.146

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3088.1	31.634	261943.662
Instance3088.2	31.725	261947.756
Instance3088.3	31.703	261937.645
Instance3088.4	31.723	261948.615
Instance3088.5	31.698	261933.476

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3088.1	0.963	232263.837
Instance3088.2	0.960	232192.987
Instance3088.3	0.961	232274.535
Instance3088.4	0.962	232150.418
Instance3088.5	0.962	232273.818

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3088.1	13.375	4.846	134.023	59.383	87580.355	35789.888	4.425	2.712	0.963	45.202	232263.837	5198.737
Instance3088.2	12.765	4.544	134.053	59.351	87808.255	35779.253	4.462	2.693	0.960	44.977	232192.987	5206.813
Instance3088.3	12.775	4.653	134.021	59.344	87771.634	35778.683	4.453	2.713	0.961	44.911	232274.535	5217.894
Instance3088.4	12.771	4.276	134.094	59.414	87770.410	35781.324	4.423	2.695	0.962	45.078	232150.418	5207.730
Instance3088.5	12.777	4.222	134.194	59.469	87711.831	35774.296	4.561	2.715	0.962	45.037	232273.818	5209.146

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.024	0.000	2.946
Available MBytes	60268.065	60199.000	60364.000
Free System Page Table Entries	33555608.973	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53612926.464	53309440.000	53714944.000
Pool Paged Bytes	145597106.857	143216640.000	148619264.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:41:46 PM -- Preparing for testing ...
6/1/2012 8:41:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:41:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:41:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500049 records inserted).
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500052 records inserted).
6/2/2012 7:26:19 PM -- Duplicating 4 databases:
6/3/2012 10:59:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:59:28 PM -- Attaching databases ...
6/3/2012 10:59:28 PM -- Preparations for testing are complete.
6/4/2012 9:51:53 AM -- Jetstress testing begins ...
6/4/2012 9:51:53 AM -- Preparing for testing ...
6/4/2012 9:51:59 AM -- Attaching databases ...
6/4/2012 9:51:59 AM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Starting transaction dispatch ..
6/4/2012 9:51:59 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:59 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:05 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:05 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:11 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:11 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:11 AM -- Attaining prerequisites:
6/4/2012 9:54:13 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1211351000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:13 AM -- Performance logging has ended.
6/5/2012 9:55:49 AM -- JetInterop batch transaction stats: 402242, 401278, 401306, 401532 and 401631.
6/5/2012 9:55:49 AM -- Dispatching transactions ends.
6/5/2012 9:55:49 AM -- Shutting down databases ...
6/5/2012 9:55:51 AM -- Instance3088.1 (complete), Instance3088.2 (complete), Instance3088.3 (complete), Instance3088.4 (complete) and Instance3088.5 (complete)
6/5/2012 9:55:51 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.blg has 5759 samples.
6/5/2012 9:55:51 AM -- Creating test report ...
6/5/2012 9:56:22 AM -- Instance3088.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:22 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.xml has 5750 samples queried.
6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.html was saved.
6/5/2012 9:56:23 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:23 AM -- Verifying database checksums ...
6/5/2012 5:58:04 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 5:58:04 PM -- Performance logging has ended.
6/5/2012 5:58:04 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_22.blg has 962 samples.

Server 8 – JS8

Test Summary

Overall Test Result	Pass
Machine Name	JS8
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:55 AM
Test End Time	6/5/2012 9:55:58 AM
Collection Start Time	6/4/2012 9:54:14 AM
Collection End Time	6/5/2012 9:54:14 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	811.812
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513947623424
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance3784.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3784.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3784.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3784.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3784.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3784.1	13.390	4.871	102.739	59.584	33732.029	35780.295	0.000	2.689	0.000	45.261	0.000	5190.343
Instance3784.2	12.711	4.524	102.807	59.642	33812.165	35778.194	0.000	2.717	0.000	45.109	0.000	5208.592
Instance3784.3	12.778	4.687	102.631	59.536	33783.380	35773.365	0.000	2.694	0.000	45.081	0.000	5217.748
Instance3784.4	12.702	4.258	102.897	59.700	33829.930	35785.594	0.000	2.713	0.000	45.257	0.000	5213.127
Instance3784.5	12.797	4.261	102.707	59.570	33816.877	35766.551	0.000	2.697	0.000	45.241	0.000	5202.988

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3784.1	31.633	261946.663
Instance3784.2	31.680	261942.656
Instance3784.3	31.697	261950.116
Instance3784.4	31.697	261954.121
Instance3784.5	31.672	261940.409

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance3784.1	0.963	232312.282
Instance3784.2	0.963	232190.229
Instance3784.3	0.965	232306.541
Instance3784.4	0.968	232311.500
Instance3784.5	0.966	232239.056

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3784.1	13.390	4.871	134.372	59.584	87456.869	35780.295	4.395	2.689	0.963	45.261	232312.282	5190.343
Instance3784.2	12.711	4.524	134.487	59.642	87551.076	35778.194	4.437	2.717	0.963	45.109	232190.229	5208.592
Instance3784.3	12.778	4.687	134.328	59.536	87623.178	35773.365	4.380	2.694	0.965	45.081	232306.541	5217.748
Instance3784.4	12.702	4.258	134.594	59.700	87553.000	35785.594	4.397	2.713	0.968	45.257	232311.500	5213.127
Instance3784.5	12.797	4.261	134.379	59.570	87584.324	35766.551	4.424	2.697	0.966	45.241	232239.056	5202.988

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.028	0.000	2.952
Available MBytes	60261.552	60212.000	60363.000
Free System Page Table Entries	33555608.982	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53617334.418	53235712.000	53755904.000
Pool Paged Bytes	145794105.156	144048128.000	149426176.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:43:38 PM -- Preparing for testing …
6/1/2012 8:43:38 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:43:39 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:43:39 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:40:44 PM -- 100.0% of 1.9 TB complete (667498845 records inserted).
6/2/2012 5:40:45 PM -- 100.0% of 1.9 TB complete (667499994 records inserted).
6/2/2012 5:40:45 PM -- Duplicating 4 databases:
6/3/2012 9:24:17 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:24:22 PM -- Attaching databases …
6/3/2012 9:24:22 PM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Jetstress testing begins …
6/4/2012 9:51:55 AM -- Preparing for testing …
6/4/2012 9:52:01 AM -- Attaching databases …
6/4/2012 9:52:01 AM -- Preparations for testing are complete.
6/4/2012 9:52:01 AM -- Starting transaction dispatch ..
6/4/2012 9:52:01 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:01 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:07 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:07 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:14 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:14 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:14 AM -- Attaining prerequisites:
6/4/2012 9:54:14 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208345000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:15 AM -- Performance logging has ended.
6/5/2012 9:55:56 AM -- JetInterop batch transaction stats: 402639, 403669, 402428, 403571 and 402093.
6/5/2012 9:55:56 AM -- Dispatching transactions ends.
6/5/2012 9:55:56 AM -- Shutting down databases …
6/5/2012 9:55:58 AM -- Instance3784.1 (complete), Instance3784.2 (complete), Instance3784.3 (complete), Instance3784.4 (complete) and Instance3784.5 (complete)
6/5/2012 9:55:58 AM -- [C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg](C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg) has 5759 samples.
6/5/2012 9:55:58 AM -- Creating test report …
6/5/2012 9:56:28 AM -- Instance3784.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:28 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:28 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.xml has 5750 samples queried.
6/5/2012 9:56:29 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.html was saved.
6/5/2012 9:56:30 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:30 AM -- Verifying database checksums ...
6/5/2012 6:01:42 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:42 PM -- Performance logging has ended.
6/5/2012 6:01:42 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_29.blg has 969 samples.

Server 9 JS9

Test Summary

Overall Test Result	Pass
Machine Name	JS9
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:51:59 AM
Test End Time	6/5/2012 9:56:06 AM
Collection Start Time	6/4/2012 9:54:18 AM
Collection End Time	6/5/2012 9:54:18 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	808.431
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513872125952
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance2956.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2956.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2956.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2956.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2956.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2956.1	13.365	4.838	102.423	59.410	33760.128	35781.816	0.000	2.711	0.000	45.156	0.000	5195.521
Instance2956.2	12.769	4.534	102.457	59.423	33826.512	35793.635	0.000	2.706	0.000	45.061	0.000	5220.490
Instance2956.3	12.751	4.634	102.512	59.475	33831.768	35779.238	0.000	2.716	0.000	45.046	0.000	5209.019
Instance2956.4	12.755	4.271	102.216	59.305	33817.133	35787.849	0.000	2.701	0.000	45.017	0.000	5209.792
Instance2956.5	12.742	4.219	102.027	59.182	33835.964	35766.710	0.000	2.721	0.000	44.884	0.000	5210.367

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2956.1	31.631	261938.608
Instance2956.2	31.719	261936.186
Instance2956.3	31.720	261960.160
Instance2956.4	31.723	261934.746
Instance2956.5	31.716	261953.638

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance2956.1	0.962	232354.065
Instance2956.2	0.964	232239.506
Instance2956.3	0.962	232240.436
Instance2956.4	0.962	232271.103
Instance2956.5	0.959	232192.894

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2956.1	13.365	4.838	134.054	59.410	87601.160	35781.816	4.439	2.711	0.962	45.156	232354.065	5195.521
Instance2956.2	12.769	4.534	134.175	59.423	87750.988	35793.635	4.449	2.706	0.964	45.061	232239.506	5220.490
Instance2956.3	12.751	4.634	134.232	59.475	87740.527	35779.238	4.511	2.716	0.962	45.046	232240.436	5209.019
Instance2956.4	12.755	4.271	133.939	59.305	87845.741	35787.849	4.412	2.701	0.962	45.017	232271.103	5209.792
Instance2956.5	12.742	4.219	133.743	59.182	87932.327	35766.710	4.461	2.721	0.959	44.884	232192.894	5210.367

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.030	0.000	2.962
Available MBytes	60263.701	60231.000	60470.000
Free System Page Table Entries	33555608.986	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53955792.645	53592064.000	54063104.000
Pool Paged Bytes	144816868.584	143003648.000	149319680.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:45:29 PM -- Preparing for testing ...
6/1/2012 8:45:29 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:45:29 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:45:29 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:52:14 PM -- 100.0% of 1.9 TB complete (667499702 records inserted).
6/2/2012 7:52:15 PM -- 100.0% of 1.9 TB complete (667499951 records inserted).
6/2/2012 7:52:15 PM -- Duplicating 4 databases:
6/3/2012 11:05:48 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:53 PM -- Attaching databases ...
6/3/2012 11:05:53 PM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Jetstress testing begins ...
6/4/2012 9:51:59 AM -- Preparing for testing ...
6/4/2012 9:52:05 AM -- Attaching databases ...
6/4/2012 9:52:05 AM -- Preparations for testing are complete.
6/4/2012 9:52:05 AM -- Starting transaction dispatch ..
6/4/2012 9:52:05 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:05 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:12 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:12 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:18 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:18 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:18 AM -- Attaining prerequisites:
6/4/2012 9:54:18 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208840000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:19 AM -- Performance logging has ended.
6/5/2012 9:56:02 AM -- JetInterop batch transaction stats: 401673, 402364, 402108, 402760 and 400792.
6/5/2012 9:56:02 AM -- Dispatching transactions ends.
6/5/2012 9:56:02 AM -- Shutting down databases ...
6/5/2012 9:56:06 AM -- Instance2956.1 (complete), Instance2956.2 (complete), Instance2956.3 (complete), Instance2956.4 (complete) and Instance2956.5 (complete)
6/5/2012 9:56:06 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.blg has 5759 samples.
6/5/2012 9:56:06 AM -- Creating test report ...
6/5/2012 9:56:37 AM -- Instance2956.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.5 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:37 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.xml has 5751 samples queried.
6/5/2012 9:56:38 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.html was saved.
6/5/2012 9:56:39 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:39 AM -- Verifying database checksums ...
6/5/2012 5:58:32 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 5:58:32 PM -- Performance logging has ended.
6/5/2012 5:58:32 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_38.blg has 963 samples.

Server 10 – JS10

Test Summary

Overall Test Result	Pass
Machine Name	JS10
Test Description	5000 users/server 10 servers 2GB mailboxes .12 IOPS/user .15 IOPS tested 5 dbs per server 2000GB db volumes 250GB log volumes 2 copies 5 threads/db
Test Start Time	6/4/2012 9:52:02 AM
Test End Time	6/5/2012 9:56:10 AM
Collection Start Time	6/4/2012 9:54:25 AM
Collection End Time	6/5/2012 9:54:21 AM
Jetstress Version	14.01.0225.017
ESE Version	14.02.0247.001
Operating System	Windows Server 2008 R2 Enterprise Service Pack 1 (6.1.7601.65536)
Performance Log	C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.blg

Database Sizing and Throughput

Achieved Transactional I/O per Second	811.683
Target Transactional I/O per Second	750
Initial Database Size (bytes)	10485778677760
Final Database Size (bytes)	10513922457600
Database Files (Count)	5

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%
Run Background Database Maintenance	True
Number of Copies per Database	2

Database Configuration

Instance1468.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance1468.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance1468.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance1468.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance1468.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance1468.1	13.407	4.881	102.729	59.548	33703.137	35772.320	0.000	2.693	0.000	45.189	0.000	5191.588
Instance1468.2	12.720	4.539	103.069	59.774	33833.086	35774.335	0.000	2.717	0.000	45.204	0.000	5218.732
Instance1468.3	12.793	4.697	102.865	59.650	33783.941	35779.415	0.000	2.697	0.000	45.208	0.000	5197.703
Instance1468.4	12.720	4.270	102.697	59.544	33845.828	35781.446	0.000	2.715	0.000	45.051	0.000	5216.337
Instance1468.5	12.793	4.278	102.421	59.386	33830.134	35777.598	0.000	2.698	0.000	45.003	0.000	5202.545

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance1468.1	31.627	261941.329
Instance1468.2	31.710	261928.343
Instance1468.3	31.714	261941.519
Instance1468.4	31.693	261946.969
Instance1468.5	31.687	261942.845

Log Replication I/O Performance

MSExchange Database ==> Instances	I/O Log Reads/sec	I/O Log Reads Average Bytes
Instance1468.1	0.962	232264.315
Instance1468.2	0.967	232229.864
Instance1468.3	0.964	232265.771
Instance1468.4	0.964	232152.208
Instance1468.5	0.960	232234.999

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance1468.1	13.407	4.881	134.356	59.548	87430.148	35772.320	4.447	2.693	0.962	45.189	232264.315	5191.588
Instance1468.2	12.720	4.539	134.779	59.774	87497.379	35774.335	4.454	2.717	0.967	45.204	232229.864	5218.732
Instance1468.3	12.793	4.697	134.579	59.650	87550.355	35779.415	4.426	2.697	0.964	45.208	232265.771	5197.703
Instance1468.4	12.720	4.270	134.389	59.544	87638.384	35781.446	4.462	2.715	0.964	45.051	232152.208	5216.337
Instance1468.5	12.793	4.278	134.108	59.386	87728.575	35777.598	4.488	2.698	0.960	45.003	232234.999	5202.545

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.034	0.000	3.741
Available MBytes	60258.445	60183.000	60376.000
Free System Page Table Entries	33555608.984	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	53709553.177	53612544.000	53846016.000
Pool Paged Bytes	144836372.610	143208448.000	147795968.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:47:26 PM -- Preparing for testing ...
6/1/2012 8:47:26 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:47:27 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:47:27 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667499121 records inserted).
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667500098 records inserted).
6/2/2012 6:02:27 PM -- Duplicating 4 databases:
6/3/2012 9:59:07 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:59:14 PM -- Attaching databases ...
6/3/2012 9:59:14 PM -- Preparations for testing are complete.
6/4/2012 9:52:02 AM -- Jetstress testing begins ...
6/4/2012 9:52:02 AM -- Preparing for testing ...
6/4/2012 9:52:08 AM -- Attaching databases ...
6/4/2012 9:52:08 AM -- Preparations for testing are complete.
6/4/2012 9:52:08 AM -- Starting transaction dispatch ..
6/4/2012 9:52:08 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:08 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:15 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:15 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:21 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:21 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:21 AM -- Attaining prerequisites:
6/4/2012 9:54:25 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209893000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:25 AM -- Performance logging has ended.
6/5/2012 9:56:08 AM -- JetInterop batch transaction stats: 402878, 403577, 402799, 401869 and 401925.
6/5/2012 9:56:08 AM -- Dispatching transactions ends.
6/5/2012 9:56:08 AM -- Shutting down databases ...
6/5/2012 9:56:10 AM -- Instance1468.1 (complete), Instance1468.2 (complete), Instance1468.3 (complete), Instance1468.4 (complete) and Instance1468.5 (complete)
6/5/2012 9:56:10 AM -- [C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.blg](C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.blg) has 5759 samples.
6/5/2012 9:56:10 AM -- Creating test report ...
6/5/2012 9:56:41 AM -- Instance1468.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.4 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:41 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:41 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.xml has 5750 samples queried.
6/5/2012 9:56:42 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.html was saved.
6/5/2012 9:56:43 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:43 AM -- Verifying database checksums ...
6/5/2012 6:01:20 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:20 PM -- Performance logging has ended.
6/5/2012 6:01:20 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_42.blg has 968 samples.

Appendix C: Backup testing

Server 1 – JS1

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance5008.1	2005315.59	06:31:09	85.44
Instance5008.2	2005339.59	06:07:08	91.03
Instance5008.3	2005299.59	06:13:16	89.54
Instance5008.4	2005323.59	06:07:45	90.88
Instance5008.5	2005331.59	06:14:22	89.27

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance5008.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance5008.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance5008.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance5008.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance5008.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance5008.1	4.462	0.000	341.318	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance5008.2	4.106	0.000	363.932	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance5008.3	4.134	0.000	357.816	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance5008.4	4.100	0.000	363.323	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance5008.5	4.147	0.000	356.727	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.426	0.000	3.497
Available MBytes	61570.068	61522.000	61580.000
Free System Page Table Entries	33555608.000	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	57889124.630	57827328.000	58097664.000
Pool Paged Bytes	168346523.042	165396480.000	171864064.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/6/2012 10:58:03 AM -- Jetstress testing begins ...

6/6/2012 10:58:03 AM -- Preparing for testing ...

6/6/2012 10:58:09 AM -- Attaching databases ...

6/6/2012 10:58:09 AM -- Preparations for testing are complete.

6/6/2012 10:58:18 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:18 AM -- Backing up databases ...

6/6/2012 5:29:27 PM -- Performance logging has ended.

6/6/2012 5:29:27 PM -- Instance5008.1 (100% processed), Instance5008.2 (100% processed), Instance5008.3 (100% processed), Instance5008.4 (100% processed) and Instance5008.5 (100% processed)

6/6/2012 5:29:27 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_9.blg has 781 samples.

6/6/2012 5:29:27 PM -- Creating test report ...

Server 2 – JS2

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3708.1	2005347.59	06:28:27	86.04
Instance3708.2	2005331.59	06:04:19	91.74
Instance3708.3	2005339.59	06:15:42	88.96
Instance3708.4	2005331.59	06:04:46	91.62
Instance3708.5	2005323.59	06:04:35	91.67

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3708.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3708.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3708.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3708.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3708.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	4.381	0.000	343.888	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3708.2	4.043	0.000	366.795	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3708.3	4.207	0.000	355.542	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3708.4	4.073	0.000	366.350	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3708.5	4.059	0.000	366.504	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.480	0.000	3.225
Available MBytes	61575.081	61553.000	61586.000
Free System Page Table Entries	33555609.068	33555608.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55371533.196	55361536.000	55443456.000
Pool Paged Bytes	153283478.433	150343680.000	154664960.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

Test Log6/1/2012 8:30:21 PM -- Preparing for testing ...
6/1/2012 8:30:21 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:30:21 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:30:21 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499232 records inserted).
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499672 records inserted).
6/2/2012 5:49:42 PM -- Duplicating 4 databases:
6/3/2012 10:02:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:02:29 PM -- Attaching databases ...
6/3/2012 10:02:29 PM -- Preparations for testing are complete.
6/4/2012 9:51:31 AM -- Jetstress testing begins ...
6/4/2012 9:51:31 AM -- Preparing for testing ...
6/4/2012 9:51:36 AM -- Attaching databases ...
6/4/2012 9:51:36 AM -- Preparations for testing are complete.
6/4/2012 9:51:36 AM -- Starting transaction dispatch ..
6/4/2012 9:51:37 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:37 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:42 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:42 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:49 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:49 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:49 AM -- Attaining prerequisites:
6/4/2012 9:53:35 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210589000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:36 AM -- Performance logging has ended.
6/5/2012 9:55:21 AM -- JetInterop batch transaction stats: 400717, 400984, 400902, 399809 and 400181.
6/5/2012 9:55:21 AM -- Dispatching transactions ends.
6/5/2012 9:55:21 AM -- Shutting down databases ...
6/5/2012 9:55:22 AM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
6/5/2012 9:55:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.blg has 5758 samples.
6/5/2012 9:55:22 AM -- Creating test report ...
6/5/2012 9:55:55 AM -- Instance3708.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:55:55 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:55:55 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.xml has 5750 samples queried.

6/5/2012 9:55:56 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.html was saved.

6/5/2012 9:55:57 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:55:57 AM -- Verifying database checksums …

6/5/2012 6:01:41 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:41 PM -- Performance logging has ended.

6/5/2012 6:01:41 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_56.blg has 970 samples.

6/5/2012 6:01:46 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_56.html was saved.

6/5/2012 6:01:46 PM -- Verifying log checksums …

6/5/2012 6:01:47 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (12 logs processed), C:\logroot\log3 (12 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (12 logs processed)

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_47.evt is saved.

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_47.evt is saved.

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_47.xml was saved.

6/5/2012 6:01:47 PM -- Jetstress testing has ended.

6/6/2012 10:58:06 AM -- Jetstress testing begins …

6/6/2012 10:58:06 AM -- Preparing for testing …

6/6/2012 10:58:11 AM -- Attaching databases …

6/6/2012 10:58:11 AM -- Preparations for testing are complete.

6/6/2012 10:58:20 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:20 AM -- Backing up databases …

6/6/2012 5:26:47 PM -- Performance logging has ended.

6/6/2012 5:26:47 PM -- Instance3708.1 (100% processed), Instance3708.2 (100% processed), Instance3708.3 (100% processed), Instance3708.4 (100% processed) and Instance3708.5 (100% processed)

6/6/2012 5:26:47 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_11.blg has 776 samples.

6/6/2012 5:26:47 PM -- Creating test report …

Server 3 – JS3

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3332.1	2005315.59	06:29:58	85.70
Instance3332.2	2005363.59	06:08:43	90.65
Instance3332.3	2005331.59	06:10:55	90.11
Instance3332.4	2005339.59	06:12:55	89.62
Instance3332.5	2005339.59	06:11:04	90.07

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3332.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3332.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3332.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3332.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3332.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3332.1	4.397	0.000	342.559	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3332.2	4.102	0.000	362.412	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3332.3	4.144	0.000	360.279	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3332.4	4.173	0.000	358.340	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3332.5	4.145	0.000	360.101	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.453	0.000	3.551
Available MBytes	61744.702	61631.000	61762.000
Free System Page Table Entries	33555608.264	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54566049.684	54538240.000	54640640.000
Pool Paged Bytes	108126854.737	100286464.000	152084480.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:33:00 PM -- Preparing for testing ...
6/1/2012 8:33:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:33:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:33:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667497883 records inserted).
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667498968 records inserted).
6/2/2012 7:28:55 PM -- Duplicating 4 databases:
6/3/2012 11:05:42 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:48 PM -- Attaching databases ...
6/3/2012 11:05:48 PM -- Preparations for testing are complete.
6/4/2012 9:51:39 AM -- Jetstress testing begins ...
6/4/2012 9:51:39 AM -- Preparing for testing ...
6/4/2012 9:51:44 AM -- Attaching databases ...
6/4/2012 9:51:44 AM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Starting transaction dispatch ..
6/4/2012 9:51:44 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:44 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:50 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:50 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:56 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:56 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:56 AM -- Attaining prerequisites:
6/4/2012 9:53:54 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216696000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:55 AM -- Performance logging has ended.
6/5/2012 9:55:30 AM -- JetInterop batch transaction stats: 399233, 401291, 399511, 400818 and 399793.
6/5/2012 9:55:30 AM -- Dispatching transactions ends.
6/5/2012 9:55:30 AM -- Shutting down databases ...
6/5/2012 9:55:32 AM -- Instance3332.1 (complete), Instance3332.2 (complete), Instance3332.3 (complete), Instance3332.4 (complete) and Instance3332.5 (complete)
6/5/2012 9:55:32 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.blg has 5758 samples.
6/5/2012 9:55:32 AM -- Creating test report ...
6/5/2012 9:56:04 AM -- Instance3332.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:04 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:04 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.xml has 5750 samples queried.
6/5/2012 9:56:05 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.html was saved.
6/5/2012 9:56:06 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:06 AM -- Verifying database checksums …
6/5/2012 5:57:48 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 5:57:48 PM -- Performance logging has ended.
6/5/2012 5:57:48 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_5.blg has 962 samples.
6/5/2012 5:57:53 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_5.html was saved.
6/5/2012 5:57:53 PM -- Verifying log checksums …
6/5/2012 5:57:54 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (12 logs processed)
6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_57_54.evt is saved.
6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_57_54.evt is saved.
6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_57_54.xml was saved.
6/5/2012 5:57:54 PM -- Jetstress testing has ended.
6/6/2012 10:58:11 AM -- Jetstress testing begins …
6/6/2012 10:58:11 AM -- Preparing for testing …
6/6/2012 10:58:16 AM -- Attaching databases …
6/6/2012 10:58:16 AM -- Preparations for testing are complete.
6/6/2012 10:58:25 AM -- Performance logging started (interval: 30000 ms).
6/6/2012 10:58:25 AM -- Backing up databases …
6/6/2012 5:28:23 PM -- Performance logging has ended.
6/6/2012 5:28:23 PM -- Instance3332.1 (100% processed), Instance3332.2 (100% processed), Instance3332.3 (100% processed), Instance3332.4 (100% processed) and Instance3332.5 (100% processed)
6/6/2012 5:28:23 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_16.blg has 779 samples.

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

6/6/2012 5:28:23 PM -- Creating test report ...

Server 4 – JS4

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3232.1	2005355.59	06:40:49	83.38
Instance3232.2	2005355.59	06:23:32	87.14
Instance3232.3	2005363.59	06:29:26	85.82
Instance3232.4	2005363.59	06:31:43	85.32
Instance3232.5	2005331.59	06:36:52	84.21

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3232.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3232.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3232.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3232.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3232.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3232.1	4.701	0.000	333.416	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3232.2	4.235	0.000	348.437	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3232.3	4.329	0.000	343.169	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3232.4	4.360	0.000	340.865	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3232.5	4.575	0.000	336.619	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.269	0.292	2.243
Available MBytes	61595.834	61569.000	61609.000
Free System Page Table Entries	33555609.057	33555608.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54528345.169	54509568.000	54562816.000
Pool Paged Bytes	151996868.554	149405696.000	154488832.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Test Log

6/1/2012 8:35:00 PM -- Preparing for testing ...
6/1/2012 8:35:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:35:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:35:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667499830 records inserted).
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667500307 records inserted).
6/2/2012 5:47:43 PM -- Duplicating 4 databases:
6/3/2012 9:39:36 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:39:42 PM -- Attaching databases ...
6/3/2012 9:39:42 PM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Jetstress testing begins ...
6/4/2012 9:51:44 AM -- Preparing for testing ...
6/4/2012 9:51:50 AM -- Attaching databases ...
6/4/2012 9:51:50 AM -- Preparations for testing are complete.
6/4/2012 9:51:50 AM -- Starting transaction dispatch ..
6/4/2012 9:51:50 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:50 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:56 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:56 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:02 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:02 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:02 AM -- Attaining prerequisites:
6/4/2012 9:53:56 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213149000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:57 AM -- Performance logging has ended.
6/5/2012 9:55:36 AM -- JetInterop batch transaction stats: 401931, 402900, 402503, 402958 and 401982.
6/5/2012 9:55:36 AM -- Dispatching transactions ends.
6/5/2012 9:55:36 AM -- Shutting down databases ...
6/5/2012 9:55:37 AM -- Instance3232.1 (complete), Instance3232.2 (complete), Instance3232.3 (complete), Instance3232.4 (complete) and Instance3232.5 (complete)
6/5/2012 9:55:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.blg has 5758 samples.
6/5/2012 9:55:37 AM -- Creating test report ...
6/5/2012 9:56:10 AM -- Instance3232.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 12.6 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:10 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:10 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.xml has 5750 samples queried.

6/5/2012 9:56:11 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.html was saved.

6/5/2012 9:56:12 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:12 AM -- Verifying database checksums ...

6/5/2012 6:01:10 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:10 PM -- Performance logging has ended.

6/5/2012 6:01:10 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_11.blg has 969 samples.

6/5/2012 6:01:15 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_11.html was saved.

6/5/2012 6:01:15 PM -- Verifying log checksums ...

6/5/2012 6:01:16 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_16.evt is saved.

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_16.evt is saved.

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_16.xml was saved.

6/5/2012 6:01:16 PM -- Jetstress testing has ended.

6/6/2012 10:58:15 AM -- Jetstress testing begins ...

6/6/2012 10:58:15 AM -- Preparing for testing ...

6/6/2012 10:58:20 AM -- Attaching databases ...

6/6/2012 10:58:20 AM -- Preparations for testing are complete.

6/6/2012 10:58:29 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:29 AM -- Backing up databases ...

6/6/2012 5:39:18 PM -- Performance logging has ended.

6/6/2012 5:39:18 PM -- Instance3232.1 (100% processed), Instance3232.2 (100% processed), Instance3232.3 (100% processed), Instance3232.4 (100% processed) and Instance3232.5 (100% processed)

6/6/2012 5:39:18 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_20.blg has 801 samples.

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

6/6/2012 5:39:18 PM -- Creating test report ...

Server 5 – JS5

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3812.1	2005339.59	06:32:33	85.14
Instance3812.2	2005299.59	06:07:23	90.97
Instance3812.3	2005307.59	06:08:10	90.78
Instance3812.4	2005347.59	06:15:46	88.94
Instance3812.5	2005363.59	06:14:20	89.28

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3812.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3812.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3812.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3812.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3812.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3812.1	4.498	0.000	340.191	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3812.2	4.086	0.000	363.813	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3812.3	4.081	0.000	362.986	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3812.4	4.220	0.000	355.535	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3812.5	4.197	0.000	357.068	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.461	0.279	2.404
Available MBytes	61596.004	61548.000	61608.000
Free System Page Table Entries	33555097.020	33555067.000	33555099.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54793675.755	54763520.000	54882304.000
Pool Paged Bytes	150785196.408	147939328.000	151412736.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:37:25 PM -- Preparing for testing ...
6/1/2012 8:37:25 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:37:25 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:37:25 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499152 records inserted).
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499630 records inserted).
6/2/2012 7:20:48 PM -- Duplicating 4 databases:
6/3/2012 11:02:39 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:02:45 PM -- Attaching databases ...
6/3/2012 11:02:45 PM -- Preparations for testing are complete.
6/4/2012 9:51:47 AM -- Jetstress testing begins ...
6/4/2012 9:51:47 AM -- Preparing for testing ...
6/4/2012 9:51:52 AM -- Attaching databases ...
6/4/2012 9:51:52 AM -- Preparations for testing are complete.
6/4/2012 9:51:52 AM -- Starting transaction dispatch ..
6/4/2012 9:51:52 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:52 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:58 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:58 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:05 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:05 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:05 AM -- Attaining prerequisites:
6/4/2012 9:53:59 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213735000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:59 AM -- Performance logging has ended.
6/5/2012 9:55:43 AM -- JetInterop batch transaction stats: 400501, 399756, 399973, 400712 and 401287.
6/5/2012 9:55:43 AM -- Dispatching transactions ends.
6/5/2012 9:55:43 AM -- Shutting down databases ...
6/5/2012 9:55:44 AM -- Instance3812.1 (complete), Instance3812.2 (complete), Instance3812.3 (complete), Instance3812.4 (complete) and Instance3812.5 (complete)
6/5/2012 9:55:44 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.blg has 5758 samples.
6/5/2012 9:55:44 AM -- Creating test report ...
6/5/2012 9:56:17 AM -- Instance3812.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:17 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:17 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.xml has 5750 samples queried.

6/5/2012 9:56:18 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.html was saved.

6/5/2012 9:56:19 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:19 AM -- Verifying database checksums …

6/5/2012 5:57:56 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:57:56 PM -- Performance logging has ended.

6/5/2012 5:57:56 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_18.blg has 962 samples.

6/5/2012 5:58:00 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_18.html was saved.

6/5/2012 5:58:01 PM -- Verifying log checksums …

6/5/2012 5:58:01 PM -- C:\logroot\log1 (10 logs processed), C:\logroot\log2 (13 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (13 logs processed)

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_1.evt is saved.

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_1.evt is saved.

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_1.xml was saved.

6/5/2012 5:58:01 PM -- Jetstress testing has ended.

6/6/2012 10:58:19 AM -- Jetstress testing begins …

6/6/2012 10:58:19 AM -- Preparing for testing …

6/6/2012 10:58:24 AM -- Attaching databases …

6/6/2012 10:58:24 AM -- Preparations for testing are complete.

6/6/2012 10:58:34 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:34 AM -- Backing up databases …

6/6/2012 5:31:08 PM -- Performance logging has ended.

6/6/2012 5:31:08 PM -- Instance3812.1 (100% processed), Instance3812.2 (100% processed), Instance3812.3 (100% processed), Instance3812.4 (100% processed) and Instance3812.5 (100% processed)

6/6/2012 5:31:08 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_24.blg has 784 samples.

6/6/2012 5:31:08 PM -- Creating test report …

Server 6 – JS6

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3472.1	2005339.59	06:37:24	84.10
Instance3472.2	2005379.59	06:26:29	86.48
Instance3472.3	2005371.59	06:32:42	85.11
Instance3472.4	2005363.59	06:21:31	87.60
Instance3472.5	2005339.59	06:22:34	87.36

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3472.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3472.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3472.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3472.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3472.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3472.1	4.581	0.000	336.290	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3472.2	4.289	0.000	345.807	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3472.3	4.411	0.000	340.062	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3472.4	4.214	0.000	350.330	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3472.5	4.243	0.000	349.364	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.237	0.425	2.448
Available MBytes	61602.713	61577.000	61613.000
Free System Page Table Entries	33555609.071	33555609.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54991694.025	54960128.000	55058432.000
Pool Paged Bytes	151251470.186	148520960.000	154337280.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:39:46 PM -- Preparing for testing ...
6/1/2012 8:39:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:39:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:39:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667499357 records inserted).
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667500385 records inserted).
6/2/2012 5:53:05 PM -- Duplicating 4 databases:
6/3/2012 9:53:18 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:53:24 PM -- Attaching databases ...
6/3/2012 9:53:24 PM -- Preparations for testing are complete.
6/4/2012 9:51:49 AM -- Jetstress testing begins ...
6/4/2012 9:51:49 AM -- Preparing for testing ...
6/4/2012 9:51:55 AM -- Attaching databases ...
6/4/2012 9:51:55 AM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Starting transaction dispatch ..
6/4/2012 9:51:55 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:55 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:01 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:01 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:09 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:09 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:09 AM -- Attaining prerequisites:
6/4/2012 9:54:02 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209709000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:04 AM -- Performance logging has ended.
6/5/2012 9:56:22 AM -- JetInterop batch transaction stats: 402156, 402907, 403467, 401528 and 402377.
6/5/2012 9:56:22 AM -- Dispatching transactions ends.
6/5/2012 9:56:22 AM -- Shutting down databases ...
6/5/2012 9:56:27 AM -- Instance3472.1 (complete), Instance3472.2 (complete), Instance3472.3 (complete), Instance3472.4 (complete) and Instance3472.5 (complete)
6/5/2012 9:56:27 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.blg has 5758 samples.
6/5/2012 9:56:27 AM -- Creating test report ...
6/5/2012 9:57:00 AM -- Instance3472.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:57:00 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.xml has 5750 samples queried.

6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.html was saved.

6/5/2012 9:57:01 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:57:01 AM -- Verifying database checksums ...

6/5/2012 6:01:18 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:18 PM -- Performance logging has ended.

6/5/2012 6:01:18 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_57_0.blg has 968 samples.

6/5/2012 6:01:23 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_57_0.html was saved.

6/5/2012 6:01:23 PM -- Verifying log checksums ...

6/5/2012 6:01:24 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_24.evt is saved.

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_24.evt is saved.

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_24.xml was saved.

6/5/2012 6:01:24 PM -- Jetstress testing has ended.

6/6/2012 10:58:21 AM -- Jetstress testing begins ...

6/6/2012 10:58:21 AM -- Preparing for testing ...

6/6/2012 10:58:26 AM -- Attaching databases ...

6/6/2012 10:58:26 AM -- Preparations for testing are complete.

6/6/2012 10:58:35 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:35 AM -- Backing up databases ...

6/6/2012 5:35:59 PM -- Performance logging has ended.

6/6/2012 5:35:59 PM -- Instance3472.1 (100% processed), Instance3472.2 (100% processed), Instance3472.3 (100% processed), Instance3472.4 (100% processed) and Instance3472.5 (100% processed)

6/6/2012 5:35:59 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_26.blg has 794 samples.

6/6/2012 5:35:59 PM -- Creating test report ...

Server 7 – JS7

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3088.1	2005363.59	06:32:30	85.15
Instance3088.2	2005339.59	06:07:11	91.02
Instance3088.3	2005355.59	06:07:03	91.06
Instance3088.4	2005355.59	06:10:58	90.10
Instance3088.5	2005355.59	06:06:20	91.23

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3088.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3088.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3088.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3088.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3088.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3088.1	4.502	0.000	340.208	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3088.2	4.085	0.000	364.050	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3088.3	4.071	0.000	364.175	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3088.4	4.151	0.000	360.325	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3088.5	4.060	0.000	364.913	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.403	0.049	2.305
Available MBytes	61603.008	61581.000	61609.000
Free System Page Table Entries	33555609.060	33555608.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54877100.408	54845440.000	54923264.000
Pool Paged Bytes	151058839.510	148987904.000	156139520.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

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Test Log

6/1/2012 8:41:46 PM -- Preparing for testing ...
6/1/2012 8:41:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:41:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:41:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500049 records inserted).
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500052 records inserted).
6/2/2012 7:26:19 PM -- Duplicating 4 databases:
6/3/2012 10:59:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:59:28 PM -- Attaching databases ...
6/3/2012 10:59:28 PM -- Preparations for testing are complete.
6/4/2012 9:51:53 AM -- Jetstress testing begins ...
6/4/2012 9:51:53 AM -- Preparing for testing ...
6/4/2012 9:51:59 AM -- Attaching databases ...
6/4/2012 9:51:59 AM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Starting transaction dispatch ..
6/4/2012 9:51:59 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:59 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:05 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:05 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:11 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:11 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:11 AM -- Attaining prerequisites:
6/4/2012 9:54:13 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1211351000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:13 AM -- Performance logging has ended.
6/5/2012 9:55:49 AM -- JetInterop batch transaction stats: 402242, 401278, 401306, 401532 and 401631.
6/5/2012 9:55:49 AM -- Dispatching transactions ends.
6/5/2012 9:55:49 AM -- Shutting down databases ...
6/5/2012 9:55:51 AM -- Instance3088.1 (complete), Instance3088.2 (complete), Instance3088.3 (complete), Instance3088.4 (complete) and Instance3088.5 (complete)
6/5/2012 9:55:51 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.blg has 5759 samples.
6/5/2012 9:55:51 AM -- Creating test report ...
6/5/2012 9:56:22 AM -- Instance3088.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:22 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.xml has 5750 samples queried.

6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.html was saved.

6/5/2012 9:56:23 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:23 AM -- Verifying database checksums …

6/5/2012 5:58:04 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:58:04 PM -- Performance logging has ended.

6/5/2012 5:58:04 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_22.blg has 962 samples.

6/5/2012 5:58:09 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_22.html was saved.

6/5/2012 5:58:09 PM -- Verifying log checksums …

6/5/2012 5:58:10 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (12 logs processed), C:\logroot\log4 (10 logs processed) and C:\logroot\log5 (12 logs processed)

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_10.evt is saved.

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_10.evt is saved.

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_10.xml was saved.

6/5/2012 5:58:10 PM -- Jetstress testing has ended.

6/6/2012 10:58:24 AM -- Jetstress testing begins …

6/6/2012 10:58:24 AM -- Preparing for testing …

6/6/2012 10:58:30 AM -- Attaching databases …

6/6/2012 10:58:30 AM -- Preparations for testing are complete.

6/6/2012 10:58:38 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:38 AM -- Backing up databases …

6/6/2012 5:31:09 PM -- Performance logging has ended.

6/6/2012 5:31:09 PM -- Instance3088.1 (100% processed), Instance3088.2 (100% processed), Instance3088.3 (100% processed), Instance3088.4 (100% processed) and Instance3088.5 (100% processed)

6/6/2012 5:31:09 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_30.blg has 784 samples.

6/6/2012 5:31:09 PM -- Creating test report …

Server 8 – JS8

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance3784.1	2005363.59	06:28:14	86.09
Instance3784.2	2005355.59	06:06:45	91.13
Instance3784.3	2005371.59	06:15:15	89.07
Instance3784.4	2005379.59	06:05:29	91.45
Instance3784.5	2005371.59	06:12:46	89.66

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance3784.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3784.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3784.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3784.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3784.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3784.1	4.382	0.000	344.088	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3784.2	4.077	0.000	364.438	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3784.3	4.201	0.000	356.080	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3784.4	4.061	0.000	365.724	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance3784.5	4.162	0.000	358.453	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.436	0.178	2.513
Available MBytes	61597.030	61577.000	61608.000
Free System Page Table Entries	33555608.985	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54688217.022	54661120.000	54747136.000
Pool Paged Bytes	150618492.532	147898368.000	153722880.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

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Test Log

6/1/2012 8:43:38 PM -- Preparing for testing ...
6/1/2012 8:43:38 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:43:39 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:43:39 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:40:44 PM -- 100.0% of 1.9 TB complete (667498845 records inserted).
6/2/2012 5:40:45 PM -- 100.0% of 1.9 TB complete (667499994 records inserted).
6/2/2012 5:40:45 PM -- Duplicating 4 databases:
6/3/2012 9:24:17 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:24:22 PM -- Attaching databases ...
6/3/2012 9:24:22 PM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Jetstress testing begins ...
6/4/2012 9:51:55 AM -- Preparing for testing ...
6/4/2012 9:52:01 AM -- Attaching databases ...
6/4/2012 9:52:01 AM -- Preparations for testing are complete.
6/4/2012 9:52:01 AM -- Starting transaction dispatch ..
6/4/2012 9:52:01 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:01 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:07 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:07 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:14 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:14 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:14 AM -- Attaining prerequisites:
6/4/2012 9:54:14 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208345000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:15 AM -- Performance logging has ended.
6/5/2012 9:55:56 AM -- JetInterop batch transaction stats: 402639, 403669, 402428, 403571 and 402093.
6/5/2012 9:55:56 AM -- Dispatching transactions ends.
6/5/2012 9:55:56 AM -- Shutting down databases ...
6/5/2012 9:55:58 AM -- Instance3784.1 (complete), Instance3784.2 (complete), Instance3784.3 (complete), Instance3784.4 (complete) and Instance3784.5 (complete)
6/5/2012 9:55:58 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg has 5759 samples.
6/5/2012 9:55:58 AM -- Creating test report ...
6/5/2012 9:56:28 AM -- Instance3784.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.3 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/5/2012 9:56:28 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/5/2012 9:56:28 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.xml has 5750 samples queried.
6/5/2012 9:56:29 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.html was saved.
6/5/2012 9:56:30 AM -- Performance logging started (interval: 30000 ms).
6/5/2012 9:56:30 AM -- Verifying database checksums …
6/5/2012 6:01:42 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)
6/5/2012 6:01:42 PM -- Performance logging has ended.
6/5/2012 6:01:42 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_29.blg has 969 samples.
6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_29.html was saved.
6/5/2012 6:01:47 PM -- Verifying log checksums …
6/5/2012 6:01:48 PM -- C:\logroot\log1 (12 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)
6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_48.evt is saved.
6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_48.evt is saved.
6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_48.xml was saved.
6/5/2012 6:01:48 PM -- Jetstress testing has ended.
6/6/2012 10:58:27 AM -- Jetstress testing begins …
6/6/2012 10:58:27 AM -- Preparing for testing …
6/6/2012 10:58:32 AM -- Attaching databases …
6/6/2012 10:58:32 AM -- Preparations for testing are complete.
6/6/2012 10:58:41 AM -- Performance logging started (interval: 30000 ms).
6/6/2012 10:58:41 AM -- Backing up databases …
6/6/2012 5:26:56 PM -- Performance logging has ended.
6/6/2012 5:26:56 PM -- Instance3784.1 (100% processed), Instance3784.2 (100% processed), Instance3784.3 (100% processed), Instance3784.4 (100% processed) and Instance3784.5 (100% processed)
6/6/2012 5:26:56 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_32.blg has 775 samples.
6/6/2012 5:26:56 PM -- Creating test report …

Server 9 – JS9

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance2956.1	2005355.59	06:30:46	85.53
Instance2956.2	2005363.59	06:08:38	90.66
Instance2956.3	2005355.59	06:09:47	90.38
Instance2956.4	2005355.59	06:09:35	90.43
Instance2956.5	2005339.59	06:10:19	90.25

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance2956.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2956.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2956.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2956.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2956.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2956.1	4.451	0.000	341.670	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance2956.2	4.109	0.000	362.663	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance2956.3	4.129	0.000	361.487	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance2956.4	4.119	0.000	361.723	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance2956.5	4.112	0.000	360.969	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.425	0.113	3.717
Available MBytes	61598.328	61545.000	61612.000
Free System Page Table Entries	33555609.021	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54923132.718	54878208.000	54996992.000
Pool Paged Bytes	150808365.949	147701760.000	154071040.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Test Log

6/1/2012 8:45:29 PM -- Preparing for testing ...
6/1/2012 8:45:29 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:45:29 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:45:29 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:52:14 PM -- 100.0% of 1.9 TB complete (667499702 records inserted).
6/2/2012 7:52:15 PM -- 100.0% of 1.9 TB complete (667499951 records inserted).
6/2/2012 7:52:15 PM -- Duplicating 4 databases:
6/3/2012 11:05:48 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:53 PM -- Attaching databases ...
6/3/2012 11:05:53 PM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Jetstress testing begins ...
6/4/2012 9:51:59 AM -- Preparing for testing ...
6/4/2012 9:52:05 AM -- Attaching databases ...
6/4/2012 9:52:05 AM -- Preparations for testing are complete.
6/4/2012 9:52:05 AM -- Starting transaction dispatch ..
6/4/2012 9:52:05 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:05 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:12 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:12 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:18 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:18 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:18 AM -- Attaining prerequisites:
6/4/2012 9:54:18 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208840000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:19 AM -- Performance logging has ended.
6/5/2012 9:56:02 AM -- JetInterop batch transaction stats: 401673, 402364, 402108, 402760 and 400792.
6/5/2012 9:56:02 AM -- Dispatching transactions ends.
6/5/2012 9:56:02 AM -- Shutting down databases ...
6/5/2012 9:56:06 AM -- Instance2956.1 (complete), Instance2956.2 (complete), Instance2956.3 (complete), Instance2956.4 (complete) and Instance2956.5 (complete)
6/5/2012 9:56:06 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.blg has 5759 samples.
6/5/2012 9:56:06 AM -- Creating test report ...
6/5/2012 9:56:37 AM -- Instance2956.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:37 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.xml has 5751 samples queried.

6/5/2012 9:56:38 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.html was saved.

6/5/2012 9:56:39 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:39 AM -- Verifying database checksums ...

6/5/2012 5:58:32 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:58:32 PM -- Performance logging has ended.

6/5/2012 5:58:32 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_38.blg has 963 samples.

6/5/2012 5:58:37 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_38.html was saved.

6/5/2012 5:58:37 PM -- Verifying log checksums ...

6/5/2012 5:58:38 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (10 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_38.evt is saved.

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_38.evt is saved.

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_38.xml was saved.

6/5/2012 5:58:38 PM -- Jetstress testing has ended.

6/6/2012 10:58:29 AM -- Jetstress testing begins ...

6/6/2012 10:58:29 AM -- Preparing for testing ...

6/6/2012 10:58:35 AM -- Attaching databases ...

6/6/2012 10:58:35 AM -- Preparations for testing are complete.

6/6/2012 10:58:44 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:44 AM -- Backing up databases ...

6/6/2012 5:29:30 PM -- Performance logging has ended.

6/6/2012 5:29:30 PM -- Instance2956.1 (100% processed), Instance2956.2 (100% processed), Instance2956.3 (100% processed), Instance2956.4 (100% processed) and Instance2956.5 (100% processed)

6/6/2012 5:29:30 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_35.blg has 780 samples.

6/6/2012 5:29:30 PM -- Creating test report ...

Server 10 – JS10

Database Backup Statistics - All

Database Instance	Database Size (MBytes)	Elapsed Backup Time	MBytes Transferred/sec
Instance1468.1	2005355.59	06:29:46	85.75
Instance1468.2	2005387.59	06:00:32	92.70
Instance1468.3	2005363.59	06:07:55	90.84
Instance1468.4	2005363.59	06:02:25	92.22
Instance1468.5	2005347.59	06:04:52	91.60

Jetstress System Parameters

Thread Count	5 (per database)
Minimum Database Cache	160.0 MB
Maximum Database Cache	1280.0 MB
Insert Operations	40%
Delete Operations	20%
Replace Operations	5%
Read Operations	35%
Lazy Commits	70%

Database Configuration

Instance1468.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance1468.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance1468.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance1468.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance1468.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance1468.1	4.426	0.000	342.539	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance1468.2	4.002	0.000	370.834	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance1468.3	4.103	0.000	363.327	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance1468.4	4.026	0.000	368.868	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Instance1468.5	4.065	0.000	366.387	0.000	262144.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.410	0.000	2.507
Available MBytes	61577.893	61525.000	61593.000
Free System Page Table Entries	33555608.995	33555577.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55420259.373	54923264.000	56348672.000
Pool Paged Bytes	154901017.008	147701760.000	162574336.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:47:26 PM -- Preparing for testing ...
6/1/2012 8:47:26 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:47:27 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:47:27 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667499121 records inserted).
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667500098 records inserted).
6/2/2012 6:02:27 PM -- Duplicating 4 databases:
6/3/2012 9:59:07 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:59:14 PM -- Attaching databases ...
6/3/2012 9:59:14 PM -- Preparations for testing are complete.
6/4/2012 9:52:02 AM -- Jetstress testing begins ...
6/4/2012 9:52:02 AM -- Preparing for testing ...
6/4/2012 9:52:08 AM -- Attaching databases ...
6/4/2012 9:52:08 AM -- Preparations for testing are complete.
6/4/2012 9:52:08 AM -- Starting transaction dispatch ..
6/4/2012 9:52:08 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:08 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:15 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:15 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:21 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:21 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:21 AM -- Attaining prerequisites:
6/4/2012 9:54:25 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209893000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:25 AM -- Performance logging has ended.
6/5/2012 9:56:08 AM -- JetInterop batch transaction stats: 402878, 403577, 402799, 401869 and 401925.
6/5/2012 9:56:08 AM -- Dispatching transactions ends.
6/5/2012 9:56:08 AM -- Shutting down databases ...
6/5/2012 9:56:10 AM -- Instance1468.1 (complete), Instance1468.2 (complete), Instance1468.3 (complete), Instance1468.4 (complete) and Instance1468.5 (complete)
6/5/2012 9:56:10 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.blg has 5759 samples.
6/5/2012 9:56:10 AM -- Creating test report ...
6/5/2012 9:56:41 AM -- Instance1468.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:41 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:41 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.xml has 5750 samples queried.

6/5/2012 9:56:42 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.html was saved.

6/5/2012 9:56:43 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:43 AM -- Verifying database checksums …

6/5/2012 6:01:20 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:20 PM -- Performance logging has ended.

6/5/2012 6:01:20 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_42.blg has 968 samples.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_42.html was saved.

6/5/2012 6:01:26 PM -- Verifying log checksums …

6/5/2012 6:01:26 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_26.evt is saved.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_26.evt is saved.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_26.xml was saved.

6/5/2012 6:01:26 PM -- Jetstress testing has ended.

6/6/2012 10:58:36 AM -- Jetstress testing begins …

6/6/2012 10:58:36 AM -- Preparing for testing …

6/6/2012 10:58:41 AM -- Attaching databases …

6/6/2012 10:58:41 AM -- Preparations for testing are complete.

6/6/2012 10:58:50 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:50 AM -- Backing up databases …

6/6/2012 5:28:37 PM -- Performance logging has ended.

6/6/2012 5:28:37 PM -- Instance1468.1 (100% processed), Instance1468.2 (100% processed), Instance1468.3 (100% processed), Instance1468.4 (100% processed) and Instance1468.5 (100% processed)

6/6/2012 5:28:37 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_41.blg has 778 samples.

6/6/2012 5:28:37 PM -- Creating test report …

Appendix D: Recovery testing

Server 1 – JS1

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance5008.1	506	804.9181165
Instance5008.2	501	799.3486666
Instance5008.3	513	811.0179902
Instance5008.4	507	807.8354474
Instance5008.5	517	808.3658712

Database Configuration

Instance5008.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance5008.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance5008.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance5008.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance5008.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance5008.1	10.153	2.832	587.913	3.777	40926.933	32768.000	4.245	0.058	5.675	0.016	232546.406	2.573
Instance5008.2	10.197	3.066	587.750	3.761	40984.191	32768.000	4.139	0.000	5.642	0.000	232531.289	0.000
Instance5008.3	10.001	2.945	592.019	3.802	41033.438	32768.000	4.091	0.000	5.702	0.000	232541.883	0.000
Instance5008.4	10.211	2.992	591.946	3.776	41187.364	32768.000	4.160	0.000	5.664	0.000	232602.821	0.000
Instance5008.5	10.186	2.831	577.256	3.843	41025.555	32768.000	4.147	0.000	5.765	0.000	232551.350	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance5008.1	26.296	261941.221
Instance5008.2	25.964	262055.163
Instance5008.3	26.603	262017.123
Instance5008.4	25.385	261988.569
Instance5008.5	25.724	261974.111

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance5008.1	10.153	2.832	614.209	3.777	50389.201	32768.000	4.245	0.058	5.675	0.016	232546.406	2.573
Instance5008.2	10.197	3.066	613.714	3.761	50336.884	32768.000	4.139	0.000	5.642	0.000	232531.289	0.000
Instance5008.3	10.001	2.945	618.622	3.802	50536.593	32768.000	4.091	0.000	5.702	0.000	232541.883	0.000
Instance5008.4	10.211	2.992	617.331	3.776	50266.714	32768.000	4.160	0.000	5.664	0.000	232602.821	0.000
Instance5008.5	10.186	2.831	602.980	3.843	50451.628	32768.000	4.147	0.000	5.765	0.000	232551.350	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	2.117	0.000	9.790
Available MBytes	60176.323	60146.000	61349.000
Free System Page Table Entries	33555608.149	33555607.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	58330300.498	58224640.000	58789888.000
Pool Paged Bytes	168396015.443	168300544.000	168460288.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/6/2012 10:58:03 AM -- Jetstress testing begins ...
6/6/2012 10:58:03 AM -- Preparing for testing ...
6/6/2012 10:58:09 AM -- Attaching databases ...
6/6/2012 10:58:09 AM -- Preparations for testing are complete.
6/6/2012 10:58:18 AM -- Performance logging started (interval: 30000 ms).
6/6/2012 10:58:18 AM -- Backing up databases ...
6/6/2012 5:29:27 PM -- Performance logging has ended.
6/6/2012 5:29:27 PM -- Instance5008.1 (100% processed), Instance5008.2 (100% processed), Instance5008.3 (100% processed), Instance5008.4 (100% processed) and Instance5008.5 (100% processed)
6/6/2012 5:29:27 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_9.blg has 781 samples.
6/6/2012 5:29:27 PM -- Creating test report ...
6/6/2012 5:29:31 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_9.html was saved.
6/6/2012 5:29:31 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_29_31.evt is saved.
6/6/2012 5:29:31 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_29_31.evt is saved.
6/6/2012 5:29:31 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_29_31.xml was saved.
6/6/2012 5:29:31 PM -- Jetstress testing has ended.
6/7/2012 7:17:46 AM -- Jetstress testing begins ...
6/7/2012 7:17:46 AM -- Preparing for testing ...
6/7/2012 7:17:52 AM -- Attaching databases ...
6/7/2012 7:17:52 AM -- Preparations for testing are complete.
6/7/2012 7:17:52 AM -- Starting transaction dispatch ..
6/7/2012 7:17:52 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/7/2012 7:17:52 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/7/2012 7:17:58 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
6/7/2012 7:17:58 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
6/7/2012 7:18:02 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/7/2012 7:18:02 AM -- Performance logging started (interval: 15000 ms).
6/7/2012 7:18:02 AM -- Generating log files ...
6/7/2012 8:36:34 AM -- C:\logroot\log1 (101.2% generated), C:\logroot\log2 (100.2% generated), C:\logroot\log3 (102.6% generated), C:\logroot\log4 (101.4% generated) and C:\logroot\log5 (103.4% generated)
6/7/2012 8:36:34 AM -- Performance logging has ended.
6/7/2012 8:36:34 AM -- JetInterop batch transaction stats: 22036, 21958, 22140, 22145 and 22119.
6/7/2012 8:36:34 AM -- Dispatching transactions ends.
6/7/2012 8:36:34 AM -- Shutting down databases ...
6/7/2012 8:36:35 AM -- Instance5008.1 (complete), Instance5008.2 (complete), Instance5008.3 (complete), Instance5008.4 (complete) and Instance5008.5 (complete)
6/7/2012 8:36:35 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_58.blg has 313 samples.

6/7/2012 8:36:35 AM -- Creating test report ...
6/7/2012 8:36:37 AM -- Instance5008.1 has 16.5 for I/O Database Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.1 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.1 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.2 has 15.8 for I/O Database Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.2 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.2 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.3 has 15.6 for I/O Database Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.3 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.3 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.4 has 15.8 for I/O Database Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.4 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.4 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.5 has 15.7 for I/O Database Reads Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.5 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:37 AM -- Instance5008.5 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:37 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:36:37 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:36:37 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_58.xml has 312 samples queried.
6/7/2012 8:36:37 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_58.html was saved.
6/7/2012 8:47:59 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:47:59 AM -- Recovering databases ...
6/7/2012 9:01:30 AM -- Performance logging has ended.
6/7/2012 9:01:30 AM -- Instance5008.1 (804.9181165), Instance5008.2 (799.3486666), Instance5008.3 (811.0179902), Instance5008.4 (807.8354474) and Instance5008.5 (808.3658712)
6/7/2012 9:01:31 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_47_56.blg has 201 samples.
6/7/2012 9:01:31 AM -- Creating test report ...

Server 2 - JS2

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3708.1	505	800.92967
Instance3708.2	501	773.878403
Instance3708.3	506	787.4040365
Instance3708.4	506	785.2823685
Instance3708.5	504	793.2386235

Database Configuration

Instance3708.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3708.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3708.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3708.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3708.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	10.354	2.905	578.297	3.789	40943.811	32768.000	4.047	0.019	5.684	0.004	232547.463	2.586
Instance3708.2	9.878	2.847	603.664	3.889	41204.071	32768.000	4.254	0.000	5.833	0.000	232574.926	0.000
Instance3708.3	10.143	2.959	589.802	3.860	40968.329	32768.000	4.105	0.000	5.789	0.000	232546.331	0.000
Instance3708.4	9.747	2.967	600.271	3.875	41094.136	32768.000	4.218	0.009	5.812	0.004	232569.690	2.639
Instance3708.5	10.141	2.900	598.133	3.820	41127.417	32768.000	4.032	0.007	5.730	0.004	232557.513	2.612

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3708.1	25.646	262076.426
Instance3708.2	27.132	261980.036
Instance3708.3	26.168	261848.821
Instance3708.4	28.739	262042.245
Instance3708.5	25.557	261931.792

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3708.1	10.354	2.905	603.943	3.789	50334.163	32768.000	4.047	0.019	5.684	0.004	232547.463	2.586
Instance3708.2	9.878	2.847	630.796	3.889	50700.084	32768.000	4.254	0.000	5.833	0.000	232574.926	0.000
Instance3708.3	10.143	2.959	615.971	3.860	50352.060	32768.000	4.105	0.000	5.789	0.000	232546.331	0.000
Instance3708.4	9.747	2.967	629.010	3.875	51189.054	32768.000	4.218	0.009	5.812	0.004	232569.690	2.639
Instance3708.5	10.141	2.900	623.690	3.820	50175.172	32768.000	4.032	0.007	5.730	0.004	232557.513	2.612

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	2.051	0.000	8.311
Available MBytes	60202.804	60121.000	61385.000
Free System Page Table Entries	33555608.673	33555579.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55649017.568	55570432.000	56143872.000
Pool Paged Bytes	154516701.266	154447872.000	154734592.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:30:21 PM -- Preparing for testing ...
6/1/2012 8:30:21 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:30:21 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:30:21 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499232 records inserted).
6/2/2012 5:49:41 PM -- 100.0% of 1.9 TB complete (667499672 records inserted).
6/2/2012 5:49:42 PM -- Duplicating 4 databases:
6/3/2012 10:02:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:02:29 PM -- Attaching databases ...
6/3/2012 10:02:29 PM -- Preparations for testing are complete.
6/4/2012 9:51:31 AM -- Jetstress testing begins ...
6/4/2012 9:51:31 AM -- Preparing for testing ...
6/4/2012 9:51:36 AM -- Attaching databases ...
6/4/2012 9:51:36 AM -- Preparations for testing are complete.
6/4/2012 9:51:36 AM -- Starting transaction dispatch ..
6/4/2012 9:51:37 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:37 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:42 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:42 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:49 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:49 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:49 AM -- Attaining prerequisites:
6/4/2012 9:53:35 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1210589000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:36 AM -- Performance logging has ended.
6/5/2012 9:55:21 AM -- JetInterop batch transaction stats: 400717, 400984, 400902, 399809 and 400181.
6/5/2012 9:55:21 AM -- Dispatching transactions ends.
6/5/2012 9:55:21 AM -- Shutting down databases ...
6/5/2012 9:55:22 AM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
6/5/2012 9:55:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.blg has 5758 samples.
6/5/2012 9:55:22 AM -- Creating test report ...
6/5/2012 9:55:55 AM -- Instance3708.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:55:55 AM -- Instance3708.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:55:55 AM -- Instance3708.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:55:55 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:55:55 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:55:55 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.xml has 5750 samples queried.

6/5/2012 9:55:56 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_42.html was saved.

6/5/2012 9:55:57 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:55:57 AM -- Verifying database checksums ...

6/5/2012 6:01:41 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:41 PM -- Performance logging has ended.

6/5/2012 6:01:41 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_56.blg has 970 samples.

6/5/2012 6:01:46 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_55_56.html was saved.

6/5/2012 6:01:46 PM -- Verifying log checksums ...

6/5/2012 6:01:47 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (12 logs processed), C:\logroot\log3 (12 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (12 logs processed)

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_47.evt is saved.

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_47.evt is saved.

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_47.xml was saved.

6/5/2012 6:01:47 PM -- Jetstress testing has ended.

6/6/2012 10:58:06 AM -- Jetstress testing begins ...

6/6/2012 10:58:06 AM -- Preparing for testing ...

6/6/2012 10:58:11 AM -- Attaching databases ...

6/6/2012 10:58:11 AM -- Preparations for testing are complete.

6/6/2012 10:58:20 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:20 AM -- Backing up databases ...

6/6/2012 5:26:47 PM -- Performance logging has ended.

6/6/2012 5:26:47 PM -- Instance3708.1 (100% processed), Instance3708.2 (100% processed), Instance3708.3 (100% processed), Instance3708.4 (100% processed) and Instance3708.5 (100% processed)

6/6/2012 5:26:47 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_11.blg has 776 samples.

6/6/2012 5:26:47 PM -- Creating test report ...

6/6/2012 5:26:51 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_11.html was saved.

6/6/2012 5:26:51 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_26_51.evt is saved.
6/6/2012 5:26:51 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_26_51.evt is saved.
6/6/2012 5:26:51 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_26_51.xml was saved.
6/6/2012 5:26:51 PM -- Jetstress testing has ended.
6/7/2012 7:17:44 AM -- Jetstress testing begins …
6/7/2012 7:17:44 AM -- Preparing for testing …
6/7/2012 7:17:49 AM -- Attaching databases …
6/7/2012 7:17:49 AM -- Preparations for testing are complete.
6/7/2012 7:17:49 AM -- Starting transaction dispatch ..
6/7/2012 7:17:49 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/7/2012 7:17:49 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/7/2012 7:17:55 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
6/7/2012 7:17:55 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
6/7/2012 7:17:59 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/7/2012 7:17:59 AM -- Performance logging started (interval: 15000 ms).
6/7/2012 7:17:59 AM -- Generating log files …
6/7/2012 8:36:26 AM -- C:\logroot\log1 (101.0% generated), C:\logroot\log2 (100.2% generated), C:\logroot\log3 (101.2% generated), C:\logroot\log4 (101.2% generated) and C:\logroot\log5 (100.8% generated)
6/7/2012 8:36:26 AM -- Performance logging has ended.
6/7/2012 8:36:26 AM -- JetInterop batch transaction stats: 21947, 21791, 21706, 21945 and 21877.
6/7/2012 8:36:26 AM -- Dispatching transactions ends.
6/7/2012 8:36:26 AM -- Shutting down databases …
6/7/2012 8:36:28 AM -- Instance3708.1 (complete), Instance3708.2 (complete), Instance3708.3 (complete), Instance3708.4 (complete) and Instance3708.5 (complete)
6/7/2012 8:36:28 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_55.blg has 313 samples.
6/7/2012 8:36:28 AM -- Creating test report …
6/7/2012 8:36:29 AM -- Instance3708.1 has 16.7 for I/O Database Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.1 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.1 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.2 has 15.6 for I/O Database Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.2 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.2 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.3 has 15.8 for I/O Database Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.3 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.3 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.4 has 15.6 for I/O Database Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.4 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.4 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.5 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:36:29 AM -- Instance3708.5 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:36:29 AM -- Instance3708.5 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:36:29 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:36:29 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:36:29 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_55.xml has 312 samples queried.
6/7/2012 8:36:29 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_55.html was saved.
6/7/2012 8:47:49 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:47:49 AM -- Recovering databases ...
6/7/2012 9:01:10 AM -- Performance logging has ended.
6/7/2012 9:01:10 AM -- Instance3708.1 (800.92967), Instance3708.2 (773.878403), Instance3708.3 (787.4040365), Instance3708.4 (785.2823685) and Instance3708.5 (793.2386235)
6/7/2012 9:01:10 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_47_45.blg has 199 samples.
6/7/2012 9:01:10 AM -- Creating test report ...

Server 3 – JS3

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3332.1	511	829.8320772
Instance3332.2	507	816.5717372
Instance3332.3	501	803.576604
Instance3332.4	502	818.9585984
Instance3332.5	508	818.6933916

Database Configuration

Instance3332.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3332.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3332.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3332.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3332.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3332.1	10.226	2.857	563.354	3.698	41091.003	32768.000	4.281	0.000	5.547	0.000	232563.980	0.000
Instance3332.2	9.998	2.922	576.281	3.731	41041.127	32768.000	4.086	0.015	5.596	0.004	232557.916	2.535
Instance3332.3	9.917	2.980	578.450	3.746	40836.756	32768.000	4.134	0.000	5.619	0.000	232556.688	0.000
Instance3332.4	10.080	3.029	582.210	3.687	40959.488	32768.000	4.040	0.000	5.530	0.000	232561.243	0.000
Instance3332.5	10.103	2.849	571.214	3.723	41062.343	32768.000	4.234	0.000	5.585	0.000	232535.774	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3332.1	27.190	262054.306
Instance3332.2	28.588	261840.752
Instance3332.3	28.202	261920.591
Instance3332.4	27.232	261991.755
Instance3332.5	26.536	261988.833

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3332.1	10.226	2.857	590.544	3.698	51264.645	32768.000	4.281	0.000	5.547	0.000	232563.980	0.000
Instance3332.2	9.998	2.922	604.869	3.731	51476.891	32768.000	4.086	0.015	5.596	0.004	232557.916	2.535
Instance3332.3	9.917	2.980	606.653	3.746	51114.607	32768.000	4.134	0.000	5.619	0.000	232556.688	0.000
Instance3332.4	10.080	3.029	609.443	3.687	50836.124	32768.000	4.040	0.000	5.530	0.000	232561.243	0.000
Instance3332.5	10.103	2.849	597.751	3.723	50870.066	32768.000	4.234	0.000	5.585	0.000	232535.774	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	2.117	0.000	8.262
Available MBytes	60345.398	60240.000	61567.000
Free System Page Table Entries	33555608.150	33555578.000	33555610.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54726854.835	54652928.000	55111680.000
Pool Paged Bytes	123151767.612	104382464.000	162168832.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:33:00 PM -- Preparing for testing ...
6/1/8:33:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:33:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:33:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667497883 records inserted).
6/2/2012 7:28:54 PM -- 100.0% of 1.9 TB complete (667498968 records inserted).
6/2/2012 7:28:55 PM -- Duplicating 4 databases:
6/3/2012 11:05:42 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:48 PM -- Attaching databases ...
6/3/2012 11:05:48 PM -- Preparations for testing are complete.
6/4/2012 9:51:39 AM -- Jetstress testing begins ...
6/4/2012 9:51:39 AM -- Preparing for testing ...
6/4/2012 9:51:44 AM -- Attaching databases ...
6/4/2012 9:51:44 AM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Starting transaction dispatch ..
6/4/2012 9:51:44 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:44 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:50 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:50 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:51:56 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:51:56 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:51:56 AM -- Attaining prerequisites:
6/4/2012 9:53:54 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1216696000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:55 AM -- Performance logging has ended.
6/5/2012 9:55:30 AM -- JetInterop batch transaction stats: 399233, 401291, 399511, 400818 and 399793.
6/5/2012 9:55:30 AM -- Dispatching transactions ends.
6/5/2012 9:55:30 AM -- Shutting down databases ...
6/5/2012 9:55:32 AM -- Instance3332.1 (complete), Instance3332.2 (complete), Instance3332.3 (complete), Instance3332.4 (complete) and Instance3332.5 (complete)
6/5/2012 9:55:32 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.blg has 5758 samples.
6/5/2012 9:55:32 AM -- Creating test report ...
6/5/2012 9:56:04 AM -- Instance3332.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:04 AM -- Instance3332.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:04 AM -- Instance3332.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:04 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:04 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:04 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.xml has 5750 samples queried.

6/5/2012 9:56:05 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_50.html was saved.

6/5/2012 9:56:06 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:06 AM -- Verifying database checksums …

6/5/2012 5:57:48 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:57:48 PM -- Performance logging has ended.

6/5/2012 5:57:48 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_5.blg has 962 samples.

6/5/2012 5:57:53 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_5.html was saved.

6/5/2012 5:57:53 PM -- Verifying log checksums …

6/5/2012 5:57:54 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (12 logs processed)

6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_57_54.evt is saved.

6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_57_54.evt is saved.

6/5/2012 5:57:54 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_57_54.xml was saved.

6/5/2012 5:57:54 PM -- Jetstress testing has ended.

6/6/2012 10:58:11 AM -- Jetstress testing begins …

6/6/2012 10:58:11 AM -- Preparing for testing …

6/6/2012 10:58:16 AM -- Attaching databases …

6/6/2012 10:58:16 AM -- Preparations for testing are complete.

6/6/2012 10:58:25 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:25 AM -- Backing up databases …

6/6/2012 5:28:23 PM -- Performance logging has ended.

6/6/2012 5:28:23 PM -- Instance3332.1 (100% processed), Instance3332.2 (100% processed), Instance3332.3 (100% processed), Instance3332.4 (100% processed) and Instance3332.5 (100% processed)

6/6/2012 5:28:23 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_16.blg has 779 samples.

6/6/2012 5:28:23 PM -- Creating test report …

6/6/2012 5:28:27 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_16.html was saved.

6/6/2012 5:28:27 PM -- [C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_28_27.evt](#) is saved.

6/6/2012 5:28:27 PM -- [C:\Program Files\Exchange Jetstress\System_2012_6_6_17_28_27.evt](#) is saved.

6/6/2012 5:28:27 PM -- [C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_28_27.xml](#) was saved.

6/6/2012 5:28:27 PM -- Jetstress testing has ended.

6/7/2012 7:17:41 AM -- Jetstress testing begins ...

6/7/2012 7:17:41 AM -- Preparing for testing ...

6/7/2012 7:17:47 AM -- Attaching databases ...

6/7/2012 7:17:47 AM -- Preparations for testing are complete.

6/7/2012 7:17:47 AM -- Starting transaction dispatch ..

6/7/2012 7:17:47 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:47 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:57 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:57 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:18:01 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:18:01 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:18:01 AM -- Generating log files ...

6/7/2012 8:36:17 AM -- C:\logroot\log1 (102.2% generated), C:\logroot\log2 (101.4% generated), C:\logroot\log3 (100.2% generated), C:\logroot\log4 (100.4% generated) and C:\logroot\log5 (101.6% generated)

6/7/2012 8:36:17 AM -- Performance logging has ended.

6/7/2012 8:36:17 AM -- JetInterop batch transaction stats: 21957, 21931, 21760, 21843 and 22004.

6/7/2012 8:36:17 AM -- Dispatching transactions ends.

6/7/2012 8:36:17 AM -- Shutting down databases ...

6/7/2012 8:36:19 AM -- Instance3332.1 (complete), Instance3332.2 (complete), Instance3332.3 (complete), Instance3332.4 (complete) and Instance3332.5 (complete)

6/7/2012 8:36:19 AM -- [C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_57.blg](#) has 312 samples.

6/7/2012 8:36:19 AM -- Creating test report ...

6/7/2012 8:36:21 AM -- Instance3332.1 has 16.5 for I/O Database Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.2 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.3 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.4 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.5 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:36:21 AM -- Instance3332.5 has 3.1 for I/O Log Writes Average Latency.
6/7/2012 8:36:21 AM -- Instance3332.5 has 3.1 for I/O Log Reads Average Latency.
6/7/2012 8:36:21 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:36:21 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:36:21 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_57.xml has 311 samples queried.
6/7/2012 8:36:21 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_57.html was saved.
6/7/2012 8:48:13 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:48:13 AM -- Recovering databases ...
6/7/2012 9:02:02 AM -- Performance logging has ended.
6/7/2012 9:02:02 AM -- Instance3332.1 (829.8320772), Instance3332.2 (816.5717372), Instance3332.3 (803.576604), Instance3332.4 (818.9585984) and Instance3332.5 (818.6933916)
6/7/2012 9:02:03 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_9.blg has 206 samples.
6/7/2012 9:02:03 AM -- Creating test report ...

Server 4 – JS4

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3232.1	501	833.2904484
Instance3232.2	504	814.7257344
Instance3232.3	510	830.107926
Instance3232.4	501	806.5042182
Instance3232.5	501	816.3169956

Database Configuration

Instance3232.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3232.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3232.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3232.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3232.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3232.1	10.427	2.961	570.342	3.603	40857.990	32768.000	4.195	0.000	5.405	0.000	232493.660	0.000
Instance3232.2	10.214	3.085	579.582	3.715	40917.448	32768.000	4.390	0.000	5.573	0.000	232535.300	0.000
Instance3232.3	10.440	3.057	563.105	3.687	41069.919	32768.000	4.186	0.000	5.530	0.000	232579.066	0.000
Instance3232.4	10.282	3.011	578.233	3.725	40949.066	32768.000	4.233	0.000	5.592	0.000	232553.611	0.000
Instance3232.5	10.100	3.225	576.897	3.682	41037.771	32768.000	4.146	0.000	5.523	0.000	232561.778	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3232.1	25.982	261977.884
Instance3232.2	26.013	262011.369
Instance3232.3	25.397	261975.199
Instance3232.4	25.382	261927.287
Instance3232.5	28.294	261865.682

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3232.1	10.427	2.961	596.324	3.603	50492.414	32768.000	4.195	0.000	5.405	0.000	232493.660	0.000
Instance3232.2	10.214	3.085	605.595	3.715	50414.595	32768.000	4.390	0.000	5.573	0.000	232535.300	0.000
Instance3232.3	10.440	3.057	588.502	3.687	50603.174	32768.000	4.186	0.000	5.530	0.000	232579.066	0.000
Instance3232.4	10.282	3.011	603.616	3.725	50241.278	32768.000	4.233	0.000	5.592	0.000	232553.611	0.000
Instance3232.5	10.100	3.225	605.191	3.682	51362.035	32768.000	4.146	0.000	5.523	0.000	232561.778	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.857	0.000	6.618
Available MBytes	60236.338	60147.000	61416.000
Free System Page Table Entries	33555608.908	33555579.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55007004.444	54939648.000	55189504.000
Pool Paged Bytes	151748528.850	151597056.000	151982080.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:35:00 PM -- Preparing for testing ...
6/1/2012 8:35:00 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:35:00 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:35:00 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667499830 records inserted).
6/2/2012 5:47:42 PM -- 100.0% of 1.9 TB complete (667500307 records inserted).
6/2/2012 5:47:43 PM -- Duplicating 4 databases:
6/3/2012 9:39:36 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:39:42 PM -- Attaching databases ...
6/3/2012 9:39:42 PM -- Preparations for testing are complete.
6/4/2012 9:51:44 AM -- Jetstress testing begins ...
6/4/2012 9:51:44 AM -- Preparing for testing ...
6/4/2012 9:51:50 AM -- Attaching databases ...
6/4/2012 9:51:50 AM -- Preparations for testing are complete.
6/4/2012 9:51:50 AM -- Starting transaction dispatch ..
6/4/2012 9:51:50 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:50 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:56 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:56 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:02 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:02 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:02 AM -- Attaining prerequisites:
6/4/2012 9:53:56 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213149000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:57 AM -- Performance logging has ended.
6/5/2012 9:55:36 AM -- JetInterop batch transaction stats: 401931, 402900, 402503, 402958 and 401982.
6/5/2012 9:55:36 AM -- Dispatching transactions ends.
6/5/2012 9:55:36 AM -- Shutting down databases ...
6/5/2012 9:55:37 AM -- Instance3232.1 (complete), Instance3232.2 (complete), Instance3232.3 (complete), Instance3232.4 (complete) and Instance3232.5 (complete)
6/5/2012 9:55:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.blg has 5758 samples.
6/5/2012 9:55:37 AM -- Creating test report ...
6/5/2012 9:56:10 AM -- Instance3232.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:10 AM -- Instance3232.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 12.6 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:10 AM -- Instance3232.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:10 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:10 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:10 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.xml has 5750 samples queried.

6/5/2012 9:56:11 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_56.html was saved.

6/5/2012 9:56:12 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:12 AM -- Verifying database checksums …

6/5/2012 6:01:10 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:10 PM -- Performance logging has ended.

6/5/2012 6:01:10 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_11.blg has 969 samples.

6/5/2012 6:01:15 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_11.html was saved.

6/5/2012 6:01:15 PM -- Verifying log checksums …

6/5/2012 6:01:16 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_16.evt is saved.

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_16.evt is saved.

6/5/2012 6:01:16 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_16.xml was saved.

6/5/2012 6:01:16 PM -- Jetstress testing has ended.

6/6/2012 10:58:15 AM -- Jetstress testing begins …

6/6/2012 10:58:15 AM -- Preparing for testing …

6/6/2012 10:58:20 AM -- Attaching databases …

6/6/2012 10:58:20 AM -- Preparations for testing are complete.

6/6/2012 10:58:29 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:29 AM -- Backing up databases …

6/6/2012 5:39:18 PM -- Performance logging has ended.

6/6/2012 5:39:18 PM -- Instance3232.1 (100% processed), Instance3232.2 (100% processed), Instance3232.3 (100% processed), Instance3232.4 (100% processed) and Instance3232.5 (100% processed)

6/6/2012 5:39:18 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_20.blg has 801 samples.

6/6/2012 5:39:18 PM -- Creating test report …

6/6/2012 5:39:22 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_20.html was saved.

6/6/2012 5:39:22 PM -- [C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_39_22.evt](#) is saved.

6/6/2012 5:39:22 PM -- [C:\Program Files\Exchange Jetstress\System_2012_6_6_17_39_22.evt](#) is saved.

6/6/2012 5:39:22 PM -- [C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_39_22.xml](#) was saved.

6/6/2012 5:39:22 PM -- Jetstress testing has ended.

6/7/2012 7:17:38 AM -- Jetstress testing begins ...

6/7/2012 7:17:38 AM -- Preparing for testing ...

6/7/2012 7:17:43 AM -- Attaching databases ...

6/7/2012 7:17:43 AM -- Preparations for testing are complete.

6/7/2012 7:17:43 AM -- Starting transaction dispatch ..

6/7/2012 7:17:43 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:43 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:50 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:50 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:53 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:53 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:53 AM -- Generating log files ...

6/7/2012 8:36:03 AM -- C:\logroot\log1 (100.2% generated), C:\logroot\log2 (100.6% generated), C:\logroot\log3 (101.8% generated), C:\logroot\log4 (100.2% generated) and C:\logroot\log5 (100.2% generated)

6/7/2012 8:36:03 AM -- Performance logging has ended.

6/7/2012 8:36:03 AM -- JetInterop batch transaction stats: 21951, 21948, 21982, 21930 and 21825.

6/7/2012 8:36:03 AM -- Dispatching transactions ends.

6/7/2012 8:36:03 AM -- Shutting down databases ...

6/7/2012 8:36:04 AM -- Instance3232.1 (complete), Instance3232.2 (complete), Instance3232.3 (complete), Instance3232.4 (complete) and Instance3232.5 (complete)

6/7/2012 8:36:04 AM -- [C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_50.blg](#) has 312 samples.

6/7/2012 8:36:04 AM -- Creating test report ...

6/7/2012 8:36:06 AM -- Instance3232.1 has 16.5 for I/O Database Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.2 has 15.5 for I/O Database Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.3 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.4 has 15.5 for I/O Database Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.5 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:36:06 AM -- Instance3232.5 has 2.9 for I/O Log Writes Average Latency.
6/7/2012 8:36:06 AM -- Instance3232.5 has 2.9 for I/O Log Reads Average Latency.
6/7/2012 8:36:06 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:36:06 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:36:06 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_50.xml has 311 samples queried.
6/7/2012 8:36:06 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_50.html was saved.
6/7/2012 8:48:29 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:48:29 AM -- Recovering databases ...
6/7/2012 9:02:22 AM -- Performance logging has ended.
6/7/2012 9:02:22 AM -- Instance3232.1 (833.2904484), Instance3232.2 (814.7257344), Instance3232.3 (830.107926), Instance3232.4 (806.5042182) and Instance3232.5 (816.3169956)
6/7/2012 9:02:23 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_25.blg has 207 samples.
6/7/2012 9:02:23 AM -- Creating test report ...

Server 5 – JS5

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3812.1	501	827.2171253
Instance3812.2	505	818.1996895
Instance3812.3	505	809.1822537
Instance3812.4	506	829.3388749
Instance3812.5	501	811.3040033

Database Configuration

Instance3812.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3812.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3812.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3812.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3812.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3812.1	10.442	2.949	563.884	3.634	41238.736	32607.373	4.186	0.000	5.450	0.000	231365.590	0.000
Instance3812.2	10.525	2.822	564.250	3.714	40983.021	32768.000	4.113	0.007	5.571	0.004	232577.193	2.535
Instance3812.3	10.401	3.110	562.059	3.751	40896.182	32768.000	4.280	0.008	5.626	0.004	232512.282	2.560
Instance3812.4	10.174	2.947	569.820	3.659	41097.620	32768.000	4.111	0.000	5.489	0.000	232562.879	0.000
Instance3812.5	9.868	3.070	561.789	3.706	41012.515	32768.000	4.251	0.000	5.559	0.000	232567.232	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3812.1	25.710	262030.507
Instance3812.2	25.313	261818.661
Instance3812.3	26.076	262074.395
Instance3812.4	28.271	261925.401
Instance3812.5	30.613	261972.107

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3812.1	10.442	2.949	589.593	3.634	50866.578	32607.373	4.186	0.000	5.450	0.000	231365.590	0.000
Instance3812.2	10.525	2.822	589.563	3.714	50464.499	32768.000	4.113	0.007	5.571	0.004	232577.193	2.535
Instance3812.3	10.401	3.110	588.135	3.751	50702.671	32768.000	4.280	0.008	5.626	0.004	232512.282	2.560
Instance3812.4	10.174	2.947	598.091	3.659	51535.762	32768.000	4.111	0.000	5.489	0.000	232562.879	0.000
Instance3812.5	9.868	3.070	592.402	3.706	52430.778	32768.000	4.251	0.000	5.559	0.000	232567.232	0.000

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.917	0.000	6.474
Available MBytes	60240.879	60200.000	61414.000
Free System Page Table Entries	33555096.913	33555067.000	33555099.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54992856.233	54923264.000	55357440.000
Pool Paged Bytes	151417846.058	151404544.000	151564288.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Dell Compellent Storage Center (SC8000) 50,000 Mailbox Exchange 2010 Resiliency Storage Solution

Test Log

6/1/2012 8:37:25 PM -- Preparing for testing ...
6/1/2012 8:37:25 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:37:25 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:37:25 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499152 records inserted).
6/2/2012 7:20:47 PM -- 100.0% of 1.9 TB complete (667499630 records inserted).
6/2/2012 7:20:48 PM -- Duplicating 4 databases:
6/3/2012 11:02:39 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:02:45 PM -- Attaching databases ...
6/3/2012 11:02:45 PM -- Preparations for testing are complete.
6/4/2012 9:51:47 AM -- Jetstress testing begins ...
6/4/2012 9:51:47 AM -- Preparing for testing ...
6/4/2012 9:51:52 AM -- Attaching databases ...
6/4/2012 9:51:52 AM -- Preparations for testing are complete.
6/4/2012 9:51:52 AM -- Starting transaction dispatch ..
6/4/2012 9:51:52 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:52 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:51:58 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:51:58 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:05 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:05 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:05 AM -- Attaining prerequisites:
6/4/2012 9:53:59 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1213735000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:53:59 AM -- Performance logging has ended.
6/5/2012 9:55:43 AM -- JetInterop batch transaction stats: 400501, 399756, 399973, 400712 and 401287.
6/5/2012 9:55:43 AM -- Dispatching transactions ends.
6/5/2012 9:55:43 AM -- Shutting down databases ...
6/5/2012 9:55:44 AM -- Instance3812.1 (complete), Instance3812.2 (complete), Instance3812.3 (complete), Instance3812.4 (complete) and Instance3812.5 (complete)
6/5/2012 9:55:44 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.blg has 5758 samples.
6/5/2012 9:55:44 AM -- Creating test report ...
6/5/2012 9:56:17 AM -- Instance3812.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:17 AM -- Instance3812.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:17 AM -- Instance3812.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:17 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:17 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:17 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.xml has 5750 samples queried.

6/5/2012 9:56:18 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_51_58.html was saved.

6/5/2012 9:56:19 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:19 AM -- Verifying database checksums ...

6/5/2012 5:57:56 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:57:56 PM -- Performance logging has ended.

6/5/2012 5:57:56 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_18.blg has 962 samples.

6/5/2012 5:58:00 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_18.html was saved.

6/5/2012 5:58:01 PM -- Verifying log checksums ...

6/5/2012 5:58:01 PM -- C:\logroot\log1 (10 logs processed), C:\logroot\log2 (13 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (13 logs processed)

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_1.evt is saved.

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_1.evt is saved.

6/5/2012 5:58:01 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_1.xml was saved.

6/5/2012 5:58:01 PM -- Jetstress testing has ended.

6/6/2012 10:58:19 AM -- Jetstress testing begins ...

6/6/2012 10:58:19 AM -- Preparing for testing ...

6/6/2012 10:58:24 AM -- Attaching databases ...

6/6/2012 10:58:24 AM -- Preparations for testing are complete.

6/6/2012 10:58:34 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:34 AM -- Backing up databases ...

6/6/2012 5:31:08 PM -- Performance logging has ended.

6/6/2012 5:31:08 PM -- Instance3812.1 (100% processed), Instance3812.2 (100% processed), Instance3812.3 (100% processed), Instance3812.4 (100% processed) and Instance3812.5 (100% processed)

6/6/2012 5:31:08 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_24.blg has 784 samples.

6/6/2012 5:31:08 PM -- Creating test report ...

6/6/2012 5:31:11 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_24.html was saved.

6/6/2012 5:31:11 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_31_11.evt is saved.

6/6/2012 5:31:11 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_31_11.evt is saved.

6/6/2012 5:31:11 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_31_11.xml was saved.

6/6/2012 5:31:11 PM -- Jetstress testing has ended.

6/7/2012 7:17:31 AM -- Jetstress testing begins …

6/7/2012 7:17:31 AM -- Preparing for testing …

6/7/2012 7:17:37 AM -- Attaching databases …

6/7/2012 7:17:37 AM -- Preparations for testing are complete.

6/7/2012 7:17:37 AM -- Starting transaction dispatch ..

6/7/2012 7:17:37 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:37 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:43 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:43 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:47 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:47 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:47 AM -- Generating log files …

6/7/2012 8:34:51 AM -- C:\logroot\log1 (100.2% generated), C:\logroot\log2 (101.0% generated), C:\logroot\log3 (101.0% generated), C:\logroot\log4 (101.2% generated) and C:\logroot\log5 (100.2% generated)

6/7/2012 8:34:51 AM -- Performance logging has ended.

6/7/2012 8:34:51 AM -- JetInterop batch transaction stats: 21736, 21702, 21494, 21842 and 21669.

6/7/2012 8:34:51 AM -- Dispatching transactions ends.

6/7/2012 8:34:51 AM -- Shutting down databases …

6/7/2012 8:34:53 AM -- Instance3812.1 (complete), Instance3812.2 (complete), Instance3812.3 (complete), Instance3812.4 (complete) and Instance3812.5 (complete)

6/7/2012 8:34:53 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_43.blg has 307 samples.

6/7/2012 8:34:53 AM -- Creating test report …

6/7/2012 8:34:54 AM -- Instance3812.1 has 16.5 for I/O Database Reads Average Latency.

6/7/2012 8:34:54 AM -- Instance3812.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:34:54 AM -- Instance3812.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:34:54 AM -- Instance3812.2 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.3 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.4 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.5 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:34:55 AM -- Instance3812.5 has 3.1 for I/O Log Writes Average Latency.
6/7/2012 8:34:55 AM -- Instance3812.5 has 3.1 for I/O Log Reads Average Latency.
6/7/2012 8:34:55 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:34:55 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:34:55 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_43.xml has 306 samples queried.
6/7/2012 8:34:55 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_43.html was saved.
6/7/2012 8:48:36 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:48:36 AM -- Recovering databases ...
6/7/2012 9:02:26 AM -- Performance logging has ended.
6/7/2012 9:02:26 AM -- Instance3812.1 (827.2171253), Instance3812.2 (818.1996895), Instance3812.3 (809.1822537), Instance3812.4 (829.3388749) and Instance3812.5 (811.3040033)
6/7/2012 9:02:26 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_33.blg has 206 samples.
6/7/2012 9:02:26 AM -- Creating test report ...

Server 6 – JS6

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3472.1	503	832.2296076
Instance3472.2	508	818.9690976
Instance3472.3	505	826.9254036
Instance3472.4	501	814.195314
Instance3472.5	510	832.2296076

Database Configuration

Instance3472.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3472.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3472.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3472.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3472.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3472.1	10.508	3.005	554.148	3.616	41209.036	32608.156	4.132	0.000	5.425	0.000	231421.188	0.000
Instance3472.2	10.329	3.063	577.988	3.721	41080.574	32768.000	4.153	0.000	5.582	0.000	232561.279	0.000
Instance3472.3	10.185	3.064	574.984	3.663	41230.215	32607.373	4.139	0.000	5.495	0.000	231414.431	0.000
Instance3472.4	10.190	2.931	577.930	3.688	41250.611	32604.975	4.149	0.000	5.532	0.000	231402.480	0.000
Instance3472.5	10.423	2.940	575.709	3.675	41260.273	32768.000	4.126	0.000	5.512	0.000	232561.766	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3472.1	26.468	261841.057
Instance3472.2	25.359	261982.182
Instance3472.3	27.343	261943.211
Instance3472.4	26.879	261964.078
Instance3472.5	25.415	261943.432

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3472.1	10.508	3.005	580.616	3.616	51266.885	32608.156	4.132	0.000	5.425	0.000	231421.188	0.000
Instance3472.2	10.329	3.063	603.347	3.721	50365.144	32768.000	4.153	0.000	5.582	0.000	232561.279	0.000
Instance3472.3	10.185	3.064	602.326	3.663	51249.539	32607.373	4.139	0.000	5.495	0.000	231414.431	0.000
Instance3472.4	10.190	2.931	604.809	3.688	51059.433	32604.975	4.149	0.000	5.532	0.000	231402.480	0.000
Instance3472.5	10.423	2.940	601.124	3.675	50590.458	32768.000	4.126	0.000	5.512	0.000	232561.766	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.803	0.000	6.326
Available MBytes	60253.432	60214.000	61421.000
Free System Page Table Entries	33555609.165	33555608.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55342527.379	55218176.000	55869440.000
Pool Paged Bytes	152428782.602	152363008.000	152612864.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:39:46 PM -- Preparing for testing ...
6/1/2012 8:39:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:39:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:39:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667499357 records inserted).
6/2/2012 5:53:04 PM -- 100.0% of 1.9 TB complete (667500385 records inserted).
6/2/2012 5:53:05 PM -- Duplicating 4 databases:
6/3/2012 9:53:18 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:53:24 PM -- Attaching databases ...
6/3/2012 9:53:24 PM -- Preparations for testing are complete.
6/4/2012 9:51:49 AM -- Jetstress testing begins ...
6/4/2012 9:51:49 AM -- Preparing for testing ...
6/4/2012 9:51:55 AM -- Attaching databases ...
6/4/2012 9:51:55 AM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Starting transaction dispatch ..
6/4/2012 9:51:55 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:55 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:01 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:01 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:09 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:09 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:09 AM -- Attaining prerequisites:
6/4/2012 9:54:02 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209709000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:04 AM -- Performance logging has ended.
6/5/2012 9:56:22 AM -- JetInterop batch transaction stats: 402156, 402907, 403467, 401528 and 402377.
6/5/2012 9:56:22 AM -- Dispatching transactions ends.
6/5/2012 9:56:22 AM -- Shutting down databases ...
6/5/2012 9:56:27 AM -- Instance3472.1 (complete), Instance3472.2 (complete), Instance3472.3 (complete), Instance3472.4 (complete) and Instance3472.5 (complete)
6/5/2012 9:56:27 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.blg has 5758 samples.
6/5/2012 9:56:27 AM -- Creating test report ...
6/5/2012 9:57:00 AM -- Instance3472.1 has 13.3 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:57:00 AM -- Instance3472.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:57:00 AM -- Instance3472.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:57:00 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:57:00 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.xml has 5750 samples queried.

6/5/2012 9:57:00 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_1.html was saved.

6/5/2012 9:57:01 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:57:01 AM -- Verifying database checksums …

6/5/2012 6:01:18 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:18 PM -- Performance logging has ended.

6/5/2012 6:01:18 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_57_0.blg has 968 samples.

6/5/2012 6:01:23 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_57_0.html was saved.

6/5/2012 6:01:23 PM -- Verifying log checksums …

6/5/2012 6:01:24 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_24.evt is saved.

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_24.evt is saved.

6/5/2012 6:01:24 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_24.xml was saved.

6/5/2012 6:01:24 PM -- Jetstress testing has ended.

6/6/2012 10:58:21 AM -- Jetstress testing begins …

6/6/2012 10:58:21 AM -- Preparing for testing …

6/6/2012 10:58:26 AM -- Attaching databases …

6/6/2012 10:58:26 AM -- Preparations for testing are complete.

6/6/2012 10:58:35 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:35 AM -- Backing up databases …

6/6/2012 5:35:59 PM -- Performance logging has ended.

6/6/2012 5:35:59 PM -- Instance3472.1 (100% processed), Instance3472.2 (100% processed), Instance3472.3 (100% processed), Instance3472.4 (100% processed) and Instance3472.5 (100% processed)

6/6/2012 5:35:59 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_26.blg has 794 samples.

6/6/2012 5:35:59 PM -- Creating test report …

6/6/2012 5:36:03 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_26.html was saved.

6/6/2012 5:36:03 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_36_3.evt is saved.
6/6/2012 5:36:03 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_36_3.evt is saved.
6/6/2012 5:36:03 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_36_3.xml was saved.
6/6/2012 5:36:03 PM -- Jetstress testing has ended.
6/7/2012 7:17:28 AM -- Jetstress testing begins ...
6/7/2012 7:17:28 AM -- Preparing for testing ...
6/7/2012 7:17:33 AM -- Attaching databases ...
6/7/2012 7:17:33 AM -- Preparations for testing are complete.
6/7/2012 7:17:33 AM -- Starting transaction dispatch ..
6/7/2012 7:17:33 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/7/2012 7:17:33 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/7/2012 7:17:39 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).
6/7/2012 7:17:39 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).
6/7/2012 7:17:43 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/7/2012 7:17:43 AM -- Performance logging started (interval: 15000 ms).
6/7/2012 7:17:43 AM -- Generating log files ...
6/7/2012 8:35:34 AM -- C:\logroot\log1 (100.6% generated), C:\logroot\log2 (101.6% generated), C:\logroot\log3 (101.0% generated), C:\logroot\log4 (100.2% generated) and C:\logroot\log5 (102.0% generated)
6/7/2012 8:35:34 AM -- Performance logging has ended.
6/7/2012 8:35:34 AM -- JetInterop batch transaction stats: 21731, 21983, 21874, 21885 and 22027.
6/7/2012 8:35:35 AM -- Dispatching transactions ends.
6/7/2012 8:35:35 AM -- Shutting down databases ...
6/7/2012 8:35:39 AM -- Instance3472.1 (complete), Instance3472.2 (complete), Instance3472.3 (complete), Instance3472.4 (complete) and Instance3472.5 (complete)
6/7/2012 8:35:39 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_39.blg has 310 samples.
6/7/2012 8:35:39 AM -- Creating test report ...
6/7/2012 8:35:41 AM -- Instance3472.1 has 16.5 for I/O Database Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.1 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.1 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.2 has 15.6 for I/O Database Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.2 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.2 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.3 has 15.7 for I/O Database Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.3 has 2.9 for I/O Log Writes Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.3 has 2.9 for I/O Log Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.4 has 15.5 for I/O Database Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.4 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.4 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:35:41 AM -- Instance3472.5 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:41 AM -- Instance3472.5 has 2.9 for I/O Log Writes Average Latency.

6/7/2012 8:35:41 AM -- Instance3472.5 has 2.9 for I/O Log Reads Average Latency.

6/7/2012 8:35:41 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/7/2012 8:35:41 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/7/2012 8:35:41 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_39.xml has 309 samples queried.

6/7/2012 8:35:41 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_39.html was saved.

6/7/2012 8:48:43 AM -- Performance logging started (interval: 4000 ms).

6/7/2012 8:48:43 AM -- Recovering databases ...

6/7/2012 9:02:35 AM -- Performance logging has ended.

6/7/2012 9:02:35 AM -- Instance3472.1 (832.2296076), Instance3472.2 (818.9690976), Instance3472.3 (826.9254036), Instance3472.4 (814.195314) and Instance3472.5 (832.2296076)

6/7/2012 9:02:36 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_40.blg has 206 samples.

6/7/2012 9:02:36 AM -- Creating test report ...

Server 7 – JS7

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3088.1	504	821.6475326
Instance3088.2	507	824.0345009
Instance3088.3	508	820.5866578
Instance3088.4	501	820.8518765
Instance3088.5	502	819.2605643

Database Configuration

Instance3088.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3088.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3088.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3088.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3088.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3088.1	10.635	2.937	563.934	3.685	41232.467	32606.581	4.037	0.000	5.528	0.000	231408.560	0.000
Instance3088.2	10.363	2.943	569.528	3.696	41204.911	32607.373	4.149	0.005	5.556	0.016	231423.921	2.510
Instance3088.3	10.387	2.896	581.584	3.722	41305.193	32768.000	4.108	0.008	5.583	0.004	231380.363	2.522
Instance3088.4	10.431	3.178	571.528	3.663	41151.485	32768.000	3.969	0.000	5.495	0.000	232561.305	0.000
Instance3088.5	10.255	2.939	579.990	3.674	41310.398	32768.000	4.220	0.000	5.511	0.000	232510.864	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3088.1	24.202	261908.896
Instance3088.2	26.844	262003.785
Instance3088.3	25.306	261982.502
Instance3088.4	26.087	261936.340
Instance3088.5	26.249	262081.688

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3088.1	10.635	2.937	588.136	3.685	50313.543	32606.581	4.037	0.000	5.528	0.000	231408.560	0.000
Instance3088.2	10.363	2.943	596.372	3.696	51143.494	32607.373	4.149	0.005	5.556	0.016	231423.921	2.510
Instance3088.3	10.387	2.896	606.889	3.722	50506.888	32768.000	4.108	0.008	5.583	0.004	231380.363	2.522
Instance3088.4	10.431	3.178	597.615	3.663	50789.308	32768.000	3.969	0.000	5.495	0.000	232561.305	0.000
Instance3088.5	10.255	2.939	606.238	3.674	50869.229	32768.000	4.220	0.000	5.511	0.000	232510.864	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.806	0.000	6.547
Available MBytes	60245.278	60189.000	61419.000
Free System Page Table Entries	33555609.254	33555603.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	55121050.849	55017472.000	55500800.000
Pool Paged Bytes	152243884.332	151592960.000	152522752.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:41:46 PM -- Preparing for testing ...
6/1/2012 8:41:46 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:41:46 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:41:46 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500049 records inserted).
6/2/2012 7:26:16 PM -- 100.0% of 1.9 TB complete (667500052 records inserted).
6/2/2012 7:26:19 PM -- Duplicating 4 databases:
6/3/2012 10:59:23 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 10:59:28 PM -- Attaching databases ...
6/3/2012 10:59:28 PM -- Preparations for testing are complete.
6/4/2012 9:51:53 AM -- Jetstress testing begins ...
6/4/2012 9:51:53 AM -- Preparing for testing ...
6/4/2012 9:51:59 AM -- Attaching databases ...
6/4/2012 9:51:59 AM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Starting transaction dispatch ..
6/4/2012 9:51:59 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:51:59 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:05 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:05 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:11 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:11 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:11 AM -- Attaining prerequisites:
6/4/2012 9:54:13 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1211351000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:13 AM -- Performance logging has ended.
6/5/2012 9:55:49 AM -- JetInterop batch transaction stats: 402242, 401278, 401306, 401532 and 401631.
6/5/2012 9:55:49 AM -- Dispatching transactions ends.
6/5/2012 9:55:49 AM -- Shutting down databases ...
6/5/2012 9:55:51 AM -- Instance3088.1 (complete), Instance3088.2 (complete), Instance3088.3 (complete), Instance3088.4 (complete) and Instance3088.5 (complete)
6/5/2012 9:55:51 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.blg has 5759 samples.
6/5/2012 9:55:51 AM -- Creating test report ...
6/5/2012 9:56:22 AM -- Instance3088.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:22 AM -- Instance3088.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:22 AM -- Instance3088.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:22 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:22 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.xml has 5750 samples queried.

6/5/2012 9:56:22 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_5.html was saved.

6/5/2012 9:56:23 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:23 AM -- Verifying database checksums ...

6/5/2012 5:58:04 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:58:04 PM -- Performance logging has ended.

6/5/2012 5:58:04 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_22.blg has 962 samples.

6/5/2012 5:58:09 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_22.html was saved.

6/5/2012 5:58:09 PM -- Verifying log checksums ...

6/5/2012 5:58:10 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (12 logs processed), C:\logroot\log4 (10 logs processed) and C:\logroot\log5 (12 logs processed)

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_10.evt is saved.

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_10.evt is saved.

6/5/2012 5:58:10 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_10.xml was saved.

6/5/2012 5:58:10 PM -- Jetstress testing has ended.

6/6/2012 10:58:24 AM -- Jetstress testing begins ...

6/6/2012 10:58:24 AM -- Preparing for testing ...

6/6/2012 10:58:30 AM -- Attaching databases ...

6/6/2012 10:58:30 AM -- Preparations for testing are complete.

6/6/2012 10:58:38 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:38 AM -- Backing up databases ...

6/6/2012 5:31:09 PM -- Performance logging has ended.

6/6/2012 5:31:09 PM -- Instance3088.1 (100% processed), Instance3088.2 (100% processed), Instance3088.3 (100% processed), Instance3088.4 (100% processed) and Instance3088.5 (100% processed)

6/6/2012 5:31:09 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_30.blg has 784 samples.

6/6/2012 5:31:09 PM -- Creating test report ...

6/6/2012 5:31:13 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_30.html was saved.

6/6/2012 5:31:13 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_31_13.evt is saved.

6/6/2012 5:31:13 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_31_13.evt is saved.

6/6/2012 5:31:13 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_31_13.xml was saved.

6/6/2012 5:31:13 PM -- Jetstress testing has ended.

6/7/2012 7:17:24 AM -- Jetstress testing begins ...

6/7/2012 7:17:24 AM -- Preparing for testing ...

6/7/2012 7:17:30 AM -- Attaching databases ...

6/7/2012 7:17:30 AM -- Preparations for testing are complete.

6/7/2012 7:17:30 AM -- Starting transaction dispatch ..

6/7/2012 7:17:30 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:30 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:35 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:35 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:39 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:39 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:39 AM -- Generating log files ...

6/7/2012 8:35:41 AM -- C:\logroot\log1 (100.8% generated), C:\logroot\log2 (101.4% generated), C:\logroot\log3 (101.6% generated), C:\logroot\log4 (100.2% generated) and C:\logroot\log5 (100.2% generated)

6/7/2012 8:35:41 AM -- Performance logging has ended.

6/7/2012 8:35:41 AM -- JetInterop batch transaction stats: 21749, 22057, 22090, 21819 and 22081.

6/7/2012 8:35:41 AM -- Dispatching transactions ends.

6/7/2012 8:35:41 AM -- Shutting down databases ...

6/7/2012 8:35:42 AM -- Instance3088.1 (complete), Instance3088.2 (complete), Instance3088.3 (complete), Instance3088.4 (complete) and Instance3088.5 (complete)

6/7/2012 8:35:42 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_35.blg has 311 samples.

6/7/2012 8:35:42 AM -- Creating test report ...

6/7/2012 8:35:44 AM -- Instance3088.1 has 16.5 for I/O Database Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.2 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.3 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.4 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.5 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.5 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:44 AM -- Instance3088.5 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:44 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/7/2012 8:35:44 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/7/2012 8:35:44 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_35.xml has 310 samples queried.

6/7/2012 8:35:44 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_35.html was saved.

6/7/2012 8:48:51 AM -- Performance logging started (interval: 4000 ms).

6/7/2012 8:48:51 AM -- Recovering databases ...

6/7/2012 9:02:35 AM -- Performance logging has ended.

6/7/2012 9:02:35 AM -- Instance3088.1 (821.6475326), Instance3088.2 (824.0345009), Instance3088.3 (820.5866578), Instance3088.4 (820.8518765) and Instance3088.5 (819.2605643)

6/7/2012 9:02:35 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_47.blg has 205 samples.

6/7/2012 9:02:35 AM -- Creating test report ...

Server 8 – JS8

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance3784.1	502	822.718735
Instance3784.2	501	811.314404
Instance3784.3	501	810.78397
Instance3784.4	506	813.701357
Instance3784.5	507	816.883961

Database Configuration

Instance3784.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance3784.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance3784.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance3784.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance3784.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3784.1	10.701	2.847	569.388	3.666	41028.371	32768.000	4.058	0.000	5.500	0.000	232549.907	0.000
Instance3784.2	10.278	3.108	575.116	3.699	41353.911	32604.160	4.235	0.000	5.548	0.000	231411.119	0.000
Instance3784.3	10.483	3.260	575.408	3.706	41162.259	32768.000	3.980	0.000	5.559	0.000	232538.329	0.000
Instance3784.4	10.370	3.146	579.936	3.740	41206.198	32604.975	4.123	0.007	5.610	0.004	231399.331	2.547
Instance3784.5	10.485	3.071	577.429	3.731	41046.986	32774.239	4.024	0.004	5.604	0.015	232559.352	2.535

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance3784.2	26.095	261884.087
Instance3784.3	25.847	261942.518
Instance3784.4	25.412	261962.677
Instance3784.5	25.230	262005.077
Instance3784.2	26.095	261884.087

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance3784.1	10.701	2.847	593.705	3.666	50081.541	32768.000	4.058	0.000	5.500	0.000	232549.907	0.000
Instance3784.2	10.278	3.108	601.211	3.699	50925.857	32604.160	4.235	0.000	5.548	0.000	231411.119	0.000
Instance3784.3	10.483	3.260	601.256	3.706	50653.364	32768.000	3.980	0.000	5.559	0.000	232538.329	0.000
Instance3784.4	10.370	3.146	605.349	3.740	50473.467	32604.975	4.123	0.007	5.610	0.004	231399.331	2.547
Instance3784.5	10.485	3.071	602.659	3.731	50297.354	32774.239	4.024	0.004	5.604	0.015	232559.352	2.535

Host System Performance

Counter	Average	Minimum	Maximum
Processor Time	1.856	0.000	6.255
Available MBytes	60249.647	60209.000	61417.000
Free System Page Table Entries	33555609.221	33555607.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54763038.118	54714368.000	55037952.000
Pool Paged Bytes	152289982.745	151564288.000	154279936.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:43:38 PM -- Preparing for testing ...
6/1/2012 8:43:38 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:43:39 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:43:39 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 5:40:44 PM -- 100.0% of 1.9 TB complete (667498845 records inserted).
6/2/2012 5:40:45 PM -- 100.0% of 1.9 TB complete (667499994 records inserted).
6/2/2012 5:40:45 PM -- Duplicating 4 databases:
6/3/2012 9:24:17 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:24:22 PM -- Attaching databases ...
6/3/2012 9:24:22 PM -- Preparations for testing are complete.
6/4/2012 9:51:55 AM -- Jetstress testing begins ...
6/4/2012 9:51:55 AM -- Preparing for testing ...
6/4/2012 9:52:01 AM -- Attaching databases ...
6/4/2012 9:52:01 AM -- Preparations for testing are complete.
6/4/2012 9:52:01 AM -- Starting transaction dispatch ..
6/4/2012 9:52:01 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:01 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:07 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:07 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:14 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:14 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:14 AM -- Attaining prerequisites:
6/4/2012 9:54:14 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208345000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:15 AM -- Performance logging has ended.
6/5/2012 9:55:56 AM -- JetInterop batch transaction stats: 402639, 403669, 402428, 403571 and 402093.
6/5/2012 9:55:56 AM -- Dispatching transactions ends.
6/5/2012 9:55:56 AM -- Shutting down databases ...
6/5/2012 9:55:58 AM -- Instance3784.1 (complete), Instance3784.2 (complete), Instance3784.3 (complete), Instance3784.4 (complete) and Instance3784.5 (complete)
6/5/2012 9:55:58 AM -- [C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg](C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.blg) has 5759 samples.
6/5/2012 9:55:58 AM -- Creating test report ...
6/5/2012 9:56:28 AM -- Instance3784.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:28 AM -- Instance3784.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:28 AM -- Instance3784.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:28 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:28 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:28 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.xml has 5750 samples queried.

6/5/2012 9:56:29 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_7.html was saved.

6/5/2012 9:56:30 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:30 AM -- Verifying database checksums ...

6/5/2012 6:01:42 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:42 PM -- Performance logging has ended.

6/5/2012 6:01:42 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_29.blg has 969 samples.

6/5/2012 6:01:47 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_29.html was saved.

6/5/2012 6:01:47 PM -- Verifying log checksums ...

6/5/2012 6:01:48 PM -- C:\logroot\log1 (12 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (11 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_48.evt is saved.

6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_48.evt is saved.

6/5/2012 6:01:48 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_48.xml was saved.

6/5/2012 6:01:48 PM -- Jetstress testing has ended.

6/6/2012 10:58:27 AM -- Jetstress testing begins ...

6/6/2012 10:58:27 AM -- Preparing for testing ...

6/6/2012 10:58:32 AM -- Attaching databases ...

6/6/2012 10:58:32 AM -- Preparations for testing are complete.

6/6/2012 10:58:41 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:41 AM -- Backing up databases ...

6/6/2012 5:26:56 PM -- Performance logging has ended.

6/6/2012 5:26:56 PM -- Instance3784.1 (100% processed), Instance3784.2 (100% processed), Instance3784.3 (100% processed), Instance3784.4 (100% processed) and Instance3784.5 (100% processed)

6/6/2012 5:26:56 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_32.blg has 775 samples.

6/6/2012 5:26:56 PM -- Creating test report ...

6/6/2012 5:26:59 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_32.html was saved.

6/6/2012 5:26:59 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_26_59.evt is saved.

6/6/2012 5:26:59 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_26_59.evt is saved.

6/6/2012 5:26:59 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_26_59.xml was saved.

6/6/2012 5:26:59 PM -- Jetstress testing has ended.

6/7/2012 7:17:22 AM -- Jetstress testing begins ...

6/7/2012 7:17:22 AM -- Preparing for testing ...

6/7/2012 7:17:28 AM -- Attaching databases ...

6/7/2012 7:17:28 AM -- Preparations for testing are complete.

6/7/2012 7:17:28 AM -- Starting transaction dispatch ..

6/7/2012 7:17:28 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:28 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:33 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:33 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:37 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:37 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:37 AM -- Generating log files ...

6/7/2012 8:35:16 AM -- C:\logroot\log1 (100.4% generated), C:\logroot\log2 (100.2% generated), C:\logroot\log3 (100.2% generated), C:\logroot\log4 (101.2% generated) and C:\logroot\log5 (101.4% generated)

6/7/2012 8:35:16 AM -- Performance logging has ended.

6/7/2012 8:35:16 AM -- JetInterop batch transaction stats: 21824, 21824, 21809, 22036 and 21973.

6/7/2012 8:35:16 AM -- Dispatching transactions ends.

6/7/2012 8:35:16 AM -- Shutting down databases ...

6/7/2012 8:35:17 AM -- Instance3784.1 (complete), Instance3784.2 (complete), Instance3784.3 (complete), Instance3784.4 (complete) and Instance3784.5 (complete)

6/7/2012 8:35:17 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_33.blg has 310 samples.

6/7/2012 8:35:17 AM -- Creating test report ...

6/7/2012 8:35:19 AM -- Instance3784.1 has 16.5 for I/O Database Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.2 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.3 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.4 has 15.5 for I/O Database Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.5 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:19 AM -- Instance3784.5 has 3.0 for I/O Log Writes Average Latency.
6/7/2012 8:35:19 AM -- Instance3784.5 has 3.0 for I/O Log Reads Average Latency.
6/7/2012 8:35:19 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
6/7/2012 8:35:19 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.
6/7/2012 8:35:19 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_33.xml has 309 samples queried.
6/7/2012 8:35:19 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_33.html was saved.
6/7/2012 8:48:58 AM -- Performance logging started (interval: 4000 ms).
6/7/2012 8:48:58 AM -- Recovering databases ...
6/7/2012 9:02:41 AM -- Performance logging has ended.
6/7/2012 9:02:41 AM -- Instance3784.1 (822.718735), Instance3784.2 (811.314404), Instance3784.3 (810.78397), Instance3784.4 (813.701357) and Instance3784.5 (816.883961)
6/7/2012 9:02:41 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_48_54.blg has 204 samples.
6/7/2012 9:02:41 AM -- Creating test report ...

Server 9 – JS9

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance2956.1	513	821.3507245
Instance2956.2	504	812.598844
Instance2956.3	501	804.3773805
Instance2956.4	512	817.6378055
Instance2956.5	505	809.946759

Database Configuration

Instance2956.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance2956.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance2956.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance2956.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance2956.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2956.1	10.584	2.878	576.478	3.747	41502.578	32606.581	4.209	0.000	5.621	0.000	231356.026	0.000
Instance2956.2	10.500	3.061	576.603	3.714	41329.603	32604.160	4.041	0.000	5.570	0.000	231392.421	0.000
Instance2956.3	10.442	2.912	572.487	3.729	41492.435	32602.505	4.176	0.000	5.593	0.000	231359.478	0.000
Instance2956.4	10.451	3.305	580.485	3.758	41310.550	32605.782	4.057	0.000	5.637	0.000	231393.769	0.000
Instance2956.5	10.373	2.856	579.368	3.744	41392.157	32604.160	4.167	0.000	5.615	0.000	231389.450	0.000

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance2956.1	24.482	261979.746
Instance2956.2	25.985	261830.175
Instance2956.3	25.969	261993.386
Instance2956.4	25.988	261969.331
Instance2956.5	26.079	262010.301

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance2956.1	10.584	2.878	600.960	3.747	50484.327	32606.581	4.209	0.000	5.621	0.000	231356.026	0.000
Instance2956.2	10.500	3.061	602.588	3.714	50837.946	32604.160	4.041	0.000	5.570	0.000	231392.421	0.000
Instance2956.3	10.442	2.912	598.456	3.729	51060.705	32602.505	4.176	0.000	5.593	0.000	231359.478	0.000
Instance2956.4	10.451	3.305	606.473	3.758	50765.973	32605.782	4.057	0.000	5.637	0.000	231393.769	0.000
Instance2956.5	10.373	2.856	605.447	3.744	50895.041	32604.160	4.167	0.000	5.615	0.000	231389.450	0.000

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.860	0.000	6.228
Available MBytes	60250.485	60204.000	61412.000
Free System Page Table Entries	33555609.044	33555607.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	54994361.725	54947840.000	55267328.000
Pool Paged Bytes	151668615.529	151642112.000	151687168.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:45:29 PM -- Preparing for testing ...
6/1/2012 8:45:29 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:45:29 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:45:29 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 7:52:14 PM -- 100.0% of 1.9 TB complete (667499702 records inserted).
6/2/2012 7:52:15 PM -- 100.0% of 1.9 TB complete (667499951 records inserted).
6/2/2012 7:52:15 PM -- Duplicating 4 databases:
6/3/2012 11:05:48 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 11:05:53 PM -- Attaching databases ...
6/3/2012 11:05:53 PM -- Preparations for testing are complete.
6/4/2012 9:51:59 AM -- Jetstress testing begins ...
6/4/2012 9:51:59 AM -- Preparing for testing ...
6/4/2012 9:52:05 AM -- Attaching databases ...
6/4/2012 9:52:05 AM -- Preparations for testing are complete.
6/4/2012 9:52:05 AM -- Starting transaction dispatch ..
6/4/2012 9:52:05 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:05 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:12 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:12 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:18 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:18 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:18 AM -- Attaining prerequisites:
6/4/2012 9:54:18 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1208840000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:19 AM -- Performance logging has ended.
6/5/2012 9:56:02 AM -- JetInterop batch transaction stats: 401673, 402364, 402108, 402760 and 400792.
6/5/2012 9:56:02 AM -- Dispatching transactions ends.
6/5/2012 9:56:02 AM -- Shutting down databases ...
6/5/2012 9:56:06 AM -- Instance2956.1 (complete), Instance2956.2 (complete), Instance2956.3 (complete), Instance2956.4 (complete) and Instance2956.5 (complete)
6/5/2012 9:56:06 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.blg has 5759 samples.
6/5/2012 9:56:06 AM -- Creating test report ...
6/5/2012 9:56:37 AM -- Instance2956.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 12.8 for I/O Database Reads Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:37 AM -- Instance2956.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:37 AM -- Instance2956.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:37 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:37 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:37 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.xml has 5751 samples queried.

6/5/2012 9:56:38 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_12.html was saved.

6/5/2012 9:56:39 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:39 AM -- Verifying database checksums …

6/5/2012 5:58:32 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 5:58:32 PM -- Performance logging has ended.

6/5/2012 5:58:32 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_38.blg has 963 samples.

6/5/2012 5:58:37 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_38.html was saved.

6/5/2012 5:58:37 PM -- Verifying log checksums …

6/5/2012 5:58:38 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (10 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_17_58_38.evt is saved.

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_17_58_38.evt is saved.

6/5/2012 5:58:38 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_17_58_38.xml was saved.

6/5/2012 5:58:38 PM -- Jetstress testing has ended.

6/6/2012 10:58:29 AM -- Jetstress testing begins …

6/6/2012 10:58:29 AM -- Preparing for testing …

6/6/2012 10:58:35 AM -- Attaching databases …

6/6/2012 10:58:35 AM -- Preparations for testing are complete.

6/6/2012 10:58:44 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:44 AM -- Backing up databases …

6/6/2012 5:29:30 PM -- Performance logging has ended.

6/6/2012 5:29:30 PM -- Instance2956.1 (100% processed), Instance2956.2 (100% processed), Instance2956.3 (100% processed), Instance2956.4 (100% processed) and Instance2956.5 (100% processed)

6/6/2012 5:29:30 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_35.blg has 780 samples.

6/6/2012 5:29:30 PM -- Creating test report …

6/6/2012 5:29:34 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_35.html was saved.

6/6/2012 5:29:34 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_29_34.evt is saved.

6/6/2012 5:29:34 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_29_34.evt is saved.

6/6/2012 5:29:34 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_29_34.xml was saved.

6/6/2012 5:29:34 PM -- Jetstress testing has ended.

6/7/2012 7:17:19 AM -- Jetstress testing begins ...

6/7/2012 7:17:19 AM -- Preparing for testing ...

6/7/2012 7:17:25 AM -- Attaching databases ...

6/7/2012 7:17:25 AM -- Preparations for testing are complete.

6/7/2012 7:17:25 AM -- Starting transaction dispatch ..

6/7/2012 7:17:25 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:25 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:31 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:31 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:34 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:34 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:34 AM -- Generating log files ...

6/7/2012 8:35:09 AM -- C:\logroot\log1 (102.6% generated), C:\logroot\log2 (100.8% generated), C:\logroot\log3 (100.2% generated), C:\logroot\log4 (102.4% generated) and C:\logroot\log5 (101.0% generated)

6/7/2012 8:35:09 AM -- Performance logging has ended.

6/7/2012 8:35:09 AM -- JetInterop batch transaction stats: 21956, 21794, 21965, 22145 and 21865.

6/7/2012 8:35:09 AM -- Dispatching transactions ends.

6/7/2012 8:35:09 AM -- Shutting down databases ...

6/7/2012 8:35:12 AM -- Instance2956.1 (complete), Instance2956.2 (complete), Instance2956.3 (complete), Instance2956.4 (complete) and Instance2956.5 (complete)

6/7/2012 8:35:12 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_31.blg has 309 samples.

6/7/2012 8:35:12 AM -- Creating test report ...

6/7/2012 8:35:14 AM -- Instance2956.1 has 16.4 for I/O Database Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.1 has 3.1 for I/O Log Writes Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.1 has 3.1 for I/O Log Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.2 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.3 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.4 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.5 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.5 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:14 AM -- Instance2956.5 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:14 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/7/2012 8:35:14 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/7/2012 8:35:14 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_31.xml has 308 samples queried.

6/7/2012 8:35:14 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_31.html was saved.

6/7/2012 8:49:12 AM -- Performance logging started (interval: 4000 ms).

6/7/2012 8:49:12 AM -- Recovering databases ...

6/7/2012 9:02:54 AM -- Performance logging has ended.

6/7/2012 9:02:54 AM -- Instance2956.1 (821.3507245), Instance2956.2 (812.598844), Instance2956.3 (804.3773805), Instance2956.4 (817.6378055) and Instance2956.5 (809.946759)

6/7/2012 9:02:54 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_49_9.blg has 204 samples.

6/7/2012 9:02:54 AM -- Creating test report ...

Server 10 – JS10

Soft-Recovery Statistics - All

Database Instance	Log files replayed	Elapsed seconds
Instance1468.1	501	813.129261
Instance1468.2	508	807.0294655
Instance1468.3	508	813.659678
Instance1468.4	506	804.3773805
Instance1468.5	501	808.6207165

Database Configuration

Instance1468.1	Log path: C:\logroot\log1 Database: C:\dbroot\db1\Jetstress001001.edb
Instance1468.2	Log path: C:\logroot\log2 Database: C:\dbroot\db2\Jetstress002001.edb
Instance1468.3	Log path: C:\logroot\log3 Database: C:\dbroot\db3\Jetstress003001.edb
Instance1468.4	Log path: C:\logroot\log4 Database: C:\dbroot\db4\Jetstress004001.edb
Instance1468.5	Log path: C:\logroot\log5 Database: C:\dbroot\db5\Jetstress005001.edb

Transactional I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance1468.1	10.573	3.062	576.593	3.696	41314.417	32604.975	4.031	0.000	5.543	0.000	231378.539	0.000
Instance1468.2	10.276	3.008	586.224	3.777	41461.166	32603.337	4.124	0.000	5.666	0.000	231387.612	0.000
Instance1468.3	10.445	3.025	583.833	3.747	41632.902	32441.950	3.922	0.000	5.621	0.000	230233.170	0.000
Instance1468.4	10.405	2.909	580.697	3.766	41162.298	32768.000	4.112	0.000	5.650	0.000	232562.918	0.000
Instance1468.5	10.469	2.905	584.054	3.725	41425.191	32604.160	4.005	0.004	5.593	0.015	231374.211	2.560

Background Database Maintenance I/O Performance

MSExchange Database ==> Instances	Database Maintenance IO Reads/sec	Database Maintenance IO Reads Average Bytes
Instance1468.1	25.268	261979.337
Instance1468.2	26.504	261965.040
Instance1468.3	25.164	261952.557
Instance1468.4	25.344	261998.512
Instance1468.5	25.327	261988.569

Total I/O Performance

MSExchange Database ==> Instances	I/O Database Reads Average Latency (msec)	I/O Database Writes Average Latency (msec)	I/O Database Reads/sec	I/O Database Writes/sec	I/O Database Reads Average Bytes	I/O Database Writes Average Bytes	I/O Log Reads Average Latency (msec)	I/O Log Writes Average Latency (msec)	I/O Log Reads/sec	I/O Log Writes/sec	I/O Log Reads Average Bytes	I/O Log Writes Average Bytes
Instance1468.1	10.573	3.062	601.861	3.696	50578.675	32604.975	4.031	0.000	5.543	0.000	231378.539	0.000
Instance1468.2	10.276	3.008	612.728	3.777	50999.280	32603.337	4.124	0.000	5.666	0.000	231387.612	0.000
Instance1468.3	10.445	3.025	608.997	3.747	50736.622	32441.950	3.922	0.000	5.621	0.000	230233.170	0.000
Instance1468.4	10.405	2.909	606.040	3.766	50397.271	32768.000	4.112	0.000	5.650	0.000	232562.918	0.000
Instance1468.5	10.469	2.905	609.381	3.725	50592.110	32604.160	4.005	0.004	5.593	0.015	231374.211	2.560

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	1.856	0.000	7.803
Available MBytes	60219.624	60171.000	61381.000
Free System Page Table Entries	33555609.059	33555606.000	33555611.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	56451173.386	56373248.000	56795136.000
Pool Paged Bytes	164481510.653	160710656.000	166825984.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

6/1/2012 8:47:26 PM -- Preparing for testing ...
6/1/2012 8:47:26 PM -- Creating C:\dbroot\db1\Jetstress001001.edb.
6/1/2012 8:47:27 PM -- Database cache settings: (minimum: 32.0 MB, maximum: 256.0 MB)
6/1/2012 8:47:27 PM -- Database flush thresholds: (start: 2.5 MB, stop: 5.1 MB)
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667499121 records inserted).
6/2/2012 6:02:27 PM -- 100.0% of 1.9 TB complete (667500098 records inserted).
6/2/2012 6:02:27 PM -- Duplicating 4 databases:
6/3/2012 9:59:07 PM -- 100.0% of 7.6 TB complete (7.6 TB duplicated).
6/3/2012 9:59:14 PM -- Attaching databases ...
6/3/2012 9:59:14 PM -- Preparations for testing are complete.
6/4/2012 9:52:02 AM -- Jetstress testing begins ...
6/4/2012 9:52:02 AM -- Preparing for testing ...
6/4/2012 9:52:08 AM -- Attaching databases ...
6/4/2012 9:52:08 AM -- Preparations for testing are complete.
6/4/2012 9:52:08 AM -- Starting transaction dispatch ..
6/4/2012 9:52:08 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)
6/4/2012 9:52:08 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)
6/4/2012 9:52:15 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 200 msec/read).
6/4/2012 9:52:15 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 200 msec/write).
6/4/2012 9:52:21 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.
6/4/2012 9:52:21 AM -- Performance logging started (interval: 15000 ms).
6/4/2012 9:52:21 AM -- Attaining prerequisites:
6/4/2012 9:54:25 AM -- \MSExchange Database(JetstressWin)\Database Cache Size, Last: 1209893000.0 (lower bound: 1207960000.0, upper bound: none)
6/5/2012 9:54:25 AM -- Performance logging has ended.
6/5/2012 9:56:08 AM -- JetInterop batch transaction stats: 402878, 403577, 402799, 401869 and 401925.
6/5/2012 9:56:08 AM -- Dispatching transactions ends.
6/5/2012 9:56:08 AM -- Shutting down databases ...
6/5/2012 9:56:10 AM -- Instance1468.1 (complete), Instance1468.2 (complete), Instance1468.3 (complete), Instance1468.4 (complete) and Instance1468.5 (complete)
6/5/2012 9:56:10 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.blg has 5759 samples.
6/5/2012 9:56:10 AM -- Creating test report ...
6/5/2012 9:56:41 AM -- Instance1468.1 has 13.4 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.1 has 2.7 for I/O Log Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 12.7 for I/O Database Reads Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Writes Average Latency.
6/5/2012 9:56:41 AM -- Instance1468.2 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.3 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 12.7 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.4 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 12.8 for I/O Database Reads Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Writes Average Latency.

6/5/2012 9:56:41 AM -- Instance1468.5 has 2.7 for I/O Log Reads Average Latency.

6/5/2012 9:56:41 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/5/2012 9:56:41 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/5/2012 9:56:41 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.xml has 5750 samples queried.

6/5/2012 9:56:42 AM -- C:\Program Files\Exchange Jetstress\Stress_2012_6_4_9_52_15.html was saved.

6/5/2012 9:56:43 AM -- Performance logging started (interval: 30000 ms).

6/5/2012 9:56:43 AM -- Verifying database checksums …

6/5/2012 6:01:20 PM -- C:\dbroot\db1 (100% processed), C:\dbroot\db2 (100% processed), C:\dbroot\db3 (100% processed), C:\dbroot\db4 (100% processed) and C:\dbroot\db5 (100% processed)

6/5/2012 6:01:20 PM -- Performance logging has ended.

6/5/2012 6:01:20 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_42.blg has 968 samples.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\DBChecksum_2012_6_5_9_56_42.html was saved.

6/5/2012 6:01:26 PM -- Verifying log checksums …

6/5/2012 6:01:26 PM -- C:\logroot\log1 (11 logs processed), C:\logroot\log2 (11 logs processed), C:\logroot\log3 (11 logs processed), C:\logroot\log4 (12 logs processed) and C:\logroot\log5 (11 logs processed)

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_5_18_1_26.evt is saved.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_5_18_1_26.evt is saved.

6/5/2012 6:01:26 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_5_18_1_26.xml was saved.

6/5/2012 6:01:26 PM -- Jetstress testing has ended.

6/6/2012 10:58:36 AM -- Jetstress testing begins …

6/6/2012 10:58:36 AM -- Preparing for testing …

6/6/2012 10:58:41 AM -- Attaching databases …

6/6/2012 10:58:41 AM -- Preparations for testing are complete.

6/6/2012 10:58:50 AM -- Performance logging started (interval: 30000 ms).

6/6/2012 10:58:50 AM -- Backing up databases …

6/6/2012 5:28:37 PM -- Performance logging has ended.

6/6/2012 5:28:37 PM -- Instance1468.1 (100% processed), Instance1468.2 (100% processed), Instance1468.3 (100% processed), Instance1468.4 (100% processed) and Instance1468.5 (100% processed)

6/6/2012 5:28:37 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_41.blg has 778 samples.

6/6/2012 5:28:37 PM -- Creating test report …

6/6/2012 5:28:40 PM -- C:\Program Files\Exchange Jetstress\DatabaseBackup_2012_6_6_10_58_41.html was saved.

6/6/2012 5:28:40 PM -- C:\Program Files\Exchange Jetstress\Application_2012_6_6_17_28_40.evt is saved.

6/6/2012 5:28:40 PM -- C:\Program Files\Exchange Jetstress\System_2012_6_6_17_28_40.evt is saved.

6/6/2012 5:28:40 PM -- C:\Program Files\Exchange Jetstress\XmlConfig_2012_6_6_17_28_40.xml was saved.

6/6/2012 5:28:40 PM -- Jetstress testing has ended.

6/7/2012 7:17:17 AM -- Jetstress testing begins ...

6/7/2012 7:17:17 AM -- Preparing for testing ...

6/7/2012 7:17:22 AM -- Attaching databases ...

6/7/2012 7:17:22 AM -- Preparations for testing are complete.

6/7/2012 7:17:22 AM -- Starting transaction dispatch ..

6/7/2012 7:17:22 AM -- Database cache settings: (minimum: 160.0 MB, maximum: 1.2 GB)

6/7/2012 7:17:22 AM -- Database flush thresholds: (start: 12.8 MB, stop: 25.6 MB)

6/7/2012 7:17:28 AM -- Database read latency thresholds: (average: 20 msec/read, maximum: 100 msec/read).

6/7/2012 7:17:28 AM -- Log write latency thresholds: (average: 10 msec/write, maximum: 100 msec/write).

6/7/2012 7:17:32 AM -- Operation mix: Sessions 5, Inserts 40%, Deletes 20%, Replaces 5%, Reads 35%, Lazy Commits 70%.

6/7/2012 7:17:32 AM -- Performance logging started (interval: 15000 ms).

6/7/2012 7:17:32 AM -- Generating log files ...

6/7/2012 8:35:34 AM -- C:\logroot\log1 (100.2% generated), C:\logroot\log2 (101.6% generated), C:\logroot\log3 (101.6% generated), C:\logroot\log4 (101.2% generated) and C:\logroot\log5 (100.2% generated)

6/7/2012 8:35:34 AM -- Performance logging has ended.

6/7/2012 8:35:34 AM -- JetInterop batch transaction stats: 21736, 22040, 22060, 21845 and 21906.

6/7/2012 8:35:35 AM -- Dispatching transactions ends.

6/7/2012 8:35:35 AM -- Shutting down databases ...

6/7/2012 8:35:39 AM -- Instance1468.1 (complete), Instance1468.2 (complete), Instance1468.3 (complete), Instance1468.4 (complete) and Instance1468.5 (complete)

6/7/2012 8:35:39 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_28.blg has 311 samples.

6/7/2012 8:35:39 AM -- Creating test report ...

6/7/2012 8:35:40 AM -- Instance1468.1 has 16.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.1 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.1 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.2 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.2 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.2 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.3 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.3 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.3 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.4 has 15.6 for I/O Database Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.4 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.4 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.5 has 15.7 for I/O Database Reads Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.5 has 3.0 for I/O Log Writes Average Latency.

6/7/2012 8:35:40 AM -- Instance1468.5 has 3.0 for I/O Log Reads Average Latency.

6/7/2012 8:35:40 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.

6/7/2012 8:35:40 AM -- The test has 0 Database Page Fault Stalls/sec samples higher than 0.

6/7/2012 8:35:40 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_28.xml has 310 samples queried.

6/7/2012 8:35:41 AM -- C:\Program Files\Exchange Jetstress\Performance_2012_6_7_7_17_28.html was saved.

6/7/2012 8:49:18 AM -- Performance logging started (interval: 4000 ms).

6/7/2012 8:49:18 AM -- Recovering databases ...

6/7/2012 9:02:52 AM -- Performance logging has ended.

6/7/2012 9:02:52 AM -- Instance1468.1 (813.129261), Instance1468.2 (807.0294655), Instance1468.3 (813.659678), Instance1468.4 (804.3773805) and Instance1468.5 (808.6207165)

6/7/2012 9:02:52 AM -- C:\Program Files\Exchange Jetstress\SoftRecovery_2012_6_7_8_49_15.blg has 202 samples.

6/7/2012 9:02:52 AM -- Creating test report ...