

NotesBench Disclosure Report
for
IBM @server xSeries 235
using
Lotus Domino Server 5.09a
and
Windows 2000 Server

Results Submitted July 30, 2002

Results Certified August 12, 2002



IBM Corporation

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Edition Notice

Executive Summary

The IBM® @server xSeries 235 server demonstrated leadership performance running Lotus® Domino® Server Release 5.09a on Microsoft® Windows® 2000 Server. The results detailed in this report were obtained using the NotesBench R5Mail-Only workload.

Test Script	Maximum Users	NotesMark (tpm)	Ave. Response Time (sec)	\$/User	\$/NotesMark
R5Mail-Only	15,500	20,843	0.132	\$3.58	\$2.66

The xSeries 235 server was configured with two 2.4GHz¹ Intel® Xeon™ Processor DP, 4GB PC2100 memory, and 59 hard disk drives. Two Domino partitions, which were part of the same domain, shared a directory containing more than 32,000 person documents. For complete configuration details, see Appendix A: Overall Test Setup and Software Versions.

The server under test, configured with two Domino partitions, supported an R5Mail-Only workload of 15,500 active mail users (see price/performance results² above).

IBM's xSeries Server Performance Laboratory in Research Triangle Park, NC, conducted the benchmark in July, and KMDS Technical Associates, Inc., audited the results in August 2002.

NotesBench provides an objective method for evaluating the performance of different platforms running Lotus Domino Server. NotesBench generates a transactions-per-minute (tpm) throughput metric, called a NotesMark, for each test, along with a value for the maximum capacity (number of users) supported, and the average response time.

Benchmarking Objectives

The benchmark objective was to provide customers with information on how to utilize the capability of the xSeries 235 system as a Domino Server 5.09a mail server configured with the ServeRAID-4Mx Ultra160 SCSI Adapter for RAID-1 data redundancy.

¹ GHz only measures microprocessor internal clock speed, not application performance. Many factors affect application performance.

² The price/performance results are based on IBM's published list prices.

Test Methodologies

Test Setup and Hardware/Software Configuration

The xSeries 235 system under test (SUT) was configured with two 2.4GHz Xeon Processor DP (512KB of ECC full-speed L2 write-back cache with Intel Hyper_Threading Technology), 4GB of PC2100 memory, and fifty-nine 18.2GB 15K rpm hard disk drives. Four RAID-1 arrays, each composed of 14 hard drives, which contained the mail database files, were connected to a channel on a ServeRAID-4Mx Ultra160 SCSI Adapter. Three hard drives, one of which was contained in a RAID-0 array that was used as the boot disk and two of which were contained in a RAID-1 array that was used as Domino executable codes drive, were connected to a channel on the integrated SCSI adapter equipped with an optional ServeRAID-5i Ultra320 SCSI controller. A more detailed description of the configuration of the RAID-1 arrays is provided in Appendix A.

The network consisted of two LAN segments; each segment consisted of one 16-port IBM Type 8371-A16 switch. The LAN segments were configured as follow:

- Segment 1 was connected to partition 1 on the SUT to child drivers 1, 3, 5, 7 and parent 1.
- Segment 2 was connected to partition 2 on the SUT to child drivers 2, 4, 6, 8 and parent 2.

The xSeries 235 system under test ran Microsoft Windows 2000 Server and Domino Server 5.09a.

The RAID controller configuration value for Stripe Unit Size was set at 16KB. Write-back cache was enabled for all RAID-1 arrays.

The following NOTES.INI parameters were modified as recommended in the NotesBench operator's manual.

R5Mail-Only Workload
Server_Max_Concurrent_Trans=1000
NSF_DBCache_MaxEntries=10000
NSF_Buffer_Pool_Size_MB=330
MailLogToEventsOnly=1
Log_MailRouting=10
Log_Sessions=0
Server_Pool_Tasks=100
Max_Users=10000
DBMaxEntries=10000

In the Server-Configuration document for both partitions, three mail.boxes were used on each partition for mail routing.

The following parameters were added to suppress database activity logging after long runs and to capture server console output:

```
No_Force_Activity_Logging=1
Server_Show_Performance=1
TcpIp_TcpIpAddress=0,192.1.1.x:1352
Debug_Outfile=j:\tmp\SUTy\INFO.TXT
```

In the last two lines above, x is the net address and y is the partition number for the corresponding partition. All Notes server tasks were disabled except Router.

All Domino mail database files were located on the D:, E:, F:, and G: RAID-1 arrays. The Domino executable codes and data link files were located on the J: RAID-1 array. Partition 1 used the D: and E: arrays for the mail database file; partition 2 used the F: and G: arrays.

Test Procedures

Several trial runs were conducted starting with a single Domino server to attempt to exhaust at least one of the system resources: processor, memory or disk subsystem. When average user response time reached an unacceptable level before any one of these resources had been fully utilized, an additional resource was installed. System resource utilization was monitored using Windows 2000 Performance Monitor (PERFMON), which enabled the system configuration to be optimized while balancing system resources.

The 15,500 users were distributed over 8 clients. Each client added 1,750 to 2,000 users to the system under test. The test ran for 11 hours, including ramp-up. Child 1 through child 6 simulated 2,000 users each; child 7 and child 8 each simulated 1,750 users. The actual ramp-up period from startup of child 1 to the point when all 15,500 users were shown on the server console was approximately 4 hours. The test ran for more than 6 hours after ramp-up. During the test runs, the tools used to determine steady state included the child driver RES files, Notesizer command outputs, and Domino Server statistics output to the server console on a minute-by-minute basis.

To confirm steady state, we verified the number of users at the server and its logs. We confirmed steady state when the number of users on the SUT Domino Server console reached the intended number of users. We also used the Show Stat Mail command on the server to verify that at least 90 percent of the mail generated during the test period was delivered to the local mail databases during the test period.

To ensure that the test results were reproducible, all tests were repeated, and the results were compared and were found to be consistent.

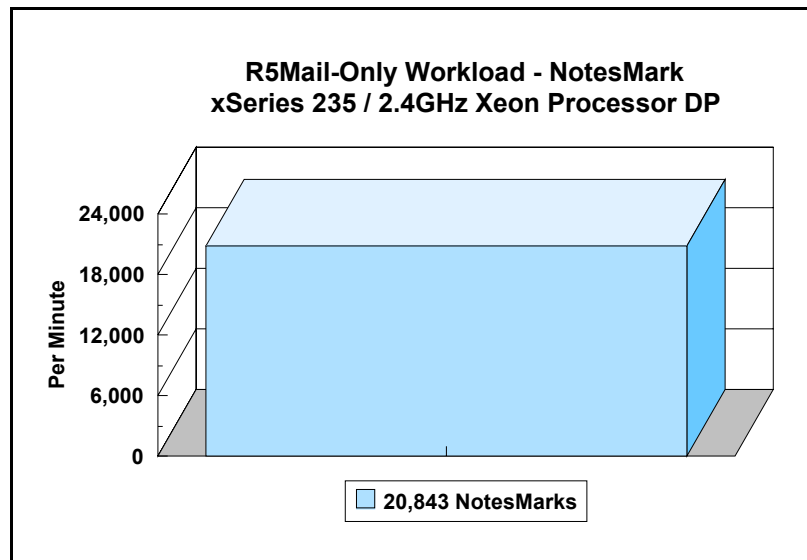
Other NotesBench Tests

IBM intends to continue conducting NotesBench measurements to further optimize and exploit the performance capability of the xSeries product line running Domino Server 5.09a.

Data

xSeries 235 NotesMark Value for R5Mail-Only Test

The xSeries 235 server demonstrated that it can support 15,500 concurrent, active users with this workload. The NotesMark throughput value was 20,843. Average response time was 0.132 seconds. The test ran error-free for a period of 11 hours.



The R5Mail workload executes Notes transactions that model a server for mail users at sites that rely only on mail for communication. The resulting capacity metric for a mail-only server is the maximum number of users that can be supported before the average user response time becomes unacceptable.

The Domino R5Mail-Only test script models an active user who is reading and sending mail. The script contains an average of 15 minutes of waiting; thus, the average user would execute this script a maximum of four times each hour. For each iteration of the test script, there are 5 documents read, 2 documents updated, 2 documents deleted, 2 documents added, 1 view scrolling operation, 1 database opened and closed, 1 view opened and closed, looking up of recipients and sending an invitation every 30 minutes, as well as some miscellaneous operations. In sending messages, each user creates and sends a mail message to NumMessageRecipients no more frequently than every 90 minutes. About every 90 minutes, each user creates a meeting invitation and responds to an invitation.

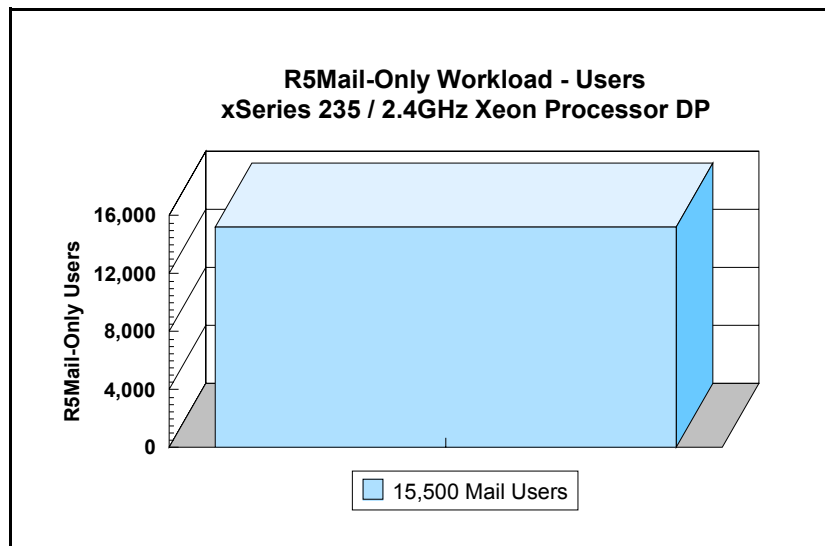
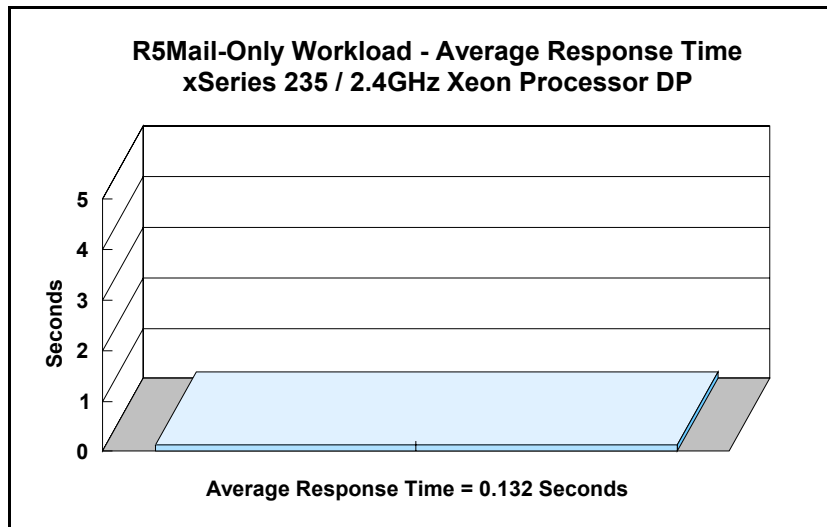
NotesNum Output for R5Mail-Only Test

Min Start Time = 07/12/2002 11:05:13 AM Max Stop Time = 07/12/2002 10:02:43 PM

Total Test Errors = 0

Total Test Time = 39420 sec

Test Run: Users = 15500 NotesMark = 20843 Response Time = 132 msec (07/12/2002 03:10:00 AM to 07/12/2002 09:53:00 PM)



Analysis

When configured as described in this report, the xSeries 235 server demonstrated that it can manage the intense resource usage during ramp-up to 15,500 concurrent R5Mail users with no errors at the clients. During the steady-state period on one of the successful 15,500-user runs, the average CPU utilization was 80.39 percent. The average available memory was 890.851MB.

The transaction logging option was not enabled for this audit run. When this option is enabled, we recommend placing the transaction logging directory on a dedicated disk that is attached to a less-busy adapter on a less-busy PCI bus to improve response time.

Conclusions

The test results demonstrate that the xSeries 235 configured as described in this report can support up to 15,500 concurrent, active R5Mail users with a response time well below that permitted by the test criteria.

These results are based on running the xSeries 235 as a dedicated Domino server. The addition of other application workloads will affect the number of users supported as well as the response time. Achieving optimum performance in a customer environment is highly dependent upon selecting adequate processor power, memory and disk storage as well as balancing the configuration of that hardware and appropriately tuning the operating system and Domino software.

Statement by Auditor

The original “Lotus NotesBench Test Results Report Certification Letter” was signed by Daryl K. Thompson, NotesBench Auditor for KMDS Technical Associates, Inc., and is on file at IBM.

Appendix A: Overall Test Setup and Software Versions

Number of Client Systems

For the R5Mail-Only test, 10 driver systems were used. Eight systems were configured as child drivers 1 through 8; two systems were used as parents to control the run.

The disk configuration used for the child driver systems follows:

- Child drivers 1-8:
 - C: Partition (2GB - NTFS) - Windows 2000
 - D: Partition (6.5GB - NTFS) - Notes 5.09a code and data

Number of Server Platforms

One server platform, the xSeries 235 with two 2.4GHz Xeon Processor DP and 4GB of memory, was benchmarked.

The disk configuration used for the system under test follows:

- C: Single disk drive (18GB - NTFS) - Windows 2000 Server (Boot Partition)
- D: Partition (118GB - NTFS) - Domino mail files
- E: Partition (118GB - NTFS) - Domino mail files
- F: Partition (118GB - NTFS) - Domino mail files
- G: Partition (118GB - NTFS) - Domino mail files
- J: Partition (18GB - NTFS) - Domino executables and Domino mail data subdirectory

Network

The network consisted of two segments. All child drivers, parents and SUT were connected to one of 16 ports on two IBM TYPE 8371 A-16 switches. One 10/100 Dual-Port Server Adapter was installed in the xSeries 235 system under test. The LAN segments were configured as follow:

- Segment 1 was connected to partition 1 on the SUT to child drivers 1, 3, 5, 7 and parent 1.
- Segment 2 was connected to partition 2 on the SUT to child drivers 2, 4, 6, 8 and parent 2.

Software Versions

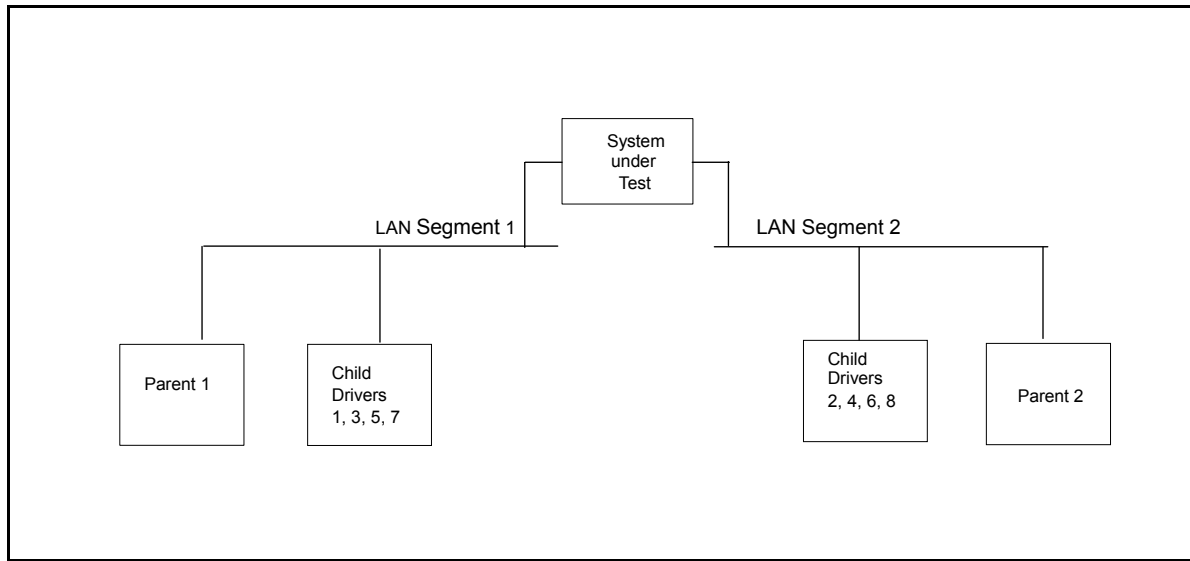
Software versions used on the system under test were as follows:

- Microsoft Windows 2000 Server and Service Pack 2
- Lotus Domino Server Release 5.09a for Windows 2000

Software versions used on the child and parent drivers were as follows:

- Microsoft Windows 2000 Professional for child drivers and Windows 2000 Server for the parent systems
- Lotus Domino Client Release 5.09a for Windows 2000
- NotesBench Version 5.08 - Windows/32, released July 11, 2001

Test Setup Diagram



Details of Configuration

System Under Test	Parent Source Drivers and Child Drivers 1-8
xSeries 235	IBM IntelliStation M Pro
2 x 2.4GHz Xeon Processor DP	1 x 500MHz Pentium III
4GB Memory	256MB Memory
59 x 18.2GB Drives (4 RAID-1 arrays)	1 x 9.1GB Drive
1 x ServeRAID-5i Ultra320 SCSI Adapter 2 x ServeRAID-4Mx Ultra160 SCSI Adapter	
Embedded 10/100/1000Mbps Ethernet Controller Intel Pro /1000 XT Server Adapter	Integrated 10/100 Ethernet Controller
Microsoft Windows 2000 Server	Microsoft Windows 2000 Professional

Appendix B: System Configurations

Server under Test	
System	xSeries 235
Processor	2 x 2.4GHz Xeon Processor DP
Memory	4GB
Cache	512KB ECC Full-Speed L2 Cache per Processor
RAID Controller	2 x ServeRAID-4Mx Ultra160 SCSI Adapter, 1 x ServeRAID-5i Ultra320 SCSI Adapter
Disk Drive	56 x 18.2GB 15K rpm (configured as four RAID-1 arrays) 3 x 18.2GB 15K rpm (configured two as a RAID-1 array, and one as RAID-0 for system boot drive)
Network Interface	Embedded 10/100/1000Mbps Ethernet controller, Intel PRO/1000 XT Server Adapter
I/O	PCI Bus (64 Bit)
Operating System	Microsoft Windows 2000 Server with Service Pack 2
Notes	Lotus Domino Server Release 5.09a for Windows 2000

Parent Source Drivers and Child Drivers 1 - 8	
System	IBM IntelliStation M Pro
Processor	1 x 500MHz Pentium III
Memory	256MB
Disk Drive	1 x 9.1GB
Network Interface	Integrated 10/100 Ethernet Controller
I/O	PCI Bus
Operating System	Microsoft Windows 2000 Professional with Service Pack 2
Notes	Lotus Domino Client Release 5.09a for Windows 2000
NotesBench	NotesBench Version 5.04 - Windows/32, released July 11, 2001

Appendix C: Operating System Parameters

In the system under test, the following registry variables were changed from their default values of 2 to 0:

HKEY_LOCAL_MACHINE/System/CurrentControlSet/Control/PriorityControl/Win32PrioritySeparation:
REG_DWORD:0

HKEY_LOCAL_MACHINE/System/CurrentControlSet/Control/SessionManager/MemoryManager/
LargeSystemCache: REG_DWORD:0

Appendix D: NOTES.INI Settings

NOTES.INI for First Partition Server

[Notes]

```
Directory=j:\notesr5\sut1
KitType=2
SetupDB=Setup.nsf
UserName=administrator
CompanyName=ibm
NotesProgram=j:\notesr5
InstallType=4
CONSOLE_Lotus_Domino_Server=80 300 7 150 9 818 340
WinNTIconPath=j:\notesr5\sut1\W32
Timezone=5
DST=1
$$HasLANPort=1
WWWDSPP_SYNC_BROWSERCACHE=0
WWWDSPP_PREFETCH_OBJECT=0
EnablePlugins=1
Preferences=2147486833
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Region=en-US
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3,0,_IWKSV,,WKS,WK1,,WR1,,WRK,,WK3,,WK4,,4,
VIEWIMP3=Structured Text,0,_ISTR,,LTR,,CGN,,STR,,1,
VIEWIMP4=Tabular Text,0,_ITAB,,PRN,,RPT,,TXT,,TAB,,1,
VIEWEXP1=Lotus 1-2-3,0,_XWKS,,WKS,WK1,,WR1,,WRK,,4,
VIEWEXP3=Structured Text,0,_XSTR,,LTR,,CGN,,STR,,1,
VIEWEXP4=Tabular Text,1,_XTAB,,LTR,,RPT,,CGN,,TAB,,1,
EDITIMP1=ASCII Text,0,_ITEXT,,TXT,,PRN,,C,,H,,RIP,,1,
EDITIMP2=Microsoft RTF,0,_IW4W,_IRTF,,DOC,,RTF,,2,
EDITIMP3=Lotus 1-2-3,0,_IW4W,_IWKSE,,WKS,WK1,,WR1,,WRK,,WK3,,WK4,,123,,4,
EDITIMP4=Lotus PIC,0,_IPIC,,PIC,,8,
EDITIMP5=CGM Image,0,_IFL,,GMF,,CGM,,8,
EDITIMP6=TIF 5.0 Image,0,_ITIFF,,TIF,,18,
EDITIMP7=BMP Image,0,_IBMP,,BMP,,18,
EDITIMP8=Lotus Ami Pro,0,_IW4W,W4W33F/V0,,SAM,,2,
EDITIMP9=HTML File,0,_IHTML,,HTM,,HTML,,1,
EDITIMP17=WordPerfect 5.x,0,_IW4W,W4W07F/V1,,DOC,,WPD,,2,
EDITIMP21=Lotus Word Pro,0,_IW4W,W4W12F/V0,,LWP,,2,
EDITIMP22=PCX Image,0,_IPCX,,PCX,,18,
EDITIMP28=Binary with Text,0,_ISTRNGS,,*,1,
EDITIMP29=WordPerfect 6.0/6.1,0,_IW4W,W4W48F/V0,,WPD,,WPT,,DOC,,2,
EDITIMP30=Microsoft Excel,0,_IW4W,W4W21F/V4C,,XLS,,4,
EDITIMP31=Microsoft Word,0,_IW4W,W4W49F/V0,,DOC,,2,
EDITIMP32=GIF Image,0,_IGIF,,GIF,,18,
EDITIMP33=JPEG Image,0,_IJPEG,,JPG,,18,
EDITEXP1=ASCII Text,2,_XTXT,,TXT,,PRN,,C,,H,,RIP,,1,
EDITEXP2=Microsoft RTF,2,_XRTF,,DOC,,RTF,,4,
EDITEXP3=CGM Image,2,_XCGM,,CGM,,GMF,,8,
EDITEXP4=TIF 5.0 Image,2,_XTIFF,,TIF,,18,
EDITEXP5=Lotus Ami Pro,2,_XW4W,W4W33T/V0,,SAM,,2,
EDITEXP14=WordPerfect 5.1,2,_XW4W,W4W07T/V1,,DOC,,2,
EDITEXP21=WordPerfect 6.0,2,_XW4W,W4W48T/V0,,DOC,,2,
```


EDITEXP22=WordPerfect 6.1,2,_XW4W,W4W48T/V1, .WPD, .WPT, .DOC,2,
EDITEXP23=Microsoft Word 6.0,2,_XW4W,W4W49T/V0, .DOC,2,
DDETimeout=10
NAMEDSTYLE0=03004261736963001010100000A00000000000000
0100A0050A0000006400A0050A00
009404000000000000
NAMEDSTYLE0_FACE=Default Sans Serif
NAMEDSTYLE1=030042756C6C657400
0000008070A00000064008070A000
049404000000000000
NAMEDSTYLE1_FACE=Default Sans Serif
NAMEDSTYLE2=0300486561646C696E6500
00100A0050A0000006400A0050A00
0009404000000000000
NAMEDSTYLE2_FACE=Default Sans Serif
DefaultMailTemplate=mail50.ntf
ServerTasks=Router
;ServerTasks=Router,Replica,Update,Amgr,AdminP,CalConn,Event,Sched,Stats,HTTP,DIIOP,IMAP,POP3
;ServerTasksAt1=Catalog,Design
;ServerTasksAt2=UpdAll,Object Collect mailobj.nsf
;ServerTasksAt3=Object Info -Full
;ServerTasksAt5=Statlog
TCP/IP=TCP, 0, 15, 0
LAN0ip=NETBIOS, 0, 15, 0
LAN3ip=NETBIOS, 3, 15, 0
VINES=VINES, 0, 15, 0
SPX=NWSPX, 0, 15, 0
AppleTalk=ATALK, 0, 15, 0
LAN1=NETBIOS, 1, 15, 0
LAN2=NETBIOS, 2, 15, 0
LAN4=NETBIOS, 4, 15, 0
LAN5=NETBIOS, 5, 15, 0
LAN6=NETBIOS, 6, 15, 0
LAN7=NETBIOS, 7, 15, 0
LAN8=NETBIOS, 8, 15, 0
COM1=XPC,1,15,0,
COM2=XPC,2,15,0,
COM3=XPC,3,15,0,
COM4=XPC,4,15,0,
COM5=XPC,5,15,0,
Ports=TCP/IP
;Ports=TCP/IP,LAN0ip,LAN3ip
DisabledPorts=VINES,SPX,AppleTalk,LAN1,LAN2,LAN4,LAN5,LAN6,LAN7,LAN8,COM1,COM2,COM3,COM4,COM5
LOG_REPLICATION=0
LOG_SESSIONS=0
ExistingServerName=CN=sut/O=ibm
KeyFilename=J:\notesr5\data\User.ID
CertificateExpChecked=J:\notesr5\data\User.ID 07/08/2002
ServerKeyFileName=sut1.id
MailServer=CN=sut1/O=ibm
Domain=ibm
Admin=CN=adminstrator/O=ibm
TemplateSetup=66
Setup=62
ServerSetup=55
DESKWINDOWSIZ=-4 -4 1032 748
MAXIMIZED=1
CleanSetup=1
PhoneLog=2
Log=log.nsf, 1, 0, 7, 40000
TRANSLOG_AutoFixup=1
TRANSLOG_UseAll=0
TRANSLOG_Style=0
TRANSLOG_Performance=2
TRANSLOG_Status=0
MTEnabled=0
ECLSetup=3
SERVERS_FRAME_PERCENT=20

```

MONITOR_SCALE=1
ADMINWINDOWSIZEWIN=20 15 984 715
ADMINMAXIMIZED=0
WinNTIconCommonConfig=Universal
WinNTIconSize=2
WinNTIconPos=2
WinNTIconHidden=1
WinNTIconRect=0 0 0 24
FileDlgDirectory=J:\notesr5\data
AdminSetup=502
AdminLastServer=CN=sut1/O=ibm
;=====
server_show_performance=1
mailuseprocesses=0
tcpip_tcpipaddress=0,192.1.2.222:1352
MailLogToEventsOnly=1
Log_mailRouting=10
DBMaxEntries=10000
Max_users=10000
NSF_DBCache_MaxEntries=10000
Server_Pool_Tasks=100
Server_max_Concurrent_Trans=1000
No_Force_Activity_Logging=1
NSF_Buffer_Pool_Size_MB=330
MailCompactDisabled=1
Update_No_FullText=1
Debug_OutFile=j:\temp\sut1info.txt
;=====

```

NOTES.INI for Second Partition Server

[Notes]

```

Directory=j:\notesr5\sut2
KitType=2
SetupDB=Setup.nsf
UserName=administrator
CompanyName=ibm
NotesProgram=j:\notesr5
InstallType=4
CONSOLE_Lotus_Domino_Server=80 300 7 219 405 887 736
WinNTIconPath=j:\notesr5\sut2\W32
Timezone=5
DST=1
$$HasLANPort=1
WWWDSPP_SYNC_BROWSERCACHE=0
WWWDSPP_PREFETCH_OBJECT=0
EnablePlugins=1
Preferences=2147486833
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Region=en-US
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3,0,_IWKSV,,WKS,.WK1,.WR1,.WRK,.WK3,.WK4,,4,
VIEWIMP3=Structured Text,0,_ISTR,,LTR,.CGN,.STR,,1,
VIEWIMP4=Tabular Text,0,_ITAB,,PRN,.RPT,.TXT,.TAB,,1,
VIEWEXP1=Lotus 1-2-3,0,_XWKS,,WKS,.WK1,.WR1,.WRK,,4,
VIEWEXP3=Structured Text,0,_XSTR,,LTR,.CGN,.STR,,1,
VIEWEXP4=Tabular Text,1,_XTAB,,LTR,.RPT,.CGN,.TAB,,1,
EDITIMP1=ASCII Text,0,_ITEXT,,TXT,.PRN,.C,.H,.RIP,,1,

```


LOG_SESSIONS=0
ExistingServerName=CN=sut/O=ibm
KeyFilename=J:\notes5\data\User.ID
CertificateExpChecked=J:\notes5\data\User.ID 07/08/2002
ServerKeyFileName=sut2.id
MailServer=CN=sut2/O=ibm
Domain=ibm
Admin=CN=administrator/O=ibm
TemplateSetup=66
Setup=62
ServerSetup=55
DESKWINDOWSIZES=-4 -4 1032 748
MAXIMIZED=1
CleanSetup=1
PhoneLog=2
Log=log.nsf, 1, 0, 7, 40000
TRANSLOG_AutoFixup=1
TRANSLOG_UseAll=0
TRANSLOG_Style=0
TRANSLOG_Performance=2
TRANSLOG_Status=0
MTEnabled=0
ECLSetup=3
SERVERS_FRAME_PERCENT=20
MONITOR_SCALE=1
ADMINWINDOWSIZESWIN=20 15 984 715
ADMINMAXIMIZED=0
WinNTIconCommonConfig=Universal
WinNTIconSize=2
WinNTIconPos=2
WinNTIconHidden=1
WinNTIconRect=0 0 0 24
FileDlgDirectory=J:\notes5\data
AdminSetup=502
AdminLastServer=CN=sut2/O=ibm

server_show_performance=1
mailuseprocesses=0
tcpip_tcpipaddress=0,192.1.2.223:1352
MailLogToEventsOnly=1
Log_mailRouting=10
DBMaxEntries=10000
Max_users=10000
NSF_DBCache_MaxEntries=10000
Server_Pool_Tasks=100
Server_max_Concurrent_Trans=1000
No_Force_Activity_Logging=1
NSF_Buffer_Pool_Size_MB=330
MailCompactDisabled=1
Update_No_FullText=1
Debug_OutFile=j:\temp\sut2info.txt

NOTES.INI for Child 1

[Notes]

Directory=d:\notes\data
KitType=1
InstallType=6

NthIteration=6
Tmp=Notestmp
MaxSessions=100
NumAddLocalReplica=1
NumDeleteLocalReplica=1
NumStampLocalReplica=1
NumUpdateLocalReplica=1

```

NumMessageRecipients=3
NumMailNotesPerUser=100
AttachmentSize=500000
LargeMessageSize=32000
NodeName=nchild11
MailTemplate=mail50.ntf
;=====iNotes=====
;MailTemplate=iNotes5.ntf
;NBiNotes=1
;HTTPNABView=$People/M
;WebAuthenticationOff=1
;WebPreferencesOff=1
;HTTPHost=sut.ibm.com
;RecipientDomain=ibm.com
;Domail=ibm.com
;=====
USESERVERNAB=1
ResultsDirectory=\\parent3\c$\results
DEBUG_OUTFILE=\\parent3\c$\results\res1
NumNotesLocalReplica=90
NumSharedNotes=900
NormalMessageSize=10000
ThreadStagger=0.3
;=====imap=====
;NodeName=nchild11
;USESERVERNAB=1
;domain=ibm
;Tmp=Notestmp
;NthIteration=6
;MailTemplate=mail6.ntf
;imap_session_timeout=30
;MaxSessions=100
;NumMailNotesPerUser=100
;NumMessageRecipients=3
;NumNotesLocalReplica=90
;NumSharedNotes=900
;MailRecipientPercentUser=50
;MailRecipientPercentvolume=50
;mailrecipientbeginnumber=1
;mailrecipientendnumber=10000
;r5imap_loop_n=1000
;clienthost=nchild11.ibm.com
;smtphost=sut.ibm.com
;ldaphost=sut.ibm.com
;imaphost=sut.ibm.com
;recipientdomain=ibm.com
;messagelinesize=100
;normalmessagesize=50000
;ScriptIterationLimit=1
;NBTestReset=0
;nopause=0
;enable_break=1
;KillProcess=1
;Imail_No_APC=1
;ResultsDirectory=\\parent1\c$\results
;DEBUG_OUTFILE=\\parent1\c$\results\res11
;ThreadStagger=4
;nabentries=10000
;=====
;=====
WinNTIconPath=d:\notes\data\W32
Timezone=5
DST=1
$$HasLANPort=1
WWWDSync_BROWSERCACHE=0
WWWDSync_PREFETCH_OBJECT=0
EnableJavaApplets=1
EnablePlugins=1

```

Preferences=-2147480463
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Region=en-US
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3,0,_IWKSV,,WKS,WK1,WR1,WRK,WK3,WK4,,4,
VIEWIMP3=Structured Text,0,_ISTR,,LTR,CGN,STR,,1,
VIEWIMP4=Tabular Text,0,_ITAB,,PRN,RPT, TXT,TAB,,1,
VIEWEXP1=Lotus 1-2-3,0,_XWKS,,WKS,WK1,WR1,WRK,,4,
VIEWEXP3=Structured Text,0,_XSTR,,LTR,CGN,STR,,1,
VIEWEXP4=Tabular Text,1,_XTAB,,LTR,RPT,CGN,TAB,,1,
EDITIMP1=ASCII Text,0,_ITEXT,,TXT,PRN,C,H,RIP,,1,
EDITIMP2=Microsoft RTF,0,_IW4W,_IRTF,DOC,RTF,,2,
EDITIMP3=Lotus 1-2-3,0,_IW4W,_IWKSE,WKS,WK1,WR1,WRK,WK3,WK4,,123,,4,
EDITIMP4=Lotus PIC,0,_IPIC,,PIC,,8,
EDITIMP5=CGM Image,0,_IFL,,GMF,CGM,,8,
EDITIMP6=TIFF 5.0 Image,0,_ITIFF,,TIF,,18,
EDITIMP7=BMP Image,0,_IBMP,,BMP,,18,
EDITIMP8=Lotus Ami Pro,0,_IW4W,W4W33F/V0,.SAM,,2,
EDITIMP9=HTML File,0,_IHTML,,HTM,HTML,,1,
EDITIMP17=WordPerfect 5.x,0,_IW4W,W4W07F/V1,DOC,WPD,,2,
EDITIMP21=Lotus Word Pro,0,_IW4W,W4W12F/V0,LWP,,2,
EDITIMP22=PCX Image,0,_IPCX,,PCX,,18,
EDITIMP28=Binary with Text,0,_ISTRNGS,,*,1,
EDITIMP29=WordPerfect 6.0/6.1,0,_IW4W,W4W48F/V0,WPD,WPT,DOC,,2,
EDITIMP30=Microsoft Excel,0,_IW4W,W4W21F/V4C,XLS,,4,
EDITIMP31=Microsoft Word,0,_IW4W,W4W49F/V0,DOC,,2,
EDITIMP32=GIF Image,0,_IGIF,,GIF,,18,
EDITIMP33=JPEG Image,0,_IJPEG,,JPG,,18,
EDITEXP1=ASCII Text,2,_XTXT,,TXT,PRN,C,H,RIP,,1,
EDITEXP2=Microsoft RTF,2,_XRTF,,DOC,RTF,,4,
EDITEXP3=CGM Image,2,_XCGM,,CGM,GMF,,8,
EDITEXP4=TIFF 5.0 Image,2,_XTIFF,,TIF,,18,
EDITEXP5=Lotus Ami Pro,2,_XW4W,W4W33T/V0,.SAM,,2,
EDITEXP14=WordPerfect 5.1,2,_XW4W,W4W07T/V1,DOC,,2,
EDITEXP21=WordPerfect 6.0,2,_XW4W,W4W48T/V0,DOC,,2,
EDITEXP22=WordPerfect 6.1,2,_XW4W,W4W48T/V1,WPD,WPT,DOC,,2,
EDITEXP23=Microsoft Word 6.0,2,_XW4W,W4W49T/V0,DOC,,2,
DDETimeout=10
NAMEDSTYLE0=0300426173696300101010000A00000000000
0100A0050A0000006400A0050A000
009404000000000000
NAMEDSTYLE0_FACE=Default Sans Serif
NAMEDSTYLE1=030042756C6C657400101010000A00000000000
0000008070A000000640008070A00
049404000000000000
NAMEDSTYLE1_FACE=Default Sans Serif
NAMEDSTYLE2=0300486561646C696E650010101010B0C0000000000
00100A0050A0000006400A0050A00
000940400000000000
NAMEDSTYLE2_FACE=Default Sans Serif
DefaultMailTemplate=mail50.ntf
TCPIP=TCP, 0, 15, 0
LAN0=NETBIOS,0,15,0,,12288,
VINES=VINES, 0, 15, 0
SPX=NWSPX, 0, 15, 0
COM1=XPC,1,15,0,,12288,
COM2=XPC,2,15,0,,12288,
COM3=XPC,3,15,0,
COM4=XPC,4,15,0,
COM5=XPC,5,15,0,
Ports=TCPIP

DisabledPorts=LAN0,COM1,COM2,VINES,SPX,COM3,COM4,COM5
KeyFilename=nchild11.id
CertificateExpChecked=nchild11.id 07/08/2002
\$headlineClientId=F5062CA2:35D89173-85256BF0:00667392
MailServer=CN=sut1/O=ibm
MailFile=mail\nchild11.nsf
TemplateSetup=66
Setup=62
Location=Office (Network),9A2,CN=nchild11/O=ibm
\$IEVersionMajor=5
DESKWINDOWSIZE=20 15 984 715
WINDOWSIZEWIN=20 15 984 715
MAXIMIZED=0
WinNTIconCommonConfig=Universal
WinNTIconSize=2
WinNTIconPos=2
WinNTIconHidden=1
WinNTIconRect=0 0 0 24
PhoneLog=2
Log=log.nsf, 1, 0, 7, 40000
ECLSetup=3
NAMES=names.nsf
\$headlineDisableHeadlines=0
EmptyTrash=0
MIMEPromptMultilingual=1
MIMEMultilingualMode=1
EnableActiveXInBrowser=1
EnableJavaScript=1
EnableJavaScriptErrorDialogs=1
EnableLiveConnect=1
ShowAccelerators=1
DisableImageDithering=1
MaxDocToDelete=10000

NOTES.INI for Parent Source Driver

[Notes]

Directory=c:\notes\data
KitType=1
InstallType=2

=====
,
,
,
,
,
; Begin Notesbench variables for parent 1
,
,
; *****
,
NodeName=parent3

Runtime=660
ChildStagger=1,1;18,2;21,3;25,4;30,5;35,6;40,7;45,8
;ChildStagger=1,1;16,2;19,3;22,4;29,5;32,6;37,7;35,8;48,9;16,10

NumClients1=2000
NumClients2=2000
NumClients3=2000
NumClients4=2000
NumClients5=2000
NumClients6=2000
NumClients7=1750
NumClients8=1750
NumClients9=400
NumClients10=400
NumClients11=500
NumClients12=500
NumClients13=500
NumClients14=500
NumClients15=500

```

NumClients16=500
NumClients17=500
NumClients18=500
NumClients19=500
NumClients20=500
ResultsDirectory=c:\results
DEBUG_OUTFILE=c:\results\notesnum_sut.txt
;-----End
;*****
;
;           Multirun Variables
;*****
; ProbeIntervalDelay=wait after end of one run before starting next
; ProbeWaitTime=wait to start Probe (default=15mins)
; ProbeRunTime=#minutes probe will collect stats
;;Probe_Interval=2800,2900,3000
;;ProbeIntervalDelay=30
;;ProbeWaitTime=30
;;ProbeRunTime=180
; ProbeRunTime=2 because we want 240 minutes of runtime after ramp-up
; without overhead of PROBE
; Next line cause command 'show stat' to execute on SUT console
; before start of each multi-run and when ramped up for that run
; Mail statistics required for audit at ramp-up and before ramp-down
;;ProbeTestIncrementCMD=show stat mail
;;ProbeTestIncrementCMD=show stat database
;;NBTestReset=1
;*****
;           Server.Planner Variables
;*****
;;CPDatabase=c:\notesb3\data\Server.Planner.nsf
;;SUTMachineID=Teton600
;-----End
;-----End
WinNTIconPath=c:\notes\data\W32
Timezone=5
DST=1
$$HasLANPort=1
WWWDSPP_SYNC_BROWSERCACHE=0
WWWDSPP_PREFETCH_OBJECT=0
EnableJavaApplets=1
EnablePlugins=1
Preferences=-2147480463
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Region=en-US
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3,0,_IWKSV,,WKS,,WK1,,WR1,,WRK,,WK3,,WK4,,4,
VIEWIMP3=Structured Text,0,_ISTR,,LTR,,CGN,,STR,,1,
VIEWIMP4=Tabular Text,0,_ITAB,,PRN,,RPT,,TXT,,TAB,,1,
VIEWEXP1=Lotus 1-2-3,0,_XWKS,,WKS,,WK1,,WR1,,WRK,,4,
VIEWEXP3=Structured Text,0,_XSTR,,LTR,,CGN,,STR,,1,
VIEWEXP4=Tabular Text,1,_XTAB,,LTR,,RPT,,CGN,,TAB,,1,
EDITIMP1=ASCII Text,0,_ITEXT,,TXT,,PRN,,C,,H,,RIP,,1,
EDITIMP2=Microsoft RTF,0,_IW4W,_IRTF,,DOC,,RTF,,2,
EDITIMP3=Lotus 1-2-3,0,_IW4W,_IWKSE,,WKS,,WK1,,WR1,,WRK,,WK3,,WK4,,123,,4,
EDITIMP4=Lotus PIC,0,_IPIC,,PIC,,8,
EDITIMP5=CGM Image,0,_IFL,,GMF,,CGM,,8,
EDITIMP6=TIFF 5.0 Image,0,_ITIFF,,TIF,,18,
EDITIMP7=BMP Image,0,_IBMP,,BMP,,18,
EDITIMP8=Lotus Ami Pro,0,_IW4W,W4W33F/V0,,SAM,,2,
EDITIMP9=HTML File,0,_IHTML,,HTM,,HTML,,1,
EDITIMP17=WordPerfect 5.x,0,_IW4W,W4W07F/V1,,DOC,,WPD,,2,

```


EnableJavaScript=1
EnableJavaScriptErrorDialogs=1
EnableLiveConnect=1
ShowAccelerators=1
DisableImageDithering=1

Appendix E: Network Configuration

The standard TCP/IP stack provided by Microsoft Windows 2000 Server was used.

In the system under test, the network adapter speed for the embedded Full Duplex 10/100/1000 Mbps Ethernet controller was changed from the default 'Auto' to 100 Mbps.

Appendix F: Guidelines for Information Usage

This report is intended for IBM Business Partners, customers, and IBM marketing and technical support personnel. The report may be distributed in accordance with the requirements stated in the Edition notice.

Appendix G: Pricing

The table provides the IBM List Price for the U.S. only. Actual prices may vary, and prices may also vary by country. Prices are subject to change without notice. For additional information and current prices, contact your local IBM representative.

Item Description	Order Number	Qty	IBM List Price	Extended Price
IBM xSeries 235 One 2.4GHz Xeon Processor DP Embedded 10/100/1000 Ethernet Controller	8671-41X	1	\$3,449	\$3,449
2.4GHz Xeon Processor DP Upgrade	37L3533	1	1,199	1,199
1GB PC2100 DDR SDRAM RDIMM Memory	33L5039	4	989	3,956
ServeRAID-4Mx Ultra160 SCSI Adapter	06P5736	2	879	1,758
ServeRAID-5i Ultra320 SCSI Adapter	25P3492	1	499	499
Intel PRO/1000 XT Server Adapter	22P6801	1	185	185
18.2GB 15K Ultra160 SCSI Hard Disk Drives	06P5767	59	439	25,901
EXP300 Rack Storage Expansion Enclosure	3531-1RU	4	3,179	12,716
E54 15" (13.8" Viewable) Color Monitor	633147N	1	139	139
Software				
Windows 2000 Server		1	738	738
Lotus Domino R5 Enterprise Server (List Price)		1	4,995	4,995
Total System Price				\$55,535

Appendix H: Vendor-Defined Information

None.

First Edition - August 2002

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