# IT Essentials 5.0 5.3.4.4 Lab - Hard Drive Maintenance in Windows XP

# Introduction

Print and complete this lab.

In this lab, you will examine the results after using Disk Check and Disk Defragmenter on a hard drive.

# **Recommended Equipment**

The following equipment is required for this exercise:

- A computer running Windows XP Professional
  - Two or more partitions on the hard drive.

# Step 1

Log on to Windows as an administrator.

### Start > My Computer > double-click New Volume (G:).

Note: Substitute volume and drive (G:) for the letter used in your computer.



Right-click anywhere in the white space of the folder area for drive **G**: > **Properties** > **Tools** tab > **Check Now**.

The "Check Disk New Volume (G:)" window opens.

Make sure none of the boxes are checked and then click Start.

The "Disk Check Complete" window opens.



How many phases were checked?

Click OK.

Select the Tools tab, click Check Now.

? 🔀
sectors
ancel

Place a check mark in the check box next to Scan for and attempt recovery of bad sectors > Start.

The "Disk Check Complete" window appears.



How many phases were checked?

# Click OK.

Select the **Tools** tab, click **Check Now**.

Check Disk New Volume (G:)	? 🗙
Check disk options	
<ul> <li>Automatically fix file system errors</li> <li>Scan for and attempt recovery of bad</li> </ul>	sectors
C	
Start C	Cancel

Place a check mark in both check boxes and click Start.

An information window opens.

İ	Checkin	ng Disk New Yolume (G:)
	٩	The disk check could not be performed because the disk check utility needs exclusive access to some Windows files on the disk. These files can be accessed only by restarting Windows. Do you want to schedule this disk check to occur the next time you restart the computer?
		Ves No

Why will CHKDSK not start?

**Note:** This message is displayed because a boot partition will be scanned, or a non-boot partition that is going to be scanned is open.

Click **Yes** and then **OK** to close the "New Volume (G:) Properties" window.

Make sure drive G: stays open.

**Note:** To force CHKDSK to create a log file, when it scans a non-boot partition with no bad sectors, the non-boot partition drive must be open.

#### Click Start > Shutdown > Restart.

#### Step 2

The "Checking file system on G:" window appears.



How many stages in the scan are there?

What is being verified in each of the stages?

Were any problems found with the volume?

If so what are they?

# Step 3

Log on to Windows as an administrator.

#### Start > Control Panel > Administrative Tools > Event Viewer > in the left pane select Application.

Event Viewer					×
File Action View Help					
	2				
Event Viewer (Local)	Application 2	2,107 event(s)			
Security	Туре	Date	Time	Source	^
System	Information	9/24/2012	6:36:00 PM	gupdate	-
Internet Explorer	Information	b9/24/2012	6:25:27 PM	Norton AntiVirus	
Microsoft Office Diagnostics	Information	9/24/2012	6:25:25 PM	Norton AntiVirus	
Microsoft Office Sessions	Information	9/24/2012	6:25:19 PM	Windows Search	
	Information	9/24/2012	6:25:14 PM	ESENT	
	Information	9/24/2012	6:25:14 PM	ESENT	
	Information	9/24/2012	6:25:14 PM	SecurityCenter	
	Information	9/24/2012	6:25:13 PM	HPSLPSVC	
	Information	9/24/2012	6:25:12 PM	Viewpoint Manag	
	Information	9/24/2012	6:25:12 PM	gupdate	
	Information	9/24/2012	6:25:10 PM	Winlogon	¥
	<			>	

Double-click the top event in the right pane.

The "Event Properties" window opens.

Event Prope	rties			? 🗙
Event				
Date: Time: Type: User: Compute:	9/24/2012 7:26:29 PM Warning N/A JOHN-PC	Source: Category: Event ID:	Windows Search Service Gatherer 3036	<ul> <li>↑</li> <li>↓</li> <li>□</li> </ul>
The contern 725345543 c85c91210 Context: A Details: (0x800040	nt source <ou 3-682003330- 12b6}/&gt; cann pplication, Sy Jnspecified ei 105)</ou 	tlookexpres 1017}/{160 ot be acce stemIndex rror	s://{s-1-5-21-343818398- )e2894.f5b7-4d71-b1fd- ssed. Catalog	<
Data: 💿 E	3ytes 🔿 Wo	rds		<
			IK Cancel	Apply

Click the black down arrow until the disk check event appears.



Which stages are shown as completed?

Close all open windows.

## Step 4

Start > My Computer > right-click drive (C:) > Properties > Tools tab > Defragment Now.

😵 Disk Defragmen	ter				
File Action View	Help				
← →   🖬   😫					
Volume	Session Status	File System	Capacity	Free Space	% Free Space
😑 (C:)		NTFS	3.99 GB	1.83 GB	45 %
💷 New Volume (G:)		NTFS	499 MB	494 MB	98 %
Estimated disk usage	before defragmentatio	on: 	-	-	
Analyze	Defragment	Pause Sto	p View Rep	port	
Fragmented files	Contiguous files	Unmovable files	Free space		

The "Disk Defragmenter" window appears. Notice drive (C:) is selected.

What are the file types and colors, grouped by Disk Defragmenter?

# Click Analyze.

When the Analysis is complete for: (C:) window appears, click View Report.



The "Analysis Report" window opens.

Analysis is comple You do not need l 	ete for: (C to defragr n:	:) nent this volume.	
Volume information	n:		
Volume (C:)			~
Volume size		= 3.99 GB	
Cluster size		= 4 KB	5
Used space		= 2.16 GB	. 0
Free space		= 1.83 GB	
Percent free s	space	= 45 %	
Volume fragmen	tation		~
Fragments	File Size	File Name	^
112	11 MB	\Documents and Settings\Administrator\Loca	э. 🔳
103	6 MB	\Documents and Settings\Administrator\Loca	э. 🦳
67	704 KB	\Documents and Settings\Default User\Local	l.
63	1 KB	\WINDOWS\system32\config\system.LOG	
60	249 KB	\WINDOWS\setupapi.log	
51	3 MB	\Documents and Settings\Administrator\Loca	а.
48	8 MB	\Program Files\TechSmith\Snagit 9\SnagitEdi	i
46	39 MB	\Documents and Settings\Administrator\Desl	k. ≚
<			
Duint	C.c.u.	As Definition of Class	
Princ	Save	As Derragment Close	

Does the volume need defragmenting?

Click on the scroll down bar to view volume information.

Volume (C:)		
Volume size	=	3.99 GB
Cluster size	=	4 KB
Used space	=	2.16 GB
Free space	=	1.83 GB
Percent free space	=	45 %
Volume fragmentation		
Total fragmentation	=	10 %
File fragmentation	=	20 %
Free space fragmentation	=	0%
File fragmentation		
Total files	=	10,655
Average file size	=	246 KB
Total fragmented files	=	634
Total excess fragments	=	2,046
Average fragments per file	=	1.19
Pagefile fragmentation		
Pagefile size	=	768 MB
Total fragments	=	1
Folder fragmentation		
Total folders	=	748
Fragmented folders	=	17
Excess folder fragments	=	118
Master File Table (MFT) fragmentation		
Total MFT size	-	11 MB
MFT record count	=	11,420
Percent MFT in use	=	99
Total MFT fragments		2

olume informat	ion:			
Volume (C;)				~
Volume size			3.99 GB	
Cluster size		=	4 KB	_
Used space		=	2.16 GB	
Free space		=	1.83 GB	
Davaar b fuar		-	4E 9/	
Percent free	e space		40.70	
Volume fragmente	d files:		10 70	~
Volume fragmente Fragments	d files: File Size	File Name	70 76	~
Volume fragmente ost fragmente Fragments 112	d files: File Size	File Name \Documents and Settin	gs\Administrato	r\Loca.
Fragments 112 103	d files: File Size 11 MB 6 MB	File Name \Documents and Settin \Documents and Settin	gs\Administrato gs\Administrato	r\Loca.
Fragments 112 103 67	File Size 11 MB 6 MB 704 KB	File Name \Documents and Settin \Documents and Settin \Documents and Settin	gs\Administrato gs\Administrato gs\Default User	r\Loca. I\Loca.
Fragments Fragments 112 103 67 63	d files: File Size 11 MB 6 MB 704 KB 1 KB	File Name \Documents and Settin \Documents and Settin \Documents and Settin \WINDOWS\system32	gs\Administrato gs\Administrato gs\Default User ,config\system.L	r\Loca. I\Loca. Local . OG
Fragments 112 103 67 63 60	d files: File Size 11 MB 6 MB 704 KB 1 KB 249 KB	File Name \Documents and Settin \Documents and Settin \During Settins \WINDOWS\system32' \WINDOWS\setupapi.	gs\Administrato gs\Administrato gs\Default User config\system.L og	r\Loca. ILocal. OG
Fragments 112 103 67 63 60 51	d files: File Size 11 MB 6 MB 704 KB 1 KB 249 KB 3 MB	File Name (Documents and Settin (Documents and Settin (WINDOWS(system32) (WINDOWS(system32) (Documents and Settin (Documents and Settin	gs\Administrato gs\Administrato gs\Default User config\system.L og gs\Administrato	r\Loca. r\Loca. \Local . .OG r\Loca.
Fragments Fragments 112 103 67 63 60 51 48	d files: File Size 11 MB 6 MB 704 KB 1 KB 249 KB 3 MB 8 MB	File Name \Documents and Settin \Documents and Settin \WINDOWS\system32' \WINDOWS\system32' \WINDOWS\setupapi.I \Documents and Settin \Program Files\Tech5m	gs\Administrato gs\Administrato gs\Default User config\system.L gg\Administrato ith\Snagit 9\Sna	r\Loca. I\Local . ILocal . OG I'LLoca. IgitEdi

Click the **Close** button.

Drive (C:) has what percentage of free space?

💱 Disk Defragmenter File Action View Help ← → 📧 😫 Volume Session Status File System Capacity Free Space % Free Space 3.99 GB 🔲 (C:) Analyzed 45 % New Volume (G:) NTFS 499 MB 494 MB 98 % Estimated disk usage before defragmentation: Estimated disk usage after defragmentation: Defragment View Report Analyze Pause Stop 📕 Fragmented files 📃 Contiguous files 📃 Unmovable files 🔲 Free space

The "Disk Defragmenter" window opens.

Click the **Defragment** button.

The defragmenting process begins.

💱 Disk Defragmen	iter				
File Action View	Help				
← → 📧 😫					
Volume	Session Status	File System	Capacity	Free Space	% Free Space
(C:)	Defragmenting	NTES	3.99 GB	1.83 GB	45 %
New Volume (G:)		NTFS	499 MB	494 MB	98 %
Estimated disk usage	before defragmentatio	n:			
Estimated disk usage	after defragmentation				
Analyze	Defragment <b>F</b>	'ause Sto	View Rep	port	
Fragmented files	Contiguous files	Unmovable files	Free space		
(C:) Defragmenting 1	% Compacting Files				

The "Defragmentation is complete for: (C:)" window appears.



# Click View Report.

Click on the scroll down bar to view volume information.

Volume (C:)		
Volume size	=	3.99 GB
Cluster size	=	4 KB
Used space	=	2.15 GB
Free space	=	1.84 GB
Percent free space	=	46 %
Volume fragmentation		
Total fragmentation	=	0%
File fragmentation	=	0%
Free space fragmentation	=	0%
File fragmentation		
Total files		10,673
Average file size	=	245 KB
Total fragmented files	=	0
Total excess fragments	=	0
Average fragments per file	=	1.00
Pagefile fragmentation		
Pagefile size	=	768 MB
Total fragments	=	1
Folder fragmentation		
Total folders	=	748
Fragmented folders	=	1
Excess folder fragments	=	0
Master File Table (MFT) fragmentation		
Total MFT size	=	11 MB
MFT record count	=	11,438
Percent MFT in use	=	99
Total MFT fragments	777	2

Volume (C:) has what percentage of free space?

Close all open windows.