



**Network Appliance, Inc.**  
**FAS3040 Fibre Channel**  
**Storage Solution**  
**For Microsoft Exchange Server**

**Storage**

**Tested with: ESRP – Storage Version 1.2**  
**Tested Date: February 7, 2007**

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## Overview

This document provides information on the NetApp FAS3040 Fibre Channel storage solution for Microsoft Exchange Server, based the *Microsoft Exchange Solution Reviewed Program (ESRP) – Storage program\**. For any questions or comments regarding the contents of this document, see [Additional Information](#).

\*The *ESRP – Storage* program was developed by Microsoft Corporation to provide a common storage testing framework for vendors to provide information on its storage solutions for Microsoft Exchange Server software. For more details on the *Microsoft ESRP – Storage* program, please click [Microsoft ESRP - Storage](#).

## Disclaimer

This document has been produced independently of Microsoft Corporation. Microsoft Corporation expressly disclaims responsibility for, and makes no warranty, express or implied, with respect to, the accuracy of the contents of this document.

The information contained in this document represents the current view of NetApp on the issues discussed as of the date of publication. Due to changing market conditions, it should not be interpreted to be a commitment on the part of NetApp, and NetApp cannot guarantee the accuracy of any information presented after the date of publication.

## Features

This document describes the testing of a 14,000-user configuration for Exchange Server 2003 with a NetApp FAS3040 storage system. The FAS3040 is the newest member of the NetApp FAS3000 series of mid-range storage systems which deliver outstanding price-performance value and unsurpassed versatility.

The FAS3040 performance is driven by a 64-bit architecture that uses high throughput, low latency links and PCI Express for all internal and external data transfers. Integrated 4 Gb/sec Fibre Channel ports and optional 10 Gb/sec Ethernet maximize the speed and throughput of connections to hosts and storage. The FAS3040 scales to a maximum of 252 disk drives and 126TB of capacity with high-performance Fibre Channel and low-cost SATA drives. NetApp FAS systems can be upgraded for performance or storage capacity by changing storage controllers with no need for painful data migration. Existing storage can be left in place, protecting the storage investment and minimizing disruption to operations.

For the purposes of this tested Exchange deployment, various NetApp best practice recommendations for an Exchange deployment were followed. The FAS3040 being tested used standard NetApp features such as Snapshot™, RAID-DP™, FlexVol® flexible volumes, and SnapDrive®.

Snapshot technology provides in-place, logical backups of an entire Exchange environment, usually in seconds, regardless of whether the data being backed up is several megabytes or hundreds of terabytes. Additionally, NetApp Snapshot technology causes virtually no loss of performance following Snapshot creation and use going forward.

RAID-DP is a high performance implementation of RAID-6 that provides double parity across the disk subsystem and protects against the failure of up to two disks per RAID group.

FlexVol enables the creation of logical storage volumes across a large pool of disk drives known as an aggregate. FlexVol provide three core advantages for workloads such as Microsoft Exchange:

1. Using FlexVol volumes, the capacity and performance bandwidth of a large collection of fast drives can be made available to all volumes. Even very small FlexVol volumes have the performance benefit of a very large number of drives.
2. A large number of volumes may be created, all with independent Snapshot copy schedules, mirroring events, etc.
3. All FlexVol volumes can be managed independently, while receiving the maximum I/O benefit of a much larger pool of drives

SnapDrive offers a rich set of capabilities that virtualizes and enhances storage management for Microsoft Windows environments. SnapDrive is tightly integrated with NTFS to provide a layer of abstraction between application data and physical storage associated with that data.

For this ESRP testing environment NetApp SnapManager® for Exchange (SME) was not required. SnapManager for Exchange is an Exchange software backup and recovery management solution that integrates NetApp Snapshot backups with Microsoft Exchange Server via the Microsoft standard and approved Volume Shadow Copy Services (VSS) snapshot interface. NetApp highly recommends SnapManager for Exchange is a part of a production Exchange deployment.

## **Solution Description**

This section outlines the hardware and software environment NetApp used to run the ESRP tests as well as the targeted customer for which this solution was designed.

## Hardware and Software Environment

### Storage:

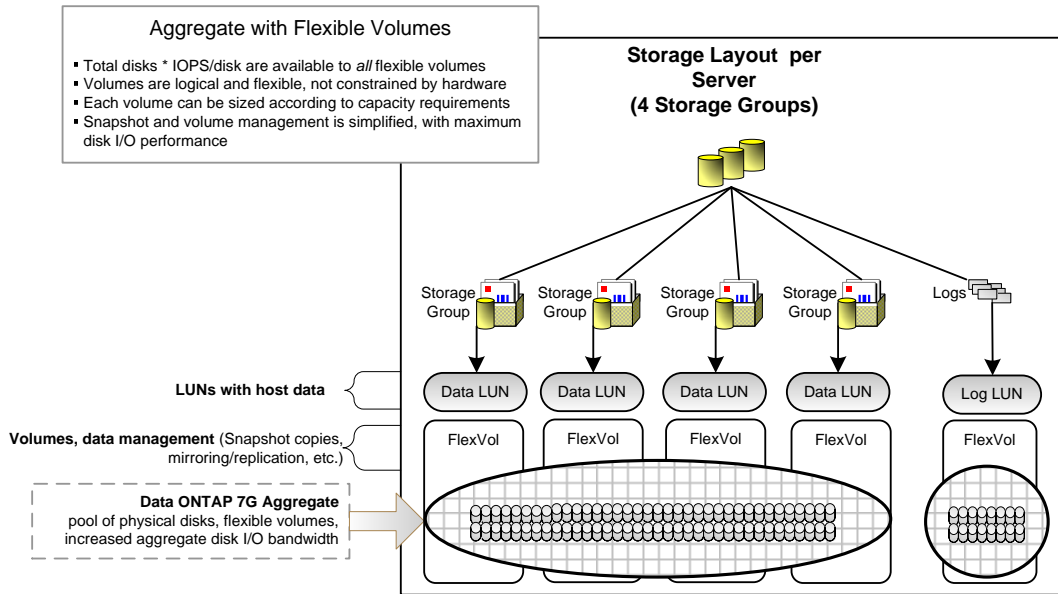
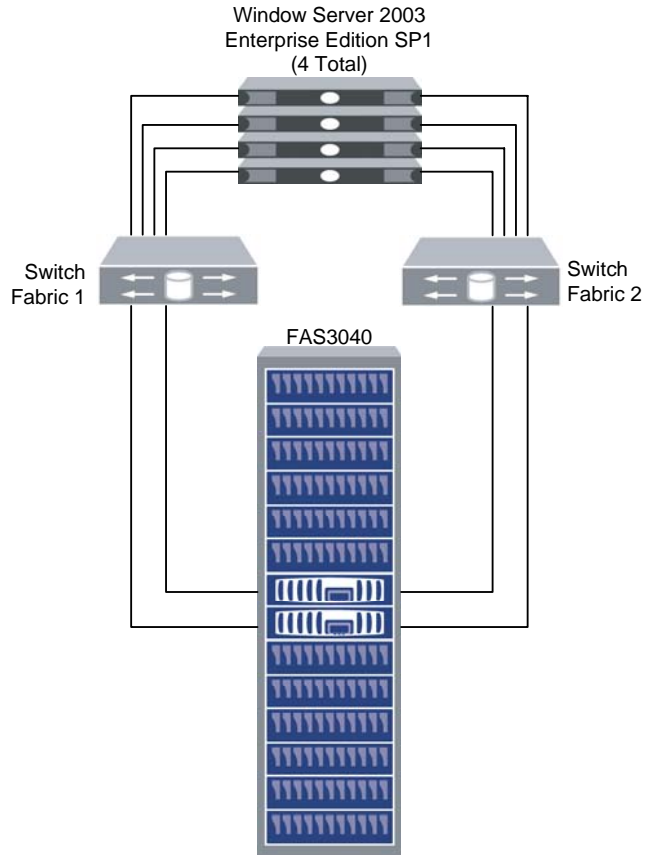
- One FAS3040 Active/Active storage controller
  - Two storage controllers in a fault tolerant configuration
- Data ONTAP® 7.2.1
  - Standard O/S that runs on all NetApp storage platforms
- Ten DS14MK2 disk shelves
  - Five shelves per storage controller with fail-over connectivity paths to partner storage controller
- 144 GB 15K RPM drives

### Servers:

- Four Fujitsu-Siemens RX300 S2 Servers
- Windows Server 2003, Enterprise Edition SP1
  - Up to date critical patches as of January 25, 2007
- NetApp SnapDrive 4.2.1
- Data ONTAP DSM 3.0 for Windows MPIO

### Fibre Channel Switches:

- 2 Brocade SilkWorm® 4100 SAN switches



**Figure 1) FAS3040 storage configuration for ESRP testing**

## Exchange Storage Group and Storage Layout

Each FAS3040 storage controller was configured with two aggregates. A separate aggregate was created for the various Exchange storage groups and another one for transaction logs. A FlexVol flexible volume containing a single LUN was created for each Exchange storage group (four for each server). A FlexVol flexible volume containing four LUNs was created to host the transaction logs for each server. The details about the placement of aggregates, volumes, LUNs and files are enumerated in the table following.

Controller Name	Aggregate	Volume	Use	RAID Type	Number of Data Drives	Number of Parity Drives	Number of LUNs
FAS1	ag1	s1_sg1db	SG1 LUN	RAID-DP	42	6	8 x 225 GB
		s1_sg2db	SG2 LUN				
		s1_sg3db	SG3 LUN				
		s1_sg4db	SG4 LUN				
		s2_sg1db	SG1 LUN				
		s2_sg2db	SG2 LUN				
		s2_sg3db	SG3 LUN				
		s2_sg4db	SG4 LUN				
	ag2	s1_log	Server1 Logs	RAID-DP	8	2	8 x 40 GB
		s2_log	Server2 Logs				
FAS2	ag1	s3_sg1db	SG1 LUN	RAID-DP	42	6	8 x 225 GB
		s3_sg2db	SG2 LUN				
		s3_sg3db	SG3 LUN				
		s3_sg4db	SG4 LUN				
		s4_sg1db	SG1 LUN				
		s4_sg2db	SG2 LUN				
		s4_sg3db	SG3 LUN				
		s4_sg4db	SG4 LUN				
	ag2	s3_log	Server3 Logs	RAID-DP	8	2	8 x 40 GB
		s4_log	Server4 Logs				

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 deployments.

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 designed for a medium to large size Exchange environment depending on the enterprise size or business need. The target customer would typically be one looking for a cost effective, scalable, reliable, and high performance Exchange storage solution. The solution tested is designed for:

- 14,000 users
- 4 servers
- 1.0 IOPS
- 200 MB mailboxes
- Maintaining ample controller headroom available for storage infrastructure activities such as data replication and disk reconstructs

## ***Tested Deployment***

The following tables summarize the testing environment:

### **Simulated Exchange Configuration:**

Number of Exchange mailboxes simulated	14,000
Number of hosts	4
Number of mailboxes/host	3,500
Number of storage groups/host	4
Number of mailbox stores/storage group	5
Number of mailboxes/mailbox store	175
Number of mailbox store LUNs/storage group	1
Simulated profile: I/O's per second per mailbox (IOPS, include 20% headroom)	1.0 IOPs per user
Database LUN size	225 GB
Log LUN size	40 GB
Backup LUN size/storage group	N/A
Total database size for performance testing	2,729 GB
% storage capacity used by Exchange database	76%

**Hardware (List of all the hardware used for the test):**

Storage type (SAN, DAS, iSCSI, NAS)	SAN
Storage model and OS/firmware revision	FAS3040 Data ONTAP 7.2.1 O/S
Storage cache	8 GB Total (4GB per controller)
Number of storage controllers	2
Number of storage ports	8 (four per controller)
Maximum bandwidth of storage connectivity to host	32Gbps (8 x 4Gb/sec per port)
Switch type/model/firmware revision	Brocade SilkWorm 4100 V5.2.0a
HBA model and firmware	Qlogic QLA2462 dual port 4Gbps FC HBA and firmware V4.00.18
Number of HBA's/host	1 per host
Host server type	Fujitsu-Siemens RX300 S2, 2 x 3.6 GHz CPU, 4 GB RAM
Total number of disks tested in solution	116
Maximum number of spindles can be hosted in the storage	252

**Software**

HBA driver	Qlogic V9.1.2.16
HBA QueueTarget Setting	0
HBA QueueDepth Setting	128
Multi-Pathing	Data ONTAP DSM 3.0 for Windows MPIO
Host OS	Windows 2003 Enterprise Edition SP1
ESE.dll file version	V6.5.7638.2
Replication solution name/version	N/A

**Disk Configuration (Mailbox Store Disks)**

Disk type, speed and firmware revision	Fibre Channel Disk – 15K RPM – FW NA01
Raw capacity per disk (GB)	144 GB
Number of physical disks in test	96
Total raw storage capacity (GB)	13824 GB
Disk slice size (GB)	N/A
Number of slices per LUN or number of disks per LUN	One aggregate consisting of three 16 disk RAID-DP groups per controller
Raid level	RAID-DP
Total formatted capacity	3,600 GB
Storage capacity utilization	26%
Database capacity utilization	20%

## Disk Configuration (Transactional Log Disks)

Disk type, speed and firmware revision	Fibre Channel Disk – 15K RPM – FW NA01
Raw capacity per disk (GB)	144 GB
Number of physical disks in test	20
total raw storage capacity (GB)	2880 GB
Disk slice size (GB)	N/A
Number of slices per LUN or number of disks per LUN	One aggregate consisting of one 10 disk RAID-DP group per controller
Raid level	RAID-DP
Total formatted capacity	640 GB

## ***Streaming Backup***

N/A

## ***Replication***

N/A

## **Best Practices**

Microsoft Exchange Server is a heavily I/O intensive application. Based on the testing using the ESRP framework, NetApp would recommend the following to improve the storage performance.

### **Sizing**

Performance, stability, disaster recovery procedures, and general Exchange maintenance all benefit from proper Exchange sizing. NetApp has studied the I/O patterns of Exchange systems running on NetApp storage. When a customer approaches NetApp for an Exchange storage solution, NetApp leverages this knowledge and expertise to properly size the storage specifically to the customer's environment. Several factors are taken into consideration in this process including:

- Number of mailboxes
- Mailbox size
- IOPS per mailbox
- Storage platform type
- Physical drive type
- Backup retention time

## Layout

Another key consideration for Exchange Server 2003 is layout of storage groups, databases, volumes, and LUNs. Although NetApp storage solutions can take full advantage of the performance benefits of aggregates and flexible volumes, following proper layout guidelines is essential to ensuring a high performing, low latency Exchange solution. Consulting with your NetApp Exchange specialist about proper layout will ensure that your Exchange deployment on NetApp storage will perform optimally in your environment.

## Core Storage

For this ESRP submission, we followed these NetApp Exchange best practices:

- Create separate aggregates for storage groups and transaction logs. This provides for disaster recovery in the unlikely event of the loss of an aggregate so that Exchange data is still available for recovery.
- Use dedicated FlexVol volumes for Storage Groups.
- Use dedicated FlexVol volumes for transaction logs.
- Use SnapDrive to provision LUNs. This reduces the complexity of LUN provisioning and additionally means that diskpart is not required or recommended as SnapDrive provides for correct LUN sector alignment.
- Spindle counts for storage groups and log files are derived from NetApp Exchange Sizing guidelines and the NetApp online Exchange sizing tool. Further information on Exchange sizing using the NetApp Exchange sizing tool is available from your local NetApp Exchange specialist.

Exchange workloads can change over time – especially with changes to the number of mailboxes and variations to the anticipated email flow. These factors can result in alterations to the performance of the deployed Exchange configuration and consequently may require additional tuning. Should the Exchange on NetApp storage environment require additional review, please contact NetApp Global Services. They are trained to collect and analyze the necessary performance data and provide recommendations to bring the Exchange on NetApp environment back to expected performance levels.

## Additional Information

[Link to appropriate storage specs on netapp.com](#)

[Data ONTAP Software](#)

[FlexVol & FlexClone™ technologies](#)

[SnapDrive Software](#)

[SnapManager for Exchange Software](#)

[NetApp RAID-DP](#)

## Test Result 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 to show the html report)

- There were no errors reported in any of the event logs collected for the reliability tests.
- There were no errors reported in during the [database](#) and [log](#) checksum process.

### **Performance**

Performance testing is to exercise the storage with maximum sustainable Exchange type of IO for two hours. The test is to show how long it takes for the storage to respond to an IO under load. The data below are samples taken from each of the four hosts attached, and it is the average of all the logical disks in the 2 hours test duration.

#### **Host RIKER9**

Average of the database disks read latency (ms)	14 ms
Average of the database disks write latency (ms)	4 ms
Average of the log disks write latency (ms)	1 ms
Average database disk read IO per sec	608.5 IOPs
Average database disk write IO per sec	272.2 IOPs
Average log disk write IO per sec	68.1 IOPs
Average database disk read IO per second per host	2,434.0 IOPs
Average database disk write IO per second per host	1,088.8 IOPs
Average log write IO per second per host	272.4 IOPs
Max database page fault stalls per sec	0

### Host RIKER10

Average of the database disks read latency (ms)	14 ms
Average of the database disks write latency (ms)	3 ms
Average of the log disks write latency (ms)	1 ms
Average database disk read IO per sec	633.9 IOPs
Average database disk write IO per sec	283.4 IOPs
Average log disk write IO per sec	70.7 IOPs
Average database disk read IO per second per host	2,535.6 IOPs
Average database disk write IO per second per host	1,133.6 IOPs
Average log write IO per second per host	282.8 IOPs
Max database page fault stalls per sec	0

### Host RIKER11

Average of the database disks read latency (ms)	14 ms
Average of the database disks write latency (ms)	4 ms
Average of the log disks write latency (ms)	1 ms
Average database disk read IO per sec	607.2 IOPs
Average database disk write IO per sec	271.5 IOPs
Average log disk write IO per sec	67.8 IOPs
Average database disk read IO per second per host	2,428.8 IOPs
Average database disk write IO per second per host	1,086.0 IOPs
Average log write IO per second per host	271.2 IOPs
Max database page fault stalls per sec	0

### Host RIKER12

Average of the database disks read latency (ms)	14 ms
Average of the database disks write latency (ms)	3 ms
Average of the log disks write latency (ms)	1 ms
Average database disk read IO per sec	633.6 IOPs
Average database disk write IO per sec	283.4 IOPs
Average log disk write IO per sec	70.7 IOPs
Average database disk read IO per second per host	2,534.4 IOPs
Average database disk write IO per second per host	1,133.6 IOPs
Average log write IO per second per host	282.8 IOPs
Max database page fault stalls per sec	0

## **Streaming Backup Performance**

For the Version 1.0 release, only streaming backup type is supported for testing in the framework. There are two tests in this section. First one is to measure the read IO performance metrics by running checksum on all the databases and log files. The second test is to measure the end to end performance when the databases are backed up to disks.

### **Database Read-only Performance**

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

#### **Host RIKER9**

MB read/sec per storage group	15.325 MB/sec
MB read/sec total	61.3 MB/sec
File size/Seconds taken	699,548 MB 11,402 sec

#### **Host RIKER10**

MB read/sec per storage group	15.275 MB/sec
MB read/sec total	61.1 MB/sec
File size/Seconds taken	699,533 MB 11,439 sec

#### **Host RIKER11**

MB read/sec per storage group	15.275 MB/sec
MB read/sec total	61.1 MB/sec
File size/Seconds taken	699,539 MB 11,443 sec

#### **Host RIKER12**

MB read/sec per storage group	15.225 MB/sec
MB read/sec total	60.9 MB/sec
File size/Seconds taken	699,532 MB 11,488 sec

## Log Read-only Performance

The 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 100 log files played in a single storage group. Each log file is 5 MB in size.

### Host RIKER9

Average time to play one log file (sec)	2.38 sec
Average log disks Read Bytes/sec	5,242,050 bytes

### Host RIKER10

Average time to play one log file (sec)	1.96 sec
Average log disks Read Bytes/sec	5,836,473 bytes

### Host RIKER11

Average time to play one log file (sec)	2.18 sec
Average log disks Read Bytes/sec	5,487,694 bytes

### Host RIKER12

Average time to play one log file (sec)	1.97 sec
Average log disks Read Bytes/sec	5,835,684 bytes

## Backup to disk Performance

N/A

## **Conclusion**

This document is developed by NetApp, and reviewed by 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 their pre-deployment verification. It is still necessary to validate the storage design for a specific customer environment.

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

Network Appliance offers its customers complete sizing information for Exchange Server deployments through its systems engineers. The recommendations for storage configurations are based on the NetApp online Exchange sizing tool which takes inputs specific to each customer's deployment needs. Contact your local NetApp sales office for additional information.

## Appendix A – Test Results

### Database Checksum – reliability testing

#### Jetstress Test Result: RIKER9

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7761154	0	0	0	7.0 MB/sec (30317 MB/4343 seconds)
M:Jetstress1.edb	7763970	0	0	0	10.0 MB/sec (30328 MB/3019 seconds)
M:Jetstress2.edb	7762690	0	0	0	10.2 MB/sec (30323 MB/2980 seconds)
M:Jetstress3.edb	7760898	0	0	0	10.1 MB/sec (30316 MB/3000 seconds)
M:Jetstress4.edb	7764994	0	0	0	10.1 MB/sec (30332 MB/3000 seconds)
M:Jetstress5.edb	7761410	0	0	0	18.4 MB/sec (30318 MB/1646 seconds)
N:Jetstress.edb	7810050	0	0	0	10.1 MB/sec (30508 MB/3006 seconds)

N:Jetstress1.edb	7806722	0	0	0	9.8 MB/sec (30495 MB/3106 seconds)
N:Jetstress2.edb	7809026	0	0	0	9.8 MB/sec (30504 MB/3123 seconds)
N:Jetstress3.edb	7807490	0	0	0	9.7 MB/sec (30498 MB/3144 seconds)
N:Jetstress4.edb	7808770	0	0	0	9.7 MB/sec (30503 MB/3154 seconds)
N:Jetstress5.edb	7810562	0	0	0	13.0 MB/sec (30510 MB/2338 seconds)
O:Jetstress.edb	7763202	0	0	0	10.7 MB/sec (30325 MB/2824 seconds)
O:Jetstress1.edb	7762690	0	0	0	10.3 MB/sec (30323 MB/2938 seconds)
O:Jetstress2.edb	7766274	0	0	0	10.2 MB/sec (30337 MB/2973 seconds)
O:Jetstress3.edb	7764482	0	0	0	10.2 MB/sec (30330 MB/2986 seconds)
O:Jetstress4.edb	7766530	0	0	0	10.1 MB/sec (30338 MB/2993 seconds)
O:Jetstress5.edb	7764994	0	0	0	10.8 MB/sec (30332 MB/2818

					seconds)
P:Jetstress.edb	7806978	0	0	0	10.0 MB/sec (30496 MB/3040 seconds)
P:Jetstress1.edb	7808258	0	0	0	9.8 MB/sec (30501 MB/3121 seconds)
P:Jetstress2.edb	7810562	0	0	0	9.7 MB/sec (30510 MB/3147 seconds)
P:Jetstress3.edb	7806978	0	0	0	9.6 MB/sec (30496 MB/3164 seconds)
P:Jetstress4.edb	7809794	0	0	0	9.7 MB/sec (30507 MB/3157 seconds)
P:Jetstress5.edb	7808770	0	0	0	13.4 MB/sec (30503 MB/2268 seconds)
(sum)	186867248	0	0	0	41.0 MB/sec (729950 MB/17825 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.746	0.004	161.74	0.003	17991.63
N:	1.621	0.003	163.80	0.002	17873.80
O:	1.563	0.003	166.05	0.002	17535.67
P:	1.629	0.004	163.56	0.003	17901.45

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.108	0.000	7.422
Available MBytes	3063.04	3060.00	3112.00
Free System Page Table Entries	22856.62	22821.00	22861.00
Pages/Sec	0.057	0.000	912.12
Pool Nonpaged Bytes	24301300.00	24215550.00	24346620.00
Pool Paged Bytes	16826970.00	15544320.00	16998400.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-22.blg is saved.**

2/10/2007 9:35:37 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/10/2007 9:35:37 AM -- Validating input parameters, it may take a few minutes...

2/10/2007 9:35:37 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/10/2007 9:35:40 AM -- Loading performance counters...

2/10/2007 9:35:40 AM -- Instance3404.1: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:40 AM -- Instance3404.2: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:40 AM -- Instance3404.3: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:40 AM -- Instance3404.4: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:40 AM -- Start Jetstress test...

2/10/2007 9:35:42 AM -- Starting Stress test run...

2/10/2007 9:35:43 AM -- Performance logging started.

2/10/2007 9:35:43 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\Stress\_2007\_2\_10\_9-35-40.blg.

2/11/2007 9:35:33 AM -- Adding new data to the performance log file...

2/11/2007 9:35:43 AM -- Performance logging stopped.

2/11/2007 9:35:43 AM -- Stopping Jetstress...

2/11/2007 9:36:14 AM -- Creating test report ...

2/11/2007 9:36:22 AM -- Volume O: has 0.0148 for Avg. Disk sec/Read.

2/11/2007 9:36:22 AM -- Volume N: has 0.0146 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume P: has 0.0146 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume M: has 0.0149 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:22 AM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume R: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:22 AM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:22 AM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Volume T: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:22 AM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:22 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
 2/11/2007 9:36:22 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
 2/11/2007 9:36:23 AM -- Performance logging started.  
 2/11/2007 9:36:23 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress \DatabaseChecksum\_2007\_2\_11\_9-36-22.blg.  
 2/11/2007 9:36:23 AM -- Checksum validation may take a while depending on the file sizes.  
 2/11/2007 2:36:14 PM -- Database checksum in progress:  
 Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
 2/11/2007 2:36:14 PM -- Performance logging stopped.  
 2/11/2007 2:36:14 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-22.html for checksum result.

## Jetstress Test Result: RIKER10

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7777282	0	0	0	8.2 MB/sec (30380 MB/3700 seconds)
M:Jetstress1.edb	7778562	0	0	0	10.9 MB/sec (30385 MB/2793 seconds)
M:Jetstress2.edb	7776258	0	0	0	10.9 MB/sec

					(30376 MB/2777 seconds)
M:Jetstress3.edb	7777026	0	0	0	10.9 MB/sec (30379 MB/2785 seconds)
M:Jetstress4.edb	7778306	0	0	0	10.9 MB/sec (30384 MB/2781 seconds)
M:Jetstress5.edb	7777026	0	0	0	11.5 MB/sec (30379 MB/2635 seconds)
N:Jetstress.edb	7821826	0	0	0	10.5 MB/sec (30554 MB/2913 seconds)
N:Jetstress1.edb	7827202	0	0	0	10.4 MB/sec (30575 MB/2938 seconds)
N:Jetstress2.edb	7822594	0	0	0	10.5 MB/sec (30557 MB/2922 seconds)
N:Jetstress3.edb	7825410	0	0	0	10.4 MB/sec (30568 MB/2933 seconds)
N:Jetstress4.edb	7827202	0	0	0	10.4 MB/sec (30575 MB/2945 seconds)
N:Jetstress5.edb	7822850	0	0	0	10.9 MB/sec (30558 MB/2794 seconds)
O:Jetstress.edb	7781122	0	0	0	11.1 MB/sec (30395 MB/2733 seconds)

O:Jetstress1.edb	7779330	0	0	0	11.0 MB/sec (30388 MB/2768 seconds)
O:Jetstress2.edb	7778306	0	0	0	11.0 MB/sec (30384 MB/2767 seconds)
O:Jetstress3.edb	7780098	0	0	0	10.9 MB/sec (30391 MB/2776 seconds)
O:Jetstress4.edb	7777538	0	0	0	10.9 MB/sec (30381 MB/2777 seconds)
O:Jetstress5.edb	7779586	0	0	0	10.9 MB/sec (30389 MB/2792 seconds)
P:Jetstress.edb	7826690	0	0	0	10.5 MB/sec (30573 MB/2925 seconds)
P:Jetstress1.edb	7827714	0	0	0	10.3 MB/sec (30577 MB/2954 seconds)
P:Jetstress2.edb	7825154	0	0	0	10.4 MB/sec (30567 MB/2940 seconds)
P:Jetstress3.edb	7826690	0	0	0	10.4 MB/sec (30573 MB/2952 seconds)
P:Jetstress4.edb	7825154	0	0	0	10.4 MB/sec (30567 MB/2947 seconds)
P:Jetstress5.edb	7824898	0	0	0	11.0 MB/sec (30566 MB/2786

					seconds)
(sum)	187243824	0	0	0	42.4 MB/sec (731421 MB/17261 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.577	0.004	166.91	0.003	17474.45
N:	1.539	0.003	168.12	0.002	17447.89
O:	1.470	0.003	175.56	0.003	16616.91
P:	1.545	0.003	167.57	0.002	17507.36

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.139	0.000	9.77
Available MBytes	3026.68	3023.00	3075.00
Free System Page Table Entries	22684.40	22661.00	22681.00
Pages/Sec	0.065	0.000	906.10
Pool Nonpaged Bytes	24323600.00	24170500.00	24367100.00
Pool Paged Bytes	16179830.00	15183870.00	16351230.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-26.blg is saved.**

2/10/2007 9:35:40 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0  
 Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1  
 Detected ESE.dll version: 6.5.7638.2  
 Detected ESEPERF.dll version: 6.5.7638.1

2/10/2007 9:35:41 AM -- Validating input parameters, it may take a few minutes...

2/10/2007 9:35:41 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/10/2007 9:35:44 AM -- Loading performance counters...  
2/10/2007 9:35:44 AM -- Instance2156.1: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:44 AM -- Instance2156.2: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:44 AM -- Instance2156.3: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:44 AM -- Instance2156.4: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:44 AM -- Start Jetstress test...  
2/10/2007 9:35:46 AM -- Starting Stress test run...  
2/10/2007 9:35:47 AM -- Performance logging started.  
2/10/2007 9:35:47 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress \Stress\_2007\_2\_10\_9-35-44.blg.  
2/11/2007 9:35:15 AM -- Adding new data to the performance log file...  
2/11/2007 9:35:47 AM -- Performance logging stopped.  
2/11/2007 9:35:47 AM -- Stopping Jetstress...  
2/11/2007 9:36:18 AM -- Creating test report ...  
2/11/2007 9:36:26 AM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume N: has 0.0140 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume P: has 0.0140 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume M: has 0.0142 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:26 AM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume R: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:26 AM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:26 AM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Volume T: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:26 AM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:26 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/11/2007 9:36:26 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/11/2007 9:36:27 AM -- Performance logging started.  
2/11/2007 9:36:27 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-26.blg.  
2/11/2007 9:36:27 AM -- Checksum validation may take a while depending on the file sizes.  
2/11/2007 2:28:15 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/11/2007 2:28:15 PM -- Performance logging stopped.  
2/11/2007 2:28:15 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-26.html for checksum result.

## Jetstress Test Result: RIKER11

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7760386	0	0	0	6.8 MB/sec (30314 MB/4441 seconds)
M:Jetstress1.edb	7761410	0	0	0	10.0 MB/sec (30318 MB/3019 seconds)
M:Jetstress2.edb	7761666	0	0	0	10.2 MB/sec (30319 MB/2979 seconds)
M:Jetstress3.edb	7762178	0	0	0	10.1 MB/sec (30321 MB/3015 seconds)
M:Jetstress4.edb	7762178	0	0	0	10.1 MB/sec (30321 MB/3006 seconds)
M:Jetstress5.edb	7758850	0	0	0	19.9 MB/sec (30308 MB/1525 seconds)
N:Jetstress.edb	7805442	0	0	0	10.2 MB/sec (30490 MB/2998 seconds)
N:Jetstress1.edb	7811074	0	0	0	9.9 MB/sec (30512 MB/3092 seconds)
N:Jetstress2.edb	7810818	0	0	0	9.8 MB/sec (30511 MB/3101 seconds)

						seconds)
N:Jetstress3.edb	7806466	0	0	0	0	9.7 MB/sec (30494 MB/3129 seconds)
N:Jetstress4.edb	7807746	0	0	0	0	9.7 MB/sec (30499 MB/3136 seconds)
N:Jetstress5.edb	7808770	0	0	0	0	12.8 MB/sec (30503 MB/2385 seconds)
O:Jetstress.edb	7766786	0	0	0	0	10.7 MB/sec (30339 MB/2840 seconds)
O:Jetstress1.edb	7766274	0	0	0	0	10.3 MB/sec (30337 MB/2938 seconds)
O:Jetstress2.edb	7768066	0	0	0	0	10.3 MB/sec (30344 MB/2951 seconds)
O:Jetstress3.edb	7764738	0	0	0	0	10.1 MB/sec (30331 MB/3004 seconds)
O:Jetstress4.edb	7764226	0	0	0	0	10.1 MB/sec (30329 MB/3009 seconds)
O:Jetstress5.edb	7766018	0	0	0	0	10.8 MB/sec (30336 MB/2805 seconds)
P:Jetstress.edb	7811330	0	0	0	0	10.2 MB/sec (30513 MB/3005 seconds)
P:Jetstress1.edb	7808002	0	0	0	0	9.9 MB/sec

					(30500 MB/3094 seconds)
P:Jetstress2.edb	7809026	0	0	0	9.8 MB/sec (30504 MB/3120 seconds)
P:Jetstress3.edb	7809026	0	0	0	9.7 MB/sec (30504 MB/3149 seconds)
P:Jetstress4.edb	7810562	0	0	0	9.7 MB/sec (30510 MB/3153 seconds)
P:Jetstress5.edb	7807746	0	0	0	13.0 MB/sec (30499 MB/2337 seconds)
<b>(sum)</b>	186868784	0	0	0	41.0 MB/sec (729956 MB/17810 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.764	0.004	161.60	0.003	17988.06
N:	1.615	0.003	164.09	0.002	17844.45
O:	1.567	0.003	165.93	0.002	17550.55
P:	1.620	0.003	163.91	0.002	17861.38

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.127	0.000	9.375
Available MBytes	3675.35	3672.00	3724.00
Free System Page Table Entries	22843.00	22773.00	22853.00
Pages/Sec	0.063	0.000	879.19
Pool Nonpaged Bytes	25296990.00	25182210.00	25329660.00
Pool Paged Bytes	16099570.00	15110140.00	16347140.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-28.blg is saved.**

2/10/2007 9:35:42 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/10/2007 9:35:42 AM -- Validating input parameters, it may take a few minutes...

2/10/2007 9:35:42 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/10/2007 9:35:46 AM -- Loading performance counters...

2/10/2007 9:35:46 AM -- Instance3460.1: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:46 AM -- Instance3460.2: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:46 AM -- Instance3460.3: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:46 AM -- Instance3460.4: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)

2/10/2007 9:35:46 AM -- Start Jetstress test...

2/10/2007 9:35:48 AM -- Starting Stress test run...

2/10/2007 9:35:49 AM -- Performance logging started.

2/10/2007 9:35:49 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\Stress\_2007\_2\_10\_9-35-46.blg.

2/11/2007 9:35:20 AM -- Adding new data to the performance log file...

2/11/2007 9:35:49 AM -- Performance logging stopped.

2/11/2007 9:35:49 AM -- Stopping Jetstress...

2/11/2007 9:36:20 AM -- Creating test report ...

2/11/2007 9:36:28 AM -- Volume O: has 0.0148 for Avg. Disk sec/Read.

2/11/2007 9:36:28 AM -- Volume N: has 0.0145 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume P: has 0.0145 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume M: has 0.0149 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:28 AM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume R: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:28 AM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:28 AM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Volume T: has 0.0007 for Avg. Disk sec/Write.  
 2/11/2007 9:36:28 AM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
 2/11/2007 9:36:28 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
 2/11/2007 9:36:28 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
 2/11/2007 9:36:28 AM -- Performance logging started.  
 2/11/2007 9:36:28 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-28.blg.  
 2/11/2007 9:36:28 AM -- Checksum validation may take a while depending on the file sizes.  
 2/11/2007 2:36:16 PM -- Database checksum in progress:  
 Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
 2/11/2007 2:36:16 PM -- Performance logging stopped.  
 2/11/2007 2:36:16 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-28.html for checksum result.

## Jetstress Test Result: RIKER12

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7777026	0	0	0	8.2 MB/sec (30379 MB/3713 seconds)
M:Jetstress1.edb	7778306	0	0	0	10.8 MB/sec (30384 MB/2803 seconds)
M:Jetstress2.edb	7774722	0	0	0	11.0 MB/sec

					(30370 MB/2772 seconds)
M:Jetstress3.edb	7777026	0	0	0	10.8 MB/sec (30379 MB/2810 seconds)
M:Jetstress4.edb	7776258	0	0	0	10.8 MB/sec (30376 MB/2803 seconds)
M:Jetstress5.edb	7778306	0	0	0	11.6 MB/sec (30384 MB/2618 seconds)
N:Jetstress.edb	7828482	0	0	0	10.5 MB/sec (30580 MB/2907 seconds)
N:Jetstress1.edb	7825666	0	0	0	10.4 MB/sec (30569 MB/2927 seconds)
N:Jetstress2.edb	7823362	0	0	0	10.6 MB/sec (30560 MB/2886 seconds)
N:Jetstress3.edb	7826178	0	0	0	10.5 MB/sec (30571 MB/2920 seconds)
N:Jetstress4.edb	7826434	0	0	0	10.5 MB/sec (30572 MB/2921 seconds)
N:Jetstress5.edb	7826946	0	0	0	10.9 MB/sec (30574 MB/2813 seconds)
O:Jetstress.edb	7779330	0	0	0	11.1 MB/sec (30388 MB/2740 seconds)

O:Jetstress1.edb	7779586	0	0	0	10.9 MB/sec (30389 MB/2779 seconds)
O:Jetstress2.edb	7783426	0	0	0	11.0 MB/sec (30404 MB/2770 seconds)
O:Jetstress3.edb	7779586	0	0	0	10.9 MB/sec (30389 MB/2790 seconds)
O:Jetstress4.edb	7780098	0	0	0	10.9 MB/sec (30391 MB/2784 seconds)
O:Jetstress5.edb	7780354	0	0	0	10.9 MB/sec (30392 MB/2800 seconds)
P:Jetstress.edb	7825154	0	0	0	10.5 MB/sec (30567 MB/2909 seconds)
P:Jetstress1.edb	7828226	0	0	0	10.4 MB/sec (30579 MB/2932 seconds)
P:Jetstress2.edb	7825154	0	0	0	10.5 MB/sec (30567 MB/2904 seconds)
P:Jetstress3.edb	7826690	0	0	0	10.4 MB/sec (30573 MB/2937 seconds)
P:Jetstress4.edb	7825410	0	0	0	10.4 MB/sec (30568 MB/2944 seconds)
P:Jetstress5.edb	7824898	0	0	0	10.9 MB/sec (30566 MB/2803

					seconds)
(sum)	187256624	0	0	0	42.4 MB/sec (731471 MB/17249 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.584	0.004	166.42	0.003	17521.55
N:	1.533	0.003	168.84	0.002	17377.81
O:	1.475	0.003	175.06	0.002	16666.59
P:	1.538	0.003	168.31	0.003	17433.61

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.167	0.000	9.77
Available MBytes	3635.71	3630.00	3774.00
Free System Page Table Entries	22615.22	22613.00	22613.00
Pages/Sec	1.292	0.000	15591.29
Pool Nonpaged Bytes	25346030.00	25219070.00	25387010.00
Pool Paged Bytes	16389940.00	15400960.00	16621570.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-32.blg is saved.**

2/10/2007 9:35:46 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0  
 Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1  
 Detected ESE.dll version: 6.5.7638.2  
 Detected ESEPERF.dll version: 6.5.7638.1

2/10/2007 9:35:46 AM -- Validating input parameters, it may take a few minutes...

2/10/2007 9:35:47 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/10/2007 9:35:50 AM -- Loading performance counters...  
2/10/2007 9:35:50 AM -- Instance3292.1: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:50 AM -- Instance3292.2: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:50 AM -- Instance3292.3: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:50 AM -- Instance3292.4: IO parameters are thread (10), insert (17), replace (70), delete (5), and lazy commit (90)  
2/10/2007 9:35:50 AM -- Start Jetstress test...  
2/10/2007 9:35:52 AM -- Starting Stress test run...  
2/10/2007 9:35:53 AM -- Performance logging started.  
2/10/2007 9:35:53 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\Stress\_2007\_2\_10\_9-35-50.blg.  
2/11/2007 9:35:16 AM -- Adding new data to the performance log file...  
2/11/2007 9:35:53 AM -- Performance logging stopped.  
2/11/2007 9:35:53 AM -- Stopping Jetstress...  
2/11/2007 9:36:24 AM -- Creating test report ...  
2/11/2007 9:36:32 AM -- Volume O: has 0.0142 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume M: has 0.0142 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:32 AM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume R: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:32 AM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:32 AM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Volume T: has 0.0007 for Avg. Disk sec/Write.  
2/11/2007 9:36:32 AM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/11/2007 9:36:32 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/11/2007 9:36:32 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/11/2007 9:36:33 AM -- Performance logging started.  
2/11/2007 9:36:33 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-32.blg.  
2/11/2007 9:36:33 AM -- Checksum validation may take a while depending on the file sizes.  
2/11/2007 2:28:34 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/11/2007 2:28:34 PM -- Performance logging stopped.  
2/11/2007 2:28:34 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_24hrstress\DatabaseChecksum\_2007\_2\_11\_9-36-32.html for checksum result.

# Log Checksum – Soft Recovery Testing

## Jetstress Test Result: RIKER9

The following table shows a quick overview of log replay statistics for 100 log files per storage group:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Disk Read Bytes/sec	Total Seconds
Log (Q:)	0.001	0.000	89.56	0.079	5829917.00	177.20
Log (R:)	0.001	0.000	90.69	0.034	5902502.00	205.94
Log (S:)	0.001	0.000	89.94	0.069	5853440.00	187.92
Log (T:)	0.000	0.000	51.97	0.037	3382342.00	380.19

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	4.528	0.000	14.75
Available MBytes	2194.93	2119.00	3053.00
Free System Page Table Entries	22741.00	22741.00	22741.00
Pages/Sec	0.012	0.000	4.001
Pool Nonpaged Bytes	26375560.00	23830530.00	27418620.00
Pool Paged Bytes	15823360.00	14794750.00	15863810.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-8.blg is saved.**

2/7/2007 9:09:57 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:09:57 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:09:58 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:04 AM -- Loading performance counters...

2/7/2007 9:10:04 AM -- Instance2456.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:04 AM -- Instance2456.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:04 AM -- Instance2456.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:04 AM -- Instance2456.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:04 AM -- Start Jetstress test...  
2/7/2007 9:10:06 AM -- Starting StreamingBackup test run...  
2/7/2007 9:10:07 AM -- Performance logging started.  
2/7/2007 9:10:07 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-4.blg.  
2/7/2007 9:55:22 AM -- Adding new data to the performance log file...  
2/7/2007 9:55:37 AM -- Performance logging stopped.  
2/7/2007 9:55:37 AM -- Stopping Jetstress...  
2/7/2007 9:56:07 AM -- Creating test report ...  
2/7/2007 9:56:08 AM -- Volume O: has 0.0135 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume P: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume Q: has 0.0005 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume R: has 0.0008 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume S: has 0.0005 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume T: has 0.0006 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:56:08 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:56:08 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:56:09 AM -- Performance logging started.  
2/7/2007 9:56:09 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-8.blg.  
2/7/2007 10:11:57 AM -- Adding new data to the performance log file...  
2/7/2007 10:12:00 AM -- Performance logging stopped.  
2/7/2007 10:12:00 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-8.html for soft recovery result.

## Jetstress Test Result: RIKER10

The following table shows a quick overview of log replay statistics for 100 log files per storage group:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Disk Read Bytes/sec	Total Seconds
Log (Q:)	0.001	0.000	90.15	0.060	5866769.00	184.45
Log (R:)	0.001	0.000	91.14	0.061	5932255.00	210.69
Log (S:)	0.001	0.000	86.61	0.071	5638736.00	184.41
Log (T:)	0.001	0.000	90.77	0.054	5908130.00	204.05

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	5.423	0.000	15.23
Available MBytes	2209.77	2123.00	3060.00
Free System Page Table Entries	22741.00	22741.00	22741.00
Pages/Sec	0.013	0.000	3.997
Pool Nonpaged Bytes	26111340.00	23842820.00	27713540.00
Pool Paged Bytes	14200920.00	13144060.00	14274560.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-40.blg is saved.**

2/7/2007 9:09:58 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:09:59 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:09:59 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:05 AM -- Loading performance counters...

2/7/2007 9:10:05 AM -- Instance3764.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:05 AM -- Instance3764.2: IO parameters are thread (9), insert (17), replace

(70), delete (5), and lazy commit (90)  
2/7/2007 9:10:05 AM -- Instance3764.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:05 AM -- Instance3764.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:05 AM -- Start Jetstress test...  
2/7/2007 9:10:07 AM -- Starting StreamingBackup test run...  
2/7/2007 9:10:08 AM -- Performance logging started.  
2/7/2007 9:10:08 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-5.blg.  
2/7/2007 9:54:53 AM -- Adding new data to the performance log file...  
2/7/2007 9:55:08 AM -- Performance logging stopped.  
2/7/2007 9:55:08 AM -- Stopping Jetstress...  
2/7/2007 9:55:39 AM -- Creating test report ...  
2/7/2007 9:55:39 AM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume N: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume M: has 0.0136 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume R: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume S: has 0.0006 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume T: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:55:39 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:55:40 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:55:40 AM -- Performance logging started.  
2/7/2007 9:55:40 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-40.blg.  
2/7/2007 10:08:40 AM -- Adding new data to the performance log file...  
2/7/2007 10:08:44 AM -- Performance logging stopped.  
2/7/2007 10:08:44 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-40.html for soft recovery result.

## Jetstress Test Result: RIKER11

The following table shows a quick overview of log replay statistics for 100 log files per storage group:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Disk Read Bytes/sec	Total Seconds
Log (Q:)	0.001	0.000	91.64	0.063	5963688.00	173.94
Log (R:)	0.001	0.000	91.57	0.074	5960267.00	203.33
Log (S:)	0.001	0.000	89.84	0.068	5847730.00	188.73
Log (T:)	0.001	0.000	64.21	0.056	4179091.00	306.05

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	5.209	0.000	16.99
Available MBytes	2810.84	2731.00	3666.00
Free System Page Table Entries	22653.00	22653.00	22653.00
Pages/Sec	0.011	0.000	4.000
Pool Nonpaged Bytes	27126210.00	24469500.00	28561410.00
Pool Paged Bytes	14225720.00	13148160.00	14282750.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-13.blg is saved.**

2/7/2007 9:10:02 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:10:03 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:10:03 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:08 AM -- Loading performance counters...

2/7/2007 9:10:08 AM -- Instance2516.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:08 AM -- Instance2516.2: IO parameters are thread (9), insert (17), replace

(70), delete (5), and lazy commit (90)  
2/7/2007 9:10:08 AM -- Instance2516.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:08 AM -- Instance2516.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:08 AM -- Start Jetstress test...  
2/7/2007 9:10:11 AM -- Starting StreamingBackup test run...  
2/7/2007 9:10:12 AM -- Performance logging started.  
2/7/2007 9:10:12 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-8.blg.  
2/7/2007 9:55:27 AM -- Adding new data to the performance log file...  
2/7/2007 9:55:42 AM -- Performance logging stopped.  
2/7/2007 9:55:42 AM -- Stopping Jetstress...  
2/7/2007 9:56:11 AM -- Creating test report ...  
2/7/2007 9:56:12 AM -- Volume O: has 0.0135 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume P: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume Q: has 0.0004 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume R: has 0.0011 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume S: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume T: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:56:12 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:56:13 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:56:13 AM -- Performance logging started.  
2/7/2007 9:56:13 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-13.blg.  
2/7/2007 10:10:45 AM -- Adding new data to the performance log file...  
2/7/2007 10:10:45 AM -- Performance logging stopped.  
2/7/2007 10:10:45 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-13.html for soft recovery result.

## Jetstress Test Result: RIKER12

The following table shows a quick overview of log replay statistics for 100 log files per storage group:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Disk Read Bytes/sec	Total Seconds
Log (Q:)	0.001	0.000	91.02	0.060	5924608.00	183.05
Log (R:)	0.001	0.000	91.13	0.066	5931552.00	211.06
Log (S:)	0.001	0.000	87.45	0.097	5691956.00	184.50
Log (T:)	0.001	0.000	89.03	0.029	5794621.00	207.89

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	5.447	0.000	16.02
Available MBytes	2859.25	2767.00	3702.00
Free System Page Table Entries	22413.00	22413.00	22413.00
Pages/Sec	0.011	0.000	4.001
Pool Nonpaged Bytes	27387750.00	24936450.00	28913660.00
Pool Paged Bytes	14627940.00	13590530.00	14684160.00

**Performance log C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-55.blg is saved.**

2/7/2007 9:10:13 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:10:13 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:10:14 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:20 AM -- Loading performance counters...

2/7/2007 9:10:20 AM -- Instance3840.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:20 AM -- Instance3840.2: IO parameters are thread (9), insert (17), replace

(70), delete (5), and lazy commit (90)  
2/7/2007 9:10:20 AM -- Instance3840.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:20 AM -- Instance3840.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/7/2007 9:10:20 AM -- Start Jetstress test...  
2/7/2007 9:10:22 AM -- Starting StreamingBackup test run...  
2/7/2007 9:10:23 AM -- Performance logging started.  
2/7/2007 9:10:23 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-20.blg.  
2/7/2007 9:55:08 AM -- Adding new data to the performance log file...  
2/7/2007 9:55:23 AM -- Performance logging stopped.  
2/7/2007 9:55:23 AM -- Stopping Jetstress...  
2/7/2007 9:55:54 AM -- Creating test report ...  
2/7/2007 9:55:55 AM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume N: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume M: has 0.0136 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume R: has 0.0010 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume S: has 0.0004 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume T: has 0.0009 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:55:55 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:55:55 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:55:56 AM -- Performance logging started.  
2/7/2007 9:55:56 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-55.blg.  
2/7/2007 10:09:00 AM -- Adding new data to the performance log file...  
2/7/2007 10:09:02 AM -- Performance logging stopped.  
2/7/2007 10:09:02 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-55.html for soft recovery result.

# Performance Results – 2 Hour Performance Test

## Jetstress Test Result: RIKER9

The purpose of this test is to verify the storage configuration which the customer is planning to deploy. The test run has been successful, meaning the database read latency and log write latency are below 20ms; Database page fault stalls/sec is 0. However, Microsoft strongly recommends that you perform further validation of this storage solution (additional tasks listed below):

1. You should refer to the table below to determine if the actual disk IO (achieved IO) has exceeded the targeted IO (expected IO). If not, you may want to increase the thread count to increase the load, provided that the disk latency will not exceed the threshold.
2. You need to confirm whether the storage solution has synchronous replication as part of the implementation. If the solution does not utilize synchronous replication, then you should check for the database write latency, the desired value should be under 20 ms. (Please refer to <http://support.microsoft.com/?kbid=895847> for synchronous replication definitions.)
3. Please check the status pane in the Jetstress window, to make sure that no errors were logged during the database checksum validation.

Planned disk subsystem profile:

Total test database size	Production data size	Total number of databases	Expected I/O	Achieved I/O
682.27 GB (based on the attached database)	(n/a)	24 (4 storage(s) * 6 database(s))	3500.00 (3500 mailboxes of 1.00 IOPS)	3522.73

JetStress test parameter summary:

Instance	threadCount	logBufferSize	opInsert	opReplace	opDelete	lazyCommit
1	8	9000	17	70	5	90
2	9	9000	17	70	5	90
3	8	9000	17	70	5	90
4	9	9000	17	70	5	90

Disk subsystem performance summary:

Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Data (O:)	0.014	0.003	569.06	253.83	(n/a)
Data (N:)	0.014	0.004	650.96	292.52	(n/a)
Data (P:)	0.014	0.004	651.04	292.29	(n/a)
Data (M:)	0.014	0.004	562.77	250.27	(n/a)
Log (Q:)	0.000	0.001	0.000	63.21	6347.83
Log (R:)	0.000	0.001	0.000	72.57	6440.75
Log (S:)	0.000	0.001	0.000	64.00	6358.96
Log (T:)	0.000	0.001	0.000	72.45	6455.45

Processor/memory performance summary:

Counter	Average	Minimum	Maximum
% Processor Time	5.245	3.958	6.615
Available MBytes	2169.69	2162.00	2928.00
Free System Page Table Entries	22901.00	22901.00	22901.00
Pages/Sec	0.014	0.000	2.933
Pool Nonpaged Bytes	22202218.35	20520960.00	22331392.00
Pool Paged Bytes	14390573.43	14381056.00	15691776.00
Database Page Fault Stalls/sec	0.000	0.000	0.000

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-52.blg is saved.**

2/6/2007 6:02:46 PM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/6/2007 6:02:46 PM -- Validating input parameters, it may take a few minutes...  
2/6/2007 6:02:46 PM -- Attaching databases ... (it may take a few minutes if the  
databases are in dirty shutdown state)  
2/6/2007 6:02:52 PM -- Loading performance counters...  
2/6/2007 6:02:52 PM -- Instance3776.1: IO parameters are thread (8), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:52 PM -- Instance3776.2: IO parameters are thread (9), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:52 PM -- Instance3776.3: IO parameters are thread (8), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:52 PM -- Instance3776.4: IO parameters are thread (9), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:52 PM -- Start Jetstress test...  
2/6/2007 6:02:55 PM -- Starting Performance test run...  
2/6/2007 6:02:56 PM -- Performance logging started.  
2/6/2007 6:02:56 PM -- Performance data will be saved to C:\Program  
Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-52.blg.  
2/6/2007 8:02:41 PM -- Adding new data to the performance log file...  
2/6/2007 8:02:56 PM -- Performance logging stopped.  
2/6/2007 8:02:56 PM -- Stopping Jetstress...  
2/6/2007 8:03:27 PM -- Creating test report ...  
2/6/2007 8:03:29 PM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume R: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/6/2007 8:03:29 PM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.

## Jetstress Test Result: RIKER10

The purpose of this test is to verify the storage configuration which the customer is planning to deploy. The test run has been successful, meaning the database read latency and log write latency are below 20ms; Database page fault stalls/sec is 0. However, Microsoft strongly recommends that you perform further validation of this storage solution (additional tasks listed below):

1. You should refer to the table below to determine if the actual disk IO (achieved IO) has exceeded the targeted IO (expected IO). If not, you may want to increase the thread count to increase the load, provided that the disk latency will not exceed the threshold.
2. You need to confirm whether the storage solution has synchronous replication as part of the implementation. If the solution does not utilize synchronous replication, then you should check for the database write latency, the desired value should be under 20 ms. (Please refer to <http://support.microsoft.com/?kbid=895847> for synchronous replication definitions.)
3. Please check the status pane in the Jetstress window, to make sure that no errors were logged during the database checksum validation.

Planned disk subsystem profile:

Total test database size	Production data size	Total number of databases	Expected I/O	Achieved I/O
682.27 GB (based on the attached database)	(n/a)	24 (4 storage(s) * 6 database(s))	3500.00 (3500 mailboxes of 1.00 IOPS)	3669.27

JetStress test parameter summary:

Instance	threadCount	logBufferSize	opInsert	opReplace	opDelete	lazyCommit
1	8	9000	17	70	5	90
2	9	9000	17	70	5	90
3	8	9000	17	70	5	90
4	9	9000	17	70	5	90

Disk subsystem performance summary:

Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Data (O:)	0.014	0.003	591.93	263.41	(n/a)
Data (N:)	0.013	0.003	677.07	304.07	(n/a)
Data (P:)	0.013	0.003	677.07	303.59	(n/a)
Data (M:)	0.014	0.003	589.76	262.36	(n/a)
Log (Q:)	0.000	0.001	0.000	65.91	6363.65
Log (R:)	0.000	0.001	0.000	75.27	6457.95
Log (S:)	0.000	0.001	0.000	66.28	6357.02
Log (T:)	0.000	0.001	0.000	75.33	6441.07

Processor/memory performance summary:

Counter	Average	Minimum	Maximum
% Processor Time	5.433	3.802	6.693
Available MBytes	2168.77	2162.00	2928.00
Free System Page Table Entries	22901.00	22901.00	22901.00
Pages/Sec	0.018	0.000	4.000
Pool Nonpaged Bytes	22291141.75	21061632.00	22405120.00
Pool Paged Bytes	14203773.59	14196736.00	15020032.00
Database Page Fault Stalls/sec	0.000	0.000	0.000

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-53.blg is saved.**

2/6/2007 6:02:47 PM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/6/2007 6:02:47 PM -- Validating input parameters, it may take a few minutes...  
2/6/2007 6:02:47 PM -- Attaching databases ... (it may take a few minutes if the  
databases are in dirty shutdown state)  
2/6/2007 6:02:53 PM -- Loading performance counters...  
2/6/2007 6:02:53 PM -- Instance2100.1: IO parameters are thread (8), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:53 PM -- Instance2100.2: IO parameters are thread (9), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:53 PM -- Instance2100.3: IO parameters are thread (8), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:53 PM -- Instance2100.4: IO parameters are thread (9), insert (17), replace  
(70), delete (5), and lazy commit (90)  
2/6/2007 6:02:53 PM -- Start Jetstress test...  
2/6/2007 6:02:56 PM -- Starting Performance test run...  
2/6/2007 6:02:57 PM -- Performance logging started.  
2/6/2007 6:02:57 PM -- Performance data will be saved to C:\Program  
Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-53.blg.  
2/6/2007 8:02:42 PM -- Adding new data to the performance log file...  
2/6/2007 8:02:57 PM -- Performance logging stopped.  
2/6/2007 8:02:57 PM -- Stopping Jetstress...  
2/6/2007 8:03:26 PM -- Creating test report ...  
2/6/2007 8:03:29 PM -- Volume O: has 0.0136 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume N: has 0.0134 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume P: has 0.0134 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume M: has 0.0136 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:29 PM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:29 PM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/6/2007 8:03:29 PM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.

## Jetstress Test Result: RIKER11

The purpose of this test is to verify the storage configuration which the customer is planning to deploy. The test run has been successful, meaning the database read latency and log write latency are below 20ms; Database page fault stalls/sec is 0. However, Microsoft strongly recommends that you perform further validation of this storage solution (additional tasks listed below):

1. You should refer to the table below to determine if the actual disk IO (achieved IO) has exceeded the targeted IO (expected IO). If not, you may want to increase the thread count to increase the load, provided that the disk latency will not exceed the threshold.
2. You need to confirm whether the storage solution has synchronous replication as part of the implementation. If the solution does not utilize synchronous replication, then you should check for the database write latency, the desired value should be under 20 ms. (Please refer to <http://support.microsoft.com/?kbid=895847> for synchronous replication definitions.)
3. Please check the status pane in the Jetstress window, to make sure that no errors were logged during the database checksum validation.

Planned disk subsystem profile:

Total test database size	Production data size	Total number of databases	Expected I/O	Achieved I/O
682.27 GB (based on the attached database)	(n/a)	24 (4 storage(s) * 6 database(s))	3500.00 (3500 mailboxes of 1.00 IOPS)	3514.60

JetStress test parameter summary:

Instance	threadCount	logBufferSize	opInsert	opReplace	opDelete	lazyCommit
1	8	9000	17	70	5	90
2	9	9000	17	70	5	90
3	8	9000	17	70	5	90
4	9	9000	17	70	5	90

Disk subsystem performance summary:

Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Data (O:)	0.014	0.004	567.27	252.73	(n/a)
Data (N:)	0.014	0.004	648.69	290.83	(n/a)
Data (P:)	0.014	0.003	650.70	292.33	(n/a)
Data (M:)	0.014	0.003	562.01	250.05	(n/a)
Log (Q:)	0.000	0.001	0.000	62.91	6368.84
Log (R:)	0.000	0.001	0.000	72.15	6443.14
Log (S:)	0.000	0.001	0.000	63.47	6379.61
Log (T:)	0.000	0.001	0.000	72.86	6419.25

Processor/memory performance summary:

Counter	Average	Minimum	Maximum
% Processor Time	5.253	3.229	7.318
Available MBytes	2777.35	2770.00	3537.00
Free System Page Table Entries	22853.00	22853.00	22853.00
Pages/Sec	0.017	0.000	3.000
Pool Nonpaged Bytes	23258481.84	21741568.00	23392256.00
Pool Paged Bytes	14244716.49	14237696.00	15011840.00
Database Page Fault Stalls/sec	0.000	0.000	0.000

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-57.blg is saved.**

2/6/2007 6:02:51 PM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/6/2007 6:02:51 PM -- Validating input parameters, it may take a few minutes...  
2/6/2007 6:02:51 PM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)  
2/6/2007 6:02:57 PM -- Loading performance counters...  
2/6/2007 6:02:57 PM -- Instance3280.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:02:57 PM -- Instance3280.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:02:57 PM -- Instance3280.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:02:57 PM -- Instance3280.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:02:57 PM -- Start Jetstress test...  
2/6/2007 6:02:59 PM -- Starting Performance test run...  
2/6/2007 6:03:00 PM -- Performance logging started.  
2/6/2007 6:03:00 PM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-2-57.blg.  
2/6/2007 8:02:45 PM -- Adding new data to the performance log file...  
2/6/2007 8:03:00 PM -- Performance logging stopped.  
2/6/2007 8:03:00 PM -- Stopping Jetstress...  
2/6/2007 8:03:31 PM -- Creating test report ...  
2/6/2007 8:03:33 PM -- Volume O: has 0.0142 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume N: has 0.0140 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume Q: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:33 PM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:33 PM -- Volume R: has 0.0001 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume S: has 0.0007 for Avg. Disk sec/Write.  
2/6/2007 8:03:33 PM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:33 PM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:33 PM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/6/2007 8:03:33 PM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.

## Jetstress Test Result: RIKER12

The purpose of this test is to verify the storage configuration which the customer is planning to deploy. The test run has been successful, meaning the database read latency and log write latency are below 20ms; Database page fault stalls/sec is 0. However, Microsoft strongly recommends that you perform further validation of this storage solution (additional tasks listed below):

1. You should refer to the table below to determine if the actual disk IO (achieved IO) has exceeded the targeted IO (expected IO). If not, you may want to increase the thread count to increase the load, provided that the disk latency will not exceed the threshold.
2. You need to confirm whether the storage solution has synchronous replication as part of the implementation. If the solution does not utilize synchronous replication, then you should check for the database write latency, the desired value should be under 20 ms. (Please refer to <http://support.microsoft.com/?kbid=895847> for synchronous replication definitions.)
3. Please check the status pane in the Jetstress window, to make sure that no errors were logged during the database checksum validation.

Planned disk subsystem profile:

Total test database size	Production data size	Total number of databases	Expected I/O	Achieved I/O
682.27 GB (based on the attached database)	(n/a)	24 (4 storage(s) * 6 database(s))	3500.00 (3500 mailboxes of 1.00 IOPS)	3667.87

JetStress test parameter summary:

Instance	threadCount	logBufferSize	opInsert	opReplace	opDelete	lazyCommit
1	8	9000	17	70	5	90
2	9	9000	17	70	5	90
3	8	9000	17	70	5	90
4	9	9000	17	70	5	90

Disk subsystem performance summary:

Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Data (O:)	0.014	0.003	591.69	263.76	(n/a)
Data (N:)	0.013	0.003	676.82	303.80	(n/a)
Data (P:)	0.013	0.003	676.71	303.48	(n/a)
Data (M:)	0.014	0.003	589.14	262.46	(n/a)
Log (Q:)	0.000	0.001	0.000	65.67	6396.96
Log (R:)	0.000	0.001	0.000	75.47	6432.96
Log (S:)	0.000	0.001	0.000	66.29	6377.40
Log (T:)	0.000	0.001	0.000	75.26	6457.46

Processor/memory performance summary:

Counter	Average	Minimum	Maximum
% Processor Time	5.562	2.630	7.917
Available MBytes	2829.07	2817.00	3545.00
Free System Page Table Entries	22853.00	22853.00	22853.00
Pages/Sec	16.37	0.000	5145.46
Pool Nonpaged Bytes	23141485.03	21749760.00	23281664.00
Pool Paged Bytes	14185628.06	14176256.00	14950400.00
Database Page Fault Stalls/sec	0.000	0.000	0.000

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-3-6.blg is saved.**

2/6/2007 6:03:00 PM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/6/2007 6:03:00 PM -- Validating input parameters, it may take a few minutes...  
2/6/2007 6:03:00 PM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)  
2/6/2007 6:03:06 PM -- Loading performance counters...  
2/6/2007 6:03:06 PM -- Instance2612.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:03:06 PM -- Instance2612.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:03:06 PM -- Instance2612.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:03:06 PM -- Instance2612.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)  
2/6/2007 6:03:06 PM -- Start Jetstress test...  
2/6/2007 6:03:09 PM -- Starting Performance test run...  
2/6/2007 6:03:10 PM -- Performance logging started.  
2/6/2007 6:03:10 PM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_2hrperformance\Performance\_2007\_2\_6\_18-3-6.blg.  
2/6/2007 8:02:55 PM -- Adding new data to the performance log file...  
2/6/2007 8:03:10 PM -- Performance logging stopped.  
2/6/2007 8:03:10 PM -- Stopping Jetstress...  
2/6/2007 8:03:40 PM -- Creating test report ...  
2/6/2007 8:03:43 PM -- Volume O: has 0.0136 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume N: has 0.0134 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume P: has 0.0134 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume M: has 0.0137 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:43 PM -- Volume Q: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:43 PM -- Volume R: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:43 PM -- Volume S: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/6/2007 8:03:43 PM -- Volume T: has 0.0000 for Avg. Disk sec/Read.  
2/6/2007 8:03:43 PM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/6/2007 8:03:43 PM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.

## Database Read-Only Performance

### Jetstress Test Result: RIKER9

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7460610	0	0	0	8.0 MB/sec (29143 MB/3652 seconds)
M:Jetstress1.edb	7460866	0	0	0	14.5 MB/sec (29144 MB/2016 seconds)
M:Jetstress2.edb	7460866	0	0	0	14.6 MB/sec (29144 MB/1995 seconds)
M:Jetstress3.edb	7460866	0	0	0	14.4 MB/sec (29144 MB/2021 seconds)
M:Jetstress4.edb	7460866	0	0	0	16.9 MB/sec (29144 MB/1727 seconds)
M:Jetstress5.edb	7460354	0	0	0	73.2 MB/sec (29142 MB/398 seconds)
N:Jetstress.edb	7462402	0	0	0	14.8 MB/sec (29150 MB/1971 seconds)
N:Jetstress1.edb	7462402	0	0	0	14.3 MB/sec (29150)

						MB/2045 seconds)
N:Jetstress2.edb	7462402	0	0	0	0	14.2 MB/sec (29150 MB/2054 seconds)
N:Jetstress3.edb	7462658	0	0	0	0	14.1 MB/sec (29151 MB/2072 seconds)
N:Jetstress4.edb	7462402	0	0	0	0	14.0 MB/sec (29150 MB/2075 seconds)
N:Jetstress5.edb	7462914	0	0	0	0	21.6 MB/sec (29152 MB/1352 seconds)
O:Jetstress.edb	7461890	0	0	0	0	15.6 MB/sec (29148 MB/1865 seconds)
O:Jetstress1.edb	7461122	0	0	0	0	15.3 MB/sec (29145 MB/1899 seconds)
O:Jetstress2.edb	7461122	0	0	0	0	15.7 MB/sec (29145 MB/1856 seconds)
O:Jetstress3.edb	7461122	0	0	0	0	15.7 MB/sec (29145 MB/1860 seconds)
O:Jetstress4.edb	7460866	0	0	0	0	15.7 MB/sec (29144 MB/1854 seconds)
O:Jetstress5.edb	7461378	0	0	0	0	16.2 MB/sec (29146 MB/1799 seconds)

P:Jetstress.edb	7462402	0	0	0	15.7 MB/sec (29150 MB/1851 seconds)
P:Jetstress1.edb	7462402	0	0	0	15.4 MB/sec (29150 MB/1897 seconds)
P:Jetstress2.edb	7463170	0	0	0	15.9 MB/sec (29153 MB/1838 seconds)
P:Jetstress3.edb	7462658	0	0	0	15.8 MB/sec (29151 MB/1842 seconds)
P:Jetstress4.edb	7463170	0	0	0	15.7 MB/sec (29153 MB/1854 seconds)
P:Jetstress5.edb	7463426	0	0	0	16.1 MB/sec (29154 MB/1808 seconds)
<b>(sum)</b>	179084336	0	0	0	61.3 MB/sec (699548 MB/11402 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.353	0.003	236.86	0.004	11811.36
N:	1.106	0.003	241.77	0.003	11571.30
O:	1.026	0.003	251.20	0.003	11137.08
P:	1.021	0.004	252.27	0.005	11093.06

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.613	0.000	6.641
Available MBytes	3018.84	2999.00	3065.00
Free System Page Table Entries	22739.07	22741.00	22741.00
Pages/Sec	0.101	0.000	961.66
Pool Nonpaged Bytes	27426490.00	27410430.00	27451390.00
Pool Paged Bytes	15821320.00	14917630.00	16113660.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseC hecksum\_2007\_2\_7\_10-12-0.blg is saved.**

2/7/2007 9:09:57 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:09:57 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:09:58 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:04 AM -- Loading performance counters...

2/7/2007 9:10:04 AM -- Instance2456.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:04 AM -- Instance2456.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:04 AM -- Instance2456.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:04 AM -- Instance2456.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:04 AM -- Start Jetstress test...

2/7/2007 9:10:06 AM -- Starting StreamingBackup test run...

2/7/2007 9:10:07 AM -- Performance logging started.

2/7/2007 9:10:07 AM -- Performance data will be saved to C:\Program

Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-4.blg.

2/7/2007 9:55:22 AM -- Adding new data to the performance log file...

2/7/2007 9:55:37 AM -- Performance logging stopped.

2/7/2007 9:55:37 AM -- Stopping Jetstress...

2/7/2007 9:56:07 AM -- Creating test report ...

2/7/2007 9:56:08 AM -- Volume O: has 0.0135 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume P: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume Q: has 0.0005 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume R: has 0.0008 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume S: has 0.0005 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:08 AM -- Volume T: has 0.0006 for Avg. Disk sec/Read.  
2/7/2007 9:56:08 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:56:08 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:56:08 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:56:09 AM -- Performance logging started.  
2/7/2007 9:56:09 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-8.blg.  
2/7/2007 10:11:57 AM -- Adding new data to the performance log file...  
2/7/2007 10:12:00 AM -- Performance logging stopped.  
2/7/2007 10:12:00 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-8.html for soft recovery result.  
2/7/2007 10:12:02 AM -- Performance logging started.  
2/7/2007 10:12:02 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-12-0.blg.  
2/7/2007 10:12:02 AM -- Checksum validation may take a while depending on the file sizes.  
2/7/2007 1:28:53 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/7/2007 1:28:53 PM -- Performance logging stopped.  
2/7/2007 1:28:53 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-12-0.html for checksum result.

## Jetstress Test Result: RIKER10

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7461378	0	0	0	11.3 MB/sec (29146 MB/2579 seconds)
M:Jetstress1.edb	7461634	0	0	0	15.5 MB/sec (29147 MB/1881 seconds)
M:Jetstress2.edb	7461122	0	0	0	15.7 MB/sec (29145 MB/1855 seconds)
M:Jetstress3.edb	7460866	0	0	0	15.6 MB/sec (29144 MB/1865 seconds)
M:Jetstress4.edb	7461122	0	0	0	15.6 MB/sec (29145 MB/1873 seconds)
M:Jetstress5.edb	7461378	0	0	0	18.6 MB/sec (29146 MB/1568 seconds)
N:Jetstress.edb	7462658	0	0	0	17.3 MB/sec (29151 MB/1680 seconds)
N:Jetstress1.edb	7462658	0	0	0	15.3 MB/sec (29151 MB/1911 seconds)
N:Jetstress2.edb	7462914	0	0	0	15.8 MB/sec (29152 MB/1849 seconds)

						seconds)
N:Jetstress3.edb	7462658	0	0	0	0	15.7 MB/sec (29151 MB/1859 seconds)
N:Jetstress4.edb	7462146	0	0	0	0	15.7 MB/sec (29149 MB/1857 seconds)
N:Jetstress5.edb	7462402	0	0	0	0	15.7 MB/sec (29150 MB/1860 seconds)
O:Jetstress.edb	7460866	0	0	0	0	16.4 MB/sec (29144 MB/1777 seconds)
O:Jetstress1.edb	7461122	0	0	0	0	14.3 MB/sec (29145 MB/2040 seconds)
O:Jetstress2.edb	7460610	0	0	0	0	14.7 MB/sec (29143 MB/1985 seconds)
O:Jetstress3.edb	7460610	0	0	0	0	14.5 MB/sec (29143 MB/2011 seconds)
O:Jetstress4.edb	7460610	0	0	0	0	14.5 MB/sec (29143 MB/2013 seconds)
O:Jetstress5.edb	7460354	0	0	0	0	16.6 MB/sec (29142 MB/1753 seconds)
P:Jetstress.edb	7462146	0	0	0	0	17.2 MB/sec (29149 MB/1693 seconds)
P:Jetstress1.edb	7462402	0	0	0	0	14.4 MB/sec

					(29150 MB/2021 seconds)
P:Jetstress2.edb	7462146	0	0	0	14.6 MB/sec (29149 MB/1990 seconds)
P:Jetstress3.edb	7461890	0	0	0	14.5 MB/sec (29148 MB/2008 seconds)
P:Jetstress4.edb	7462402	0	0	0	14.5 MB/sec (29150 MB/2009 seconds)
P:Jetstress5.edb	7462402	0	0	0	16.1 MB/sec (29150 MB/1810 seconds)
<b>(sum)</b>	179080496	0	0	0	61.1 MB/sec (699533 MB/11439 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.120	0.003	240.64	0.004	11623.95
N:	1.022	0.003	253.93	0.003	11018.81
O:	1.084	0.004	241.50	0.004	11583.55
P:	1.082	0.004	242.56	0.005	11535.17

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.657	0.000	27.31
Available MBytes	3016.58	3005.00	3063.00
Free System Page Table Entries	22734.17	22701.00	22741.00
Pages/Sec	0.108	0.000	896.40
Pool Nonpaged Bytes	27710680.00	27697150.00	27729920.00
Pool Paged Bytes	15128300.00	13295620.00	15417340.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseC hecksum\_2007\_2\_7\_10-8-44.blg is saved.**

2/7/2007 9:09:58 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:09:59 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:09:59 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:05 AM -- Loading performance counters...

2/7/2007 9:10:05 AM -- Instance3764.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:05 AM -- Instance3764.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:05 AM -- Instance3764.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:05 AM -- Instance3764.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:05 AM -- Start Jetstress test...

2/7/2007 9:10:07 AM -- Starting StreamingBackup test run...

2/7/2007 9:10:08 AM -- Performance logging started.

2/7/2007 9:10:08 AM -- Performance data will be saved to C:\Program

Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-5.blg.

2/7/2007 9:54:53 AM -- Adding new data to the performance log file...

2/7/2007 9:55:08 AM -- Performance logging stopped.

2/7/2007 9:55:08 AM -- Stopping Jetstress...

2/7/2007 9:55:39 AM -- Creating test report ...

2/7/2007 9:55:39 AM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume N: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume M: has 0.0136 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume R: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume S: has 0.0006 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:39 AM -- Volume T: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:39 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:55:39 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:55:40 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:55:40 AM -- Performance logging started.  
2/7/2007 9:55:40 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-40.blg.  
2/7/2007 10:08:40 AM -- Adding new data to the performance log file...  
2/7/2007 10:08:44 AM -- Performance logging stopped.  
2/7/2007 10:08:44 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-40.html for soft recovery result.  
2/7/2007 10:08:46 AM -- Performance logging started.  
2/7/2007 10:08:46 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-8-44.blg.  
2/7/2007 10:08:46 AM -- Checksum validation may take a while depending on the file sizes.  
2/7/2007 1:22:30 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/7/2007 1:22:30 PM -- Performance logging stopped.  
2/7/2007 1:22:30 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-8-44.html for checksum result.

## Jetstress Test Result: RIKER11

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7460354	0	0	0	8.2 MB/sec (29142 MB/3538 seconds)
M:Jetstress1.edb	7460866	0	0	0	14.6 MB/sec (29144 MB/1995 seconds)
M:Jetstress2.edb	7461122	0	0	0	14.6 MB/sec (29145 MB/1991 seconds)
M:Jetstress3.edb	7460354	0	0	0	14.5 MB/sec (29142 MB/2010 seconds)
M:Jetstress4.edb	7460354	0	0	0	16.0 MB/sec (29142 MB/1825 seconds)
M:Jetstress5.edb	7461378	0	0	0	57.6 MB/sec (29146 MB/506 seconds)
N:Jetstress.edb	7461890	0	0	0	14.8 MB/sec (29148 MB/1973 seconds)
N:Jetstress1.edb	7462402	0	0	0	14.3 MB/sec (29150 MB/2036 seconds)
N:Jetstress2.edb	7462146	0	0	0	14.2 MB/sec (29149 MB/2050 seconds)

						seconds)
N:Jetstress3.edb	7462146	0	0	0	0	14.1 MB/sec (29149 MB/2069 seconds)
N:Jetstress4.edb	7462658	0	0	0	0	14.1 MB/sec (29151 MB/2068 seconds)
N:Jetstress5.edb	7461890	0	0	0	0	20.1 MB/sec (29148 MB/1446 seconds)
O:Jetstress.edb	7461634	0	0	0	0	15.7 MB/sec (29147 MB/1861 seconds)
O:Jetstress1.edb	7461634	0	0	0	0	15.3 MB/sec (29147 MB/1906 seconds)
O:Jetstress2.edb	7461122	0	0	0	0	15.7 MB/sec (29145 MB/1858 seconds)
O:Jetstress3.edb	7461378	0	0	0	0	15.7 MB/sec (29146 MB/1854 seconds)
O:Jetstress4.edb	7461378	0	0	0	0	15.7 MB/sec (29146 MB/1861 seconds)
O:Jetstress5.edb	7461122	0	0	0	0	16.1 MB/sec (29145 MB/1814 seconds)
P:Jetstress.edb	7462402	0	0	0	0	15.8 MB/sec (29150 MB/1845 seconds)
P:Jetstress1.edb	7462914	0	0	0	0	15.4 MB/sec

					(29152 MB/1898 seconds)
P:Jetstress2.edb	7462914	0	0	0	15.9 MB/sec (29152 MB/1836 seconds)
P:Jetstress3.edb	7462914	0	0	0	15.7 MB/sec (29152 MB/1852 seconds)
P:Jetstress4.edb	7462402	0	0	0	15.8 MB/sec (29150 MB/1849 seconds)
P:Jetstress5.edb	7462658	0	0	0	16.0 MB/sec (29151 MB/1818 seconds)
<b>(sum)</b>	179082032	0	0	0	61.1 MB/sec (699539 MB/11443 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.324	0.003	235.63	0.004	11868.73
N:	1.104	0.003	240.23	0.003	11645.55
O:	1.028	0.003	250.75	0.003	11158.23
P:	1.022	0.004	252.04	0.005	11102.33

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.645	0.000	23.44
Available MBytes	3625.14	3611.00	3670.00
Free System Page Table Entries	22655.06	22653.00	22653.00
Pages/Sec	0.100	0.000	888.95
Pool Nonpaged Bytes	28566460.00	28549120.00	28581890.00
Pool Paged Bytes	15130150.00	13307900.00	15392770.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseC hecksum\_2007\_2\_7\_10-10-45.blg is saved.**

2/7/2007 9:10:02 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:10:03 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:10:03 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:08 AM -- Loading performance counters...

2/7/2007 9:10:08 AM -- Instance2516.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:08 AM -- Instance2516.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:08 AM -- Instance2516.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:08 AM -- Instance2516.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:08 AM -- Start Jetstress test...

2/7/2007 9:10:11 AM -- Starting StreamingBackup test run...

2/7/2007 9:10:12 AM -- Performance logging started.

2/7/2007 9:10:12 AM -- Performance data will be saved to C:\Program

Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-8.blg.

2/7/2007 9:55:27 AM -- Adding new data to the performance log file...

2/7/2007 9:55:42 AM -- Performance logging stopped.

2/7/2007 9:55:42 AM -- Stopping Jetstress...

2/7/2007 9:56:11 AM -- Creating test report ...

2/7/2007 9:56:12 AM -- Volume O: has 0.0135 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume N: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume P: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume M: has 0.0143 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume Q: has 0.0004 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume R: has 0.0011 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume S: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:56:12 AM -- Volume T: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:56:12 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:56:12 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:56:13 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:56:13 AM -- Performance logging started.  
2/7/2007 9:56:13 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-13.blg.  
2/7/2007 10:10:45 AM -- Adding new data to the performance log file...  
2/7/2007 10:10:45 AM -- Performance logging stopped.  
2/7/2007 10:10:45 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-56-13.html for soft recovery result.  
2/7/2007 10:10:47 AM -- Performance logging started.  
2/7/2007 10:10:47 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-10-45.blg.  
2/7/2007 10:10:47 AM -- Checksum validation may take a while depending on the file sizes.  
2/7/2007 1:28:36 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/7/2007 1:28:36 PM -- Performance logging stopped.  
2/7/2007 1:28:36 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-10-45.html for checksum result.

## Jetstress Test Result: RIKER12

The following table shows a quick overview of checksum statistics:

Database	Pages seen	Bad checksums	Correctable checksums	Wrong page numbers	MB read/sec (File size/Seconds taken)
M:Jetstress.edb	7461890	0	0	0	10.8 MB/sec (29148 MB/2698 seconds)
M:Jetstress1.edb	7460866	0	0	0	15.5 MB/sec (29144 MB/1874 seconds)
M:Jetstress2.edb	7461378	0	0	0	15.8 MB/sec (29146 MB/1848 seconds)
M:Jetstress3.edb	7460866	0	0	0	15.6 MB/sec (29144 MB/1863 seconds)
M:Jetstress4.edb	7461378	0	0	0	15.6 MB/sec (29146 MB/1867 seconds)
M:Jetstress5.edb	7461122	0	0	0	19.2 MB/sec (29145 MB/1519 seconds)
N:Jetstress.edb	7462658	0	0	0	16.6 MB/sec (29151 MB/1751 seconds)
N:Jetstress1.edb	7462658	0	0	0	15.3 MB/sec (29151 MB/1900 seconds)
N:Jetstress2.edb	7462402	0	0	0	15.9 MB/sec (29150 MB/1833 seconds)

						seconds)
N:Jetstress3.edb	7462402	0	0	0	0	15.8 MB/sec (29150 MB/1850 seconds)
N:Jetstress4.edb	7463170	0	0	0	0	15.8 MB/sec (29153 MB/1850 seconds)
N:Jetstress5.edb	7462146	0	0	0	0	15.7 MB/sec (29149 MB/1851 seconds)
O:Jetstress.edb	7460866	0	0	0	0	15.7 MB/sec (29144 MB/1852 seconds)
O:Jetstress1.edb	7460866	0	0	0	0	14.4 MB/sec (29144 MB/2023 seconds)
O:Jetstress2.edb	7460866	0	0	0	0	14.5 MB/sec (29144 MB/2013 seconds)
O:Jetstress3.edb	7460610	0	0	0	0	14.3 MB/sec (29143 MB/2036 seconds)
O:Jetstress4.edb	7460866	0	0	0	0	14.3 MB/sec (29144 MB/2041 seconds)
O:Jetstress5.edb	7460354	0	0	0	0	17.2 MB/sec (29142 MB/1691 seconds)
P:Jetstress.edb	7462402	0	0	0	0	16.2 MB/sec (29150 MB/1796 seconds)
P:Jetstress1.edb	7462658	0	0	0	0	14.4 MB/sec

					(29151 MB/2020 seconds)
P:Jetstress2.edb	7462146	0	0	0	14.6 MB/sec (29149 MB/1991 seconds)
P:Jetstress3.edb	7461890	0	0	0	14.5 MB/sec (29148 MB/2005 seconds)
P:Jetstress4.edb	7461634	0	0	0	14.4 MB/sec (29147 MB/2022 seconds)
P:Jetstress5.edb	7462146	0	0	0	16.7 MB/sec (29149 MB/1747 seconds)
<b>(sum)</b>	179080240	0	0	0	60.9 MB/sec (699532 MB/11488 seconds)

The following table shows a quick overview of database and log performance counter sample data:

Storage Volume	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Total Seconds
M:	1.129	0.003	239.65	0.003	11671.69
N:	1.020	0.003	253.49	0.003	11038.27
O:	1.091	0.003	239.91	0.003	11660.19
P:	1.084	0.004	241.49	0.005	11585.09

The following table shows a quick overview of processor and memory performance counter sample data:

Counter	Average	Minimum	Maximum
% Processor Time	1.673	0.000	28.13
Available MBytes	3649.61	3621.00	3696.00
Free System Page Table Entries	22409.39	22373.00	22413.00
Pages/Sec	0.115	0.000	934.81
Pool Nonpaged Bytes	28902380.00	28884990.00	28921860.00
Pool Paged Bytes	15565020.00	13692930.00	15884290.00

**Performance log C:\Program**

**Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseC hecksum\_2007\_2\_7\_10-9-2.blg is saved.**

2/7/2007 9:10:13 AM -- Environment validation results:

Detected JetstressUI version: 6.5.7830.0

Detected operating system: Microsoft Windows Server 2003 (5.2.3790.0) Service Pack 1

Detected ESE.dll version: 6.5.7638.2

Detected ESEPERF.dll version: 6.5.7638.1

2/7/2007 9:10:13 AM -- Validating input parameters, it may take a few minutes...

2/7/2007 9:10:14 AM -- Attaching databases ... (it may take a few minutes if the databases are in dirty shutdown state)

2/7/2007 9:10:20 AM -- Loading performance counters...

2/7/2007 9:10:20 AM -- Instance3840.1: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:20 AM -- Instance3840.2: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:20 AM -- Instance3840.3: IO parameters are thread (8), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:20 AM -- Instance3840.4: IO parameters are thread (9), insert (17), replace (70), delete (5), and lazy commit (90)

2/7/2007 9:10:20 AM -- Start Jetstress test...

2/7/2007 9:10:22 AM -- Starting StreamingBackup test run...

2/7/2007 9:10:23 AM -- Performance logging started.

2/7/2007 9:10:23 AM -- Performance data will be saved to C:\Program

Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\Performance\_LogGeneration\_2007\_2\_7\_9-10-20.blg.

2/7/2007 9:55:08 AM -- Adding new data to the performance log file...

2/7/2007 9:55:23 AM -- Performance logging stopped.

2/7/2007 9:55:23 AM -- Stopping Jetstress...

2/7/2007 9:55:54 AM -- Creating test report ...

2/7/2007 9:55:55 AM -- Volume O: has 0.0141 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume N: has 0.0133 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume P: has 0.0139 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume M: has 0.0136 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume Q: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume Q: has 0.0007 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume R: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume R: has 0.0010 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume S: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume S: has 0.0004 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Volume T: has 0.0006 for Avg. Disk sec/Write.  
2/7/2007 9:55:55 AM -- Volume T: has 0.0009 for Avg. Disk sec/Read.  
2/7/2007 9:55:55 AM -- Test has 0 Max Database Page Fault Stalls/sec.  
2/7/2007 9:55:55 AM -- Test has 0 Database Page Fault Stalls/sec samples higher than 0.  
2/7/2007 9:55:55 AM -- Soft recovery may take a while depending on the number of log files.  
2/7/2007 9:55:56 AM -- Performance logging started.  
2/7/2007 9:55:56 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-55.blg.  
2/7/2007 10:09:00 AM -- Adding new data to the performance log file...  
2/7/2007 10:09:02 AM -- Performance logging stopped.  
2/7/2007 10:09:02 AM -- Soft recovery is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\SoftRecovery\_2007\_2\_7\_9-55-55.html for soft recovery result.  
2/7/2007 10:09:04 AM -- Performance logging started.  
2/7/2007 10:09:04 AM -- Performance data will be saved to C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-9-2.blg.  
2/7/2007 10:09:04 AM -- Checksum validation may take a while depending on the file sizes.  
2/7/2007 1:23:35 PM -- Database checksum in progress:  
Storage Group #1 (100%), Storage Group #2 (100%), Storage Group #3 (100%), and Storage Group #4 (100%).  
2/7/2007 1:23:35 PM -- Performance logging stopped.  
2/7/2007 1:23:35 PM -- Checksum is completed, please open C:\Program Files\Jetstress\esrp\_3040\_14000\_backupdatabase\_run2\DatabaseChecksum\_2007\_2\_7\_10-9-2.html for checksum result.

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