

NotesBench Disclosure Report
for
IBM Netfinity 7000 M10
using
Lotus Domino Server 5.0
and
Windows NT Server EE 4.0

Results Certified July 9, 1999



IBM Corporation

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Edition Notice

Executive Summary

The IBM Netfinity* 7000 M10 server demonstrated leadership performance running Lotus** Domino** Server Release 5.0 on Microsoft** Windows** NT Server 4.0 Enterprise Edition (with Service Pack 4). 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	8,400	12,124	0.143	\$10.18	\$7.05

The IBM Netfinity 7000 M10 server was configured with four 500MHz¹ Intel** Pentium** III Xeon** processors, 2.5GB² of memory, and 34 hard disk drives. All configuration details are provided in Appendix A: Overall Test Setup and Software Versions.

The server under test supported an R5Mail-Only workload of 8,400 active mail users (see price/performance results³ above). The R5Mail workload is considerably more intense than that for R4Mail. For example, R5Mail message size is 10 times larger than that of R4Mail. Meeting invitations have been added, and the Name and Address Book is required to hold twice as many names as the number of concurrent users. In addition to routing the mail, the server now must resolve every address lookup and deliver locally all mail generated. Because of these significant differences in workload, R5Mail-Only benchmark results should not be compared with R4Mail-Only results.

IBM's Server Performance Laboratory in Research Triangle Park, NC, conducted the benchmark in June, and KMDS Technical Associates, Inc., audited the results in June 1999.

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 fully utilize the capability of the IBM Netfinity 7000 M10 system as a Domino Server 5.0 mail server configured with the Netfinity ServeRAID Ultra2 SCSI Adapter for RAID-1 data redundancy.

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

² When referring to hard drive capacity, GB stands for one thousand million bytes. Total user-accessible capacity may vary depending on operating environments.

³ The price/performance results are based on pricing provided by CDW Computer Centers, Inc. IBM resellers set their own prices, and actual prices may vary.

Test Methodologies

Test Setup and Hardware/Software Configuration

The IBM Netfinity 7000 M10 system under test (SUT) was configured with four 500MHz Pentium III Xeon processors (2MB of L2 write-back cache per processor), 2.5GB of memory, four 4.51GB 10K rpm hard disk drives, thirty 9.1GB 10K rpm hard disk drives, and three Netfinity 10/100 Fault Tolerant Adapters. Each of six RAID-1 arrays, which contained the mail files, was connected to a Netfinity ServeRAID-3L Ultra2 SCSI Adapter. Four drives, three of which were contained in a RAID-1 array, and one of which was used as the boot disk, were connected to a ServeRAID-3H Ultra2 SCSI Adapter. A more detailed description of the configuration of the RAID-1 arrays is provided in Appendix A.

The network consisted of three LAN segments. The LAN segments, each consisting of one 12-port SuperStack 100 Hub, were configured as follows:

- Segment 1 connected port 1 on the SUT to child drivers 1, 3, 5, 7, 10, 12, and 13, parent 1, and router port 1.
- Segment 2 connected port 2 on the SUT to child drivers 2, 4, 6, 8, 9 and 11; parent 2: and router port 2.
- Segment 3 connected port 3 on the SUT to child drivers 14 - 17, and router port 3.

The IBM Netfinity 7000 M10 system under test ran Microsoft Windows NT Server 4.0 Enterprise Edition with Service Pack 4 and Domino Server 5.0.

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
MailMaxThreads=8
NSF_DBcache_MaxEntries=10000
SetMailLogToEventsOnly=1
Log_MailRouting=10
Log_Sesions=0
Mail_Number_Of_MailBoxes=8
Server_Pool_Tasks=100
Max_Users=10000
DBMaxEntries=10000

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
Debug_Outfile=\\Parent1\Results\SUTINFO.TXT
```

All Notes server tasks were disabled except Replica, Router and Update.

All Domino data files were located on the D:, E:, F:, G:, H: and I: RAID-1 arrays. The Domino executable codes and data link files were located on the J: RAID-1 array.

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 disk array was installed. System resource utilization was monitored using Windows NT Performance Monitor (PERFMON), which enabled the system configuration to be optimized while balancing system resources.

The 8,400 users were distributed over 17 clients. Each client added 300 to 600 users to the system under test. The test ran for 9 hours and 45 minutes, including ramp-up.

Child 1 through child 5 simulated 600 users each; child 6 simulated 500 users; child 7 simulated 600 users; child 8 through child 11 simulated 400 users; child 12 and child 13 simulated 300 users each; child 14 simulated 600 users; child 15 simulated 500 users; child 16 simulated 600 users; and child 17 simulated 400 users.

The actual ramp-up period from startup of child 1 to the point when all 8,400 users were shown on the server console was approximately 3 hours. The test ran for approximately 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. In fact, during the test period, the SUT Domino Server delivered more than 99.9 percent of the mail generated to the local mail databases.

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

ChildStagger in Minutes

Child 1 - 2 = 9

Child 3 = 6

Child 4 = 9

Child 5 = 6

Child 6 = 12

Child 7 - 9 = 9

Child 10 -13 = 12

Child 14 - 15 = 15

Child 16 - 17 = 18

ThreadStagger in Seconds

Child 1 - 5 = 0.6

Child 6 = 1.1

Child 7 = 0.9

Child 8 = 1.1

Child 9 = 1.0

Child 10 = 1.1

Child 11 - 13 = 1.8

Child 14 - 15 = 1.5

Child 16 - 17 = 1.8

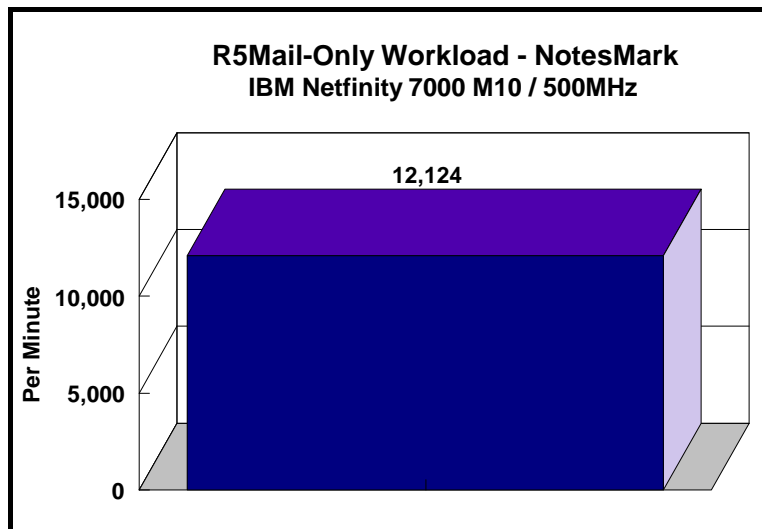
Other NotesBench Tests

IBM intends to continue conducting NotesBench measurements to further optimize and exploit the performance capability of the Netfinity product line running Domino Server 5.0.

Data

IBM Netfinity 7000 M10 NotesMark Value for R5Mail-Only Test

The IBM Netfinity 7000 M10 server demonstrated that it can support 8,400 concurrent active users with this workload. The NotesMark throughput value was 12,124. Average response time was 0.143 seconds. The test ran error-free for a period of 6 hours and 20 minutes.



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.

Compared with the previous Domino R4Mail-Only workload, the R5Mail-Only workload generates more data traffic at the system under test. All R5Mail users access the name and address book, which resides on the SUT. All mail is delivered locally. With R4Mail, all users access a local name and address book, and mail is routed to destination servers. R5Mail message size is 10 times larger than R4Mail message size, and the name and address directory contains twice as many entries as the number of concurrent users.

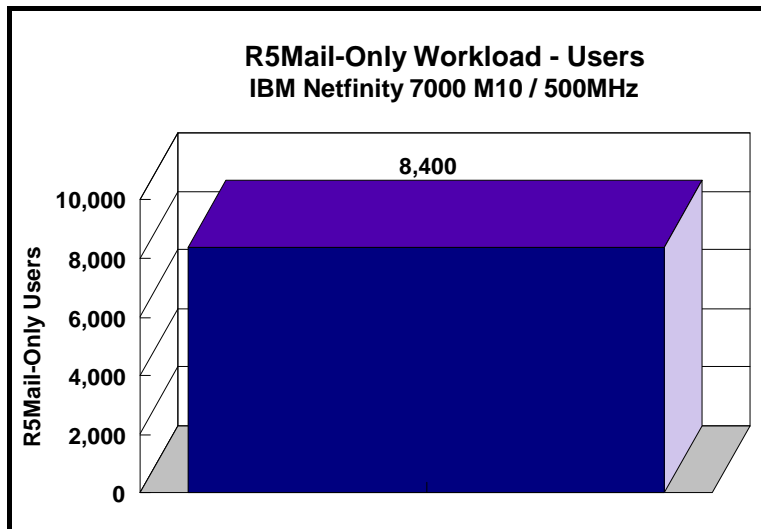
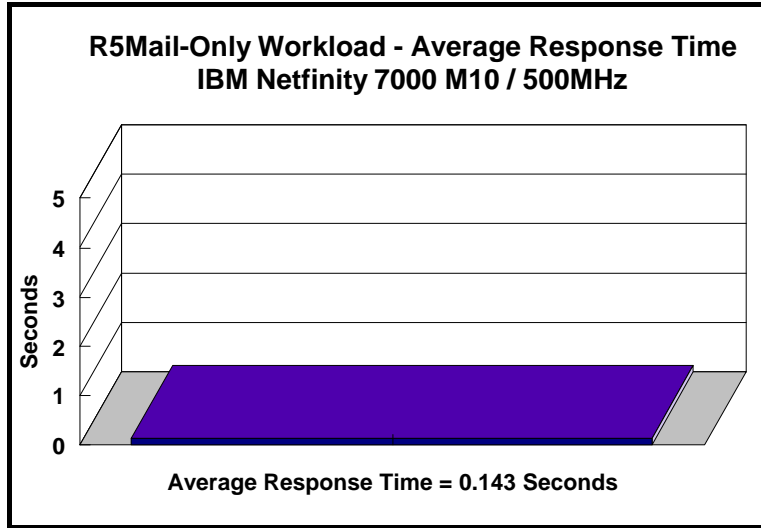
NotesNum Output for R5Mail-Only Test

Min Start Time = 06/22/99 05:40:34 PM Max Stop Time = 06/23/99 03:36:32 AM

Total Test Errors = 0

Total Test Time = 35760 sec

Test Run: Users = 8400 NotesMark = 12124 Response Time = 143 msec (06/22/99 08:54:00 PM to 06/23/99 03:15:00 AM)



Analysis

When configured optimally as described in this report, the IBM Netfinity 7000 M10 server demonstrated that it can manage the intense resource usage during ramp-up to 8,400 concurrent R5Mail users with no errors at the clients.

Steady-State Performance Statistics

During steady state, the following PERFMON measurements were noted:

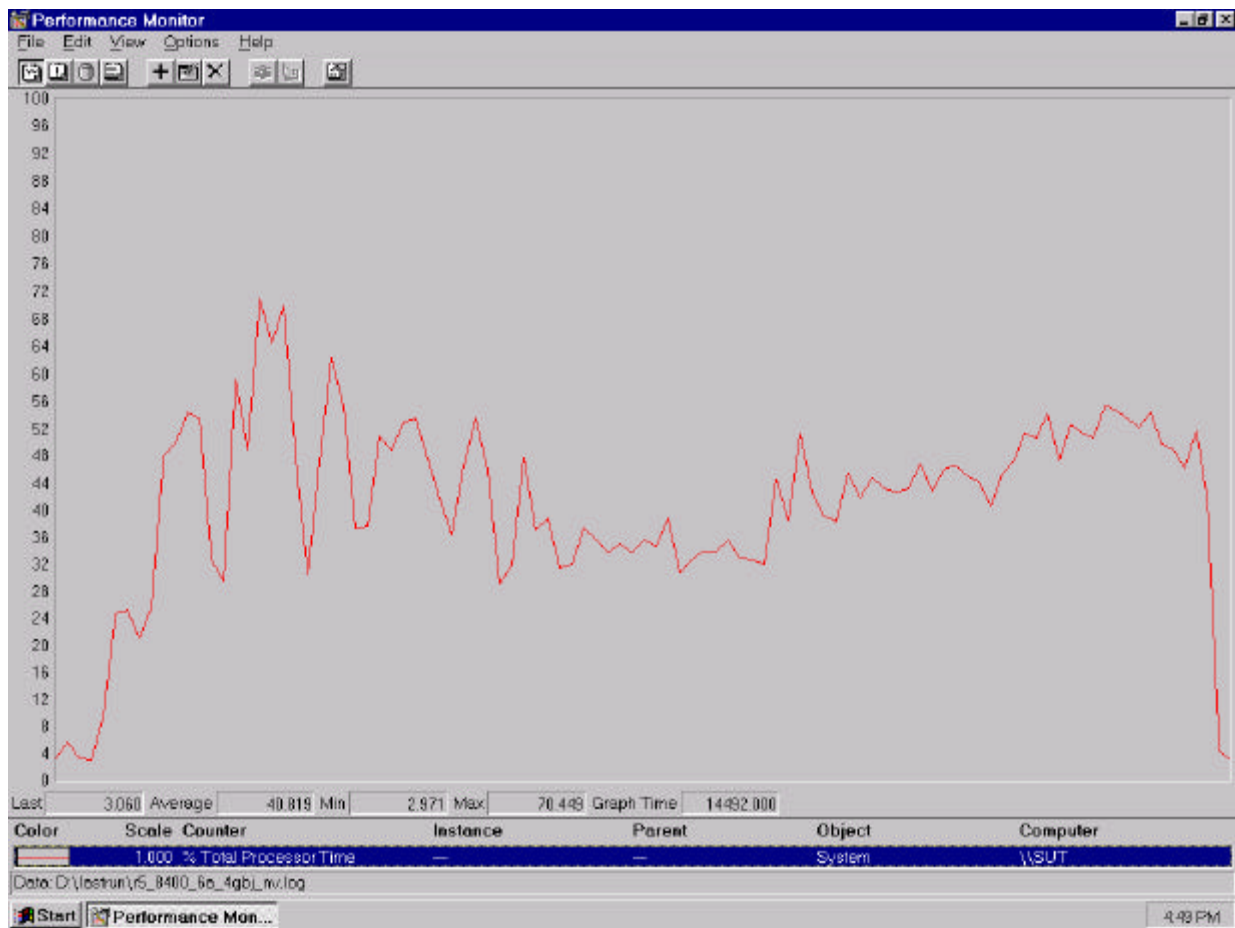
- Percentage of System Total Processor utilization
 - Average: 50%
 - Maximum: 70%
- Amount of Available Memory
 - Minimum: 0.62GB
 - Average: 0.64GB
- Disk Queue Length for Each Array
 - Average: 4.0, 4.5, 3.8, 3.8, 4.0, 4.4
 - Maximum: 4.9, 5.2, 4.4, 4.2, 4.8, 5.0
- I/O Statistics for a Data Array
 - Average I/O rate: 270 I/Os per second
 - Average Transfer Size: 12KB

Domino 5.0 server allowed the use of multiple arrays to off-load user mail databases from the standard notes\data subdirectory. It provides load-balancing capability without using complicated partition servers. 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.

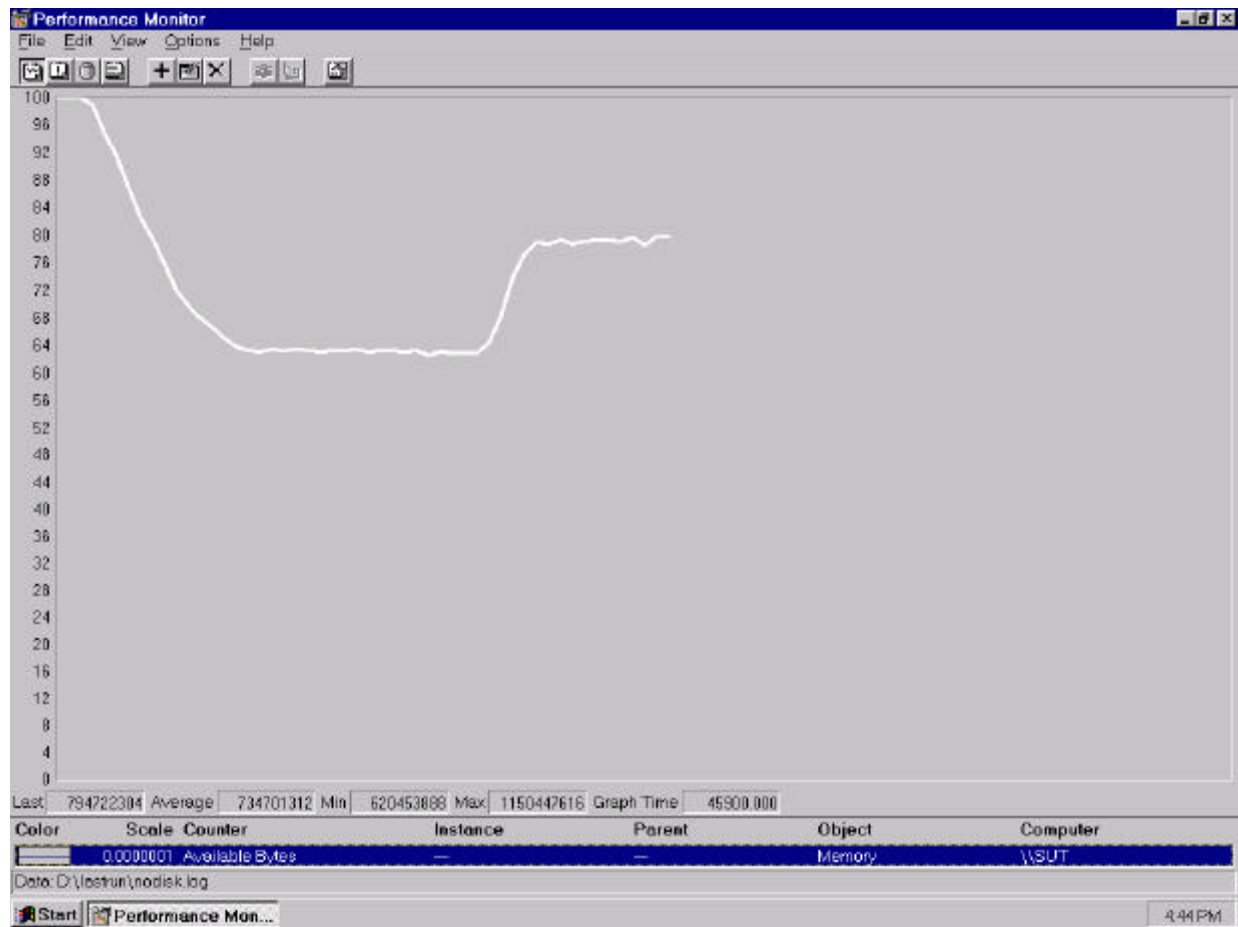
The PERFMON screen captures on the following pages show that:

- Average processor utilization during ramp-up was slightly higher than processor utilization after ramp-up.
- Available memory decreased during ramp-up and increased during ramp-down.
- Queue lengths for disk I/O fluctuated during the run.

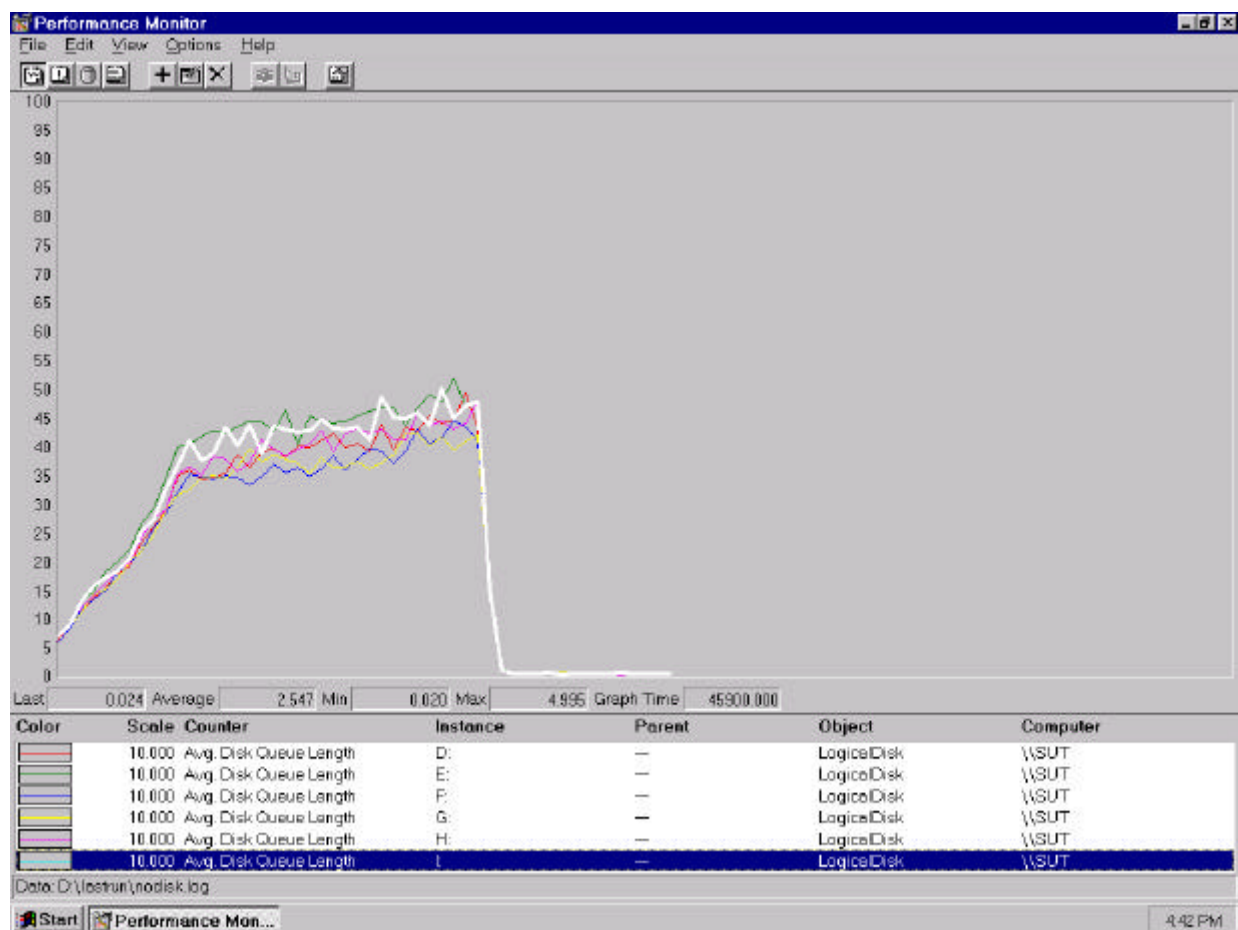
CPU Utilization



Memory Utilization



Queue Length for Disk I/O



Conclusions

The test results demonstrate that the IBM Netfinity 7000 M10 configured as described in this report can support up to 8,400 concurrent, active R5Mail users with a response time well below that permitted by the test criteria. The server's architecture provides many options that can expand its capability. With upgradable memory and I/O subsystems, along with under-utilized processor capacity, the system can be further expanded to accommodate an increased workload.

These results are based on running the IBM Netfinity 7000 M10 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.

These results represent leadership performance in a hardware platform for the Domino Server 5.0 environment.

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, 19 driver systems were used. Seventeen of those systems were configured as child drivers (child 1 through child 17). Two parent systems were used for debug_output data collection. One of the two parent systems was used to control the run.

The disk configuration used for the child systems is as follows:

- Child drivers 1-17
 - C: Partition (512MB - NTFS) - Windows NT 4.0 and Notes 5.0 Workstation code
 - D: Partition (1.5GB - NTFS) - Notes 5.0 Workstation data

Number of Server Platforms

One server platform, the IBM Netfinity 7000 M10 with four 500MHz Pentium III Xeon processors and 2.5GB of memory was benchmarked.

The disk configuration used for the system under test is as follows:

- C: Single disk drive (4.2GB - NTFS) - Windows NT Server Version 4.0 EE (Boot Partition)
- D: Partition (22.5GB - NTFS) - Domino mail files
- E: Partition (22.5GB - NTFS) - Domino mail files
- F: Partition (22.5GB - NTFS) - Domino mail files
- G: Partition (22.5GB - NTFS) - Domino mail files
- H: Partition (22.5GB - NTFS) - Domino mail files
- I: Partition (22.5GB - NTFS) - Domino mail files
- J: Partition (6.6GB - NTFS) - Domino executables and Domino mail data subdirectory

Network

The network consisted of three LAN segments. The LAN segments, each consisting of two 12-port SuperStack 100 Hubs, were configured as follows:

- Segment 1 connected port 1 on the SUT to child drivers 1, 3, 5, 7, 10, 12, and 13, parent 1, and router port 1.
- Segment 2 connected port 2 on the SUT to child drivers 2, 4, 6, 8, 9 and 11; parent 2: and router port 2.
- Segment 3 connected port 3 on the SUT to child drivers 14 - 17, and router port 3.

Software Versions

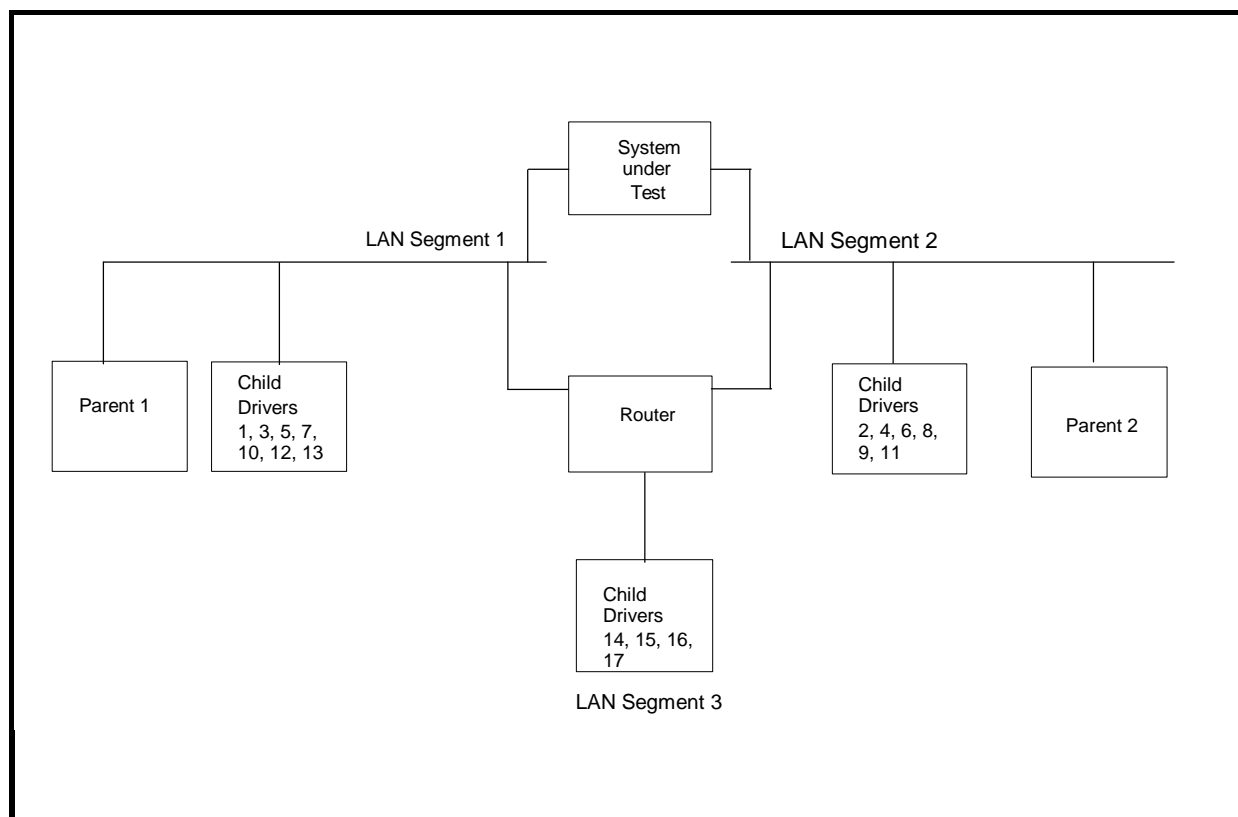
Software versions used on the system under test were as follows:

- Microsoft Windows NT Server 4.0 Extended Edition and Service Pack 4
- Lotus Domino Server Release 5.0
- NotesBench Version 5.0 - Windows/32, released March 12, 1999

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

- Microsoft Windows NT Workstation 4.0 and Service Pack 4
- Lotus Domino Client Release 5.0 for Windows NT
- NotesBench Version 5.0 - Windows/32, released March 12, 1999

Test Setup Diagram



Details of Configuration

System Under Test	Child Drivers 1-17	Parent Source Driver
IBM Netfinity 7000 M10	IBM PC 365	IBM PC Server 325
4x 500MHz Pentium III Xeon Processor	1 x 200MHz Pentium Pro Processor	1 x 200MHz Pentium Pro Processor
2.5GB Memory	128MB Memory	128MB Memory
4 x 4.51GB Drives (RAID-1 and one boot drive) 30 x 9.1GB Drives (six RAID-1 arrays)	1 x 2GB Drive	1 x 4.5GB Drive
6 x ServeRAID-3L Ultra2 SCSI Adapter 1x ServeRAID-3H Ultra2 SCSI Adapter		
3 x Netfinity 10/100 Fault Tolerant Adapter	1 x Intel EtherExpress 10/100 PCI TX Adapter	1 x Intel EtherExpress 10/100 PCI TX Adapter
Windows NT Server 4.0 Extended Edition with Service Pack 4	Windows NT Workstation 4.0 with Service Pack 4	Windows NT Workstation 4.0 with Service Pack 4

Appendix B: System Configurations

Server under Test	
System	IBM Netfinity 7000 M10
Processor	4 x 500MHz Pentium III Xeon with 2MB L2 Cache
Memory	2.5GB
Cache	2MB L2 Write-Back Cache per Processor
RAID Controller	6 x Netfinity ServeRAID-3L Ultra2 SCSI Adapter and 1 x Netfinity ServeRAID-3H Ultra2 SCSI Adapter
Disk Drive	4 x 4.51GB 10K rpm Drives (RAID-1 array and one boot drive), 30 x 9.1GB 10K rpm (six RAID-1 arrays)
Network Interface	3 x Netfinity 10/100 Fault Tolerant Adapter
I/O	PCI Bus
Operating System	Microsoft Windows NT Server 4.0 Extended Edition with Service Pack 4
Notes	Lotus Domino Server Release 5.0 for Windows NT
NotesBench	NotesBench Version 5.0 - Windows/32, released March 12, 1999

Child Drivers 1 - 17	
System	IBM PC 365
Processor	1 x 200MHz Pentium Pro
Memory	128MB
Disk Drive	1 x 2GB
Network Interface	1 x Intel EtherExpress 10/100 PCI TX Adapter
I/O	PCI Bus
Operating System	Microsoft Windows NT Workstation 4.0 with Service Pack 4
Notes	Lotus Domino Client Release 5.0 for Windows NT
NotesBench	NotesBench Version 5.0 - Windows/32, released March 12, 1999

Parents 1 - 2	
System	IBM PC Server 325
Processor	1 x 200MHz Pentium Pro
Memory	128MB
Disk Drive	1 x 4.5GB
Network Interface	1 x Intel EtherExpress 10/100 PCI TX Adapter
I/O	PCI Bus
Operating System	Microsoft Windows NT Workstation 4.0 with Service Pack 4
Notes	Lotus Domino Client Release 5.0 for Windows NT
NotesBench	NotesBench Version 5.0 - Windows/32, released March 12, 1999

Note: NotesBench was started at Parent 1 and results were collected on both Parent 1 and 2. Prior to running NotesNum on Parent 1, results on Parent 2 were copied to Parent 1 results directory.

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 System under Test

[Notes]

```
; Server Performance
;
DBMaxEntries=10000
MailMaxThreads=8
Mail_Number_Of_MailBoxes=8
Max_Users=10000
NSF_DBCache_Maxentries=10000
Server_Pool_Tasks=100
Server_Max_Concurrent_Trans=1000
;View_Rebuild_dir=m:\view_dir
;
;MailUseThreads=1
LOG_SESSIONS=0
SetMailLogToEventsOnly=1
LOG_MAILROUTING=10
SERVER_SHOW_PERFORMANCE=1
No_Force_Activity_Logging=1
DEBUG_OUTFILE=\\parent1\results\sutinfo.txt
;Server_MaxSessions=8000
;Server_Session_timeout=15
; end performance parameters
;
Directory=j:\notesb3\data
KitType=2
SetupDB=Setup.nsf
UserName=sut
CompanyName=IBM
NotesProgram=j:\notesb3
InstallType=4
CONSOLE_Lotus_Domino_Server=80 25 7 8 62 660 393
WinNTIconPath=j:\notesb3\data\W32
$$HasLANPort=1
WWWDSync_BROWSERCACHE=0
WWWDSync_PREFETCH_OBJECT=0
EnablePlugins=1
Preferences=-2147480463
Region=en-US
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3 Worksheet,0_IWKS,.,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 Worksheet,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 Word RTF,0_IRTF,.,DOC.,RTF.,2,
EDITIMP3=Lotus 1-2-3 Worksheet,0_IWKSE,.,WKS.,WK1.,WR1.,WRK.,WK3.,WK4.,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=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=WordPro 96/97,0_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=Excel spreadsheet,0_IW4W,W4W21F/V4C,.,XLS.,4,
EDITIMP31=Word for Windows,0_IW4W,W4W49F/V0,.,DOC.,2,
EDITIMP32=GIF Image,0_IGIF,.,GIF.,18,
EDITIMP33=JPEG Image,0_IJPEG,.,JPG.,18,
```


NAMEDSTYLE2=0300486561646C696E650010101010B0C000000000000100A0050A0000006400
A0050A000
NAMEDSTYLE2_FACE=Default Sans Serif
\$\$\$OpenSpecial=NotesNIC
\$\$\$NotesNIC=CN=Home/OU=Notes/O=NET, welcome.nsf, Notes NIC Welcome, Notes Network Information Center on the Internet
DefaultMailTemplate=mail50.ntf
TCPIP=TCP, 0, 15, 0
Ports=TCPIP
KeyFilename=nchild1.id
CertificateExpChecked=nchild1.id 06/06/99
MailServer=CN=sut/O=IBM
MailFile=mail\nchild1.nsf
TemplateSetup=54
Setup=58
Location=Office (Network),99E,CN=nchild1/O=IBM
\$IEVersionMajor=4
\$IEVersionMinor=72
ECLSetup=3
\$headlineClientId=CF617F74:9D826848-8525674F:004E5306
DESKWINDOWSIZE=-4 -4 648 460
WINDOWSIZEWIN=12 9 616 447
MAXIMIZED=1
WinNTIconCommonConfig=Universal
WinNTIconSize=2
WinNTIconPos=2
WinNTIconHidden=1
WinNTIconRect=0 0 0 24
FileDialogDirectory=D:\notesb3\data
NAMES=names.nsf
\$MIMESaveFormat=132
\$headlineDisableHeadlines=0
EmptyTrash=0
MIMEPromptMultilingual=1
MIMEMultilingualMode=1
EnableActiveXInBrowser=1
EnableJavaScript=1
EnableJavaScriptErrorDialogs=1
EnableLiveConnect=1
ShowAccelerators=1
NthIteration=6
Tmp=Notestmp
MaxSessions=100
NumAddLocalReplica=1
NumDeleteLocalReplica=1
NumStampLocalReplica=1
NumUpdateLocalReplica=1
NormalMessageSize=10000
NumMessageRecipients=3
NumMailNotesPerUser=100
AttachmentSize=500000
LargeMessageSize=32000
MAXDocToDelete=10000
NumNotesLocalReplica=90
NumSharedNotes=900
MailTemplate=Mail50.NTF
Domain=IBM
PhoneLog=2
Log=log.nsf, 1, 0, 7, 40000
UseServerNAB=1
NewMailSeqNum=2
NewMailSeqNum8525674F:004D6C7F=2
HELPWINDOWSIZEWIN=47 49 609 364
Win32InfoboxPos=2 110
SERVERS_FRAME_PERCENT=20
MONITOR_SCALE=1
ADMINWINDOWSIZEWIN=12 9 616 447
ADMINMAXIMIZED=0
AdminSetup=500

NOTES.INI for Parent Source Driver1

```
[Notes]
;
; Begin Notesbench variables for PARTITION 1
;
; *****
NodeName=parent1
; Runtime in minutes
;Runtime=700
;ChildStagger=15,1-4;30,5;15,6-8;30,9;15,10-12;30,13;15,14-17
Runtime=585
ChildStagger=9,1-2;6,3;9,4;6,5;12,6;9,7-9;12,10-13;15,14-15;18,16-17
NumClients1=600
NumClients2=600
NumClients3=600
NumClients4=600
NumClients5=600
NumClients6=500
NumClients7=600
NumClients8=400
NumClients9=400
NumClients10=400
NumClients11=400
NumClients12=300
NumClients13=300
NumClients14=600
NumClients15=500
NumClients16=600
NumClients17=400
;NumClients18=100
; NumClients19=400
; NumClients20=100
ResultsDirectory=c:\results
DEBUG_OUTFILE=c:\results\notesnum.txt
;----End
Directory=C:\Notesb3\Data
KitType=1
InstallType=0
WinNTIconPath=C:\Notesb3\Data\W32
$$HasLANPort=1
WWWDSPP_SYNC_BROWSERCACHE=0
WWWDSPP_PREFETCH_OBJECT=0
EnableJavaApplets=1
EnablePlugins=1
Preferences=-2147480463
Region=en-US
AltNameLanguage=en
ContentLanguage=en-US
WeekStart=1
ViewWeekStart=2
NavWeekStart=2
XLATE_CSID=52
SPELL_LANG=1033
Passthru_LogLevel=0
Console_LogLevel=2
VIEWIMP1=Lotus 1-2-3 Worksheet,0_IWKS,.,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 Worksheet,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=MicrosoftWord RTF,0_IRTF,.,DOC.,RTF.,2,
EDITIMP3=Lotus 1-2-3 Worksheet,0_IWKSE,.,WKS.,WK1.,WR1.,WRK.,WK3.,WK4.,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=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=WordPro 96/97,0_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=Excel spreadsheet,0_IW4W,W4W21F/V4C.,XLS.,4,
EDITIMP31=Word for Windows,0_IW4W,W4W49F/V0.,DOC.,2,
```


NBCONFIG.INI for Child Drivers

```
.*****
;
; NotesBench parms
.*****
NthIteration=6
;NthIteration=9999
Tmp=Notestmp
MaxSessions=100
NumAddLocalReplica=1
NumDeleteLocalReplica=1
NumStampLocalReplica=1
NumUpdateLocalReplica=1
NormalMessageSize=10000
NumMessageRecipients=3
NumMailNotesPerUser=100
AttachmentSize=50000
LargeMessageSize=32000
MAXDocToDelete=10000
;
; *****
; * MaxUsers=9000 total *
; * NumNotesLocalReplica=1% MaxUsers *
; * NumSharedNotes=10% MaxUsers *
; *****
NumNotesLocalReplica=90
NumSharedNotes=900
MailTemplate=Mail50.NTF
;NormalMessageSize=10000
Domain=IBM;*****
```

Appendix E: Network Configuration

The standard TCP/IP stack provided by Microsoft Windows NT Server 4.0 Enterprise Edition was used.

In the system under test, the network adapter speed for the Netfinity 10/100 Fault Tolerant Adapter was changed from the default 'Auto' to 100Mbps. This forced the Duplex Mode to 'Half'.

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 Estimated Reseller Price to end users for the U.S. only. Actual Reseller prices may vary, and prices may also vary by country. Prices are subject to change without notice. Also, provided are prices obtained from CDW Computer Centers, Inc. The price/performance results in this document are based on third-party pricing. For additional information and current prices, contact your local IBM representative.

*The price for the 256MB DIMM in the table below is the Estimated Reseller Price and not CDW's.

Item Description	Order Number	Qty	IBM Estimated Reseller Unit Price	IBM Estimated Reseller Extended Price	Reseller Unit Price	Reseller Extended Price
IBM Netfinity 7000 M10	8680-8RY	1	\$14,745	\$14,745	\$14,473	\$14,473
1 x 500MHz Pentium III Xeon Processor / 2MB L2 Cache (one 256MB DIMM included)						
500MHz / 2MB L2 Cache Processor Upgrade	28L4735	3	6,699	20,097	6,369	19,107
1GB Memory Expansion Kit	01K8046	2	3,379	6,758	3,221	6,442
256MB DIMM	01K8044	1	935	935	*935	*935
Memory Card	01K8004	1	559	559	546	546
Netfinity ServeRAID-3L Ultra2 SCSI Adapter	01K7364	6	785	4,710	749	4,494
Netfinity ServeRAID-3H Ultra2 SCSI Adapter	01K7207	1	1,899	1,899	1,788	1,788
Netfinity EXP10 4.51GB 10K Wide Ultra SCSI SCA-2 Hard Disk Drives	01K8009	4	589	2,356	578	2,312
Netfinity EXP10 9.1GB 10K Wide Ultra SCSI SCA-2 Hard Disk Drives	01K8499	30	839	25,170	799	23,970
Netfinity EXP15 Rack Storage Expansion Enclosure	35202RU	3	2,419	7,257	2,305	6,915
Netfinity 10/100 Fault Tolerant Adapter	08L3341	3	109	327	105	315
IBM G42 14" (13.2" Viewable) Color Monitor	654000N	1	219	219	212	212
Software						
Windows NT Server 4.0 EE (Service Pack 4 free on Internet)		1	3,999	3,999	3,999	3,999
Lotus Domino Server Release 5.0		1	NC		NC	
Total System Price					\$89,031	\$85,508

Appendix H: Vendor-Defined Information

None.

First Edition - June 1999

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