

# Server Software Configuration

## DBMS Configuration

## OS Configuration

### Server Information:

Database server information text file sysinfo-pe2900.txt is in the SupportingFiles\Indroduction directory.

### Services:

Name	Status	Startup Type	Log On As
.NET Runtime Optimization Service v2.0.50727_x64		Manual	Local System
.NET Runtime Optimization Service v2.0.50727_X86		Manual	Local System
Alerter		Disabled	Local Service
Application Experience Lookup Service	Started	Automatic	Local System
Application Layer Gateway Service		Manual	Local Service
Application Management		Manual	Local System
ASP.NET State Service		Manual	Network Service
Automatic Updates		Manual	Local System
Background Intelligent Transfer Service		Manual	Local System
ClipBook		Disabled	Local System
COM+ Event System	Started	Automatic	Local System
COM+ System Application		Manual	Local System
Computer Browser	Started	Automatic	Local System
Cryptographic Services	Started	Automatic	Local System
DCOM Server Process Launcher	Started	Automatic	Local System

DHCP Client		Manual	Network Service
Distributed File System		Manual	Local System
Distributed Link Tracking Client	Started	Automatic	Local System
Distributed Link Tracking Server		Disabled	Local System
Distributed Transaction Coordinator	Started	Automatic	Network Service
DNS Client	Started	Automatic	Network Service
Error Reporting Service	Started	Automatic	Local System
Event Log	Started	Automatic	Local System
File Replication		Manual	Local System
Help and Support	Started	Manual	Local System
HTTP SSL	Started	Manual	Local System
Human Interface Device Access		Disabled	Local System
IAS Jet Database Access		Manual	Local System
IIS Admin Service	Started	Automatic	Local System
IMAPI CD-Burning COM Service		Disabled	Local System
Indexing Service		Disabled	Local System
InstallDriver Table Manager		Manual	Local System
Intersite Messaging		Disabled	Local System
IPSEC Services	Started	Automatic	Local System
Kerberos Key Distribution Center		Disabled	Local System
License Logging		Disabled	Network Service
Logical Disk Manager	Started	Automatic	Local System
Logical Disk Manager Administrative Service		Manual	Local System
Messenger		Disabled	Local System
Microsoft Software Shadow Copy Provider		Manual	Local System
MRMonitor	Started	Automatic	Local System
MSMFramework	Started	Automatic	Local System
Net Logon		Manual	Local System
NetMeeting Remote Desktop Sharing		Disabled	Local System

Network Connections	Started	Manual	Local System
Network DDE		Disabled	Local System
Network DDE DSDM		Disabled	Local System
Network Location Awareness (NLA)	Started	Manual	Local System
Network Provisioning Service		Manual	Local System
NT LM Security Support Provider		Manual	Local System
Office Source Engine		Manual	Local System
Performance Logs and Alerts		Automatic	Network Service
Plug and Play	Started	Automatic	Local System
Portable Media Serial Number Service		Manual	Local System
Print Spooler		Manual	Local System
Protected Storage	Started	Automatic	Local System
Remote Access Auto Connection Manager		Manual	Local System
Remote Access Connection Manager		Manual	Local System
Remote Desktop Help Session Manager		Manual	Local System
Remote Procedure Call (RPC)	Started	Automatic	Network Service
Remote Procedure Call (RPC) Locator		Manual	Network Service
Remote Registry	Started	Automatic	Local Service
Removable Storage		Manual	Local System
Resultant Set of Policy Provider		Manual	Local System
Routing and Remote Access		Disabled	Local System
Secondary Logon	Started	Automatic	Local System
Security Accounts Manager	Started	Automatic	Local System
Server	Started	Automatic	Local System
Shell Hardware Detection	Started	Automatic	Local System
Smart Card		Manual	Local Service
Special Administration Console Helper	Started	Manual	Local System
SQL Server (MSSQLSERVER)		Manual	Local System
SQL Server Active Directory Helper		Disabled	Network Service

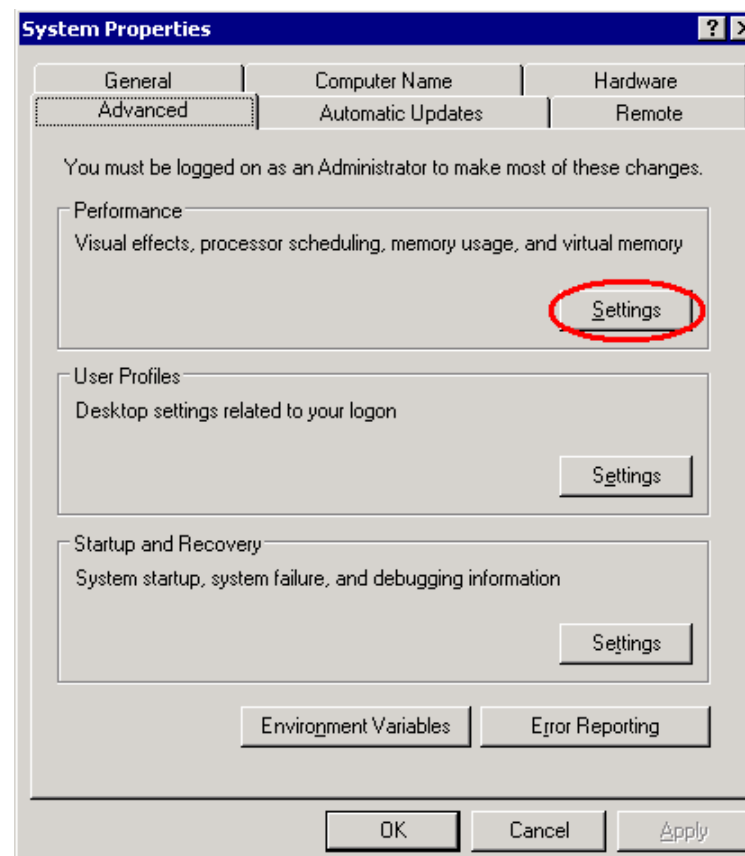
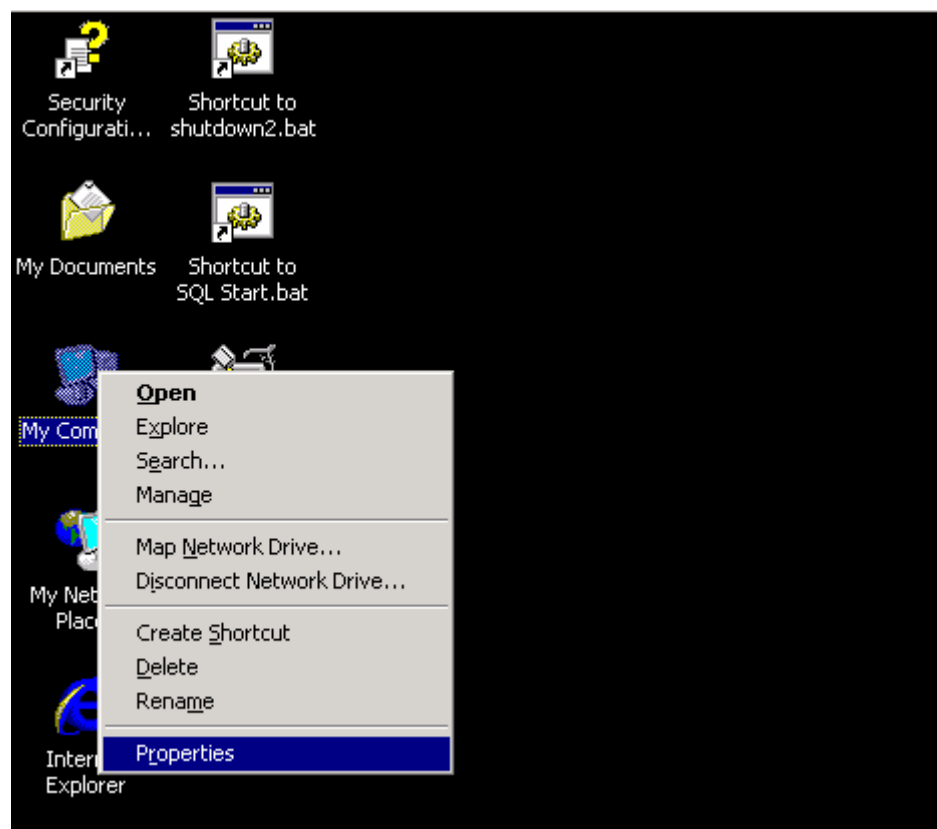
SQL Server Agent (MSSQLSERVER)		Manual	Local System
SQL Server Analysis Services (MSSQLSERVER)		Manual	Local System
SQL Server Browser		Disabled	Local System
SQL Server FullText Search (MSSQLSERVER)		Manual	Local System
SQL Server Integration Services	Started	Automatic	Network Service
SQL Server Reporting Services (MSSQLSERVER)		Manual	Local System
SQL Server VSS Writer	Started	Automatic	Local System
System Event Notification	Started	Automatic	Local System
Task Scheduler	Started	Automatic	Local System
TCP/IP NetBIOS Helper	Started	Automatic	Local Service
Telephony		Manual	Local System
Telnet		Disabled	Local Service
Terminal Services	Started	Manual	Local System
Terminal Services Session Directory		Disabled	Local System
Themes		Disabled	Local System
Uninterruptible Power Supply		Manual	Local Service
Virtual Disk Service		Manual	Local System
Volume Shadow Copy		Manual	Local System
WebClient		Disabled	Local Service
Windows Audio		Disabled	Local System
Windows Firewall/Internet Connection Sharing (ICS)		Disabled	Local System
Windows Image Acquisition (WIA)		Disabled	Local Service
Windows Installer		Manual	Local System
Windows Management Instrumentation	Started	Automatic	Local System
Windows Management Instrumentation Driver Extensions		Manual	Local System
Windows Time	Started	Automatic	Local Service
Windows User Mode Driver Framework		Manual	Local Service
WinHTTP Web Proxy Auto-Discovery Service		Manual	Local Service
Wireless Configuration		Manual	Local System
WMI Performance Adapter		Manual	Local System
Workstation	Started	Automatic	Local System

World Wide Web Publishing Service	Started	Automatic	Local System
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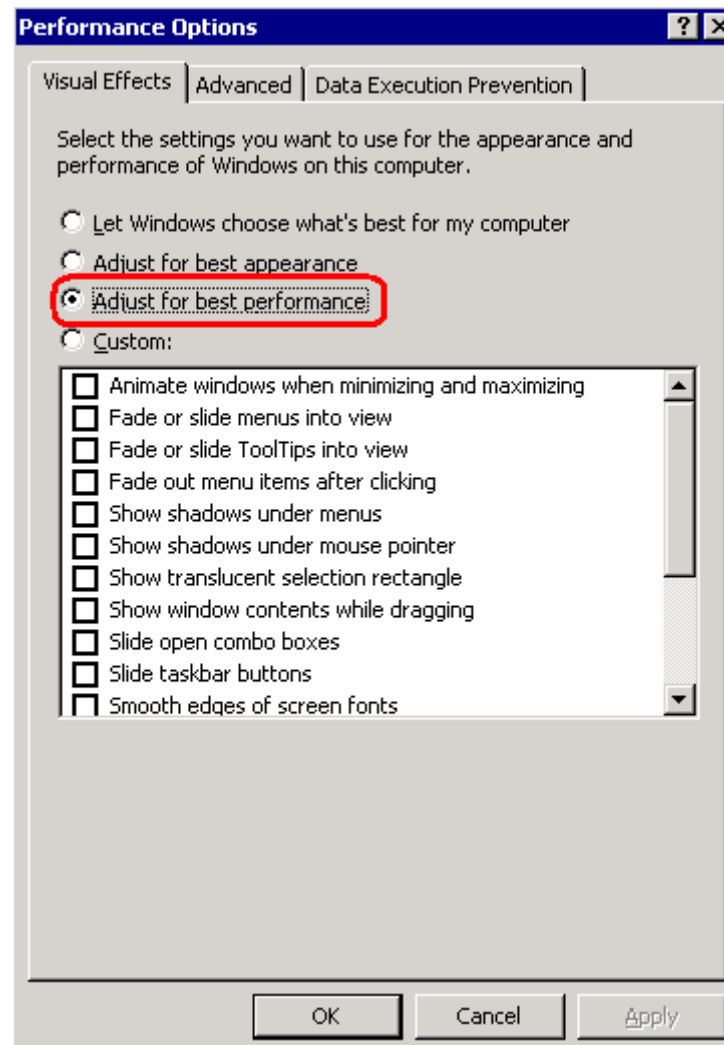
## OS Settings:

### DBServer System Properties Modifications:

To modify the system properties, right click on the **My Computer** desktop icon and select Properties. Select the **Advanced** tab and under the **Performance** heading, click on Settings.

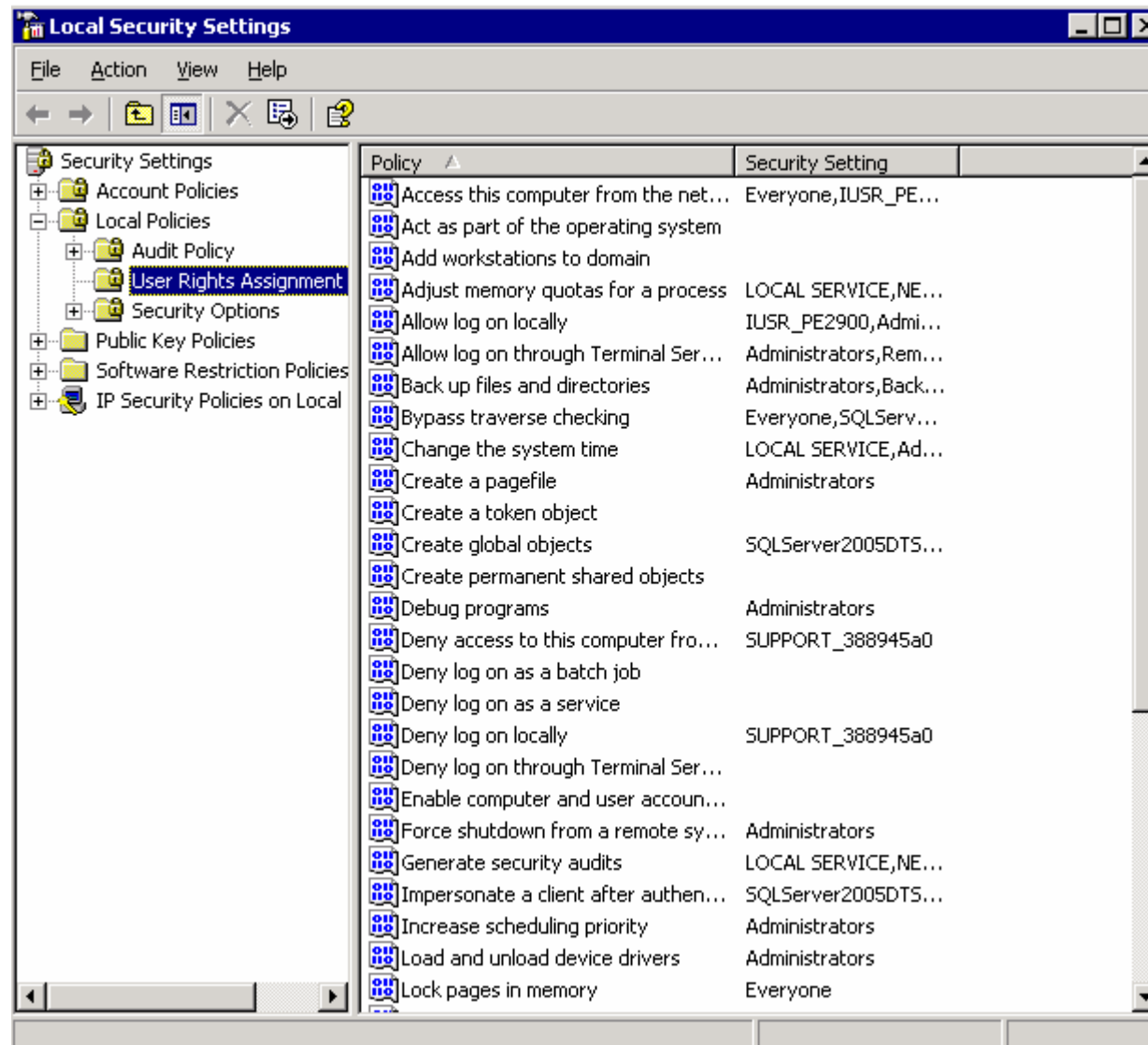


Under the **Visual Effects** tab, click on **Adjust for best performance**.

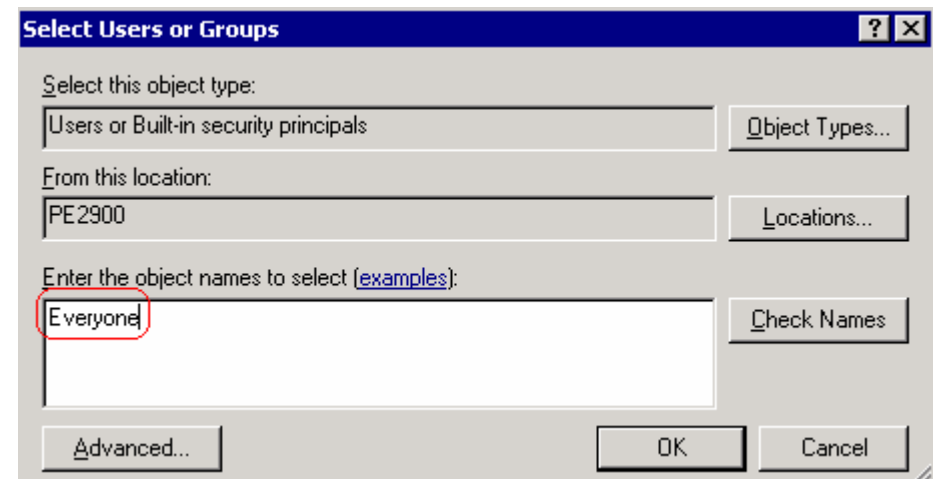
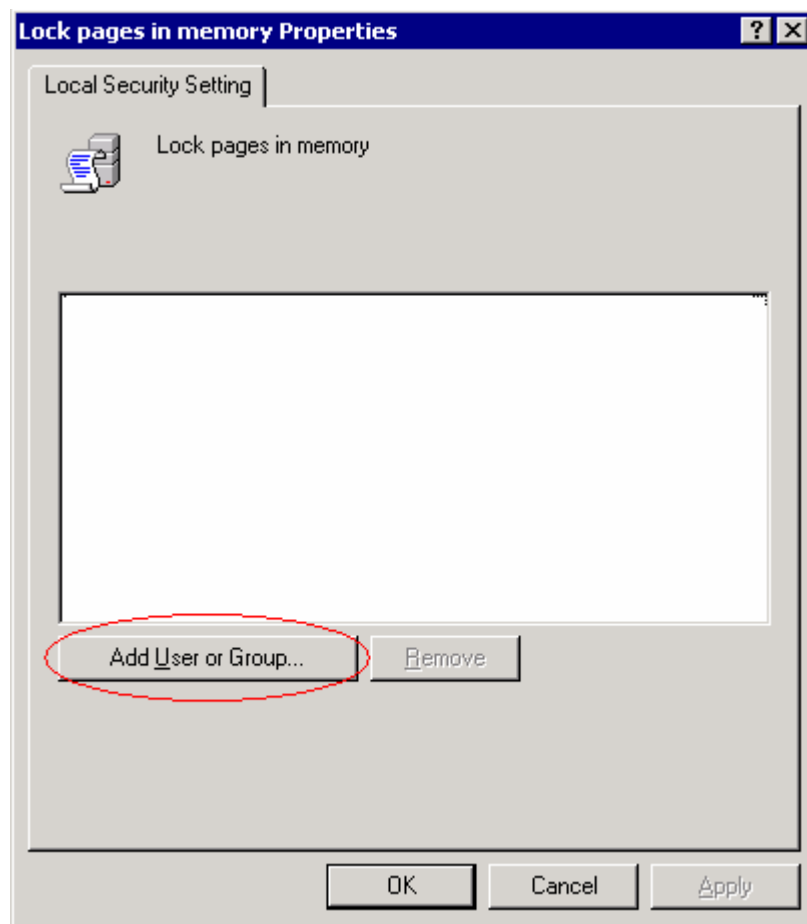


## Lock Pages in Memory:

To access **Lock Pages in Memory**, click on the **Start** button, select Settings -> Control Panel -> Administrative Tools -> Local Security Policy.



This displays the **Local Security Settings** window and from here, access **Local Policies -> User Rights Assignment** and double click on **Lock pages in memory**. The **Lock Pages in memory Properties** appears, then click **Add User or Group**. The **Select Users or Groups Box** appears, type **Everyone** and click OK, then OK out of the remaining boxes.

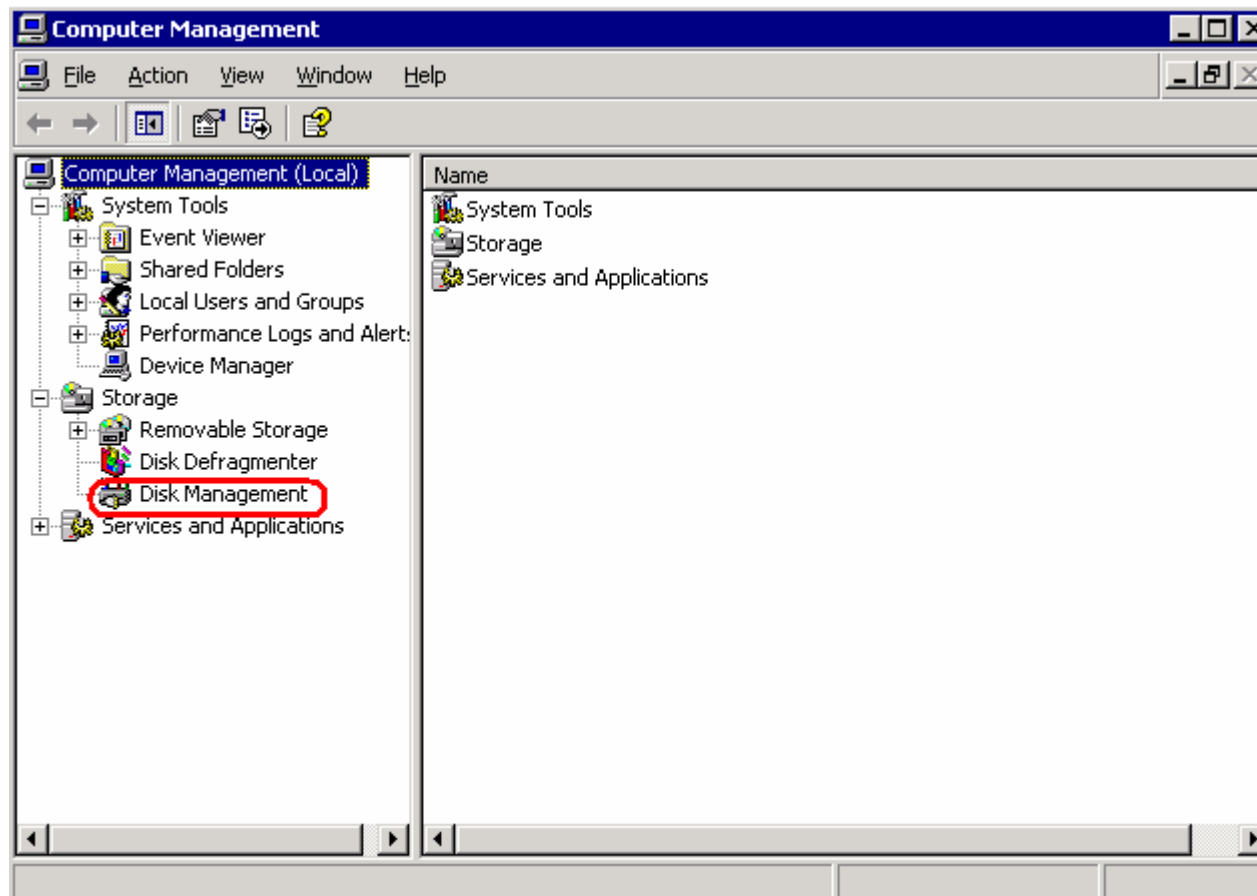




## Disk Configuration:

The disks were setup using the Disk Management tool.

Right click **My Computer** and select **Manage**. Right click on **Disk Management**.



## SQL Server Configuration

### Installation:

The **Latin1\_general\_Binary collation** option was selected during the SQL Server install and **SP2** for SQL Server was applied.

### SQL Server Startup Parameters:

sqlservr -C -T661 -T834 -T3502 -T8744

- c - Start SQL Server independent of the Service Control Manager
- T661 - Disable the ghost record removal process
- T834 - Enable Large Pages
- T8744 - Disallow prefetch ranges
- T3502 - Display checkpoints in the errorlog

### SQL Server Parameters:

name	minimum	maximum	config_value	run_value
Ad Hoc Distributed Queries	0	1	0	0
affinity I/O mask	-2147483648	2147483647	0	0
affinity mask	-2147483648	2147483647	255	255
affinity64 I/O mask	-2147483648	2147483647	0	0
affinity64 mask	-2147483648	2147483647	0	0
Agent XPs	0	1	0	0
allow updates	0	1	1	1
awe enabled	0	1	1	1
blocked process threshold	0	86400	0	0

c2 audit mode	0	1	0	0
clr enabled	0	1	0	0
common criteria compliance enabled	0	1	0	0
cost threshold for parallelism	0	32767	0	0
cross db ownership chaining	0	1	0	0
cursor threshold	-1	2147483647	-1	-1
Database Mail XPs	0	1	0	0
default full-text language	0	2147483647	1033	1033
default language	0	9999	0	0
default trace enabled	0	1	0	0
disallow results from triggers	0	1	0	0
fill factor (%)	0	100	0	0
ft crawl bandwidth (max)	0	32767	0	0
ft crawl bandwidth (min)	0	32767	0	0
ft notify bandwidth (max)	0	32767	100	100
ft notify bandwidth (min)	0	32767	0	0
in-doubt xact resolution	0	2	0	0
index create memory (KB)	704	2147483647	0	0
lightweight pooling	0	1	1	1
locks	5000	2147483647	0	0
max degree of parallelism	0	64	0	0
max full-text crawl range	0	256	4	4
max server memory (MB)	16	2147483647	47104	47104
max text repl size (B)	0	2147483647	65536	65536
max worker threads	128	32767	1024	1024
media retention	0	365	0	0
min memory per query (KB)	512	2147483647	512	512
min server memory (MB)	0	2147483647	45056	45056
nested triggers	0	1	1	1
network packet size (B)	512	32767	32767	32767
Ole Automation Procedures	0	1	0	0
open objects	0	2147483647	0	0

PH timeout (s)	1	3600	60	60
precompute rank	0	1	0	0
priority boost	0	1	1	1
query governor cost limit	0	2147483647	0	0
query wait (s)	-1	2147483647	2147483647	2147483647
recovery interval (min)	0	32767	32767	32767
remote access	0	1	1	1
remote admin connections	0	1	0	0
remote login timeout (s)	0	2147483647	2147483647	2147483647
remote proc trans	0	1	0	0
remote query timeout (s)	0	2147483647	600	600
Replication XPs	0	1	0	0
scan for startup procs	0	1	1	1
server trigger recursion	0	1	1	1
set working set size	0	1	0	0
show advanced options	0	1	1	1
SMO and DMO XPs	0	1	1	1
SQL Mail XPs	0	1	0	0
transform noise words	0	1	0	0
two digit year cutoff	1753	9999	2049	2049
user connections	0	32767	0	0
user options	0	32767	0	0
Web Assistant Procedures	0	1	0	0
xp_cmdshell	0	1	0	0

## Client Configuration

### OS Configuration

#### System Information:

The Client System information text file Client\_SysInfo.txt is in the SupportingFiles\Indroduction directory.

#### Assign IP Address to Client System:

**Start -> Settings -> Network Connections.** Right click on the desired **network icon** and select **Properties**. Click on **Internet Protocol** and **Properties**, select **Use the following IP address** and input 192.1.1.30.

### SQL Configuration

A standard SQL configuration was used on this client.

### Benchcraft Configuration

#### Benchcraft Profile:

```
<?xml version="1.0" ?>  
= <benchcraft_profile workload="TPC-E" version="5"  
  xmlns:bc="http://mssqlperf.partners.extranet.microsoft.com/Benchcraft" iStatsRefreshInt="5" iStatsSampleInt="60">  
  <user_engine name="DRIVER1" description="" directory="C:\tpcelogs\UEdriver1.log" machine="client81"  
    parameters="~Default" pipe="DRIVER1134540328" db_size="134000" ScaleDown="0" ActiveCustomers="1000"
```

```

index="100000000" seed="87632" connect_rate="120" start_rate="120" CPU="0" Checked="1" RunDataMaintenance="1"
RunCheckpoint="1" add_options="" />
<mee_engine name="MEE1" description="" directory="C:\tpcelogs\mee1log.log" machine="client81"
pipe="MEE1134645390" SUT_server="client25" db_size="134000" ScaleDown="0" ActiveCustomers="1000"
Port="38111" index="0" seed="21858" CPU="0" Checked="1" TR_Queue_Depth="5000" TradingTimeSoFar="0"
add_options="" />
<user engine="DRIVER1" SUT_server="client25" user_count="200" EnablePartitioning="0" StartFromCustomer="1"
CustomerCount="5000" PercentPartition="100" />
= <params name="~Default" description="Default Parameter Set" txn_rate="20" DataMaintenanceInterval="60"
CheckpointInterval="450" CheckpointDuration="420">
<param_broker_volume txnWeight="4.9" />
<param_customer_position txnWeight="13" by_cust_id="50" get_history="50" />
<param_market_watch txnWeight="18" by_acct_id="35" by_industry="5" />
<param_security_detail txnWeight="14" LOBAccessPercentage="1" />
<param_trade_lookup txnWeight="8" do_frame1="30" do_frame2="30" do_frame3="30" MaxRowsFrame1="20"
OffsetFromEndTimeFrame2="115200" MaxRowsFrame2="20" OffsetFromEndTimeFrame3="12000" MaxRowsFrame3="20"
OffsetFromEndTimeFrame4="30000" MaxRowsFrame4="20" />
<param_trade_order txnWeight="10.1" market="60" stop_loss="50" security_by_name="40" buy_orders="50" lifo="35"
exec_is_owner="90" rollback="1" type_is_margin="8" />
<param_trade_status txnWeight="19" />
<param_trade_update txnWeight="2" do_frame1="33" do_frame2="33" MaxRowsFrame1="20" MaxRowsToUpdateFrame1="20"
MaxRowsFrame2="20" MaxRowsToUpdateFrame2="20" MaxRowsFrame3="20" MaxRowsToUpdateFrame3="20" />
</params>
</benchcraft_profile>

```

### Start SUT\_CE\_Server:

> SUT\_CE\_Server.exe -s PE2900

### Start SUT\_MEE\_Server:

> SUT\_MEE\_Server.exe -s PE2900