

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

**Certified August 18, 1999**



**IBM Corporation**

## **Table of Contents**

***Section 1: Executive Summary***

***Section 2: Benchmarking Objectives***

***Section 3: Test Methodologies***

***Section 4: Data***

***Section 5: Analysis***

***Section 6: Conclusions***

***Section 7: Statement by Auditor***

***Appendix A: Overall Test Setup and Software Versions***

***Appendix B: System Configurations***

***Appendix C: Operating System Parameters Values***

***Appendix D: Notes Parameters (NOTES.INI file)***

***Appendix E: Network Configuration File(s)***

***Appendix F: Guidelines for Information Usage***

***Appendix G: Pricing***

***Appendix H: Optional (vendor-defined information)***

***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	9,200	13,037	1.170	\$8.46	\$5.97

The IBM Netfinity 7000 M10 server was configured with three 550MHz<sup>1</sup> Intel\*\* Pentium\*\* III Xeon\*\* processors, 2.25GB<sup>2</sup> 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 9,200 active mail users (see price/performance results<sup>3</sup> 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 resolves every address lookup and delivers 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 July, and KMDS Technical Associates, Inc., audited the results in August 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.

---

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

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

<sup>3</sup> 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 three 550MHz Pentium III Xeon processors (2MB of L2 write-back cache per processor), 2.25GB 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.

<b>R5Mail-Only Workload</b>
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:, I: and J: RAID-1 arrays. The Domino executable codes, data link files, and transaction logging directory were located on the J: RAID-1 array. (Transaction logging was not enabled for this audited run.)

### ***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. During the test, system resource utilization was monitored using Windows NT Performance Monitor (PERFMON), which enabled the system configuration to be optimized while balancing system resources.

The 9,200 users were distributed over 17 clients. Each client added 300 to 700 users to the system under test. The test ran for 9 hours and 45 minutes, including ramp-up.

Child 1 through child 7 simulated 600 users each; child 8 through child 13 simulated 400 users each; child 14 and child 15 simulated 600 users each; child 16 and child 17 simulated 700 users each.

The actual ramp-up period from startup of child 1 to the point when all 9,200 users were shown on the server console was approximately 3-1/2 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 91 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 = 18

Child 17 = 21

**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

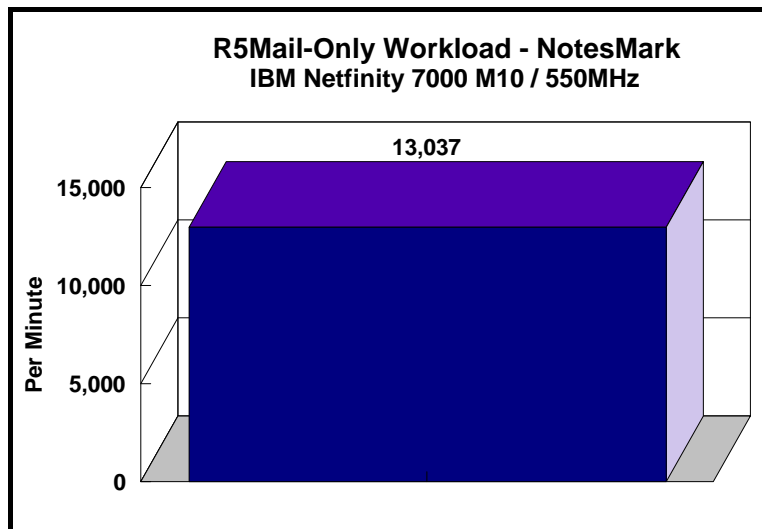
***Other NotesBench Tests***

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 9,200 concurrent active users with this workload. The NotesMark throughput value was 13,037 average response time was 1.170 seconds. The test ran error-free for a period of 6 hours and 10 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 R5mail-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.

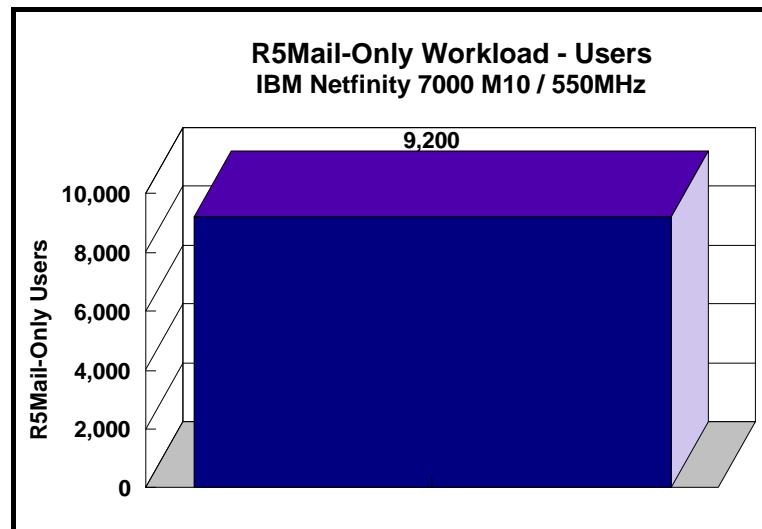
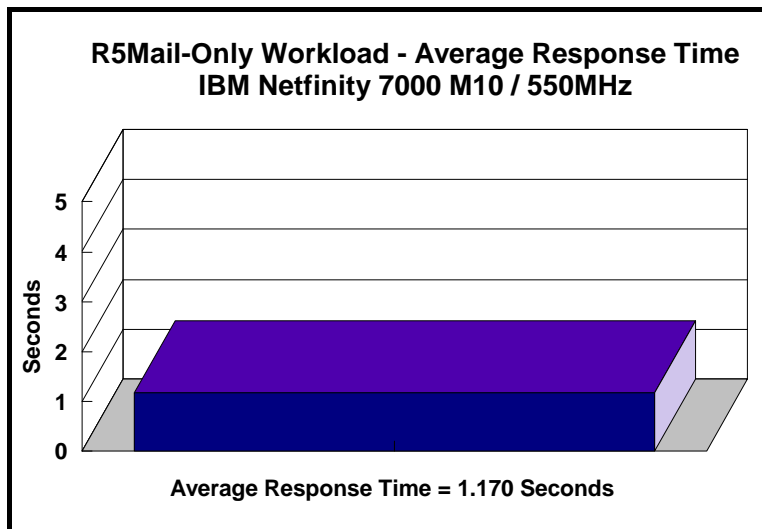
## NotesNum Output for R5Mail-Only Test

Min Start Time = 07/28/99 02:00:05 PM    Max Stop Time = 07/28/99 11:55:49 PM

Total Test Errors = 0

Total Test Time = 35700 sec

Test Run: Users = 9200    NotesMark = 13037    Response Time = 1170msec (07/28/99 05:23:00 PM to 07/28/99 11:33:00 PM)





## 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 9,200 concurrent R5Mail users with no errors at the clients.

### ***Steady-State Performance Statistics***

During steady state, the following PERFMON measurements were noted:

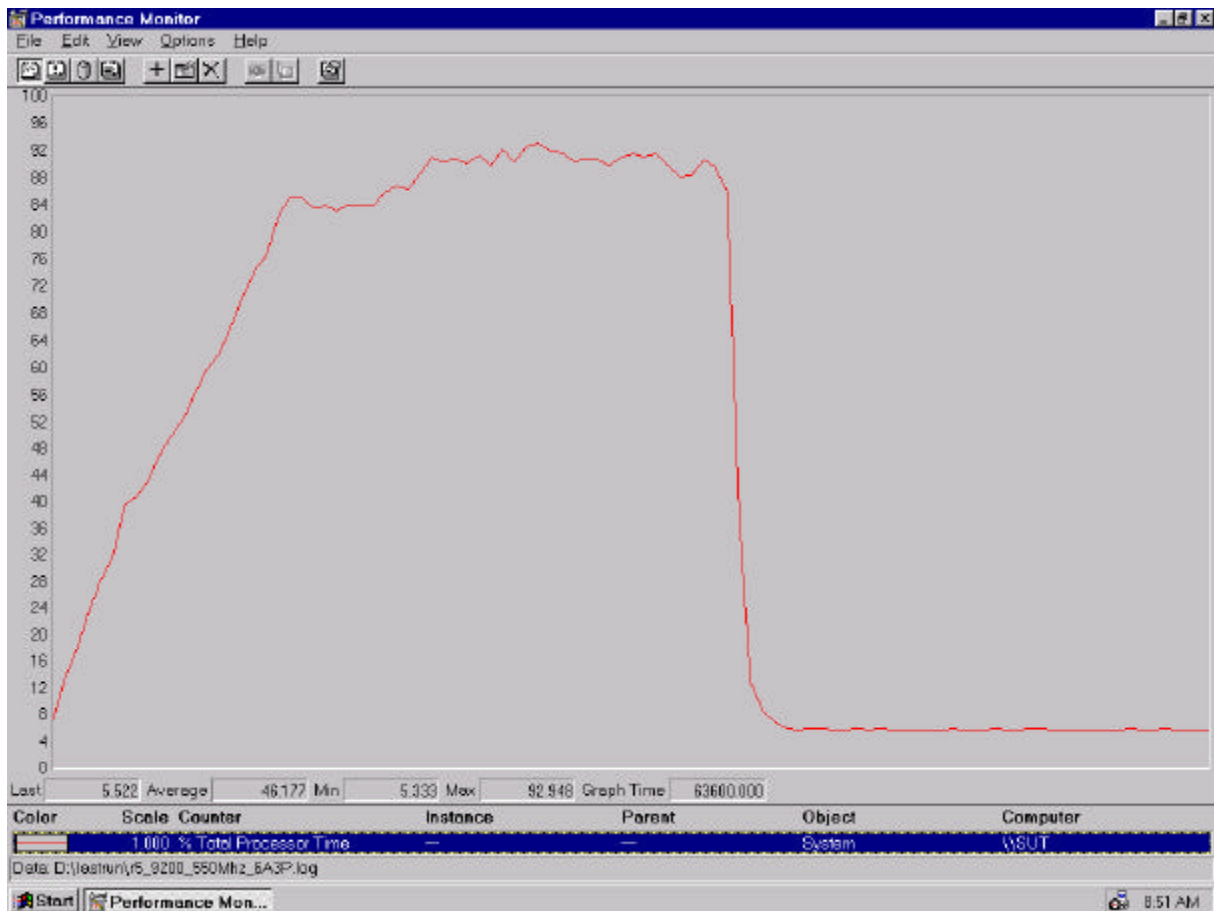
- Percentage of System Total Processor utilization
  - Average: 89%
  - Maximum: 93%
- Amount of Available Memory
  - Minimum: 0.203GB
  - Average: 0.278GB
- Disk Queue Length for Each Array (D, E, F, G, H, I, J)
  - Average: 5.3, 5.2, 5.2, 5.4, 5.2, 3.8, 0.4
  - Maximum: 5.8, 5.9, 6.0, 6.0, 5.7, 4.3, 0.5
- 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.

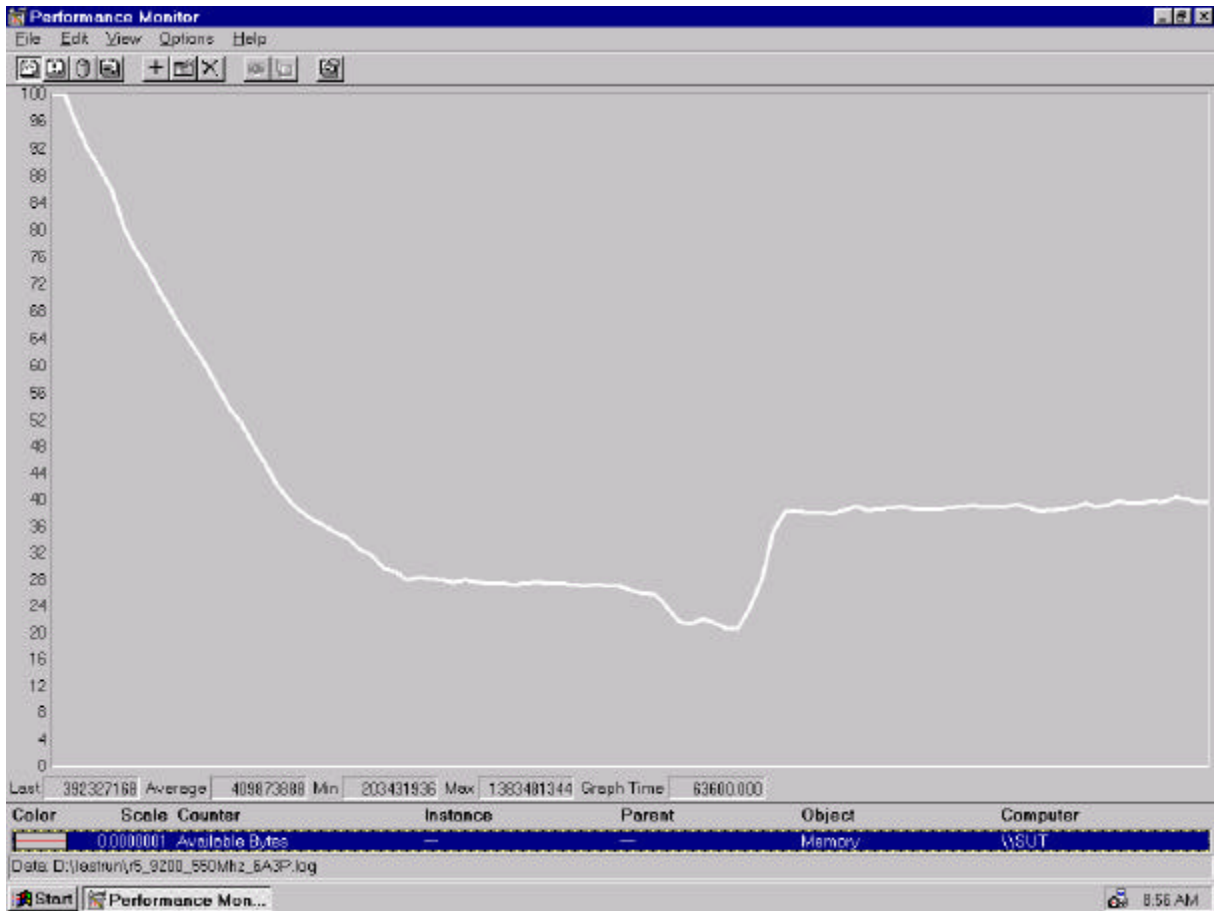
The PERFMON screen captures on the following pages show that:

- Processor utilization reached to its peak during steady state
- Available memory decreased during ramp-up and reached to the minimum during ramping down the first six child driver.
- Queue lengths for disk I/O fluctuated during the run.

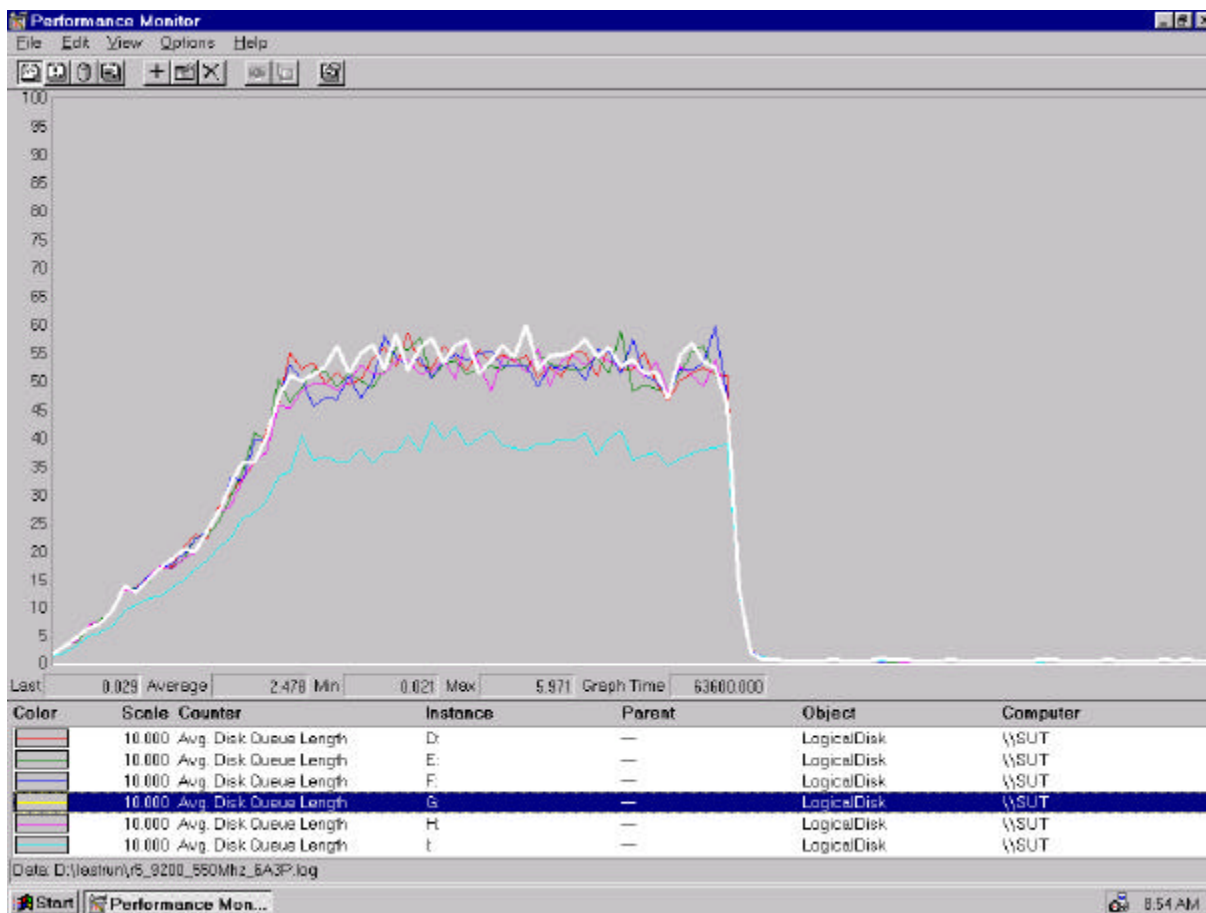
## CPU Utilization



## 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 9,200 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 CPU, memory and I/O subsystems, 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 three 550MHz Pentium III Xeon processors and 2.25GB 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:

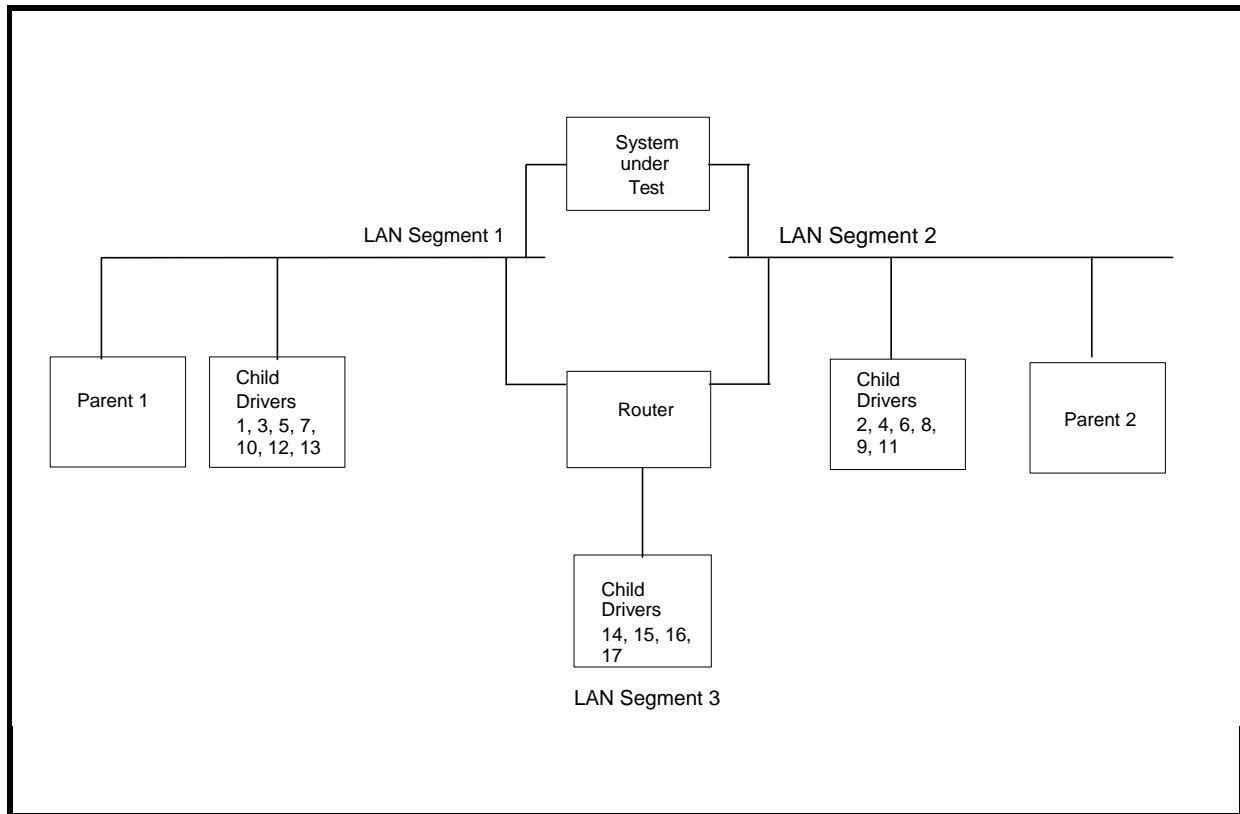
- Microsoft Windows NT Server 4.0 Extended Edition and Service Pack 4
- Lotus Domino Server Release 5.0
- NotesBench Version 5.0 - Windows/32, released March 12, 1999

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
3x 550MHz Pentium III Xeon Processor	1 x 200MHz Pentium Pro Processor	1 x 200MHz Pentium Pro Processor
2.25GB 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 1 x 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	
<b>System</b>	IBM Netfinity 7000 M10
<b>Processor</b>	3 x 550MHz Pentium III Xeon with 2MB L2 Cache
<b>Memory</b>	2.25GB
<b>Cache</b>	2MB L2 Write-Back Cache per Processor
<b>RAID Controller</b>	6 x Netfinity ServeRAID-3L Ultra2 SCSI Adapter and 1 x Netfinity ServeRAID-3H Ultra2 SCSI Adapter
<b>Disk Drive</b>	4 x 4.51GB 10K rpm Drives (RAID-1 array and one boot drive), 30 x 9.1GB 10K rpm (six RAID-1 arrays)
<b>Network Interface</b>	3 x Netfinity 10/100 Fault Tolerant Adapter
<b>I/O</b>	PCI Bus
<b>Operating System</b>	Microsoft Windows NT Server 4.0 Extended Edition with Service Pack 4
<b>Notes</b>	Lotus Domino Server Release 5.0 for Windows NT
<b>NotesBench</b>	NotesBench Version 5.0 - Windows/32, released March 12, 1999

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

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

---

## 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:\notes3\data
KitType=2
SetupDB=Setup.nsf
UserName=sut
CompanyName=IBM
NotesProgram=j:\notes3
InstallType=4
CONSOLE_Lotus_Domino_Server=80 25 7 9 63 661 394
WinNTIconPath=j:\notes3\data\W32
$$HasLANPort=1
WWWDSPPSYNC_BROWSERCACHE=0
WWWDSPPREFETCH_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=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,
EDITIMP32=GIF Image,0_IGIF,,GIF.,18,
EDITIMP33=JPEG Image,0_IJPEG,,JPG.,18,
```







```

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;21,17
NumClients1=600
NumClients2=600
NumClients3=600
NumClients4=600
NumClients5=600
NumClients6=600
NumClients7=600
NumClients8=400
NumClients9=400
NumClients10=400
NumClients11=400
NumClients12=400
NumClients13=400
NumClients14=600
NumClients15=600
NumClients16=700
NumClients17=700
;NumClients18=100
; NumClients19=400
; NumClients20=100
ResultsDirectory=c:\results
DEBUG_OUTFILE=c:\results\notesnum.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
;:ProbeInterval=7100,7300,7600
;:ProbeIntervalDelay=30
;:ProbeWaitTime=30
;:ProbeRunTime=360
; 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=Osceola500
;-----End

Directory=C:\Notesb3\Data
KitType=1
InstallType=0
WinNTIconPath=C:\Notesb3\Data\W32
$$HasLANPort=1
WWWDSP_SYNC_BROWSERCACHE=0
WWWDSP_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_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 Worksheet,0_XWKS,,WKS.,WK1.,WR1.,WRK.,4,

```





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  
000  
\$CreateBookmarkLastFolder=Databases

---

## **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 system unit and the processors 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
<b>IBM Netfinity 7000 M10</b>	8680-3SY	1	\$14,745	\$14,745	*\$14,745	*\$14,745
1 x 550MHz Pentium III Xeon Processor / 2MB L2 Cache (one 256MB DIMM included)						
550MHz / 2MB L2 Cache Processor Upgrade	33L5109	2	6,699	13,398	*6,699	*13,398
1GB Memory Expansion Kit	01K8046	2	3,379	6,758	3,221	6,442
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	779	23,370
Netfinity EXP15 Rack Storage Expansion Enclosure	35202RU	3	2,419	7,257	2,299	6,897
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
<b>Software</b>						
Windows NT Server 4.0 EE (Service Pack 4 free on Internet)		1	3,999	3,999	3,325	3,325
Lotus Domino Server Release 5.0		1	NC		NC	
<b>Total System Price</b>				\$81,397		\$77,844

---

## Appendix H: Vendor-Defined Information

None.

## **First Edition - August 1999**

THE INFORMATION CONTAINED IN THIS DOCUMENT IS DISTRIBUTED ON AN AS IS BASIS WITHOUT ANY WARRANTY EITHER EXPRESSED OR IMPLIED. The use of this information or the implementation of any of these techniques is a customer's responsibility and depends on the customer's ability to evaluate and integrate them into the customer's operational environment. While each item has been reviewed by IBM for accuracy in a specific situation, there is no guarantee that the same or similar results will be obtained

elsewhere. Customers attempting to adapt these techniques to their own environment do so at their own risk.

In this document, any references made to an IBM licensed program are not intended to state or imply that only IBM's licensed program may be used; any functionally equivalent program may be used.

This publication was produced in the United States. IBM may not offer the products, services, or features discussed in this document in other countries, and the information is subject to change without notice. Consult your local IBM representative for information on products and services available in your area..

© Copyright International Business Machines Corporation 1999. All rights reserved.

Permission is granted to reproduce this document in whole or in part, provided the copyright notice as printed above is set forth in full text at the beginning or end of each reproduced document or portion thereof.

U.S. Government Users - Documentation related to restricted rights: Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corp.

## **Trademarks**

\*IBM is a registered trademark and Netfinity is a trademark of International Business Machines Corporation.

\*\*Lotus and Lotus Notes are registered trademarks and Notes and Domino are trademarks of Lotus Development Corporation. Intel and Pentium are registered trademarks and Xeon is a trademark of Intel Corporation. Microsoft and Windows NT are trademarks or registered trademarks of Microsoft Corporation.

Other company, product, or service names, which may be denoted by two asterisks (\*\*), may be trademarks or service marks of others.