

Hitachi Adaptable Modular Storage 2100 23,000 User 250MB Mailbox Exchange 2007 Clustered Continuous Replication Storage Solution

Tested with: ESRP – Storage Version 2.1

Test Date: April 2009

April 2009



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Overview

This document provides information on a Hitachi Adaptable Modular Storage 2100 Clustered Continuous Replication (CCR) storage solution for Microsoft® Exchange Server 2007, based on the Microsoft Exchange Solution Reviewed Program (ESRP) – Storage program. For more information about the contents of this document or Hitachi Data Systems' best practice recommendations for Microsoft Exchange Server 2007 storage design, see <http://www.hds.com/solutions/microsoft/exchange.html>.

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 about the Microsoft ESRP – Storage program, see <http://www.microsoft.com/technet/prodtechnol/exchange/2007/esrp.msp>.

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Features

The purpose of this testing was to measure the ESRP 2.1 results in a Microsoft Exchange 2007 environment with 23,000 users and four servers in a CCR configuration. This testing used the Hitachi Adaptable Modular Storage 2100 midrange storage system. These results help answer questions about the kind of performance capabilities to expect with a large-scale Exchange deployment on the Hitachi Adaptable Modular Storage 2100.

This document details a tested configuration capable of supporting 23,000 users with a 0.216 IOPS per user profile and user mailbox size of 250MB. A 2100 with 120 300GB 15K RPM SAS disks, 8GB of cache and four 4Gb/s Fibre Channel host paths was used for these tests. Testing used four Sun Fire 4600 M2 servers with 32GB of RAM, four dual-core AMD Opteron CPUs, four Emulex 4Gb/s Fibre Channel adapters and Windows Server 2003 R2 Enterprise x64 with Service Pack 2.

The Hitachi Adaptable Modular Storage 2100 is a medium-sized, high-performance, highly reliable midrange storage system that can scale to 120 disks while maintaining 99.999% availability. It is highly suitable for a variety of applications and host platforms and is modular in scale. With the option of in-system and cross-system replication functionality, the 2100 is fully capable of being used as the core underlying storage platform for high-performance Exchange Server 2007 architectures.

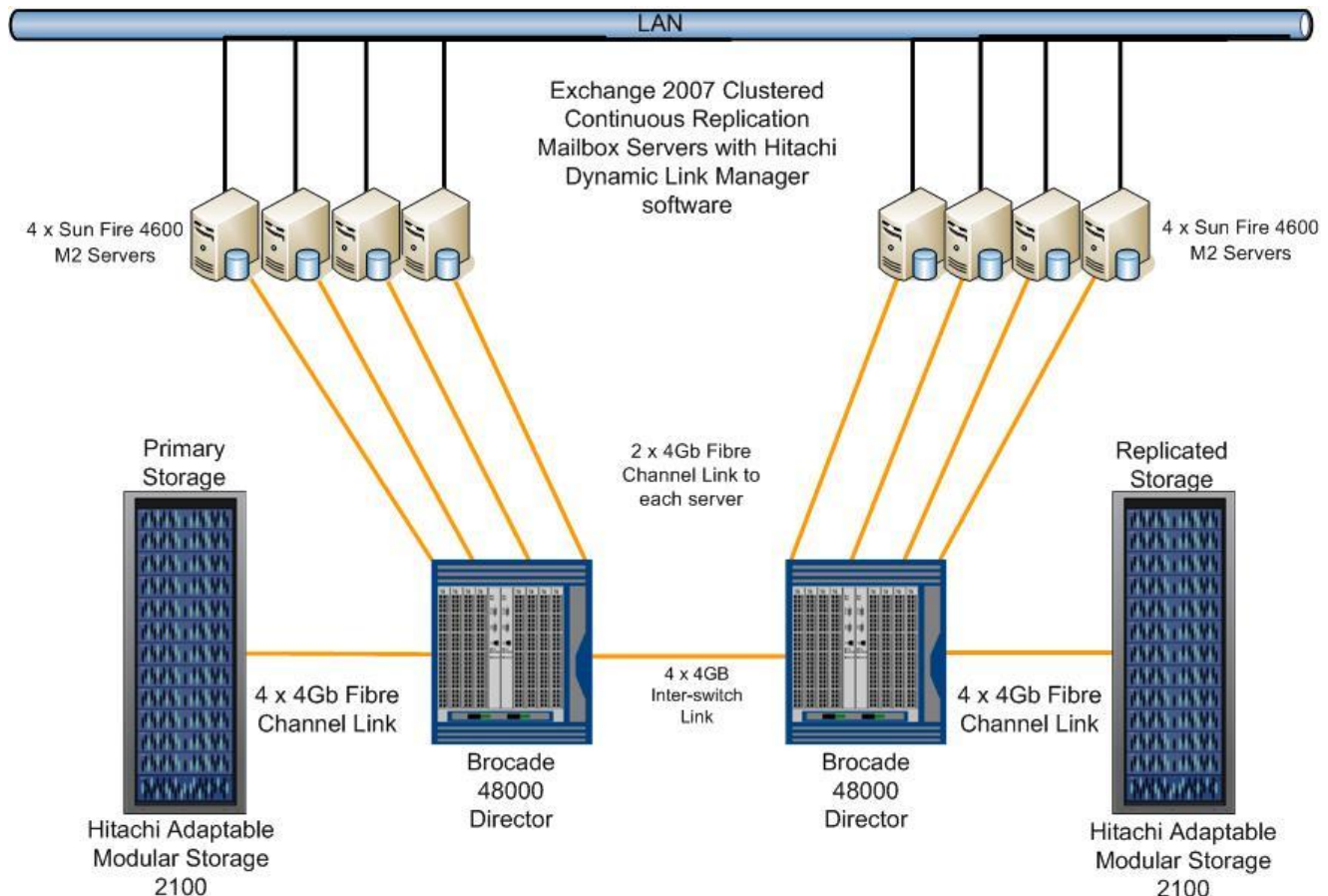
For more information about the Hitachi Adaptable Modular Storage 2000 family, see <http://www.hds.com/products/storage-systems/adaptable-modular-storage-2000-family/index.html?WT.ac=prodssams2000>.

Solution Description

Deploying Microsoft Exchange Server 2007 requires careful consideration of all aspects of the solution architecture. Host servers need to be configured so that they are robust enough to handle the required Exchange load. The storage solution must be designed to provide the necessary performance while also being reliable and easy to administer. Of course, an effective backup and recovery plan should be incorporated into the solution as well. The aim of this solution report is to provide a tested configuration that utilizes the Hitachi Adaptable Modular Storage 2100 to meet the needs of a large Exchange Server deployment.

For the targeted 23,000-user Exchange environment, a 2100 configured with 120 disks (the maximum) and four host servers was used for the primary storage. An identical set of servers using 120 disks on a separate 2100 was used for the replicated storage. Figure 1 illustrates the two systems that make up the multi-site CCR configuration.

Figure 1. Clustered Continuous Replication Configuration



This solution enables organizations to consolidate Exchange Server 2007 CCR deployments on two 2100 storage systems. Using identical hardware and software configurations ensures that primary and

replicated copies do not share storage paths, disk spindles or storage controllers. This helps ensure that performance and service levels related to storage are maintained regardless of which CCR server is hosting the active storage groups.

Table 1 illustrates how the 2100's disks were organized into RAID groups for use by either databases or logs in the primary storage. Each set of colored disks represents a RAID-10 (2D+2D) or RAID-1 RAID group. Each RKA is a disk enclosure with 15 SAS disks. An identical configuration is deployed on the replicated storage for this solution.

Table 1. Adaptable Modular Storage 2100 RAID Groups Layout

<i>Drive Slot</i>	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
RKA 7	28	29	29	30	30	31	31	32	32	33	33	34	34	35	35
RKA 6	22	22	23	23	23	23	24	24	25	25	26	26	27	27	28
RKA 5	18	19	19	19	19	20	20	20	20	21	21	21	21	22	22
RKA 4	15	15	15	15	16	16	16	16	17	17	17	17	18	18	18
RKA 3	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14
RKA 2	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
RKA 1	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7
RKA 0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3



 RAID-10 (2+2) for DBs
 RAID-1 (1+1) for Logs

Table 2 provides the detailed LU layout and RAID group allocation for the tested primary storage configuration for databases. An identical configuration is deployed on the replicated storage for this solution.

Table 2. Hitachi Adaptable Modular Storage 2100 LUN Layout

<i>RAID Group</i>	<i>LU Numbers</i>	<i>RAID Group</i>	<i>LU Numbers</i>
0	0 - 5	12	72 - 77
1	6 - 11	13	78 - 83
2	12 - 17	14	84 - 89
3	18 - 23	15	90 - 95
4	24 - 29	16	96 - 101
5	30 - 35	17	102 - 107
6	36 - 41	18	108 - 113
7	42 - 47	19	114 - 119
8	48 - 53	20	120 - 125
9	54 - 59	21	126 - 131
10	60 - 65	22	132 - 137
11	66 - 71	23	138 - 143

<i>RAID Group</i>	<i>LU Numbers</i>
24	144 - 155
25	156 - 167
26	168 - 179
27	180 - 191
28	192 - 203
29	204 - 215
30	216 - 227
31	228 - 239
32	240 - 251
33	252 - 263
34	264 - 275
35	276 - 287

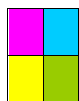

 RAID-1+0 (2+2) for DBs
 RAID-1 (1+1) for Logs

Table 3 outlines the port layout with LU assignments for the primary storage configuration. An identical configuration is deployed on the replicated storage for this solution.

Table 3. Adaptable Modular Storage 2100 Port Layout

<i>Host</i>	<i>Port</i>	<i>LU Number</i>					
SUN211	0A/1A	0	1	2	3	4	5
		6	7	8	9	10	11
		12	13	14	15	16	17
		18	19	20	21	22	23
		24	25	26	27	28	29
		30	31	32	33	34	35
		144	145	146	147	148	149
		150	151	152	153	154	155
		156	157	158	159	160	161
		162	163	164	165	166	167
		168	169	170	171	172	173
		174	175	176	177	178	179
SUN212	0B/1B	36	37	38	39	40	41
		42	43	44	45	46	47
		48	49	50	51	52	53
		54	55	56	57	58	59
		60	61	62	63	64	65
		66	67	68	69	70	71
		180	181	182	183	184	185
		186	187	188	189	190	191
		192	193	194	195	196	197
		198	199	200	201	202	203
		204	205	206	207	208	209
		210	211	212	213	214	215
SUN213	1A/0A	72	73	74	75	76	77
		78	79	80	81	82	83
		84	85	86	87	88	89
		90	91	92	93	94	95
		96	97	98	99	100	101
		102	103	104	105	106	107
		216	217	218	219	220	221
		222	223	224	225	226	227
		228	229	230	231	232	233
		234	235	236	237	238	239

		240	241	242	243	244	245		
		246	247	248	249	250	251		
SUN214	1B/0B	108	109	110	111	112	113		
		114	115	116	117	118	119		
		120	121	122	123	124	125		
		126	127	128	129	130	131		
		132	133	134	135	136	137		
		138	139	140	141	142	143		
		252	253	254	255	256	257		
		258	259	260	261	262	263		
		264	265	266	267	268	269		
		270	271	272	273	274	275		
		276	277	278	279	280	281		
		282	283	284	285	286	287		
		Logs	Logs						
		DBs	DBs						

Table 4 provides the detailed specifications for the primary storage configuration. An identical configuration is deployed on the replicated storage for this solution.

Table 4. Adaptable Modular Storage 2100 Configuration Details

<i>Host</i>	<i>RAID Group</i>	<i>Port</i>	<i>LU</i>	<i>Size (GB)</i>	<i>RAID Level</i>	<i>RAID Type</i>	<i>Disk Spec</i>	<i>Description</i>
SUN211	0	0A/1A	0 - 5	85	RAID-1+0	2+2	300GB 15K	Storage Groups 0 - 5
	1	0A/1A	6 - 11	85	RAID-1+0	2+2	300GB 15K	Storage Groups 6 - 11
	2	0A/1A	12 - 17	85	RAID-1+0	2+2	300GB 15K	Storage Groups 12 - 17
	3	0A/1A	18 - 23	85	RAID-1+0	2+2	300GB 15K	Storage Groups 18 -23
	4	0A/1A	24 - 29	85	RAID 1+0	2+2	300GB 15K	Storage Groups 24 - 29
SUN212	5	0A/1A	30 - 35	85	RAID-1+0	2+2	300GB 15K	Storage Groups 30 -35
	6	0B/1B	36 – 41	85	RAID-1+0	2+2	300GB 15K	Storage Groups 0 - 5
	7	0B/1B	42 – 47	85	RAID-1+0	2+2	300GB 15K	Storage Groups 6 - 11
	8	0B/1B	48 – 53	85	RAID-1+0	2+2	300GB 15K	Storage Groups 12 - 17
	9	0B/1B	54 – 59	85	RAID-1+0	2+2	300GB 15K	Storage Groups 18 -23
	10	0B/1B	60 - 65	85	RAID-1+0	2+2	300GB 15K	Storage Groups 24 - 29
SUN213	11	0B/1B	66 - 71	85	RAID-1+0	2+2	300GB 15K	Storage Groups 30 -35
	12	1A/0A	72 – 77	85	RAID-1+0	2+2	300GB 15K	Storage Groups 0 - 5
	13	1A/0A	78 – 83	85	RAID-1+0	2+2	300GB 15K	Storage Groups 6 - 11
	14	1A/0A	84 – 89	85	RAID-1+0	2+2	300GB 15K	Storage Groups 12 - 17
	15	1A/0A	90 - 95	85	RAID-1+0	2+2	300GB 15K	Storage Groups 18 -23

	16	1A/0A	96 – 101	85	RAID-1+0	2+2	300GB 15K	Storage Groups 24 - 29
	17	1A/0A	102-107	85	RAID-1+0	2+2	300GB 15K	Storage Groups 30 -35
SUN214	18	1B/0B	108-113	85	RAID-1+0	2+2	300GB 15K	Storage Groups 0 - 5
	19	1B/0B	114-119	85	RAID-1+0	2+2	300GB 15K	Storage Groups 6 - 11
	20	1B/0B	120-125	85	RAID-1+0	2+2	300GB 15K	Storage Groups 12 - 17
	21	1B/0B	126-131	85	RAID-1+0	2+2	300GB 15K	Storage Groups 18 -23
	22	1B/0B	132-137	85	RAID-1+0	2+2	300GB 15K	Storage Groups 24 - 29
	23	1B/0B	138-143	85	RAID-1+0	2+2	300GB 15K	Storage Groups 30 -35
SUN211	24	0A/1A	144-155	10	RAID-1	1+1	300GB 15K	Logs SG0 – SG11
	25	0A/1A	156-167	10	RAID-1	1+1	300GB 15K	Logs SG12 – SG23
	26	0A/1A	168-179	10	RAID-1	1+1	300GB 15K	Logs SG24 – SG35
SUN212	27	0B/1B	180-191	10	RAID-1	1+1	300GB 15K	Logs SG0 – SG11
	28	0B/1B	192-203	10	RAID-1	1+1	300GB 15K	Logs SG12 – SG23
	29	0B/1B	204-215	10	RAID-1	1+1	300GB 15K	Logs SG24 – SG35
SUN213	30	1A/0A	216-227	10	RAID-1	1+1	300GB 15K	Logs SG0 – SG11
	31	1A/0A	228-239	10	RAID-1	1+1	300GB 15K	Logs SG12 – SG23
	32	1A/0A	240-251	10	RAID-1	1+1	300GB 15K	Logs SG24 – SG35
SUN214	33	1B/0B	252-263	10	RAID-1	1+1	300GB 15K	Logs SG0 – SG11
	34	1B/0B	264-275	10	RAID-1	1+1	300GB 15K	Logs SG12 – SG23
	35	1B/0B	276-287	10	RAID-1	1+1	300GB 15K	Logs SG24 – SG35

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. These factors also affect server scalability:

- 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
- Client usage profiles

These factors are all beyond the scope of the ESRP – Storage program. Therefore, the number of mailboxes hosted per server as part of the tested configuration might not necessarily be viable for some customer deployments. For more information about identifying and addressing performance bottlenecks in an Exchange system, see Microsoft's [Troubleshooting Microsoft Exchange Server Performance](#).

Targeted Customer Profile

This solution is designed for medium to large organizations that plan to consolidate their Exchange Server 2007 storage on high-performance, high-reliability storage systems. This configuration supports 23,000 Exchange users with the following specifications:

- 4 Exchange Servers
- 5,750 users on a single Exchange Server
- 0.216 IOPS per user
- 250MB mailbox size
- 144 storage groups
- 1 database per storage group (144 total)
- Clustered continuous replication (CCR)

Tested Deployment

The following tables summarize the testing environment.

Table 5. Simulated Exchange Configuration

<i>Number of Exchange mailboxes simulated</i>	23,000
<i>Number of hosts</i>	4
<i>Number of mailboxes/host</i>	5,750
<i>Number of storage groups/host</i>	36
<i>Number of mailbox stores/storage group</i>	1
<i>Number of mailboxes/mailbox store</i>	160
<i>Number of mailbox store LUs/storage group</i>	6
<i>Simulated profile: I/Os per second per mailbox (IOPS, include 20% headroom)</i>	0.216
<i>Database LU size</i>	85GB
<i>Log LU size</i>	10GB
<i>Total database size for performance testing</i>	5750
<i>% storage capacity used by Exchange database**</i>	46.98%

**Storage performance characteristics change based on the percentage utilization of the individual disks. Tests that use a small percentage of the storage (~25%) might exhibit reduced throughput if the storage capacity utilization is significantly increased beyond what was tested for this paper.

Table 6. Primary Storage Hardware

Storage type (SAN, DAS, iSCSI, NAS, iSCSI)	SAN
Storage connectivity (Fibre Channel, SAS, SATA, iSCSI)	Fibre Channel
Storage model and OS/firmware revision	1 Hitachi Adaptable Modular Storage 2100 Firmware: 0860/A-S WHQL listing: Hitachi Adaptable Modular Storage 2100
Storage cache	8GB
Number of storage controllers	2
Number of storage ports	4
Maximum bandwidth of storage connectivity to host	16Gb (4x4Gb/s HBA)
Switch type/model/firmware revision	Brocade 5320, Fabric OS v6.1.1c
HBA model and firmware	Emulex LPe11002-M4-H, FW 2.80A4
Number of HBAs/host	1 dual-ported HBA per host, 2 4Gb/s port used
Host server type	Sun Fire 4600M2 4 2.8 GHz dual-core AMD Opteron CPUs, 32GB memory
Total number of disks tested in solution	120
Maximum number of spindles can be hosted in the storage	120

Table 7. Primary Storage Software

HBA driver	STOR Miniport 9.1.7.16
HBA QueueTarget setting	1
HBA QueueDepth setting	254
Multipathing	Hitachi Dynamic Link Manager v6.0
Host OS	Microsoft Windows Server 2003 R2 Enterprise x64 Edition
ESE.dll file version	08.01.0240.005
Replication solution name/version	Exchange Server 2007 CCR Service Pack 1

Table 8. Primary Storage Disk Configuration (Mailbox Store Disks)

<i>Disk type, speed and firmware revision</i>	SAS Disk 300GB 15K D06A
<i>Raw capacity per disk (GB)</i>	300GB
<i>Number of physical disks in test</i>	96
<i>Total raw storage capacity (GB)</i>	12,240 GB
<i>Disk slice size (GB)</i>	N/A
<i>Number of slices per LU or number of disks per LUN</i>	4 disks per LU
<i>RAID level</i>	RAID-1+0 at storage level
<i>Total formatted capacity</i>	12,240GB
<i>Storage capacity utilization</i>	46.98%
<i>Database capacity utilization</i>	19.97%

Table 9. Primary Storage Disk Configuration (Transaction Log Disks)

<i>Disk type, speed and firmware revision</i>	SAS 300GB 15K D06A
<i>Raw capacity per disk (GB)</i>	300GB
<i>Number of spindles in test</i>	24
<i>Total raw storage capacity (GB)</i>	7200GB
<i>Disk slice size (GB)</i>	N/A
<i>Number of slices per LU or number of disks per LUN</i>	2 disks per LU
<i>RAID level</i>	RAID-1 at storage level
<i>Total formatted capacity</i>	1440GB

Streaming Backup

N/A

Replication

The following tables summarize the replication environment.

Table 10. Replicated Configuration

<i>Replication mechanism</i>	Exchange Server 2007 CCR Service Pack 1
<i>Number of links</i>	2
<i>Simulated link distance</i>	N/A
<i>Link type</i>	IP
<i>Link bandwidth</i>	GigE (1 Gbps)

Table 11. ReplicatedStorage Hardware

Storage type (SAN, DAS, iSCSI, NAS, iSCSI)	SAN
Storage connectivity (Fibre Channel, SAS, SATA, iSCSI)	Fibre Channel
Storage model and OS/firmware revision	1 Hitachi Adaptable Modular Storage 2100 Firmware: 0860/A-S WHQL listing: Hitachi Adaptable Modular Storage 2100
Storage cache	8GB
Number of storage controllers	2
Number of storage ports	4
Maximum bandwidth of storage connectivity to host	16Gb (4x4Gb/s HBA)
Switch type/model/firmware revision	Brocade 5320, Fabric OS v6.1.1c
HBA model and firmware	Emulex LPe11002-M4-H, FW 2.80A4
Number of HBAs/host	1 dual-ported HBA per host, 2 4Gb/s port used
Host server type	Sun Fire 4600M2 4 2.8 GHz dual-core AMD Opteron CPUs, 32GB memory
Total number of disks tested in solution	120
Maximum number of spindles can be hosted in the storage	120

Table 12. Replicated Storage Software

HBA driver	STOR Miniport 9.1.7.16
HBA QueueTarget setting	1
HBA QueueDepth setting	254
Multipathing	Hitachi Dynamic Link Manager v6.0
Host OS	Microsoft Windows Server 2003 R2 Enterprise x64 Edition
ESE.dll file version	08.01.0240.005
Replication solution name/version	Exchange Server 2007 CCR Service Pack 1

Table 13. Replicated Storage Disk Configuration (Mailbox Store Disks)

<i>Disk type, speed and firmware revision</i>	SAS Disk 300GB 15K D06A
<i>Raw capacity per disk (GB)</i>	300GB
<i>Number of physical disks in test</i>	96
<i>Total raw storage capacity (GB)</i>	12,240 GB
<i>Disk slice size (GB)</i>	N/A
<i>Number of slices per LU or number of disks per LUN</i>	4 disks per LU
<i>RAID level</i>	RAID-1+0 at storage level
<i>Total formatted capacity</i>	12,240GB
<i>Storage capacity utilization</i>	46.98%
<i>Database capacity utilization</i>	19.97%

Table 14. Replicated Storage Disk Configuration (Transaction Log Disks)

<i>Disk type, speed and firmware revision</i>	SAS 300GB 15K D06A
<i>Raw capacity per disk (GB)</i>	300GB
<i>Number of spindles in test</i>	24
<i>Total raw storage capacity (GB)</i>	7200GB
<i>Disk slice size (GB)</i>	N/A
<i>Number of slices per LU or number of disks per LUN</i>	2 disks per LU
<i>RAID level</i>	RAID-1 at storage level
<i>Total formatted capacity</i>	1440GB

Best Practices

Microsoft Exchange Server 2007 is a very disk-intensive application. It presents two distinct workload patterns to the storage, with 8KB random read/write operations to the databases, and sequential write operations of varying size (between 512 bytes up to the log buffer size) to the transaction logs. For this reason, designing an optimal storage configuration can prove challenging in practice. Based on the testing run using the ESRP framework, Hitachi Data Systems recommends these best practices to improve the performance of the 2100 running Exchange.

For more information about Exchange 2007 best practices for storage design, see <http://technet.microsoft.com/en-us/library/bb124518.aspx>

Core Storage

1. Use Microsoft's diskpar or diskpart to create track-aligned disk partitions. For the 2100, using an offset of 64KB is optimal.
2. Keep the Exchange workload isolated from other applications. Mixing another I/O intensive application whose workload differs from Exchange can cause the performance for both applications to degrade.
3. Due to the difference in I/O patterns, isolate the Exchange database storage groups from the log groups. Create dedicated RAID groups for the databases and separate RAID groups for the logs.

4. Hitachi Data Systems recommends RAID-10 for the database RAID groups and RAID for the log RAID groups. Hitachi Data Systems does not recommend LU concatenation.
5. Size storage solutions for Exchange based primarily on performance criteria. The number of disks, RAID level and percent utilization of each disk directly affect the level of achievable performance. Factor in capacity requirements only after performance is addressed.
6. Spindle size is unrelated to performance with regards to IOPS or throughput rates. Spindle size is related to the usable capacity of all of the LUs from a RAID group, which is a choice users make.
7. The number of spindles, coupled with the RAID level, determines the physical IOPS capacity of the RAID group and all of its LUs. If the disk has too few spindles, the response times grow to large values very quickly.

Backup Strategy

N/A

Test Result Summary

This section provides a high-level summary of the test data from ESRP and the link to the detailed HTML reports that are generated by ESRP testing framework.

Reliability

A number of tests in the framework check reliability spanning a 24-hour window. The goal is to verify the storage can handle high I/O load for a long period of time. Following these stress tests, both log and database files are analyzed for integrity to ensure that no database or log corruption occurs.

- No errors were reported in the event log file for the storage reliability testing
- No errors were reported for the database and log checksum process
- Backup to disk test is N/A
- Database checksum on the remote storage database is N/A

Primary Storage Performance Results

Primary storage performance testing exercises the storage with maximum sustainable Exchange type of I/O for two hours. The test shows how long it takes for the storage to respond to I/O under load. The following data is the sum of all of the logical disk I/Os and average of all the logical disks I/O latency in the two-hour test duration.

Individual Server Metrics

Individual server metrics show the sum of I/Os across storage groups and the average latency across all storage groups.

Table 15. Individual Server Metrics for Exchange Server (SUN211)

Database I/O	
<i>Database Disk Transfers/sec</i>	1679 IOPS
<i>Database Disk Reads/sec</i>	913 IOPS
<i>Database Disk Writes/sec</i>	766 IOPS
<i>Average Database Disk Read Latency (ms)</i>	10
<i>Average Database Disk Write Latency (ms)</i>	1
Transaction Log I/O	
<i>Log Disk Writes/sec</i>	623 IOPS
<i>Average Log Disk Write Latency (ms)</i>	<1

Table 16. Individual Server Metrics for Exchange Server (SUN212)

Database I/O	
<i>Database Disk Transfers/sec</i>	1670 IOPS
<i>Database Disk Reads/sec</i>	912 IOPS
<i>Database Disk Writes/sec</i>	758 IOPS
<i>Average Database Disk Read Latency (ms)</i>	10
<i>Average Database Disk Write Latency (ms)</i>	2
Transaction Log I/O	
<i>Log Disk Writes/sec</i>	618 IOPS
<i>Average Log Disk Write Latency (ms)</i>	<1

Table 17. Individual Server Metrics for Exchange Server (SUN213)

Database I/O	
<i>Database Disk Transfers/sec</i>	1617 IOPS
<i>Database Disk Reads/sec</i>	892 IOPS
<i>Database Disk Writes/sec</i>	725 IOPS
<i>Average Database Disk Read Latency (ms)</i>	10
<i>Average Database Disk Write Latency (ms)</i>	1
Transaction Log I/O	
<i>Log Disk Writes/sec</i>	614 IOPS
<i>Average Log Disk Write Latency (ms)</i>	<1

Table 18. Individual Server Metrics for Exchange Server (SUN214)

Database I/O	
<i>Database Disk Transfers/sec</i>	1684 IOPS
<i>Database Disk Reads/sec</i>	922 IOPS
<i>Database Disk Writes/sec</i>	762 IOPS
<i>Average Database Disk Read Latency (ms)</i>	10
<i>Average Database Disk Write Latency (ms)</i>	1
Transaction Log I/O	
<i>Log Disk Writes/sec</i>	622 IOPS
<i>Average Log Disk Write Latency (ms)</i>	<1

Aggregate Performance Across All Servers Metrics

The aggregate performance across all server metrics shows the sum of I/Os across all servers in the solution and the average latency across all servers in the solution.

Table 19. Aggregate Server Performance

Database I/O	
<i>Database Disk Transfers/sec</i>	6,649 IOPS
<i>Database Disk Reads/sec</i>	3,639 IOPS
<i>Database Disk Writes/sec</i>	3,010 IOPS
<i>Average Database Disk Read Latency (ms)</i>	10
<i>Average Database Disk Write Latency (ms)</i>	1
Transaction Log I/O	
<i>Average Log Disk Writes/sec</i>	2,478 IOPS
<i>Average Log Disk Write Latency (ms)</i>	<1

Streaming Backup Performance

For the ESRP Version 2.1 release, only the streaming backup type is supported for testing in the framework. This section has two tests: The first measures the read I/O performance metrics by running checksums on all of the database and log files and the second measures the end-to-end performance when the databases are backed up to disks.

Database Read-Only Performance

This test measures the maximum rate at which databases can be recovered. The following tables show the average rate for a single database file.

Table 20. Database Read-only Performance for Exchange Server (SUN211)

<i>MB read/sec per storage group</i>	6.1
<i>MB read/sec total</i>	220.4

Table 21. Database Read-only Performance for Exchange Server (SUN212)

<i>MB read/sec per storage group</i>	6.0
<i>MB read/sec total</i>	217.5

Table 22. Database Read-only Performance for Exchange Server (SUN213)

<i>MB read/sec per storage group</i>	6.1
<i>MB read/sec total</i>	219.9

Table 23. Database Read-only Performance for Exchange Server (SUN214)

<i>MB read/sec per storage group</i>	6.2
<i>MB read/sec total</i>	221.7

Log Read-only Performance

This test measures the maximum rate at which the log files can be played against the databases. The following tables show the average rate for 500 log files played in a single storage group. Each log file is 1MB in size.

Table 24. Log Read-only Performance for Exchange Server (SUN211)

<i>Average time to play one log file (sec)</i>	3.32
--	------

Table 25. Log Read-only Performance for Exchange Server (SUN212)

<i>Average time to play one log file (sec)</i>	3.31
--	------

Table 26. Log Read-only Performance for Exchange Server (SUN213)

<i>Average time to play one log file (sec)</i>	3.36
--	------

Table 27. Log Read-only Performance for Exchange Server (SUN214)

<i>Average time to play one log file (sec)</i>	2.87
--	------

Conclusion

This document details a tested configuration capable of supporting 23,000 users in a CCR configuration with a 0.216 IOPS per user profile and user mailbox size of 250MB. A Hitachi Adaptable Modular Storage 2100 with 120 300GB 15K RPM SAS disks, 8GB of cache and four 4Gb/s Fibre Channel paths was used for these tests. Testing confirmed that the 2100 is capable of delivering the IOPS and capacity requirements needed to support 23,000 Exchange mailboxes configured with the specified user profile, while maintaining additional headroom to support peak throughput.

The solution outlined in this document does not include data protection components such as local or remote replication. Adding these technologies may affect performance and capacity requirements and each need to be factored into the storage design accordingly.

For additional information to assist in planning Exchange Server 2007 storage architectures for the Hitachi Adaptable Modular Storage 2000 family, see <http://www.hds.com/assets/pdf/hitachi-ams-2000-family.pdf>.

This document is developed by Hitachi Data Systems and reviewed by Microsoft Exchange Product team. The test results and data presented in this document are based on the tests introduced in the ESRP test framework. Do not quote the data directly for pre-deployment verification. It is still necessary to validate the storage design for a specific customer environment.

The ESRP program is not a benchmarking program; tests do not generate the maximum throughput for a given solution. Rather, it is focused on producing recommendations from vendors for Exchange application. Thus, do not use the data presented in this document for direct comparisons among the solutions.

Appendix A: Test Reports

This appendix contains Jetstress test results for one of the servers used in testing this storage solution. These test results are representative of the results obtained for all of the servers tested.

Performance Test Result: SUN211

Test Summary

Overall Test Result	Pass
Machine Name	SUN211
Test Description	
Test Start Time	4/7/2009 11:44:59 PM
Test End Time	4/8/2009 2:40:33 AM
Jetstress Version	08.02.0060.000
Ese Version	08.01.0240.005
Operating System	Microsoft Windows Server 2003 R2 Service Pack 2 (5.2.3790.131072)
Performance Log	C:\ESRP Testing\AMS2100 Results_250MB_Average\Performance\5750 users\Performance_2009_4_7_23_46_13.blg C:\ESRP Testing\AMS2100 Results_250MB_Average\Performance\5750 users\DBChecksum_2009_4_8_2_40_33.blg

Database Sizing and Throughput

Achieved I/O per Second	1678.782
Target I/O per Second	1242
Initial database size	2120563097600
Final database size	2128593092608
Database files (count)	36

Jetstress System Parameters

Thread count	2 (per-storage group)
Log buffers	9000
Minimum database cache	1152.0 MB
Maximum database cache	9216.0 MB
Insert operations	40%
Delete operations	30%
Replace operations	5%
Read operations	25%
Lazy commits	55%

Disk Subsystem Performance

Logical Disk	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Database (C:\asgluns\sg1)	0.011	0.002	25.575	21.397	(n/a)
Database (C:\asgluns\sg2)	0.010	0.001	24.607	20.409	(n/a)
Database (C:\asgluns\sg3)	0.010	0.001	25.276	20.944	(n/a)
Database (C:\asgluns\sg4)	0.009	0.001	25.305	21.065	(n/a)
Database (C:\asgluns\sg5)	0.010	0.001	24.816	20.563	(n/a)
Database (C:\asgluns\sg6)	0.011	0.001	25.773	21.494	(n/a)
Database (C:\asgluns\sg7)	0.011	0.001	25.725	21.450	(n/a)
Database (C:\asgluns\sg8)	0.010	0.001	25.441	21.401	(n/a)
Database (C:\asgluns\sg9)	0.009	0.001	25.284	21.370	(n/a)
Database (C:\asgluns\sg10)	0.009	0.001	25.482	21.724	(n/a)
Database (C:\asgluns\sg11)	0.010	0.001	25.451	21.545	(n/a)
Database (C:\asgluns\sg12)	0.011	0.001	24.977	20.872	(n/a)
Database (C:\asgluns\sg13)	0.010	0.001	25.650	21.421	(n/a)
Database (C:\asgluns\sg14)	0.010	0.001	25.297	20.865	(n/a)
Database (C:\asgluns\sg15)	0.009	0.001	25.963	21.908	(n/a)
Database (C:\asgluns\sg16)	0.009	0.001	25.017	21.173	(n/a)
Database (C:\asgluns\sg17)	0.010	0.001	25.580	21.737	(n/a)
Database (C:\asgluns\sg18)	0.011	0.001	25.735	21.509	(n/a)
Database (C:\asgluns\sg19)	0.010	0.001	25.294	20.892	(n/a)
Database (C:\asgluns\sg20)	0.010	0.001	25.487	21.572	(n/a)
Database (C:\asgluns\sg21)	0.009	0.001	25.265	21.405	(n/a)
Database (C:\asgluns\sg22)	0.009	0.001	25.614	21.618	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg23)	0.010	0.001	25.160	21.220	(n/a)
Database (C:\asgluns\sg24)	0.011	0.001	25.350	21.318	(n/a)
Database (C:\asgluns\sg25)	0.010	0.001	25.305	21.151	(n/a)
Database (C:\asgluns\sg26)	0.010	0.001	25.652	21.286	(n/a)
Database (C:\asgluns\sg27)	0.010	0.001	25.893	21.796	(n/a)
Database (C:\asgluns\sg28)	0.010	0.001	24.871	20.741	(n/a)
Database (C:\asgluns\sg29)	0.010	0.001	25.285	21.409	(n/a)
Database (C:\asgluns\sg30)	0.011	0.001	25.488	21.578	(n/a)
Database (C:\asgluns\sg31)	0.010	0.001	25.591	21.553	(n/a)
Database (C:\asgluns\sg32)	0.010	0.001	24.856	20.636	(n/a)
Database (C:\asgluns\sg33)	0.010	0.001	25.148	21.043	(n/a)
Database (C:\asgluns\sg34)	0.010	0.001	24.958	20.806	(n/a)
Database (C:\asgluns\sg35)	0.010	0.001	25.626	21.548	(n/a)
Database (C:\asgluns\sg36)	0.011	0.001	25.397	21.170	(n/a)
Log (C:\alogluns\log1)	0.000	0.000	0.000	17.291	4104.542
Log (C:\alogluns\log2)	0.000	0.000	0.000	16.795	4165.649
Log (C:\alogluns\log3)	0.000	0.000	0.000	17.017	4114.824
Log (C:\alogluns\log4)	0.000	0.000	0.000	17.258	4090.917
Log (C:\alogluns\log5)	0.000	0.000	0.000	16.659	4286.518
Log (C:\alogluns\log6)	0.000	0.000	0.000	17.598	4105.275
Log (C:\alogluns\log7)	0.000	0.000	0.000	17.066	4088.734
Log (C:\alogluns\log8)	0.000	0.000	0.000	17.530	4170.335
Log (C:\alogluns\log9)	0.000	0.000	0.000	17.506	4064.716
Log (C:\alogluns\log10)	0.000	0.000	0.000	17.758	4181.504
Log (C:\alogluns\log11)	0.000	0.000	0.000	17.636	4162.316
Log (C:\alogluns\log12)	0.000	0.000	0.000	17.146	4141.640
Log (C:\alogluns\log13)	0.000	0.000	0.000	17.272	4104.160
Log (C:\alogluns\log14)	0.000	0.000	0.000	16.944	4158.247

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Log (C:\alogluns\log15)	0.000	0.000	0.000	17.586	4085.920
Log (C:\alogluns\log16)	0.000	0.000	0.000	17.248	4177.256
Log (C:\alogluns\log17)	0.000	0.000	0.000	17.719	4067.665
Log (C:\alogluns\log18)	0.000	0.000	0.000	17.368	4111.133
Log (C:\alogluns\log19)	0.000	0.000	0.000	17.088	4037.450
Log (C:\alogluns\log20)	0.000	0.000	0.000	17.683	4177.159
Log (C:\alogluns\log21)	0.000	0.000	0.000	17.312	4135.266
Log (C:\alogluns\log22)	0.000	0.000	0.000	17.526	4071.379
Log (C:\alogluns\log23)	0.000	0.000	0.000	17.100	4161.045
Log (C:\alogluns\log24)	0.000	0.000	0.000	17.163	4113.399
Log (C:\alogluns\log25)	0.000	0.000	0.000	17.320	4061.781
Log (C:\alogluns\log26)	0.000	0.000	0.000	17.362	4100.500
Log (C:\alogluns\log27)	0.000	0.000	0.000	17.602	4134.225
Log (C:\alogluns\log28)	0.000	0.000	0.000	16.962	4140.325
Log (C:\alogluns\log29)	0.000	0.000	0.000	17.373	4098.609
Log (C:\alogluns\log30)	0.000	0.000	0.000	17.326	4054.160
Log (C:\alogluns\log31)	0.000	0.000	0.000	17.478	4102.822
Log (C:\alogluns\log32)	0.000	0.000	0.000	16.835	4183.690
Log (C:\alogluns\log33)	0.000	0.000	0.000	17.093	4184.031
Log (C:\alogluns\log34)	0.000	0.000	0.000	17.067	4178.648
Log (C:\alogluns\log35)	0.000	0.000	0.000	17.588	4103.809
Log (C:\alogluns\log36)	0.000	0.000	0.000	17.490	4048.854

Host System Performance

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	1.625	0.962	2.261
Available MBytes	21141.244	21114.000	22046.000
Free System Page Table Entries	16728053.000	16728053.000	16728053.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	176069783.783	175849472.000	176353280.000
Pool Paged Bytes	112356384.067	112349184.000	112357376.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

4/7/2009 11:44:59 PM -- Jetstress testing begins ...
4/7/2009 11:44:59 PM -- Prepare testing begins ...
4/7/2009 11:45:35 PM -- Attaching databases ...
4/7/2009 11:45:35 PM -- Prepare testing ends.

4/7/2009 11:45:35 PM -- Dispatching transactions begins ...
 4/7/2009 11:45:35 PM -- Database cache settings: (minimum: 1.1 GB, maximum: 9.0 GB)
 4/7/2009 11:45:35 PM -- Database flush thresholds: (start: 92.2 MB, stop: 184.3 MB)
 4/7/2009 11:46:13 PM -- Database read latency thresholds: (average: 0.02 seconds/read, maximum: 0.05 seconds/read).
 4/7/2009 11:46:13 PM -- Log write latency thresholds: (average: 0.01 seconds/write, maximum: 0.05 seconds/write).
 4/7/2009 11:46:15 PM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%, Replaces 5%, Reads 25%, Lazy Commits 55%.
 4/7/2009 11:46:15 PM -- Performance logging begins (interval: 15000 ms).
 4/7/2009 11:46:15 PM -- Attaining prerequisites:
 4/8/2009 12:27:00 AM -- \MSEExchange Database(Jetstresswin)\Database Cache Size, Last: 8700051000.0 (lower bound: 8697308000.0, upper bound: none)
 4/8/2009 2:27:02 AM -- Performance logging ends.
 4/8/2009 2:40:22 AM -- JetInterop batch transaction stats: 8531, 8342, 8360, 8523, 8315, 8370, 8401, 8467, 8423, 8502, 8490, 8340, 8407, 8341, 8589, 8354, 8435, 8476, 8465, 8383, 8391, 8453, 8320, 8391, 8399, 8403, 8526, 8349, 8343, 8315, 8471, 8356, 8227, 8301, 8475, and 8342.
 4/8/2009 2:40:22 AM -- Dispatching transactions ends.
 4/8/2009 2:40:22 AM -- Shutting down databases ...
 4/8/2009 2:40:33 AM -- Instance4012.1 (complete), Instance4012.2 (complete), Instance4012.3 (complete), Instance4012.4 (complete), Instance4012.5 (complete), Instance4012.6 (complete), Instance4012.7 (complete), Instance4012.8 (complete), Instance4012.9 (complete), Instance4012.10 (complete), Instance4012.11 (complete), Instance4012.12 (complete), Instance4012.13 (complete), Instance4012.14 (complete), Instance4012.15 (complete), Instance4012.16 (complete), Instance4012.17 (complete), Instance4012.18 (complete), Instance4012.19 (complete), Instance4012.20 (complete), Instance4012.21 (complete), Instance4012.22 (complete), Instance4012.23 (complete), Instance4012.24 (complete), Instance4012.25 (complete), Instance4012.26 (complete), Instance4012.27 (complete), Instance4012.28 (complete), Instance4012.29 (complete), Instance4012.30 (complete), Instance4012.31 (complete), Instance4012.32 (complete), Instance4012.33 (complete), Instance4012.34 (complete), Instance4012.35 (complete), and Instance4012.36 (complete)
 4/8/2009 2:40:34 AM -- Performance logging begins (interval: 30000 ms).
 4/8/2009 2:40:34 AM -- Verifying database checksums ...
 4/8/2009 5:23:00 AM -- C:\asgluns\sg1 (100% processed), C:\asgluns\sg2 (100% processed), C:\asgluns\sg3 (100% processed), C:\asgluns\sg4 (100% processed), C:\asgluns\sg5 (100% processed), C:\asgluns\sg6 (100% processed), C:\asgluns\sg7 (100% processed), C:\asgluns\sg8 (100% processed), C:\asgluns\sg9 (100% processed), C:\asgluns\sg10 (100% processed), C:\asgluns\sg11 (100% processed), C:\asgluns\sg12 (100% processed), C:\asgluns\sg13 (100% processed), C:\asgluns\sg14 (100% processed), C:\asgluns\sg15 (100% processed), C:\asgluns\sg16 (100% processed), C:\asgluns\sg17 (100% processed), C:\asgluns\sg18 (100% processed), C:\asgluns\sg19 (100% processed), C:\asgluns\sg20 (100% processed), C:\asgluns\sg21 (100% processed), C:\asgluns\sg22 (100% processed), C:\asgluns\sg23 (100% processed), C:\asgluns\sg24 (100% processed), C:\asgluns\sg25 (100% processed), C:\asgluns\sg26 (100% processed), C:\asgluns\sg27 (100% processed), C:\asgluns\sg28 (100% processed), C:\asgluns\sg29 (100% processed), C:\asgluns\sg30 (100% processed), C:\asgluns\sg31 (100% processed), C:\asgluns\sg32 (100% processed), C:\asgluns\sg33 (100% processed), C:\asgluns\sg34 (100% processed), C:\asgluns\sg35 (100% processed), and C:\asgluns\sg36 (100% processed)
 4/8/2009 5:23:02 AM -- Performance logging ends.
 4/8/2009 5:23:02 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Performance\5750 users\DBChecksum_2009_4_8_2_40_33.blg has 323 samples.
 4/8/2009 5:25:00 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Performance\5750 users\DBChecksum_2009_4_8_2_40_33.html is saved.
 4/8/2009 5:25:00 AM -- verifying log checksums ...
 4/8/2009 5:25:12 AM -- C:\alogluns\log1 (2 logs passed), C:\alogluns\log2 (2 logs passed), C:\alogluns\log3 (2 logs passed), C:\alogluns\log4 (2 logs

passed), C:\alogluns\log5 (2 logs passed), C:\alogluns\log6 (2 logs passed),
C:\alogluns\log7 (2 logs passed), C:\alogluns\log8 (2 logs passed),
C:\alogluns\log9 (2 logs passed), C:\alogluns\log10 (2 logs passed),
C:\alogluns\log11 (2 logs passed), C:\alogluns\log12 (2 logs passed),
C:\alogluns\log13 (2 logs passed), C:\alogluns\log14 (2 logs passed),
C:\alogluns\log15 (2 logs passed), C:\alogluns\log16 (2 logs passed),
C:\alogluns\log17 (2 logs passed), C:\alogluns\log18 (2 logs passed),
C:\alogluns\log19 (2 logs passed), C:\alogluns\log20 (2 logs passed),
C:\alogluns\log21 (2 logs passed), C:\alogluns\log22 (2 logs passed),
C:\alogluns\log23 (2 logs passed), C:\alogluns\log24 (2 logs passed),
C:\alogluns\log25 (2 logs passed), C:\alogluns\log26 (2 logs passed),
C:\alogluns\log27 (2 logs passed), C:\alogluns\log28 (2 logs passed),
C:\alogluns\log29 (2 logs passed), C:\alogluns\log30 (2 logs passed),
C:\alogluns\log31 (2 logs passed), C:\alogluns\log32 (2 logs passed),
C:\alogluns\log33 (2 logs passed), C:\alogluns\log34 (2 logs passed),
C:\alogluns\log35 (2 logs passed), and C:\alogluns\log36 (2 logs passed)

4/8/2009 5:25:12 AM -- C:\ESRP Testing\AMS2100

Results_250MB_Average\Performance\5750

users\Performance_2009_4_7_23_46_13.blg has 641 samples.

4/8/2009 5:25:12 AM -- Creating test report ...

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg1 has 0.0107 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg2 has 0.0096 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg3 has 0.0095 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg4 has 0.0095 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg5 has 0.0104 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg6 has 0.0112 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg7 has 0.0105 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg8 has 0.0097 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg9 has 0.0094 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg10 has 0.0092 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg11 has 0.0101 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg12 has 0.0108 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg13 has 0.0103 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg14 has 0.0097 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg15 has 0.0094 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg16 has 0.0093 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg17 has 0.0100 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg18 has 0.0106 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg19 has 0.0105 for Avg. Disk
sec/Read.

4/8/2009 5:25:49 AM -- volume C:\asgluns\sg20 has 0.0100 for Avg. Disk
sec/Read.

4/8/2009 5:25:50 AM -- volume C:\asgluns\sg21 has 0.0093 for Avg. Disk
sec/Read.

4/8/2009 5:25:50 AM -- volume C:\asgluns\sg22 has 0.0095 for Avg. Disk
sec/Read.

4/8/2009 5:25:50 AM -- volume C:\asgluns\sg23 has 0.0098 for Avg. Disk
sec/Read.

4/8/2009 5:25:50 AM -- volume C:\asgluns\sg24 has 0.0106 for Avg. Disk

sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg25 has 0.0103 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg26 has 0.0096 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg27 has 0.0096 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg28 has 0.0096 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg29 has 0.0100 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg30 has 0.0109 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg31 has 0.0103 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg32 has 0.0097 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg33 has 0.0097 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg34 has 0.0100 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg35 has 0.0098 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\asgluns\sg36 has 0.0110 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log1 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log1 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log2 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log2 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log3 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log3 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log4 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log4 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log5 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log5 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log6 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log6 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log7 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log7 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log8 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log8 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log9 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log9 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log10 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log10 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:50 AM -- volume C:\alogluns\log11 has 0.0003 for Avg. Disk
sec/write.

sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log28 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log29 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log29 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log30 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log30 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log31 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log31 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log32 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log32 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log33 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log33 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log34 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log34 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log35 has 0.0003 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log35 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log36 has 0.0002 for Avg. Disk
sec/write.
4/8/2009 5:25:51 AM -- volume C:\alogluns\log36 has 0.0000 for Avg. Disk
sec/Read.
4/8/2009 5:25:51 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
4/8/2009 5:25:51 AM -- Test has 0 Database Page Fault Stalls/sec samples
higher than 0.
4/8/2009 5:25:51 AM -- C:\ESRP Testing\AMS2100
Results_250MB_Average\Performance\5750
users\Performance_2009_4_7_23_46_13.xml has 478 samples queried.

Performance Test Database Checksums Result: SUN211

Checksum Statistics - All

<i>Database</i>	<i>Seen pages</i>	<i>Bad pages</i>	<i>Correctable pages</i>	<i>Wrong page no pages</i>	<i>File length / seconds taken</i>
C:\asgluns\sg1\Jetstress1.edb	7214914	0	0	0	56366 MBytes / 9746 seconds
C:\asgluns\sg2\Jetstress1.edb	7221570	0	0	0	56418 MBytes / 9674 seconds
C:\asgluns\sg3\Jetstress1.edb	7216194	0	0	0	56376 MBytes / 9678 seconds
C:\asgluns\sg4\Jetstress1.edb	7216450	0	0	0	56378 MBytes / 9590 seconds
C:\asgluns\sg5\Jetstress1.edb	7216706	0	0	0	56380 MBytes / 9688 seconds
C:\asgluns\sg6\Jetstress1.edb	7219522	0	0	0	56402 MBytes / 9541 seconds
C:\asgluns\sg7\Jetstress1.edb	7216450	0	0	0	56378 MBytes / 9258 seconds
C:\asgluns\sg8\Jetstress1.edb	7219778	0	0	0	56404 MBytes / 9255 seconds
C:\asgluns\sg9\Jetstress1.edb	7216194	0	0	0	56376 MBytes / 9084 seconds
C:\asgluns\sg10\Jetstress1.edb	7217218	0	0	0	56384 MBytes / 9001 seconds
C:\asgluns\sg11\Jetstress1.edb	7218754	0	0	0	56396 MBytes / 8991 seconds
C:\asgluns\sg12\Jetstress1.edb	7220034	0	0	0	56406 MBytes / 8876 seconds
C:\asgluns\sg13\Jetstress1.edb	7215426	0	0	0	56370 MBytes / 8821 seconds
C:\asgluns\sg14\Jetstress1.edb	7217986	0	0	0	56390 MBytes / 8725 seconds
C:\asgluns\sg15\Jetstress1.edb	7216962	0	0	0	56382 MBytes / 8563 seconds
C:\asgluns\sg16\Jetstress1.edb	7216962	0	0	0	56382 MBytes / 8695 seconds
C:\asgluns\sg17\Jetstress1.edb	7221570	0	0	0	56418 MBytes / 8513 seconds
C:\asgluns\sg18\Jetstress1.edb	7215938	0	0	0	56374 MBytes / 8535 seconds
C:\asgluns\sg19\Jetstress1.edb	7215426	0	0	0	56370 MBytes / 8385 seconds
C:\asgluns\sg20\Jetstress1.edb	7217218	0	0	0	56384 MBytes / 8008 seconds
C:\asgluns\sg21\Jetstress1.edb	7219010	0	0	0	56398 MBytes / 8274 seconds

<i>Database</i>	<i>Seen pages</i>	<i>Bad pages</i>	<i>Correctable pages</i>	<i>Wrong page no pages</i>	<i>File length / seconds taken</i>
C:\asgluns\sg22\Jetstress1.edb	7218242	0	0	0	56392 MBytes / 7959 seconds
C:\asgluns\sg23\Jetstress1.edb	7216194	0	0	0	56376 MBytes / 8216 seconds
C:\asgluns\sg24\Jetstress1.edb	7217986	0	0	0	56390 MBytes / 7960 seconds
C:\asgluns\sg25\Jetstress1.edb	7214402	0	0	0	56362 MBytes / 7218 seconds
C:\asgluns\sg26\Jetstress1.edb	7219266	0	0	0	56400 MBytes / 7629 seconds
C:\asgluns\sg27\Jetstress1.edb	7221570	0	0	0	56418 MBytes / 7173 seconds
C:\asgluns\sg28\Jetstress1.edb	7218498	0	0	0	56394 MBytes / 7618 seconds
C:\asgluns\sg29\Jetstress1.edb	7217474	0	0	0	56386 MBytes / 7210 seconds
C:\asgluns\sg30\Jetstress1.edb	7217218	0	0	0	56384 MBytes / 7516 seconds
C:\asgluns\sg31\Jetstress1.edb	7218498	0	0	0	56394 MBytes / 7205 seconds
C:\asgluns\sg32\Jetstress1.edb	7219010	0	0	0	56398 MBytes / 7609 seconds
C:\asgluns\sg33\Jetstress1.edb	7217986	0	0	0	56390 MBytes / 7203 seconds
C:\asgluns\sg34\Jetstress1.edb	7215170	0	0	0	56368 MBytes / 7577 seconds
C:\asgluns\sg35\Jetstress1.edb	7220802	0	0	0	56412 MBytes / 7112 seconds
C:\asgluns\sg36\Jetstress1.edb	7215426	0	0	0	56370 MBytes / 7536 seconds
(Sum)	259838024	0	0	0	2029984 MBytes / 9746 seconds

Disk Subsystem Performance of Checksum

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>
C:\asgluns\sg1	0.555	0.001	82.708	0.000
C:\asgluns\sg2	0.700	0.007	89.500	0.000
C:\asgluns\sg3	0.438	0.002	92.174	0.000
C:\asgluns\sg4	0.414	0.013	92.214	0.000
C:\asgluns\sg5	0.353	0.001	93.166	0.000
C:\asgluns\sg6	0.287	0.001	94.536	0.000
C:\asgluns\sg7	0.206	0.001	96.706	0.000

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>
C:\asgluns\sg8	0.247	0.001	96.253	0.000
C:\asgluns\sg9	0.182	0.001	98.564	0.000
C:\asgluns\sg10	0.179	0.000	100.050	0.000
C:\asgluns\sg11	0.174	0.000	99.679	0.000
C:\asgluns\sg12	0.166	0.000	100.732	0.000
C:\asgluns\sg13	0.160	0.000	102.371	0.000
C:\asgluns\sg14	0.159	0.001	102.814	0.000
C:\asgluns\sg15	0.154	0.001	105.275	0.000
C:\asgluns\sg16	0.158	0.000	103.481	0.000
C:\asgluns\sg17	0.152	0.001	105.924	0.000
C:\asgluns\sg18	0.153	0.001	105.302	0.000
C:\asgluns\sg19	0.151	0.001	107.387	0.000
C:\asgluns\sg20	0.143	0.000	112.780	0.000
C:\asgluns\sg21	0.150	0.000	109.030	0.000
C:\asgluns\sg22	0.142	0.000	113.510	0.000
C:\asgluns\sg23	0.149	0.001	109.461	0.000
C:\asgluns\sg24	0.143	0.000	112.968	0.000
C:\asgluns\sg25	0.127	0.000	124.628	0.000
C:\asgluns\sg26	0.134	0.000	117.731	0.000
C:\asgluns\sg27	0.125	0.000	126.010	0.000
C:\asgluns\sg28	0.134	0.000	118.186	0.000
C:\asgluns\sg29	0.126	0.000	125.552	0.000
C:\asgluns\sg30	0.131	0.000	120.395	0.000
C:\asgluns\sg31	0.126	0.000	124.925	0.000
C:\asgluns\sg32	0.133	0.000	118.927	0.000
C:\asgluns\sg33	0.128	0.000	124.985	0.000
C:\asgluns\sg34	0.134	0.000	119.374	0.000
C:\asgluns\sg35	0.125	0.000	127.505	0.000
C:\asgluns\sg36	0.133	0.000	120.292	0.000

Memory System Performance of Checksum

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	5.265	3.410	5.993
Available MBytes	30723.211	30711.000	30760.000
Free System Page Table Entries	16727353.000	16727353.000	16727353.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	175784088.173	175775744.000	175796224.000

Test Log

4/7/2009 11:44:59 PM -- Jetstress testing begins ...
4/7/2009 11:44:59 PM -- Prepare testing begins ...
4/7/2009 11:45:35 PM -- Attaching databases ...
4/7/2009 11:45:35 PM -- Prepare testing ends.
4/7/2009 11:45:35 PM -- Dispatching transactions begins ...
4/7/2009 11:45:35 PM -- Database cache settings: (minimum: 1.1 GB, maximum: 9.0 GB)
4/7/2009 11:45:35 PM -- Database flush thresholds: (start: 92.2 MB, stop: 184.3 MB)
4/7/2009 11:46:13 PM -- Database read latency thresholds: (average: 0.02 seconds/read, maximum: 0.05 seconds/read).
4/7/2009 11:46:13 PM -- Log write latency thresholds: (average: 0.01 seconds/write, maximum: 0.05 seconds/write).
4/7/2009 11:46:15 PM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%, Replaces 5%, Reads 25%, Lazy Commits 55%.
4/7/2009 11:46:15 PM -- Performance logging begins (interval: 15000 ms).
4/7/2009 11:46:15 PM -- Attaining prerequisites:
4/8/2009 12:27:00 AM -- \MSEExchange Database(Jetstresswin)\Database Cache Size, Last: 8700051000.0 (lower bound: 8697308000.0, upper bound: none)
4/8/2009 2:27:02 AM -- Performance logging ends.
4/8/2009 2:40:22 AM -- JetInterop batch transaction stats: 8531, 8342, 8360, 8523, 8315, 8370, 8401, 8467, 8423, 8502, 8490, 8340, 8407, 8341, 8589, 8354, 8435, 8476, 8465, 8383, 8391, 8453, 8320, 8391, 8399, 8403, 8526, 8349, 8343, 8315, 8471, 8356, 8227, 8301, 8475, and 8342.
4/8/2009 2:40:22 AM -- Dispatching transactions ends.
4/8/2009 2:40:22 AM -- Shutting down databases ...
4/8/2009 2:40:33 AM -- Instance4012.1 (complete), Instance4012.2 (complete), Instance4012.3 (complete), Instance4012.4 (complete), Instance4012.5 (complete), Instance4012.6 (complete), Instance4012.7 (complete), Instance4012.8 (complete), Instance4012.9 (complete), Instance4012.10 (complete), Instance4012.11 (complete), Instance4012.12 (complete), Instance4012.13 (complete), Instance4012.14 (complete), Instance4012.15 (complete), Instance4012.16 (complete), Instance4012.17 (complete), Instance4012.18 (complete), Instance4012.19 (complete), Instance4012.20 (complete), Instance4012.21 (complete), Instance4012.22 (complete), Instance4012.23 (complete), Instance4012.24 (complete), Instance4012.25 (complete), Instance4012.26 (complete), Instance4012.27 (complete), Instance4012.28 (complete), Instance4012.29 (complete), Instance4012.30 (complete), Instance4012.31 (complete), Instance4012.32 (complete), Instance4012.33 (complete), Instance4012.34 (complete), Instance4012.35 (complete), and Instance4012.36 (complete)
4/8/2009 2:40:34 AM -- Performance logging begins (interval: 30000 ms).
4/8/2009 2:40:34 AM -- Verifying database checksums ...
4/8/2009 5:23:00 AM -- C:\asgluns\sg1 (100% processed), C:\asgluns\sg2 (100% processed), C:\asgluns\sg3 (100% processed), C:\asgluns\sg4 (100% processed), C:\asgluns\sg5 (100% processed), C:\asgluns\sg6 (100% processed), C:\asgluns\sg7 (100% processed), C:\asgluns\sg8 (100% processed), C:\asgluns\sg9 (100% processed), C:\asgluns\sg10 (100% processed), C:\asgluns\sg11 (100% processed), C:\asgluns\sg12 (100% processed), C:\asgluns\sg13 (100% processed), C:\asgluns\sg14 (100% processed), C:\asgluns\sg15 (100% processed), C:\asgluns\sg16 (100% processed), C:\asgluns\sg17 (100% processed), C:\asgluns\sg18 (100% processed), C:\asgluns\sg19 (100% processed), C:\asgluns\sg20 (100% processed), C:\asgluns\sg21 (100% processed), C:\asgluns\sg22 (100% processed), C:\asgluns\sg23 (100% processed), C:\asgluns\sg24 (100% processed), C:\asgluns\sg25 (100% processed), C:\asgluns\sg26 (100% processed), C:\asgluns\sg27 (100% processed), C:\asgluns\sg28 (100% processed), C:\asgluns\sg29 (100% processed), C:\asgluns\sg30 (100% processed), C:\asgluns\sg31 (100% processed), C:\asgluns\sg32 (100% processed), C:\asgluns\sg33 (100% processed), C:\asgluns\sg34 (100% processed), C:\asgluns\sg35 (100% processed), and C:\asgluns\sg36 (100% processed)

4/8/2009 5:23:02 AM -- Performance logging ends.
 4/8/2009 5:23:02 AM -- C:\ESRP Testing\AMS2100
 Results_250MB_Average\Performance\5750 users\DBChecksum_2009_4_8_2_40_33.blg
 has 323 samples.

Stress Test Database Performance Result: SUN211

Test Summary

Overall Test Result	Pass
Machine Name	SUN211
Test Description	
Test Start Time	4/8/2009 5:34:29 AM
Test End Time	4/9/2009 8:17:37 PM
Jetstress Version	08.02.0060.000
Ese Version	08.01.0240.005
Operating System	Microsoft Windows Server 2003 R2 Service Pack 2 (5.2.3790.131072)
Performance Log	C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress Test\Stress_2009_4_8_5_35_44.blg C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress Test\DBChecksum_2009_4_9_20_17_37.blg

Database Sizing and Throughput

Achieved I/O per Second	1673.432
Target I/O per Second	1242
Initial database size	2128593092608
Final database size	2224739123200
Database files (count)	36

Jetstress System Parameters

Thread count	2 (per-storage group)
Log buffers	9000
Minimum database cache	1152.0 MB
Maximum database cache	9216.0 MB
Insert operations	40%
Delete operations	30%
Replace operations	5%
Read operations	25%
Lazy commits	55%

Disk Subsystem Performance

Logical Disk	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Database (C:\asgluns\sg1)	0.011	0.001	25.548	20.895	(n/a)
Database (C:\asgluns\sg2)	0.010	0.001	25.343	20.682	(n/a)
Database (C:\asgluns\sg3)	0.010	0.001	25.571	21.010	(n/a)
Database (C:\asgluns\sg4)	0.010	0.001	25.554	20.875	(n/a)
Database (C:\asgluns\sg5)	0.010	0.001	25.474	20.838	(n/a)
Database (C:\asgluns\sg6)	0.011	0.001	25.727	20.930	(n/a)
Database (C:\asgluns\sg7)	0.010	0.001	25.731	21.016	(n/a)
Database (C:\asgluns\sg8)	0.010	0.001	25.657	20.926	(n/a)
Database (C:\asgluns\sg9)	0.010	0.001	25.651	20.984	(n/a)
Database (C:\asgluns\sg10)	0.009	0.001	25.692	21.075	(n/a)
Database (C:\asgluns\sg11)	0.010	0.001	25.403	20.748	(n/a)
Database (C:\asgluns\sg12)	0.011	0.001	25.554	20.836	(n/a)
Database (C:\asgluns\sg13)	0.010	0.001	25.332	20.758	(n/a)
Database (C:\asgluns\sg14)	0.010	0.001	25.624	20.923	(n/a)
Database (C:\asgluns\sg15)	0.010	0.001	25.582	20.859	(n/a)
Database (C:\asgluns\sg16)	0.009	0.001	25.512	20.894	(n/a)
Database (C:\asgluns\sg17)	0.010	0.001	25.731	21.084	(n/a)
Database (C:\asgluns\sg18)	0.011	0.001	25.532	20.807	(n/a)
Database (C:\asgluns\sg19)	0.010	0.001	25.559	20.797	(n/a)
Database (C:\asgluns\sg20)	0.010	0.001	25.437	20.854	(n/a)
Database (C:\asgluns\sg21)	0.010	0.001	25.569	20.908	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg22)	0.010	0.001	25.666	20.985	(n/a)
Database (C:\asgluns\sg23)	0.010	0.001	25.435	20.682	(n/a)
Database (C:\asgluns\sg24)	0.011	0.001	25.601	20.982	(n/a)
Database (C:\asgluns\sg25)	0.010	0.001	25.576	20.855	(n/a)
Database (C:\asgluns\sg26)	0.010	0.001	25.412	20.770	(n/a)
Database (C:\asgluns\sg27)	0.009	0.001	25.592	20.961	(n/a)
Database (C:\asgluns\sg28)	0.010	0.001	25.601	20.905	(n/a)
Database (C:\asgluns\sg29)	0.010	0.001	25.866	21.167	(n/a)
Database (C:\asgluns\sg30)	0.011	0.001	25.626	20.870	(n/a)
Database (C:\asgluns\sg31)	0.010	0.001	25.788	21.051	(n/a)
Database (C:\asgluns\sg32)	0.010	0.001	25.446	20.784	(n/a)
Database (C:\asgluns\sg33)	0.010	0.001	25.530	20.824	(n/a)
Database (C:\asgluns\sg34)	0.010	0.001	25.668	21.013	(n/a)
Database (C:\asgluns\sg35)	0.010	0.001	25.666	21.009	(n/a)
Database (C:\asgluns\sg36)	0.011	0.001	25.718	20.897	(n/a)
Log (C:\alogluns\log1)	0.000	0.000	0.000	16.784	4145.237
Log (C:\alogluns\log2)	0.000	0.000	0.000	16.729	4180.163
Log (C:\alogluns\log3)	0.000	0.000	0.000	16.854	4159.838
Log (C:\alogluns\log4)	0.000	0.000	0.000	16.739	4135.503
Log (C:\alogluns\log5)	0.000	0.000	0.000	16.830	4158.250
Log (C:\alogluns\log6)	0.000	0.000	0.000	16.997	4174.317
Log (C:\alogluns\log7)	0.000	0.000	0.000	16.845	4176.021
Log (C:\alogluns\log8)	0.000	0.000	0.000	16.834	4170.529
Log (C:\alogluns\log9)	0.000	0.000	0.000	16.865	4191.495
Log (C:\alogluns\log10)	0.000	0.000	0.000	16.986	4181.934
Log (C:\alogluns\log11)	0.000	0.000	0.000	16.825	4180.258
Log (C:\alogluns\log12)	0.000	0.000	0.000	16.866	4150.940

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Log (C:\alogluns\log13)	0.000	0.000	0.000	16.808	4178.217
Log (C:\alogluns\log14)	0.000	0.000	0.000	16.873	4157.387
Log (C:\alogluns\log15)	0.000	0.000	0.000	16.735	4146.429
Log (C:\alogluns\log16)	0.000	0.000	0.000	16.870	4197.547
Log (C:\alogluns\log17)	0.000	0.000	0.000	16.965	4171.938
Log (C:\alogluns\log18)	0.000	0.000	0.000	16.829	4175.346
Log (C:\alogluns\log19)	0.000	0.000	0.000	16.780	4153.923
Log (C:\alogluns\log20)	0.000	0.000	0.000	16.802	4184.594
Log (C:\alogluns\log21)	0.000	0.000	0.000	16.842	4175.732
Log (C:\alogluns\log22)	0.000	0.000	0.000	16.912	4174.258
Log (C:\alogluns\log23)	0.000	0.000	0.000	16.716	4175.486
Log (C:\alogluns\log24)	0.000	0.000	0.000	16.916	4149.794
Log (C:\alogluns\log25)	0.000	0.000	0.000	16.805	4164.533
Log (C:\alogluns\log26)	0.000	0.000	0.000	16.779	4161.224
Log (C:\alogluns\log27)	0.000	0.000	0.000	16.858	4186.971
Log (C:\alogluns\log28)	0.000	0.000	0.000	16.823	4175.479
Log (C:\alogluns\log29)	0.000	0.000	0.000	16.923	4164.592
Log (C:\alogluns\log30)	0.000	0.000	0.000	16.749	4137.453
Log (C:\alogluns\log31)	0.000	0.000	0.000	16.919	4168.843
Log (C:\alogluns\log32)	0.000	0.000	0.000	16.776	4171.175
Log (C:\alogluns\log33)	0.000	0.000	0.000	16.763	4160.834
Log (C:\alogluns\log34)	0.000	0.000	0.000	16.841	4139.005
Log (C:\alogluns\log35)	0.000	0.000	0.000	16.951	4164.677
Log (C:\alogluns\log36)	0.000	0.000	0.000	16.945	4152.091

Host System Performance

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	1.935	0.000	10.054
Available MBytes	21292.276	21079.000	24888.000
Free System Page Table Entries	16727962.000	16727962.000	16727962.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	178558910.441	175403008.000	180019200.000
Pool Paged Bytes	112966775.003	111181824.000	114647040.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

4/8/2009 5:34:29 AM -- Jetstress testing begins ...
4/8/2009 5:34:29 AM -- Prepare testing begins ...

4/8/2009 5:35:05 AM -- Attaching databases ...
 4/8/2009 5:35:05 AM -- Prepare testing ends.
 4/8/2009 5:35:05 AM -- Dispatching transactions begins ...
 4/8/2009 5:35:05 AM -- Database cache settings: (minimum: 1.1 GB, maximum: 9.0 GB)
 4/8/2009 5:35:05 AM -- Database flush thresholds: (start: 92.2 MB, stop: 184.3 MB)
 4/8/2009 5:35:44 AM -- Database read latency thresholds: (average: 0.02 seconds/read, maximum: 0.1 seconds/read).
 4/8/2009 5:35:44 AM -- Log write latency thresholds: (average: 0.01 seconds/write, maximum: 0.1 seconds/write).
 4/8/2009 5:35:46 AM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%, Replaces 5%, Reads 25%, Lazy Commits 55%.
 4/8/2009 5:35:46 AM -- Performance logging begins (interval: 15000 ms).
 4/8/2009 5:35:46 AM -- Attaining prerequisites:
 4/8/2009 6:16:31 AM -- \MSEExchange Database(Jetstresswin)\Database Cache Size, Last: 8700928000.0 (lower bound: 8697308000.0, upper bound: none)
 4/9/2009 6:16:33 AM -- Performance logging ends.
 4/9/2009 8:17:26 PM -- JetInterop batch transaction stats: 109011, 108131, 109370, 108179, 109013, 109670, 109385, 109015, 109194, 109478, 109070, 108963, 108245, 109592, 109030, 108861, 109106, 108924, 108747, 108699, 109302, 109197, 109270, 108967, 109124, 108491, 108980, 109029, 109883, 108809, 109777, 108662, 108749, 109334, 109568, and 109103.
 4/9/2009 8:17:26 PM -- Dispatching transactions ends.
 4/9/2009 8:17:26 PM -- Shutting down databases ...
 4/9/2009 8:17:37 PM -- Instance5860.1 (complete), Instance5860.2 (complete), Instance5860.3 (complete), Instance5860.4 (complete), Instance5860.5 (complete), Instance5860.6 (complete), Instance5860.7 (complete), Instance5860.8 (complete), Instance5860.9 (complete), Instance5860.10 (complete), Instance5860.11 (complete), Instance5860.12 (complete), Instance5860.13 (complete), Instance5860.14 (complete), Instance5860.15 (complete), Instance5860.16 (complete), Instance5860.17 (complete), Instance5860.18 (complete), Instance5860.19 (complete), Instance5860.20 (complete), Instance5860.21 (complete), Instance5860.22 (complete), Instance5860.23 (complete), Instance5860.24 (complete), Instance5860.25 (complete), Instance5860.26 (complete), Instance5860.27 (complete), Instance5860.28 (complete), Instance5860.29 (complete), Instance5860.30 (complete), Instance5860.31 (complete), Instance5860.32 (complete), Instance5860.33 (complete), Instance5860.34 (complete), Instance5860.35 (complete), and Instance5860.36 (complete)
 4/9/2009 8:17:38 PM -- Performance logging begins (interval: 30000 ms).
 4/9/2009 8:17:38 PM -- Verifying database checksums ...
 4/9/2009 11:04:40 PM -- C:\asgluns\sg1 (100% processed), C:\asgluns\sg2 (100% processed), C:\asgluns\sg3 (100% processed), C:\asgluns\sg4 (100% processed), C:\asgluns\sg5 (100% processed), C:\asgluns\sg6 (100% processed), C:\asgluns\sg7 (100% processed), C:\asgluns\sg8 (100% processed), C:\asgluns\sg9 (100% processed), C:\asgluns\sg10 (100% processed), C:\asgluns\sg11 (100% processed), C:\asgluns\sg12 (100% processed), C:\asgluns\sg13 (100% processed), C:\asgluns\sg14 (100% processed), C:\asgluns\sg15 (100% processed), C:\asgluns\sg16 (100% processed), C:\asgluns\sg17 (100% processed), C:\asgluns\sg18 (100% processed), C:\asgluns\sg19 (100% processed), C:\asgluns\sg20 (100% processed), C:\asgluns\sg21 (100% processed), C:\asgluns\sg22 (100% processed), C:\asgluns\sg23 (100% processed), C:\asgluns\sg24 (100% processed), C:\asgluns\sg25 (100% processed), C:\asgluns\sg26 (100% processed), C:\asgluns\sg27 (100% processed), C:\asgluns\sg28 (100% processed), C:\asgluns\sg29 (100% processed), C:\asgluns\sg30 (100% processed), C:\asgluns\sg31 (100% processed), C:\asgluns\sg32 (100% processed), C:\asgluns\sg33 (100% processed), C:\asgluns\sg34 (100% processed), C:\asgluns\sg35 (100% processed), and C:\asgluns\sg36 (100% processed)
 4/9/2009 11:04:41 PM -- Performance logging ends.
 4/9/2009 11:04:41 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress Test\DBChecksum_2009_4_9_20_17_37.blg has 332 samples.
 4/9/2009 11:07:19 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress Test\DBChecksum_2009_4_9_20_17_37.html is saved.
 4/9/2009 11:07:19 PM -- Verifying log checksums ...
 4/9/2009 11:07:35 PM -- C:\alogluns\log1 (2 logs passed), C:\alogluns\log2 (2

logs passed), C:\alogluns\log3 (2 logs passed), C:\alogluns\log4 (2 logs passed), C:\alogluns\log5 (2 logs passed), C:\alogluns\log6 (2 logs passed), C:\alogluns\log7 (2 logs passed), C:\alogluns\log8 (2 logs passed), C:\alogluns\log9 (2 logs passed), C:\alogluns\log10 (2 logs passed), C:\alogluns\log11 (2 logs passed), C:\alogluns\log12 (2 logs passed), C:\alogluns\log13 (3 logs passed), C:\alogluns\log14 (2 logs passed), C:\alogluns\log15 (2 logs passed), C:\alogluns\log16 (2 logs passed), C:\alogluns\log17 (2 logs passed), C:\alogluns\log18 (2 logs passed), C:\alogluns\log19 (2 logs passed), C:\alogluns\log20 (2 logs passed), C:\alogluns\log21 (2 logs passed), C:\alogluns\log22 (2 logs passed), C:\alogluns\log23 (2 logs passed), C:\alogluns\log24 (2 logs passed), C:\alogluns\log25 (2 logs passed), C:\alogluns\log26 (2 logs passed), C:\alogluns\log27 (2 logs passed), C:\alogluns\log28 (2 logs passed), C:\alogluns\log29 (2 logs passed), C:\alogluns\log30 (2 logs passed), C:\alogluns\log31 (2 logs passed), C:\alogluns\log32 (2 logs passed), C:\alogluns\log33 (2 logs passed), C:\alogluns\log34 (2 logs passed), C:\alogluns\log35 (2 logs passed), and C:\alogluns\log36 (2 logs passed)

4/9/2009 11:07:35 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress Test\Stress_2009_4_8_5_35_44.blg has 5910 samples.

4/9/2009 11:07:35 PM -- Creating test report ...

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg1 has 0.0105 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg2 has 0.0097 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg3 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg4 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg5 has 0.0101 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg6 has 0.0110 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg7 has 0.0104 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg8 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:43 PM -- volume C:\asgluns\sg9 has 0.0095 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg10 has 0.0094 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg11 has 0.0100 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg12 has 0.0108 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg13 has 0.0104 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg14 has 0.0097 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg15 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg16 has 0.0095 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg17 has 0.0100 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg18 has 0.0109 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg19 has 0.0105 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg20 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg21 has 0.0095 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg22 has 0.0096 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg23 has 0.0100 for Avg. Disk sec/Read.

4/9/2009 11:13:44 PM -- volume C:\asgluns\sg24 has 0.0109 for Avg. Disk

```

sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg25 has 0.0104 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg26 has 0.0096 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg27 has 0.0095 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg28 has 0.0095 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg29 has 0.0099 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg30 has 0.0108 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg31 has 0.0105 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg32 has 0.0098 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg33 has 0.0096 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg34 has 0.0095 for Avg. Disk
sec/Read.
4/9/2009 11:13:44 PM -- volume C:\asgluns\sg35 has 0.0099 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\asgluns\sg36 has 0.0110 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log1 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log1 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log2 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log2 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log3 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log3 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log4 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log4 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log5 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log5 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log6 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log6 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log7 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log7 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log8 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log8 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log9 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log9 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log10 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log10 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log11 has 0.0003 for Avg. Disk
sec/write.

```


sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log28 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log29 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log29 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log30 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log30 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log31 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log31 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log32 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log32 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log33 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log33 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log34 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log34 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log35 has 0.0003 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log35 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log36 has 0.0002 for Avg. Disk
sec/write.
4/9/2009 11:13:45 PM -- volume C:\alogluns\log36 has 0.0000 for Avg. Disk
sec/Read.
4/9/2009 11:13:45 PM -- Test has 0 Maximum Database Page Fault Stalls/sec.
4/9/2009 11:13:45 PM -- Test has 0 Database Page Fault Stalls/sec samples
higher than 0.
4/9/2009 11:13:45 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress
Test\Stress_2009_4_8_5_35_44.xml has 5747 samples queried.

Stress Test Database Checksums Result: SUN211

Checksum Statistics - All

Database	Seen pages	Bad pages	Correctable pages	Wrong page no pages	File length / seconds taken
C:\asgluns\sg1\Jetstress1.edb	7541570	0	0	0	58918 MBytes / 10021 seconds
C:\asgluns\sg2\Jetstress1.edb	7546690	0	0	0	58958 MBytes / 9964 seconds
C:\asgluns\sg3\Jetstress1.edb	7541826	0	0	0	58920 MBytes / 9988 seconds
C:\asgluns\sg4\Jetstress1.edb	7538242	0	0	0	58892 MBytes / 9936 seconds
C:\asgluns\sg5\Jetstress1.edb	7543874	0	0	0	58936 MBytes / 10008 seconds
C:\asgluns\sg6\Jetstress1.edb	7544386	0	0	0	58940 MBytes / 9948 seconds

<i>Database</i>	<i>Seen pages</i>	<i>Bad pages</i>	<i>Correctable pages</i>	<i>Wrong page no pages</i>	<i>File length / seconds taken</i>
C:\asgluns\sg7\Jetstress1.edb	7541570	0	0	0	58918 MBytes / 9940 seconds
C:\asgluns\sg8\Jetstress1.edb	7543362	0	0	0	58932 MBytes / 9838 seconds
C:\asgluns\sg9\Jetstress1.edb	7541570	0	0	0	58918 MBytes / 9902 seconds
C:\asgluns\sg10\Jetstress1.edb	7546690	0	0	0	58958 MBytes / 9798 seconds
C:\asgluns\sg11\Jetstress1.edb	7547970	0	0	0	58968 MBytes / 9902 seconds
C:\asgluns\sg12\Jetstress1.edb	7545410	0	0	0	58948 MBytes / 9753 seconds
C:\asgluns\sg13\Jetstress1.edb	7541826	0	0	0	58920 MBytes / 9833 seconds
C:\asgluns\sg14\Jetstress1.edb	7545154	0	0	0	58946 MBytes / 9674 seconds
C:\asgluns\sg15\Jetstress1.edb	7541826	0	0	0	58920 MBytes / 9696 seconds
C:\asgluns\sg16\Jetstress1.edb	7543362	0	0	0	58932 MBytes / 9454 seconds
C:\asgluns\sg17\Jetstress1.edb	7548738	0	0	0	58974 MBytes / 9623 seconds
C:\asgluns\sg18\Jetstress1.edb	7542338	0	0	0	58924 MBytes / 9426 seconds
C:\asgluns\sg19\Jetstress1.edb	7539522	0	0	0	58902 MBytes / 9119 seconds
C:\asgluns\sg20\Jetstress1.edb	7546178	0	0	0	58954 MBytes / 8211 seconds
C:\asgluns\sg21\Jetstress1.edb	7546178	0	0	0	58954 MBytes / 9045 seconds
C:\asgluns\sg22\Jetstress1.edb	7545922	0	0	0	58952 MBytes / 7956 seconds
C:\asgluns\sg23\Jetstress1.edb	7541570	0	0	0	58918 MBytes / 8939 seconds
C:\asgluns\sg24\Jetstress1.edb	7543618	0	0	0	58934 MBytes / 7825 seconds
C:\asgluns\sg25\Jetstress1.edb	7539010	0	0	0	58898 MBytes / 6209 seconds
C:\asgluns\sg26\Jetstress1.edb	7545922	0	0	0	58952 MBytes / 6744 seconds
C:\asgluns\sg27\Jetstress1.edb	7549506	0	0	0	58980 MBytes / 6182 seconds
C:\asgluns\sg28\Jetstress1.edb	7543618	0	0	0	58934 MBytes / 6734 seconds

<i>Database</i>	<i>Seen pages</i>	<i>Bad pages</i>	<i>Correctable pages</i>	<i>Wrong page no pages</i>	<i>File length / seconds taken</i>
C:\asgluns\sg29\Jetstress1.edb	7546178	0	0	0	58954 MBytes / 6096 seconds
C:\asgluns\sg30\Jetstress1.edb	7538498	0	0	0	58894 MBytes / 6478 seconds
C:\asgluns\sg31\Jetstress1.edb	7545666	0	0	0	58950 MBytes / 5840 seconds
C:\asgluns\sg32\Jetstress1.edb	7545410	0	0	0	58948 MBytes / 6206 seconds
C:\asgluns\sg33\Jetstress1.edb	7541314	0	0	0	58916 MBytes / 5670 seconds
C:\asgluns\sg34\Jetstress1.edb	7540034	0	0	0	58906 MBytes / 6146 seconds
C:\asgluns\sg35\Jetstress1.edb	7549250	0	0	0	58978 MBytes / 5509 seconds
C:\asgluns\sg36\Jetstress1.edb	7540802	0	0	0	58912 MBytes / 6519 seconds
(Sum)	271574600	0	0	0	2121676 MBytes / 10021 seconds

Disk Subsystem Performance of Checksum

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>
C:\asgluns\sg1	0.265	0.006	88.910	0.002
C:\asgluns\sg2	0.287	0.004	94.526	0.002
C:\asgluns\sg3	0.254	0.007	92.893	0.002
C:\asgluns\sg4	0.274	0.006	94.892	0.002
C:\asgluns\sg5	0.244	0.004	93.316	0.002
C:\asgluns\sg6	0.262	0.006	94.125	0.002
C:\asgluns\sg7	0.231	0.004	94.440	0.002
C:\asgluns\sg8	0.241	0.006	94.555	0.002
C:\asgluns\sg9	0.223	0.005	95.290	0.002
C:\asgluns\sg10	0.232	0.004	95.788	0.002
C:\asgluns\sg11	0.214	0.004	95.381	0.002
C:\asgluns\sg12	0.213	0.003	96.720	0.002
C:\asgluns\sg13	0.209	0.003	95.233	0.002
C:\asgluns\sg14	0.200	0.006	97.180	0.002
C:\asgluns\sg15	0.195	0.003	97.123	0.002
C:\asgluns\sg16	0.181	0.002	99.850	0.002
C:\asgluns\sg17	0.180	0.002	97.760	0.001
C:\asgluns\sg18	0.179	0.002	99.953	0.001

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>
C:\asgluns\sg19	0.168	0.002	103.342	0.002
C:\asgluns\sg20	0.159	0.002	114.568	0.002
C:\asgluns\sg21	0.165	0.002	104.447	0.002
C:\asgluns\sg22	0.168	0.004	118.489	0.002
C:\asgluns\sg23	0.159	0.001	105.502	0.001
C:\asgluns\sg24	0.144	0.001	120.381	0.002
C:\asgluns\sg25	0.112	0.001	150.932	0.002
C:\asgluns\sg26	0.117	0.002	139.524	0.002
C:\asgluns\sg27	0.109	0.001	153.034	0.002
C:\asgluns\sg28	0.117	0.002	139.751	0.002
C:\asgluns\sg29	0.107	0.001	154.574	0.002
C:\asgluns\sg30	0.109	0.001	145.637	0.002
C:\asgluns\sg31	0.099	0.001	161.609	0.002
C:\asgluns\sg32	0.104	0.001	152.224	0.002
C:\asgluns\sg33	0.095	0.001	166.653	0.002
C:\asgluns\sg34	0.103	0.001	153.707	0.002
C:\asgluns\sg35	0.092	0.001	171.872	0.002
C:\asgluns\sg36	0.112	0.001	144.694	0.002

Memory System Performance of Checksum

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	6.819	3.455	39.253
Available MBytes	30807.780	30742.000	30878.000
Free System Page Table Entries	16727262.000	16727262.000	16727262.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	175775139.470	175652864.000	175849472.000
Pool Paged Bytes	117410544.578	115773440.000	119521280.000

Test Log

4/8/2009 5:34:29 AM -- Jetstress testing begins ...
 4/8/2009 5:34:29 AM -- Prepare testing begins ...
 4/8/2009 5:35:05 AM -- Attaching databases ...
 4/8/2009 5:35:05 AM -- Prepare testing ends.
 4/8/2009 5:35:05 AM -- Dispatching transactions begins ...
 4/8/2009 5:35:05 AM -- Database cache settings: (minimum: 1.1 GB, maximum: 9.0 GB)
 4/8/2009 5:35:05 AM -- Database flush thresholds: (start: 92.2 MB, stop: 184.3 MB)
 4/8/2009 5:35:44 AM -- Database read latency thresholds: (average: 0.02 seconds/read, maximum: 0.1 seconds/read).
 4/8/2009 5:35:44 AM -- Log write latency thresholds: (average: 0.01 seconds/write, maximum: 0.1 seconds/write).
 4/8/2009 5:35:46 AM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%,

Replaces 5%, Reads 25%, Lazy Commits 55%.
 4/8/2009 5:35:46 AM -- Performance logging begins (interval: 15000 ms).
 4/8/2009 5:35:46 AM -- Attaining prerequisites:
 4/8/2009 6:16:31 AM -- \MSExchange Database(Jetstresswin)\Database Cache
 Size, Last: 8700928000.0 (lower bound: 8697308000.0, upper bound: none)
 4/9/2009 6:16:33 AM -- Performance logging ends.
 4/9/2009 8:17:26 PM -- JetInterop batch transaction stats: 109011, 108131,
 109370, 108179, 109013, 109670, 109385, 109015, 109194, 109478, 109070,
 108963, 108245, 109592, 109030, 108861, 109106, 108924, 108747, 108699,
 109302, 109197, 109270, 108967, 109124, 108491, 108980, 109029, 109883,
 108809, 109777, 108662, 108749, 109334, 109568, and 109103.
 4/9/2009 8:17:26 PM -- Dispatching transactions ends.
 4/9/2009 8:17:26 PM -- Shutting down databases ...
 4/9/2009 8:17:37 PM -- Instance5860.1 (complete), Instance5860.2 (complete),
 Instance5860.3 (complete), Instance5860.4 (complete), Instance5860.5
 (complete), Instance5860.6 (complete), Instance5860.7 (complete),
 Instance5860.8 (complete), Instance5860.9 (complete), Instance5860.10
 (complete), Instance5860.11 (complete), Instance5860.12 (complete),
 Instance5860.13 (complete), Instance5860.14 (complete), Instance5860.15
 (complete), Instance5860.16 (complete), Instance5860.17 (complete),
 Instance5860.18 (complete), Instance5860.19 (complete), Instance5860.20
 (complete), Instance5860.21 (complete), Instance5860.22 (complete),
 Instance5860.23 (complete), Instance5860.24 (complete), Instance5860.25
 (complete), Instance5860.26 (complete), Instance5860.27 (complete),
 Instance5860.28 (complete), Instance5860.29 (complete), Instance5860.30
 (complete), Instance5860.31 (complete), Instance5860.32 (complete),
 Instance5860.33 (complete), Instance5860.34 (complete), Instance5860.35
 (complete), and Instance5860.36 (complete)
 4/9/2009 8:17:38 PM -- Performance logging begins (interval: 30000 ms).
 4/9/2009 8:17:38 PM -- Verifying database checksums ...
 4/9/2009 11:04:40 PM -- C:\asgluns\sg1 (100% processed), C:\asgluns\sg2 (100%
 processed), C:\asgluns\sg3 (100% processed), C:\asgluns\sg4 (100% processed),
 C:\asgluns\sg5 (100% processed), C:\asgluns\sg6 (100% processed),
 C:\asgluns\sg7 (100% processed), C:\asgluns\sg8 (100% processed),
 C:\asgluns\sg9 (100% processed), C:\asgluns\sg10 (100% processed),
 C:\asgluns\sg11 (100% processed), C:\asgluns\sg12 (100% processed),
 C:\asgluns\sg13 (100% processed), C:\asgluns\sg14 (100% processed),
 C:\asgluns\sg15 (100% processed), C:\asgluns\sg16 (100% processed),
 C:\asgluns\sg17 (100% processed), C:\asgluns\sg18 (100% processed),
 C:\asgluns\sg19 (100% processed), C:\asgluns\sg20 (100% processed),
 C:\asgluns\sg21 (100% processed), C:\asgluns\sg22 (100% processed),
 C:\asgluns\sg23 (100% processed), C:\asgluns\sg24 (100% processed),
 C:\asgluns\sg25 (100% processed), C:\asgluns\sg26 (100% processed),
 C:\asgluns\sg27 (100% processed), C:\asgluns\sg28 (100% processed),
 C:\asgluns\sg29 (100% processed), C:\asgluns\sg30 (100% processed),
 C:\asgluns\sg31 (100% processed), C:\asgluns\sg32 (100% processed),
 C:\asgluns\sg33 (100% processed), C:\asgluns\sg34 (100% processed),
 C:\asgluns\sg35 (100% processed), and C:\asgluns\sg36 (100% processed)
 4/9/2009 11:04:41 PM -- Performance logging ends.
 4/9/2009 11:04:41 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Stress
 Test\DBChecksum_2009_4_9_20_17_37.blg has 332 samples.

Streaming Backup Test Result: SUN211

Streaming Backup Statistics - All

<i>Database Instance</i>	<i>Database Size (MBytes)</i>	<i>Elapsed Backup Time</i>	<i>MBytes Transferred/sec</i>
Instance908.1	58916.52	02:48:36	5.82
Instance908.2	58956.52	02:45:06	5.95
Instance908.3	58918.52	02:45:46	5.92
Instance908.4	58890.52	02:43:42	6.00
Instance908.5	58934.52	02:47:23	5.87
Instance908.6	58938.52	02:45:52	5.92
Instance908.7	58916.52	02:48:43	5.82
Instance908.8	58930.52	02:46:33	5.90
Instance908.9	58916.52	02:47:27	5.86
Instance908.10	58956.52	02:45:27	5.94
Instance908.11	58966.52	02:48:55	5.82
Instance908.12	58946.52	02:46:45	5.89
Instance908.13	58918.52	02:48:23	5.83
Instance908.14	58944.52	02:46:12	5.91
Instance908.15	58918.52	02:46:47	5.89
Instance908.16	58930.52	02:45:29	5.94
Instance908.17	58972.52	02:48:30	5.83
Instance908.18	58922.52	02:46:50	5.89
Instance908.19	58900.52	02:48:29	5.83
Instance908.20	58952.52	02:41:25	6.09
Instance908.21	58952.52	02:46:59	5.88
Instance908.22	58950.52	02:40:21	6.13
Instance908.23	58916.52	02:48:34	5.83
Instance908.24	58932.52	02:42:32	6.04
Instance908.25	58896.52	02:28:52	6.59
Instance908.26	58950.52	02:34:07	6.37
Instance908.27	58978.52	02:25:50	6.74
Instance908.28	58932.52	02:31:58	6.46

<i>Database Instance</i>	<i>Database Size (MBytes)</i>	<i>Elapsed Backup Time</i>	<i>MBytes Transferred/sec</i>
Instance908.29	58952.52	02:28:05	6.63
Instance908.30	58892.52	02:34:04	6.37
Instance908.31	58948.52	02:28:41	6.61
Instance908.32	58946.52	02:31:07	6.50
Instance908.33	58914.52	02:26:28	6.70
Instance908.34	58904.52	02:29:14	6.58
Instance908.35	58976.52	02:28:26	6.62
Instance908.36	58910.52	02:32:43	6.43

Jetstress System Parameters

<i>Thread count</i>	2 (per-storage group)
<i>Log buffers</i>	9000
<i>Minimum database cache</i>	1152.0 MB
<i>Maximum database cache</i>	9216.0 MB
<i>Insert operations</i>	40%
<i>Delete operations</i>	30%
<i>Replace operations</i>	5%
<i>Read operations</i>	25%
<i>Lazy commits</i>	55%

Disk Subsystem Performance

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg1)	0.022	0.000	46.598	0.003	(n/a)
Database (C:\asgluns\sg2)	0.021	0.000	46.604	0.004	(n/a)
Database (C:\asgluns\sg3)	0.021	0.000	46.595	0.004	(n/a)
Database (C:\asgluns\sg4)	0.020	0.000	46.574	0.005	(n/a)
Database (C:\asgluns\sg5)	0.022	0.000	46.607	0.004	(n/a)
Database (C:\asgluns\sg6)	0.021	0.000	46.592	0.003	(n/a)
Database (C:\asgluns\sg7)	0.022	0.000	46.561	0.001	(n/a)
Database (C:\asgluns\sg8)	0.021	0.000	46.556	0.004	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg9)	0.022	0.000	46.577	0.004	(n/a)
Database (C:\asgluns\sg10)	0.021	0.000	46.581	0.004	(n/a)
Database (C:\asgluns\sg11)	0.022	0.000	46.491	0.001	(n/a)
Database (C:\asgluns\sg12)	0.021	0.000	46.569	0.004	(n/a)
Database (C:\asgluns\sg13)	0.022	0.000	46.574	0.003	(n/a)
Database (C:\asgluns\sg14)	0.021	0.000	46.588	0.004	(n/a)
Database (C:\asgluns\sg15)	0.022	0.000	46.576	0.004	(n/a)
Database (C:\asgluns\sg16)	0.021	0.000	46.610	0.004	(n/a)
Database (C:\asgluns\sg17)	0.022	0.000	46.618	0.003	(n/a)
Database (C:\asgluns\sg18)	0.021	0.000	46.598	0.004	(n/a)
Database (C:\asgluns\sg19)	0.022	0.000	46.534	0.003	(n/a)
Database (C:\asgluns\sg20)	0.021	0.000	46.592	0.004	(n/a)
Database (C:\asgluns\sg21)	0.022	0.000	46.575	0.003	(n/a)
Database (C:\asgluns\sg22)	0.020	0.000	46.585	0.004	(n/a)
Database (C:\asgluns\sg23)	0.022	0.000	46.542	0.003	(n/a)
Database (C:\asgluns\sg24)	0.021	0.000	46.567	0.004	(n/a)
Database (C:\asgluns\sg25)	0.017	0.000	46.520	0.004	(n/a)
Database (C:\asgluns\sg26)	0.018	0.000	46.582	0.003	(n/a)
Database (C:\asgluns\sg27)	0.016	0.000	46.597	0.004	(n/a)
Database (C:\asgluns\sg28)	0.018	0.000	46.555	0.003	(n/a)
Database (C:\asgluns\sg29)	0.017	0.000	46.556	0.004	(n/a)
Database (C:\asgluns\sg30)	0.018	0.000	46.535	0.003	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg31)	0.017	0.000	46.549	0.004	(n/a)
Database (C:\asgluns\sg32)	0.017	0.000	46.571	0.004	(n/a)
Database (C:\asgluns\sg33)	0.016	0.000	46.522	0.004	(n/a)
Database (C:\asgluns\sg34)	0.017	0.000	46.555	0.004	(n/a)
Database (C:\asgluns\sg35)	0.017	0.000	46.580	0.004	(n/a)
Database (C:\asgluns\sg36)	0.018	0.000	46.563	0.004	(n/a)
Log (C:\alogluns\log1)	0.000	0.000	0.000	0.001	6.857
Log (C:\alogluns\log2)	0.000	0.000	0.000	0.003	18.433
Log (C:\alogluns\log3)	0.000	0.000	0.000	0.003	8.908
Log (C:\alogluns\log4)	0.000	0.000	0.000	0.003	20.825
Log (C:\alogluns\log5)	0.000	0.000	0.000	0.002	19.890
Log (C:\alogluns\log6)	0.000	0.000	0.000	0.002	8.635
Log (C:\alogluns\log7)	0.000	0.000	0.000	0.000	0.000
Log (C:\alogluns\log8)	0.000	0.000	0.000	0.002	19.572
Log (C:\alogluns\log9)	0.000	0.000	0.000	0.002	19.890
Log (C:\alogluns\log10)	0.000	0.000	0.000	0.002	19.640
Log (C:\alogluns\log11)	0.000	0.000	0.000	0.000	0.000
Log (C:\alogluns\log12)	0.000	0.000	0.000	0.002	8.635
Log (C:\alogluns\log13)	0.000	0.000	0.000	0.002	7.450
Log (C:\alogluns\log14)	0.000	0.000	0.000	0.002	16.773
Log (C:\alogluns\log15)	0.000	0.000	0.000	0.002	8.635
Log (C:\alogluns\log16)	0.000	0.000	0.000	0.002	19.640
Log (C:\alogluns\log17)	0.000	0.000	0.000	0.002	6.857
Log (C:\alogluns\log18)	0.000	0.000	0.000	0.003	19.890
Log (C:\alogluns\log19)	0.000	0.000	0.000	0.002	6.857
Log (C:\alogluns\log20)	0.000	0.000	0.000	0.003	32.080
Log (C:\alogluns\log21)	0.000	0.000	0.000	0.002	18.381
Log (C:\alogluns\log22)	0.000	0.000	0.000	0.003	32.508
Log (C:\alogluns\log23)	0.000	0.000	0.000	0.001	6.502
Log (C:\alogluns\log24)	0.000	0.000	0.000	0.003	30.705
Log (C:\alogluns\log25)	0.000	0.000	0.000	0.003	32.080
Log (C:\alogluns\log26)	0.000	0.000	0.000	0.003	18.514
Log (C:\alogluns\log27)	0.000	0.000	0.000	0.003	20.825

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Log (C:\alogluns\log28)	0.000	0.000	0.000	0.003	31.831
Log (C:\alogluns\log29)	0.000	0.000	0.000	0.003	30.171
Log (C:\alogluns\log30)	0.000	0.000	0.000	0.003	18.159
Log (C:\alogluns\log31)	0.000	0.000	0.000	0.002	17.338
Log (C:\alogluns\log32)	0.000	0.000	0.000	0.003	29.460
Log (C:\alogluns\log33)	0.000	0.000	0.000	0.003	30.408
Log (C:\alogluns\log34)	0.000	0.000	0.000	0.003	20.825
Log (C:\alogluns\log35)	0.000	0.000	0.000	0.002	18.337
Log (C:\alogluns\log36)	0.000	0.000	0.000	0.003	20.825

Host System Performance

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	4.695	0.995	7.798
Available MBytes	30675.872	30666.000	30683.000
Free System Page Table Entries	16727990.000	16727990.000	16727990.000
Transition Pages RePurposed/sec	0.000	0.000	0.000
Pool Nonpaged Bytes	175359592.831	175214592.000	176271360.000
Pool Paged Bytes	119070306.754	116060160.000	119107584.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

4/9/2009 11:33:02 PM -- Jetstress testing begins ...
 4/9/2009 11:33:02 PM -- Prepare testing begins ...
 4/9/2009 11:33:38 PM -- Attaching databases ...
 4/9/2009 11:33:38 PM -- Prepare testing ends.
 4/9/2009 11:34:17 PM -- Performance logging begins (interval: 30000 ms).
 4/9/2009 11:34:17 PM -- Streaming backup databases ...
 4/10/2009 2:23:14 AM -- Performance logging ends.
 4/10/2009 2:23:14 AM -- Instance908.1 (100% processed), Instance908.2 (100% processed), Instance908.3 (100% processed), Instance908.4 (100% processed), Instance908.5 (100% processed), Instance908.6 (100% processed), Instance908.7 (100% processed), Instance908.8 (100% processed), Instance908.9 (100% processed), Instance908.10 (100% processed), Instance908.11 (100% processed), Instance908.12 (100% processed), Instance908.13 (100% processed), Instance908.14 (100% processed), Instance908.15 (100% processed), Instance908.16 (100% processed), Instance908.17 (100% processed), Instance908.18 (100% processed), Instance908.19 (100% processed), Instance908.20 (100% processed), Instance908.21 (100% processed), Instance908.22 (100% processed), Instance908.23 (100% processed), Instance908.24 (100% processed), Instance908.25 (100% processed), Instance908.26 (100% processed), Instance908.27 (100% processed), Instance908.28 (100% processed), Instance908.29 (100% processed), Instance908.30 (100% processed), Instance908.31 (100% processed), Instance908.32 (100% processed), Instance908.33 (100% processed), Instance908.34 (100% processed), Instance908.35 (100% processed), and Instance908.36 (100% processed)
 4/10/2009 2:23:14 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Streaming Backup\StreamingBackup_2009_4_9_23_33_38.b1g

has 337 samples.
4/10/2009 2:23:14 AM -- Creating test report ...

Soft Recovery Test Result: SUN211

Soft Recovery Statistics - All

<i>Database Instance</i>	<i>Log files replayed</i>	<i>Elapsed seconds</i>
Instance2168.1	508	1701.859375
Instance2168.2	509	1666.109375
Instance2168.3	507	1641.109375
Instance2168.4	513	1675.359375
Instance2168.5	506	1688.859375
Instance2168.6	500	1680.359375
Instance2168.7	513	1713.171875
Instance2168.8	505	1675.609375
Instance2168.9	513	1704.359375
Instance2168.10	510	1654.609375
Instance2168.11	514	1711.421875
Instance2168.12	509	1710.046875
Instance2168.13	507	1704.359375
Instance2168.14	508	1711.671875
Instance2168.15	508	1685.109375
Instance2168.16	501	1617.359375
Instance2168.17	506	1691.609375
Instance2168.18	507	1707.671875
Instance2168.19	511	1712.171875
Instance2168.20	518	1704.359375
Instance2168.21	511	1684.359375
Instance2168.22	516	1671.359375
Instance2168.23	510	1707.171875
Instance2168.24	515	1715.421875
Instance2168.25	517	1714.171875
Instance2168.26	509	1688.859375
Instance2168.27	517	1712.421875
Instance2168.28	503	1671.359375
Instance2168.29	518	1708.921875
Instance2168.30	505	1711.921875
Instance2168.31	516	1714.171875
Instance2168.32	509	1708.421875
Instance2168.33	508	1707.671875

<i>Database Instance</i>	<i>Log files replayed</i>	<i>Elapsed seconds</i>
Instance2168.34	509	1698.109375
Instance2168.35	505	1710.296875
Instance2168.36	505	1711.921875

Disk Subsystem Performance

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg1)	0.203	0.023	164.318	3.183	(n/a)
Database (C:\asgluns\sg2)	0.118	0.012	162.218	3.156	(n/a)
Database (C:\asgluns\sg3)	0.110	0.011	162.489	3.130	(n/a)
Database (C:\asgluns\sg4)	0.101	0.013	165.375	3.191	(n/a)
Database (C:\asgluns\sg5)	0.129	0.010	163.526	3.159	(n/a)
Database (C:\asgluns\sg6)	0.190	0.018	161.449	3.128	(n/a)
Database (C:\asgluns\sg7)	0.163	0.016	166.303	3.202	(n/a)
Database (C:\asgluns\sg8)	0.122	0.012	163.021	3.131	(n/a)
Database (C:\asgluns\sg9)	0.107	0.009	166.393	3.198	(n/a)
Database (C:\asgluns\sg10)	0.111	0.009	164.143	3.150	(n/a)
Database (C:\asgluns\sg11)	0.156	0.014	166.076	3.218	(n/a)
Database (C:\asgluns\sg12)	0.212	0.021	164.075	3.165	(n/a)
Database (C:\asgluns\sg13)	0.191	0.023	164.488	3.160	(n/a)
Database (C:\asgluns\sg14)	0.119	0.009	164.563	3.163	(n/a)
Database (C:\asgluns\sg15)	0.120	0.010	163.561	3.154	(n/a)
Database (C:\asgluns\sg16)	0.105	0.010	164.100	3.103	(n/a)
Database (C:\asgluns\sg17)	0.146	0.015	162.922	3.154	(n/a)
Database (C:\asgluns\sg18)	0.216	0.022	166.438	3.168	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg19)	0.178	0.015	164.417	3.168	(n/a)
Database (C:\asgluns\sg20)	0.133	0.011	164.869	3.219	(n/a)
Database (C:\asgluns\sg21)	0.136	0.022	164.633	3.150	(n/a)
Database (C:\asgluns\sg22)	0.105	0.009	164.972	3.200	(n/a)
Database (C:\asgluns\sg23)	0.136	0.011	165.455	3.164	(n/a)
Database (C:\asgluns\sg24)	0.214	0.018	167.968	3.200	(n/a)
Database (C:\asgluns\sg25)	0.194	0.020	165.395	3.196	(n/a)
Database (C:\asgluns\sg26)	0.132	0.011	163.697	3.163	(n/a)
Database (C:\asgluns\sg27)	0.141	0.012	167.821	3.220	(n/a)
Database (C:\asgluns\sg28)	0.108	0.009	162.251	3.125	(n/a)
Database (C:\asgluns\sg29)	0.182	0.014	165.362	3.207	(n/a)
Database (C:\asgluns\sg30)	0.209	0.020	164.946	3.145	(n/a)
Database (C:\asgluns\sg31)	0.198	0.018	165.162	3.201	(n/a)
Database (C:\asgluns\sg32)	0.144	0.014	165.834	3.176	(n/a)
Database (C:\asgluns\sg33)	0.128	0.010	165.062	3.140	(n/a)
Database (C:\asgluns\sg34)	0.118	0.009	162.859	3.174	(n/a)
Database (C:\asgluns\sg35)	0.150	0.012	163.650	3.136	(n/a)
Database (C:\asgluns\sg36)	0.239	0.020	162.929	3.147	(n/a)
Log (C:\alogluns\log1)	0.020	0.006	9.769	1.017	4160.087
Log (C:\alogluns\log2)	0.020	0.005	9.729	1.015	4065.487
Log (C:\alogluns\log3)	0.020	0.006	9.680	1.014	4032.888
Log (C:\alogluns\log4)	0.018	0.005	9.878	1.025	4137.992
Log (C:\alogluns\log5)	0.020	0.006	9.739	1.017	4142.890
Log (C:\alogluns\log6)	0.019	0.005	9.623	1.004	4146.329
Log (C:\alogluns\log7)	0.021	0.007	9.937	1.029	4188.980

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Log (C:\alogluns\log8)	0.020	0.005	9.704	1.027	4075.342
Log (C:\alogluns\log9)	0.022	0.006	9.887	1.027	4189.967
Log (C:\alogluns\log10)	0.019	0.005	9.748	0.993	4074.025
Log (C:\alogluns\log11)	0.021	0.006	9.934	1.037	4191.468
Log (C:\alogluns\log12)	0.020	0.005	9.805	1.040	4212.539
Log (C:\alogluns\log13)	0.019	0.006	9.705	1.039	4127.624
Log (C:\alogluns\log14)	0.021	0.005	9.798	1.050	4142.392
Log (C:\alogluns\log15)	0.020	0.005	9.705	1.024	4099.737
Log (C:\alogluns\log16)	0.017	0.005	9.679	0.999	3942.816
Log (C:\alogluns\log17)	0.021	0.006	9.731	1.015	4170.802
Log (C:\alogluns\log18)	0.019	0.005	9.818	1.023	4146.462
Log (C:\alogluns\log19)	0.021	0.006	9.818	1.045	4165.919
Log (C:\alogluns\log20)	0.020	0.005	9.975	1.024	4249.478
Log (C:\alogluns\log21)	0.021	0.006	9.747	1.026	4164.505
Log (C:\alogluns\log22)	0.017	0.006	9.966	1.032	4140.437
Log (C:\alogluns\log23)	0.021	0.005	9.778	1.037	4183.681
Log (C:\alogluns\log24)	0.020	0.005	9.977	1.034	4209.645
Log (C:\alogluns\log25)	0.021	0.006	9.937	1.027	4208.231
Log (C:\alogluns\log26)	0.020	0.005	9.799	1.030	4152.809
Log (C:\alogluns\log27)	0.021	0.006	9.974	1.047	4177.828
Log (C:\alogluns\log28)	0.020	0.005	9.697	1.030	4109.184
Log (C:\alogluns\log29)	0.021	0.006	9.977	1.048	4143.032
Log (C:\alogluns\log30)	0.020	0.005	9.785	1.033	4155.005
Log (C:\alogluns\log31)	0.021	0.006	9.974	1.036	4137.281
Log (C:\alogluns\log32)	0.021	0.006	9.843	1.044	4210.639
Log (C:\alogluns\log33)	0.021	0.005	9.745	1.032	4175.611
Log (C:\alogluns\log34)	0.021	0.006	9.815	1.034	4178.800
Log (C:\alogluns\log35)	0.022	0.006	9.719	1.036	4184.952
Log (C:\alogluns\log36)	0.019	0.005	9.745	1.022	4247.008

Host System Performance

<i>Counter</i>	<i>Average</i>	<i>Minimum</i>	<i>Maximum</i>
% Processor Time	13.821	0.000	73.698
Available MBytes	22516.829	21089.000	30455.000
Free System Page Table Entries	16728015.280	16728013.000	16728053.000
Transition Pages RePurposed/sec	94.543	0.000	6883.444

Pool Nonpaged Bytes	182393415.627	174399488.000	185393152.000
Pool Paged Bytes	117261667.482	115273728.000	118288384.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

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4/10/2009 3:43:52 AM -- Jetstress testing begins ...
4/10/2009 3:43:52 AM -- Prepare testing begins ...
4/10/2009 3:44:28 AM -- Attaching databases ...
4/10/2009 3:44:28 AM -- Prepare testing ends.
4/10/2009 3:44:28 AM -- Dispatching transactions begins ...
4/10/2009 3:44:28 AM -- Database cache settings: (minimum: 1.1 GB, maximum:
9.0 GB)
4/10/2009 3:44:28 AM -- Database flush thresholds: (start: 92.2 MB, stop:
184.3 MB)
4/10/2009 3:45:06 AM -- Database read latency thresholds: (average: 0.02
seconds/read, maximum: 0.05 seconds/read).
4/10/2009 3:45:06 AM -- Log write latency thresholds: (average: 0.01
seconds/write, maximum: 0.05 seconds/write).
4/10/2009 3:45:09 AM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%,
Replaces 5%, Reads 25%, Lazy Commits 55%.
4/10/2009 3:45:09 AM -- Performance logging begins (interval: 15000 ms).
4/10/2009 3:45:09 AM -- Generating log files ...
4/10/2009 8:24:46 AM -- C:\alogluns\log1 (101.8% generated), C:\alogluns\log2
(101.8% generated), C:\alogluns\log3 (101.6% generated), C:\alogluns\log4
(102.8% generated), C:\alogluns\log5 (101.4% generated), C:\alogluns\log6
(100.2% generated), C:\alogluns\log7 (102.8% generated), C:\alogluns\log8
(101.2% generated), C:\alogluns\log9 (102.8% generated), C:\alogluns\log10
(102.2% generated), C:\alogluns\log11 (103.0% generated), C:\alogluns\log12
(102.0% generated), C:\alogluns\log13 (101.6% generated), C:\alogluns\log14
(101.8% generated), C:\alogluns\log15 (101.6% generated), C:\alogluns\log16
(100.4% generated), C:\alogluns\log17 (101.2% generated), C:\alogluns\log18
(101.6% generated), C:\alogluns\log19 (102.4% generated), C:\alogluns\log20
(103.8% generated), C:\alogluns\log21 (102.4% generated), C:\alogluns\log22
(103.4% generated), C:\alogluns\log23 (102.2% generated), C:\alogluns\log24
(103.2% generated), C:\alogluns\log25 (103.6% generated), C:\alogluns\log26
(102.0% generated), C:\alogluns\log27 (103.6% generated), C:\alogluns\log28
(100.8% generated), C:\alogluns\log29 (103.8% generated), C:\alogluns\log30
(101.2% generated), C:\alogluns\log31 (103.4% generated), C:\alogluns\log32
(102.0% generated), C:\alogluns\log33 (101.8% generated), C:\alogluns\log34
(102.0% generated), C:\alogluns\log35 (101.2% generated), and
C:\alogluns\log36 (101.2% generated)
4/10/2009 8:24:47 AM -- Performance logging ends.
4/10/2009 8:24:47 AM -- JetInterop batch transaction stats: 12930, 12942,
12997, 12975, 12943, 12865, 13013, 12975, 13052, 13133, 13057, 12970, 12918,
12968, 12925, 12989, 12921, 12949, 13075, 13110, 12958, 12950, 13100, 12968,
13076, 13030, 13092, 12807, 13110, 12870, 13045, 13014, 12976, 12951, 12936,
and 12883.
4/10/2009 8:24:48 AM -- Dispatching transactions ends.
4/10/2009 8:24:48 AM -- Shutting down databases ...
4/10/2009 8:24:58 AM -- Instance2168.1 (complete), Instance2168.2 (complete),
Instance2168.3 (complete), Instance2168.4 (complete), Instance2168.5
(complete), Instance2168.6 (complete), Instance2168.7 (complete),
Instance2168.8 (complete), Instance2168.9 (complete), Instance2168.10
(complete), Instance2168.11 (complete), Instance2168.12 (complete),
Instance2168.13 (complete), Instance2168.14 (complete), Instance2168.15
(complete), Instance2168.16 (complete), Instance2168.17 (complete),
Instance2168.18 (complete), Instance2168.19 (complete), Instance2168.20
(complete), Instance2168.21 (complete), Instance2168.22 (complete),
Instance2168.23 (complete), Instance2168.24 (complete), Instance2168.25
(complete), Instance2168.26 (complete), Instance2168.27 (complete),
Instance2168.28 (complete), Instance2168.29 (complete), Instance2168.30
(complete), Instance2168.31 (complete), Instance2168.32 (complete),
Instance2168.33 (complete), Instance2168.34 (complete), Instance2168.35

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(complete), and Instance2168.36 (complete)
4/10/2009 8:24:58 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft Recovery\Performance_2009_4_10_3_45_6.blg has 1115 samples.
4/10/2009 8:24:58 AM -- Creating test report ...
4/10/2009 8:25:50 AM -- Volume C:\asglns\sg1 has 0.0106 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- Volume C:\asglns\sg2 has 0.0096 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- Volume C:\asglns\sg3 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- Volume C:\asglns\sg4 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- Volume C:\asglns\sg5 has 0.0101 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg6 has 0.0107 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg7 has 0.0103 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg8 has 0.0097 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg9 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg10 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg11 has 0.0098 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg12 has 0.0110 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg13 has 0.0102 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg14 has 0.0097 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg15 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg16 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg17 has 0.0100 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg18 has 0.0108 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg19 has 0.0104 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg20 has 0.0096 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg21 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg22 has 0.0094 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg23 has 0.0101 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg24 has 0.0108 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg25 has 0.0103 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg26 has 0.0096 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg27 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- Volume C:\asglns\sg28 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:52 AM -- Volume C:\asglns\sg29 has 0.0097 for Avg. Disk sec/Read.
4/10/2009 8:25:52 AM -- Volume C:\asglns\sg30 has 0.0108 for Avg. Disk sec/Read.
4/10/2009 8:25:52 AM -- Volume C:\asglns\sg31 has 0.0105 for Avg. Disk sec/Read.
4/10/2009 8:25:52 AM -- Volume C:\asglns\sg32 has 0.0096 for Avg. Disk

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sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg33 has 0.0095 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg34 has 0.0094 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg35 has 0.0099 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg36 has 0.0110 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log1 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log1 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log2 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log2 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log3 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log3 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log4 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log4 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log5 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log5 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log6 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log6 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log7 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log7 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log8 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log8 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log9 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log9 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log10 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log10 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log11 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log11 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log12 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log12 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log13 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log13 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log14 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log14 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log15 has 0.0003 for Avg. Disk
sec/write.

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sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log32 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log33 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log33 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log34 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log34 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log35 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log35 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log36 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log36 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
4/10/2009 8:25:53 AM -- Test has 0 Database Page Fault Stalls/sec samples
higher than 0.
4/10/2009 8:25:53 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft
Recovery\Performance_2009_4_10_3_45_6.xml has 1114 samples queried.
4/10/2009 8:25:55 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft
Recovery\Performance_2009_4_10_3_45_6.html is saved.
4/12/2009 8:21:12 PM -- Performance logging begins (interval: 4000 ms).
4/12/2009 8:21:12 PM -- Recovering databases ...
4/12/2009 8:49:49 PM -- Performance logging ends.
4/12/2009 8:49:49 PM -- Instance2168.1 (1701.859375), Instance2168.2
(1666.109375), Instance2168.3 (1641.109375), Instance2168.4 (1675.359375),
Instance2168.5 (1688.859375), Instance2168.6 (1680.359375), Instance2168.7
(1713.171875), Instance2168.8 (1675.609375), Instance2168.9 (1704.359375),
Instance2168.10 (1654.609375), Instance2168.11 (1711.421875), Instance2168.12
(1710.046875), Instance2168.13 (1704.359375), Instance2168.14 (1711.671875),
Instance2168.15 (1685.109375), Instance2168.16 (1617.359375), Instance2168.17
(1691.609375), Instance2168.18 (1707.671875), Instance2168.19 (1712.171875),
Instance2168.20 (1704.359375), Instance2168.21 (1684.359375), Instance2168.22
(1671.359375), Instance2168.23 (1707.171875), Instance2168.24 (1715.421875),
Instance2168.25 (1714.171875), Instance2168.26 (1688.859375), Instance2168.27
(1712.421875), Instance2168.28 (1671.359375), Instance2168.29 (1708.921875),
Instance2168.30 (1711.921875), Instance2168.31 (1714.171875), Instance2168.32
(1708.421875), Instance2168.33 (1707.671875), Instance2168.34 (1698.109375),
Instance2168.35 (1710.296875), and Instance2168.36 (1711.921875)
4/12/2009 8:49:50 PM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft
Recovery\SoftRecovery_2009_4_12_20_20_46.blg has 386 samples.
4/12/2009 8:49:50 PM -- Creating test report ...

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Soft Recovery Test Performance Result: SUN211

Test Summary

Overall Test Result	Fail
Machine Name	SUN211
Test Description	
Test Start Time	4/10/2009 3:43:52 AM
Test End Time	4/10/2009 8:24:58 AM
Jetstress Version	08.02.0060.000
Ese Version	08.01.0240.005

Operating System

Microsoft Windows Server 2003 R2 Service Pack 2 (5.2.3790.131072)

Performance LogC:\ESRP Testing\AMS2100 Results_250MB_Average\Soft Recovery\Performance_2009_4_10_3_45_6.blg

Test Issues

Fail C:\asgluns\sg12 has 7 maximum database read latency errors.

Fail C:\asgluns\sg36 has 7 maximum database read latency errors.

Database Sizing and Throughput

Achieved I/O per Second 1684.137

Capacity Percentage 100%

Throughput Percentage 100%

Initial database size 2224739123200

Final database size 2235663187968

Database files (count) 36

Jetstress System Parameters

Thread count	2 (per-storage group)
Log buffers	9000
Minimum database cache	1152.0 MB
Maximum database cache	9216.0 MB
Insert operations	40%
Delete operations	30%
Replace operations	5%
Read operations	25%
Lazy commits	55%

Disk Subsystem Performance

Logical Disk	Avg. Disk sec/Read	Avg. Disk sec/Write	Disk Reads/sec	Disk Writes/sec	Avg. Disk Bytes/Write
Database (C:\asgluns\sg1)	0.011	0.001	25.873	20.978	(n/a)
Database (C:\asgluns\sg2)	0.010	0.001	25.625	20.722	(n/a)
Database (C:\asgluns\sg3)	0.010	0.001	25.644	20.777	(n/a)
Database (C:\asgluns\sg4)	0.009	0.001	25.895	21.138	(n/a)
Database (C:\asgluns\sg5)	0.010	0.001	25.842	20.742	(n/a)
Database (C:\asgluns\sg6)	0.011	0.001	25.564	20.489	(n/a)
Database (C:\asgluns\sg7)	0.010	0.001	25.901	20.922	(n/a)
Database (C:\asgluns\sg8)	0.010	0.001	25.817	20.647	(n/a)
Database (C:\asgluns\sg9)	0.009	0.001	26.062	21.110	(n/a)
Database (C:\asgluns\sg10)	0.009	0.001	26.016	20.924	(n/a)
Database (C:\asgluns\sg11)	0.010	0.001	25.854	20.945	(n/a)
Database (C:\asgluns\sg12)	0.011	0.001	26.079	20.950	(n/a)
Database (C:\asgluns\sg13)	0.010	0.001	25.865	20.848	(n/a)
Database (C:\asgluns\sg14)	0.010	0.001	25.965	20.973	(n/a)
Database (C:\asgluns\sg15)	0.009	0.001	25.832	20.802	(n/a)

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Database (C:\asgluns\sg16)	0.009	0.001	25.856	20.638	(n/a)
Database (C:\asgluns\sg17)	0.010	0.001	25.856	20.786	(n/a)
Database (C:\asgluns\sg18)	0.011	0.001	26.055	21.056	(n/a)
Database (C:\asgluns\sg19)	0.010	0.001	25.993	20.978	(n/a)
Database (C:\asgluns\sg20)	0.010	0.001	25.871	20.888	(n/a)
Database (C:\asgluns\sg21)	0.010	0.001	25.800	20.886	(n/a)
Database (C:\asgluns\sg22)	0.009	0.001	25.810	20.959	(n/a)
Database (C:\asgluns\sg23)	0.010	0.001	26.227	21.096	(n/a)
Database (C:\asgluns\sg24)	0.011	0.001	26.086	21.165	(n/a)
Database (C:\asgluns\sg25)	0.010	0.001	26.061	21.249	(n/a)
Database (C:\asgluns\sg26)	0.010	0.001	25.824	20.785	(n/a)
Database (C:\asgluns\sg27)	0.009	0.001	26.112	21.341	(n/a)
Database (C:\asgluns\sg28)	0.009	0.001	25.584	20.554	(n/a)
Database (C:\asgluns\sg29)	0.010	0.001	25.950	21.185	(n/a)
Database (C:\asgluns\sg30)	0.011	0.001	25.953	20.849	(n/a)
Database (C:\asgluns\sg31)	0.010	0.001	25.998	21.068	(n/a)
Database (C:\asgluns\sg32)	0.010	0.001	25.799	20.857	(n/a)
Database (C:\asgluns\sg33)	0.009	0.001	26.056	20.968	(n/a)
Database (C:\asgluns\sg34)	0.009	0.001	25.728	20.785	(n/a)
Database (C:\asgluns\sg35)	0.010	0.001	25.662	20.678	(n/a)
Database (C:\asgluns\sg36)	0.011	0.001	25.698	20.587	(n/a)
Log (C:\alogluns\log1)	0.000	0.000	0.000	16.802	4192.211
Log (C:\alogluns\log2)	0.000	0.000	0.000	16.603	4233.076

<i>Logical Disk</i>	<i>Avg. Disk sec/Read</i>	<i>Avg. Disk sec/Write</i>	<i>Disk Reads/sec</i>	<i>Disk Writes/sec</i>	<i>Avg. Disk Bytes/Write</i>
Log (C:\alogluns\log3)	0.000	0.000	0.000	16.615	4239.554
Log (C:\alogluns\log4)	0.000	0.000	0.000	16.882	4221.555
Log (C:\alogluns\log5)	0.000	0.000	0.000	16.630	4199.337
Log (C:\alogluns\log6)	0.000	0.000	0.000	16.425	4212.755
Log (C:\alogluns\log7)	0.000	0.000	0.000	16.726	4229.131
Log (C:\alogluns\log8)	0.000	0.000	0.000	16.550	4196.673
Log (C:\alogluns\log9)	0.000	0.000	0.000	16.765	4249.242
Log (C:\alogluns\log10)	0.000	0.000	0.000	16.671	4241.446
Log (C:\alogluns\log11)	0.000	0.000	0.000	16.817	4221.610
Log (C:\alogluns\log12)	0.000	0.000	0.000	16.708	4157.939
Log (C:\alogluns\log13)	0.000	0.000	0.000	16.609	4219.869
Log (C:\alogluns\log14)	0.000	0.000	0.000	16.656	4157.740
Log (C:\alogluns\log15)	0.000	0.000	0.000	16.551	4245.013
Log (C:\alogluns\log16)	0.000	0.000	0.000	16.466	4168.351
Log (C:\alogluns\log17)	0.000	0.000	0.000	16.561	4191.786
Log (C:\alogluns\log18)	0.000	0.000	0.000	16.719	4186.367
Log (C:\alogluns\log19)	0.000	0.000	0.000	16.817	4189.848
Log (C:\alogluns\log20)	0.000	0.000	0.000	16.832	4243.459
Log (C:\alogluns\log21)	0.000	0.000	0.000	16.738	4259.809
Log (C:\alogluns\log22)	0.000	0.000	0.000	16.809	4254.654
Log (C:\alogluns\log23)	0.000	0.000	0.000	16.738	4211.290
Log (C:\alogluns\log24)	0.000	0.000	0.000	16.914	4189.537
Log (C:\alogluns\log25)	0.000	0.000	0.000	16.982	4234.618
Log (C:\alogluns\log26)	0.000	0.000	0.000	16.666	4199.249
Log (C:\alogluns\log27)	0.000	0.000	0.000	16.925	4214.200
Log (C:\alogluns\log28)	0.000	0.000	0.000	16.428	4218.338
Log (C:\alogluns\log29)	0.000	0.000	0.000	16.862	4250.393
Log (C:\alogluns\log30)	0.000	0.000	0.000	16.602	4164.394
Log (C:\alogluns\log31)	0.000	0.000	0.000	16.868	4239.393
Log (C:\alogluns\log32)	0.000	0.000	0.000	16.695	4167.623
Log (C:\alogluns\log33)	0.000	0.000	0.000	16.650	4187.584
Log (C:\alogluns\log34)	0.000	0.000	0.000	16.672	4212.092
Log (C:\alogluns\log35)	0.000	0.000	0.000	16.577	4162.869
Log (C:\alogluns\log36)	0.000	0.000	0.000	16.664	4199.635

Host System Performance

Counter	Average	Minimum	Maximum
% Processor Time	2.550	1.117	4.366
Available MBytes	21836.650	21120.000	30481.000
Free System Page Table Entries	16728025.000	16728025.000	16728025.000
Transition Pages RePurposed/sec	54.076	0.000	997.815
Pool Nonpaged Bytes	174546190.924	174125056.000	175157248.000
Pool Paged Bytes	117402766.350	116535296.000	119558144.000
Database Page Fault Stalls/sec	0.000	0.000	0.000

Test Log

```
4/10/2009 3:43:52 AM -- Jetstress testing begins ...
4/10/2009 3:43:52 AM -- Prepare testing begins ...
4/10/2009 3:44:28 AM -- Attaching databases ...
4/10/2009 3:44:28 AM -- Prepare testing ends.
4/10/2009 3:44:28 AM -- Dispatching transactions begins ...
4/10/2009 3:44:28 AM -- Database cache settings: (minimum: 1.1 GB, maximum:
9.0 GB)
4/10/2009 3:44:28 AM -- Database flush thresholds: (start: 92.2 MB, stop:
184.3 MB)
4/10/2009 3:45:06 AM -- Database read latency thresholds: (average: 0.02
seconds/read, maximum: 0.05 seconds/read).
4/10/2009 3:45:06 AM -- Log write latency thresholds: (average: 0.01
seconds/write, maximum: 0.05 seconds/write).
4/10/2009 3:45:09 AM -- Operation mix: Sessions 2, Inserts 40%, Deletes 30%,
Replaces 5%, Reads 25%, Lazy Commits 55%.
4/10/2009 3:45:09 AM -- Performance logging begins (interval: 15000 ms).
4/10/2009 3:45:09 AM -- Generating log files ...
4/10/2009 8:24:46 AM -- C:\alogluns\log1 (101.8% generated), C:\alogluns\log2
(101.8% generated), C:\alogluns\log3 (101.6% generated), C:\alogluns\log4
(102.8% generated), C:\alogluns\log5 (101.4% generated), C:\alogluns\log6
(100.2% generated), C:\alogluns\log7 (102.8% generated), C:\alogluns\log8
(101.2% generated), C:\alogluns\log9 (102.8% generated), C:\alogluns\log10
(102.2% generated), C:\alogluns\log11 (103.0% generated), C:\alogluns\log12
(102.0% generated), C:\alogluns\log13 (101.6% generated), C:\alogluns\log14
(101.8% generated), C:\alogluns\log15 (101.6% generated), C:\alogluns\log16
(100.4% generated), C:\alogluns\log17 (101.2% generated), C:\alogluns\log18
(101.6% generated), C:\alogluns\log19 (102.4% generated), C:\alogluns\log20
(103.8% generated), C:\alogluns\log21 (102.4% generated), C:\alogluns\log22
(103.4% generated), C:\alogluns\log23 (102.2% generated), C:\alogluns\log24
(103.2% generated), C:\alogluns\log25 (103.6% generated), C:\alogluns\log26
(102.0% generated), C:\alogluns\log27 (103.6% generated), C:\alogluns\log28
(100.8% generated), C:\alogluns\log29 (103.8% generated), C:\alogluns\log30
(101.2% generated), C:\alogluns\log31 (103.4% generated), C:\alogluns\log32
(102.0% generated), C:\alogluns\log33 (101.8% generated), C:\alogluns\log34
(102.0% generated), C:\alogluns\log35 (101.2% generated), and
C:\alogluns\log36 (101.2% generated)
4/10/2009 8:24:47 AM -- Performance logging ends.
4/10/2009 8:24:47 AM -- JetInterop batch transaction stats: 12930, 12942,
12997, 12975, 12943, 12865, 13013, 12975, 13052, 13133, 13057, 12970, 12918,
12968, 12925, 12989, 12921, 12949, 13075, 13110, 12958, 12950, 13100, 12968,
13076, 13030, 13092, 12807, 13110, 12870, 13045, 13014, 12976, 12951, 12936,
and 12883.
4/10/2009 8:24:48 AM -- Dispatching transactions ends.
4/10/2009 8:24:48 AM -- Shutting down databases ...
4/10/2009 8:24:58 AM -- Instance2168.1 (complete), Instance2168.2 (complete),
Instance2168.3 (complete), Instance2168.4 (complete), Instance2168.5
```

(complete), Instance2168.6 (complete), Instance2168.7 (complete), Instance2168.8 (complete), Instance2168.9 (complete), Instance2168.10 (complete), Instance2168.11 (complete), Instance2168.12 (complete), Instance2168.13 (complete), Instance2168.14 (complete), Instance2168.15 (complete), Instance2168.16 (complete), Instance2168.17 (complete), Instance2168.18 (complete), Instance2168.19 (complete), Instance2168.20 (complete), Instance2168.21 (complete), Instance2168.22 (complete), Instance2168.23 (complete), Instance2168.24 (complete), Instance2168.25 (complete), Instance2168.26 (complete), Instance2168.27 (complete), Instance2168.28 (complete), Instance2168.29 (complete), Instance2168.30 (complete), Instance2168.31 (complete), Instance2168.32 (complete), Instance2168.33 (complete), Instance2168.34 (complete), Instance2168.35 (complete), and Instance2168.36 (complete)
4/10/2009 8:24:58 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft Recovery\Performance_2009_4_10_3_45_6.blg has 1115 samples.
4/10/2009 8:24:58 AM -- Creating test report ...
4/10/2009 8:25:50 AM -- volume C:\asg\luns\sg1 has 0.0106 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- volume C:\asg\luns\sg2 has 0.0096 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- volume C:\asg\luns\sg3 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- volume C:\asg\luns\sg4 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:50 AM -- volume C:\asg\luns\sg5 has 0.0101 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg6 has 0.0107 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg7 has 0.0103 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg8 has 0.0097 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg9 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg10 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg11 has 0.0098 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg12 has 0.0110 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg13 has 0.0102 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg14 has 0.0097 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg15 has 0.0093 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg16 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg17 has 0.0100 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg18 has 0.0108 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg19 has 0.0104 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg20 has 0.0096 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg21 has 0.0095 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg22 has 0.0094 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg23 has 0.0101 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg24 has 0.0108 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg25 has 0.0103 for Avg. Disk sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asg\luns\sg26 has 0.0096 for Avg. Disk

sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asgluns\sg27 has 0.0095 for Avg. Disk
sec/Read.
4/10/2009 8:25:51 AM -- volume C:\asgluns\sg28 has 0.0095 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg29 has 0.0097 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg30 has 0.0108 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg31 has 0.0105 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg32 has 0.0096 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg33 has 0.0095 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg34 has 0.0094 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg35 has 0.0099 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\asgluns\sg36 has 0.0110 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log1 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log1 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log2 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log2 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log3 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log3 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log4 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log4 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log5 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log5 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log6 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log6 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log7 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log7 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log8 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log8 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log9 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log9 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log10 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log10 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log11 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log11 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log12 has 0.0002 for Avg. Disk
sec/write.

sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log29 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log30 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log30 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log31 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log31 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log32 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:52 AM -- volume C:\alogluns\log32 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log33 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log33 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log34 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log34 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log35 has 0.0003 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log35 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log36 has 0.0002 for Avg. Disk
sec/write.
4/10/2009 8:25:53 AM -- volume C:\alogluns\log36 has 0.0000 for Avg. Disk
sec/Read.
4/10/2009 8:25:53 AM -- Test has 0 Maximum Database Page Fault Stalls/sec.
4/10/2009 8:25:53 AM -- Test has 0 Database Page Fault Stalls/sec samples
higher than 0.
4/10/2009 8:25:53 AM -- C:\ESRP Testing\AMS2100 Results_250MB_Average\Soft
Recovery\Performance_2009_4_10_3_45_6.xml has 1114 samples queried.



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ESRP-041-00 April 2009