

Application Note



Expanding Data Volumes on EonStor® Storage Systems in Windows 2003 Server Environment

Abstract

This application note explains how existing storage volumes can be expanded using Infotrend storage in conjunction with the dynamic volumes capabilities of the Windows 2003 server systems.

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Networked Storage Solution Provider

Revision 1.0

Mar, 2009

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While it is relatively easy to add a second addressable volume to a server, many administrators often find that they have a need to extend the capacity of existing storage volumes. This is largely due to the fact that applications often have hard coded references to absolute device names such as /dev/sdb2 in a Linux environment or f:\ in a windows environment. These dependencies make the task of relocation non trivial. The need then is to grow the size of an existing volume in a non data destructive way while preserving the device name to the existing applications and their associated data.

This application note explains how existing storage can be expanded without resorting to virtualization technology using Infortrend storage in conjunction with the dynamic volumes capabilities of the Windows 2003 server systems.

Application Example

The following demonstration will show how to increase the capacity of the original logical drive by adding new drives without being destructive to the data.

Scenario

User has one logical drive made up of three physical drives in a B12F-R1430 and it has been recognized by the Computer Management Utility in Windows 2003 Server environment. The logical drive contains data and its total capacity is currently 9.76GB (disk 1, shown in **Figure 1**). User would like to increase the capacity of the current logical drive by adding additional drive(s) to it.

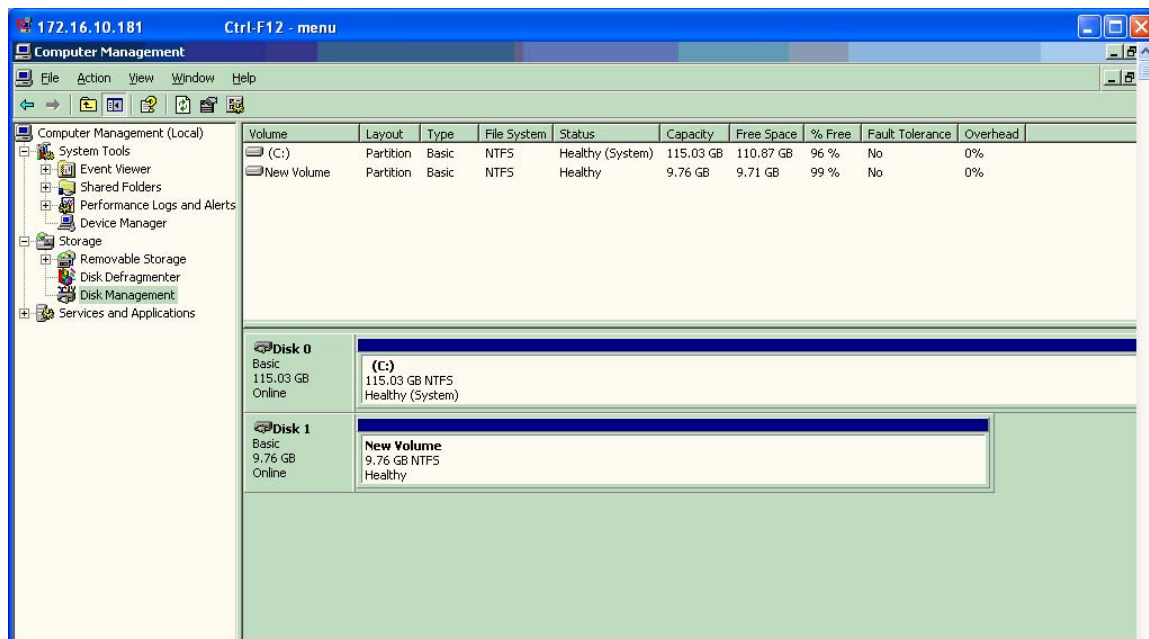


Figure 1. Computer Management Utility Showing Existing Drive

Procedures

Users need to follow the procedures below to expand the logical drive by adding drive(s).

A. Create New Partition

Step1.

From the console main menu, go to “View and Edit logical drive.” Press <Enter> on the current logical drive.

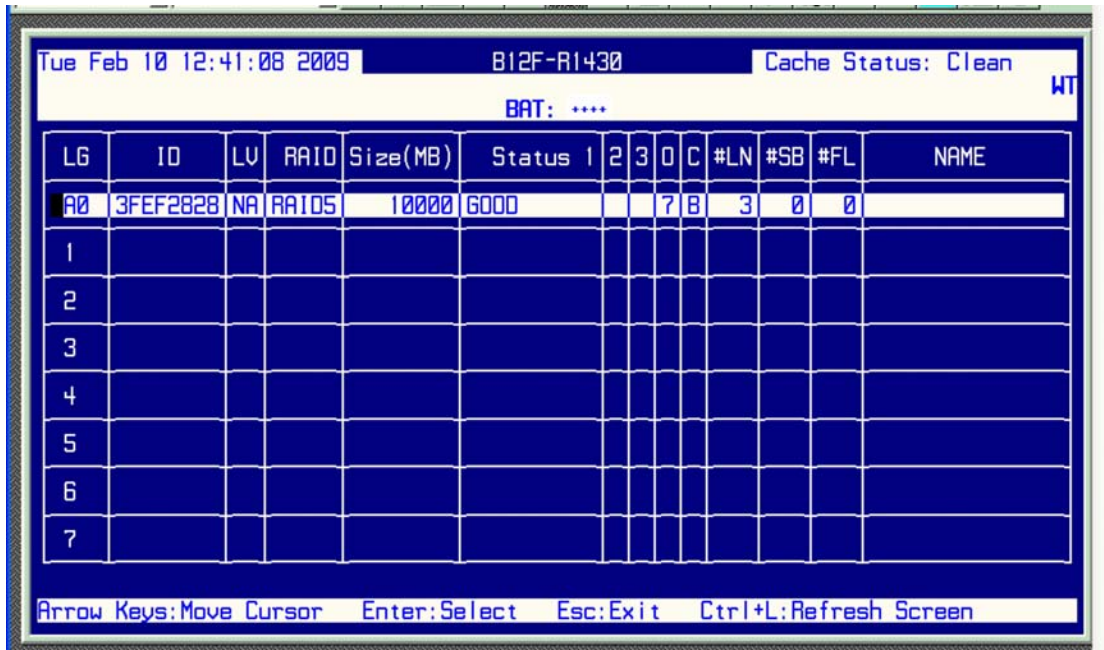


Figure 2. Pressing <Enter> on the Logical Drive to Be Expanded

Step 2.

Choose “add drives”, and then select drive(s) you want to add.

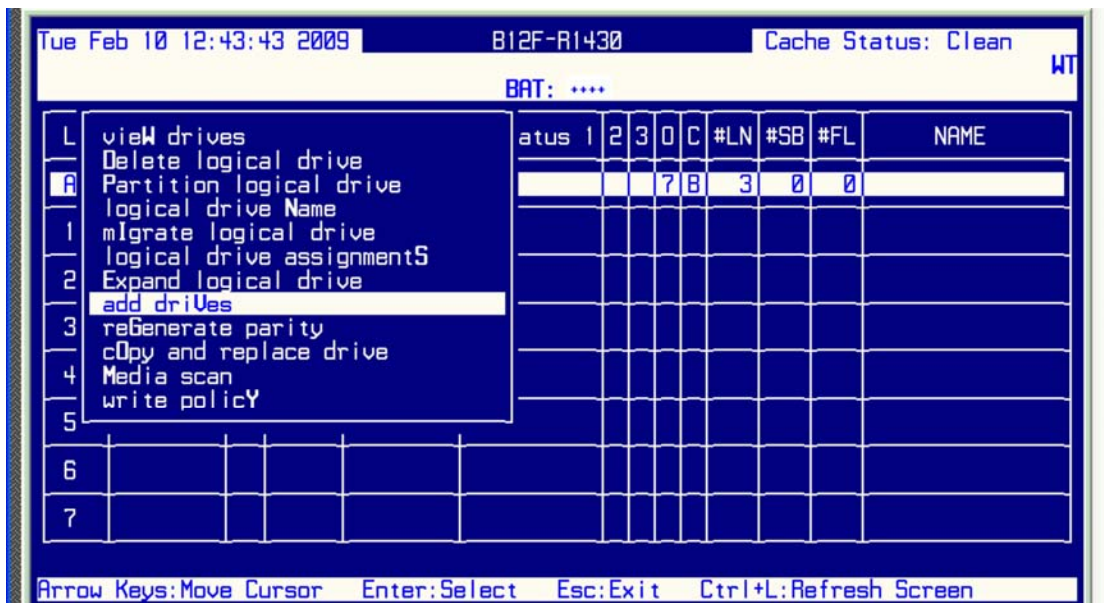


Figure 3. Using the “add drives” Function

Step 3.

Wait until the “addition” is 100% done. (shown in the upper left corner of Figure 4)

LG	ID	LV	RAID	Size(MB)	Status	1	2	3	0	C	#LN	#SB	#FL	NAME
A0	3FEF2828	NA	RAID5	10000	GOOD	A	7	B	4	0	0			
1														
2														
3														
4														
5														
6														
7														

Figure 4. Progress Display of “add drives” Function

Step 4.

The newly created partition is shown in **Figure 5** below.

LG	ID	LV	RAID	Size	Partition	Offset(MB)	Size(MB)	Name
A0	59BAA303	NA	RAID5	1	0	0	10000	
1					1	10000	5000	
2					2			
3					3			
4					4			
5					5			
6					6			
7					7			

Figure 5. Newly Created Partition

B. Map the New Partition

Step 1.

Go to “view and edit Host luns”, and press <Enter> on host channel you would like the new partition to be mapped to.

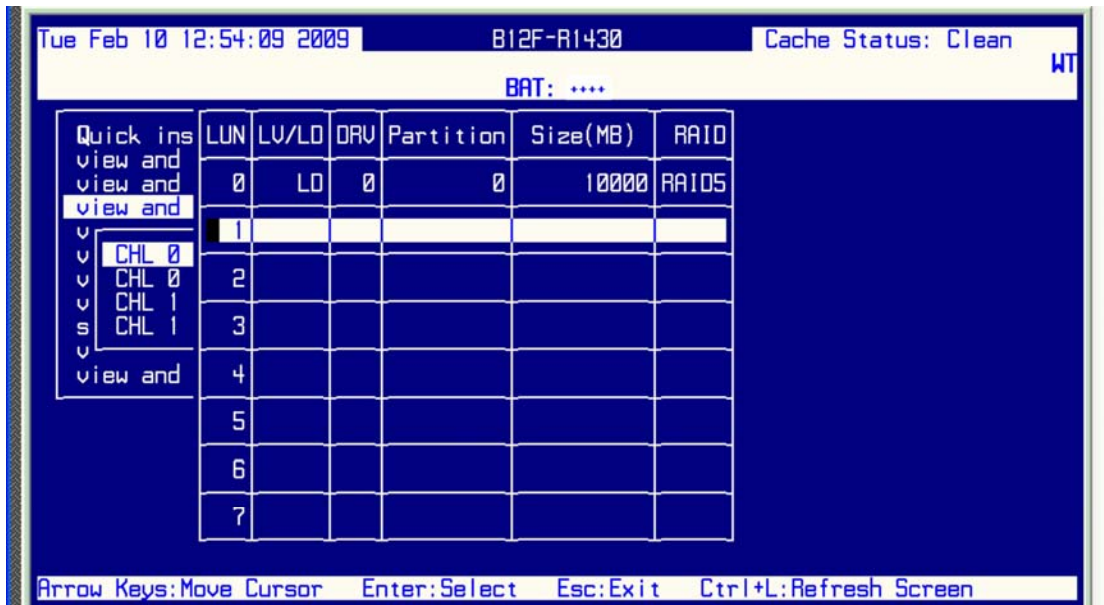


Figure 6. Selecting the Host Channel You Would Like the New Partition to Be Mapped to

Step 2.

Press “Enter” on the first available LUN, and select “Logical Drive.”

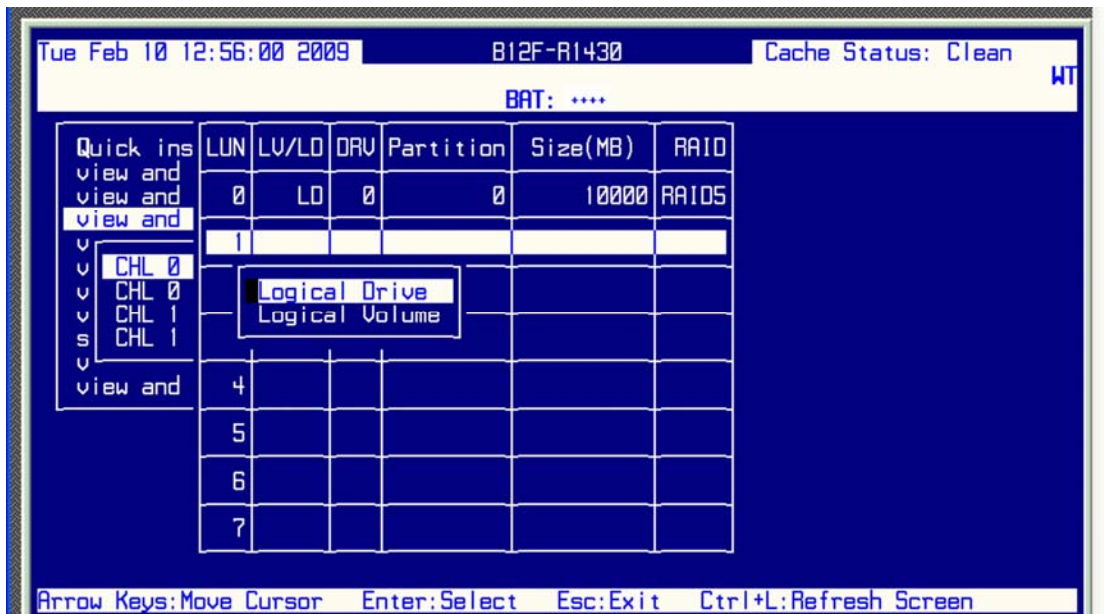


Figure 7. Selecting “Logical Drive”

Step 3.

Press “Enter” on the newly expanded logical drive.

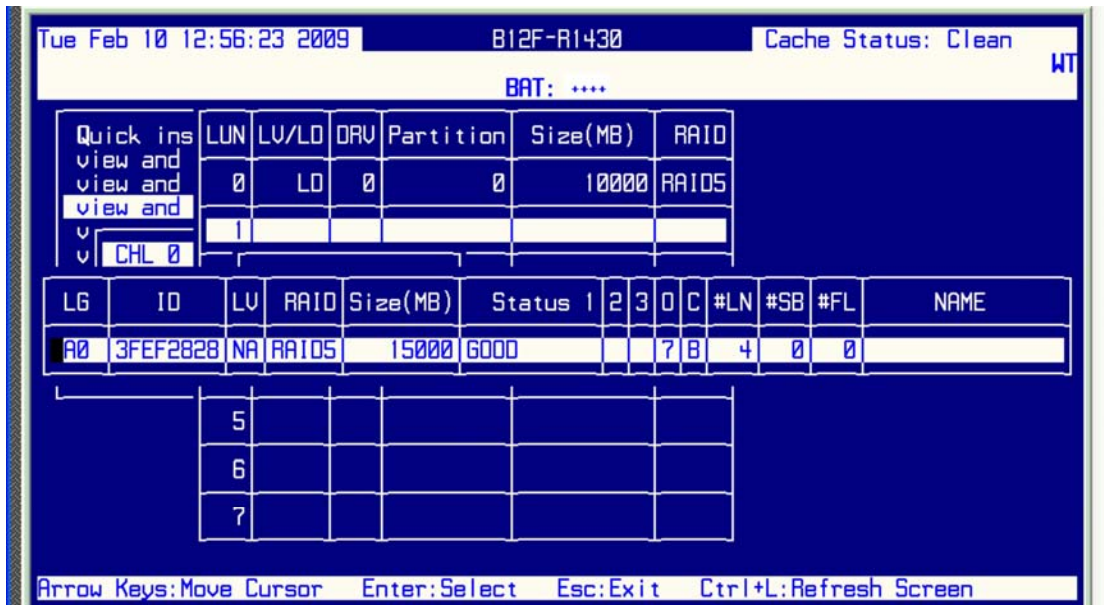


Figure 8. Selecting the Newly Expanded Logical Drive

Step 4.

Select the newly created partition.

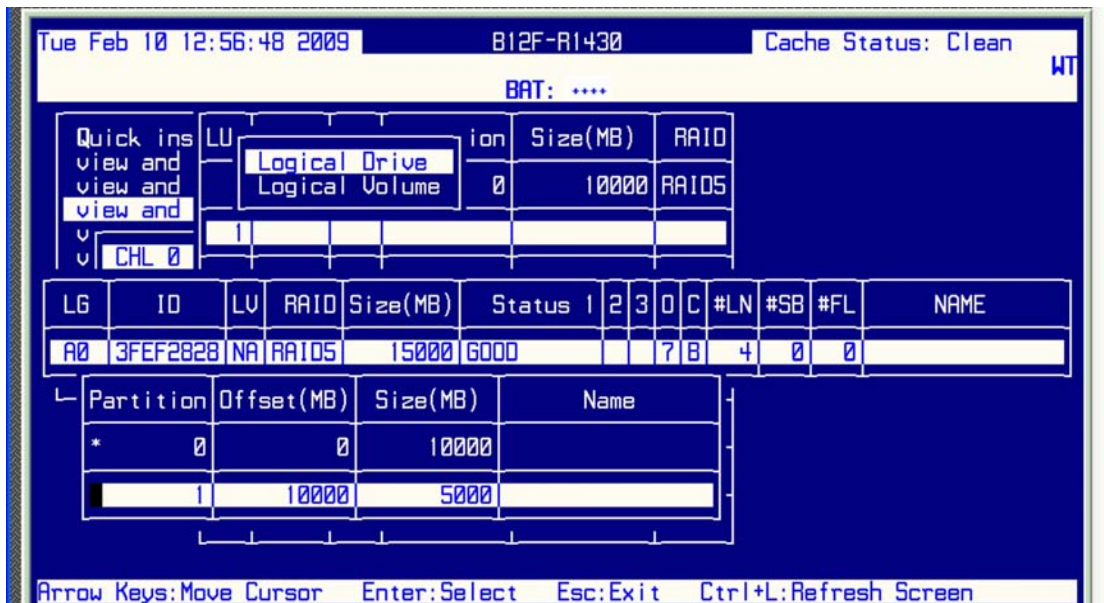


Figure 9. Selecting the Newly Created Partition

Step 5.

The new partition is now mapped to the host channel.

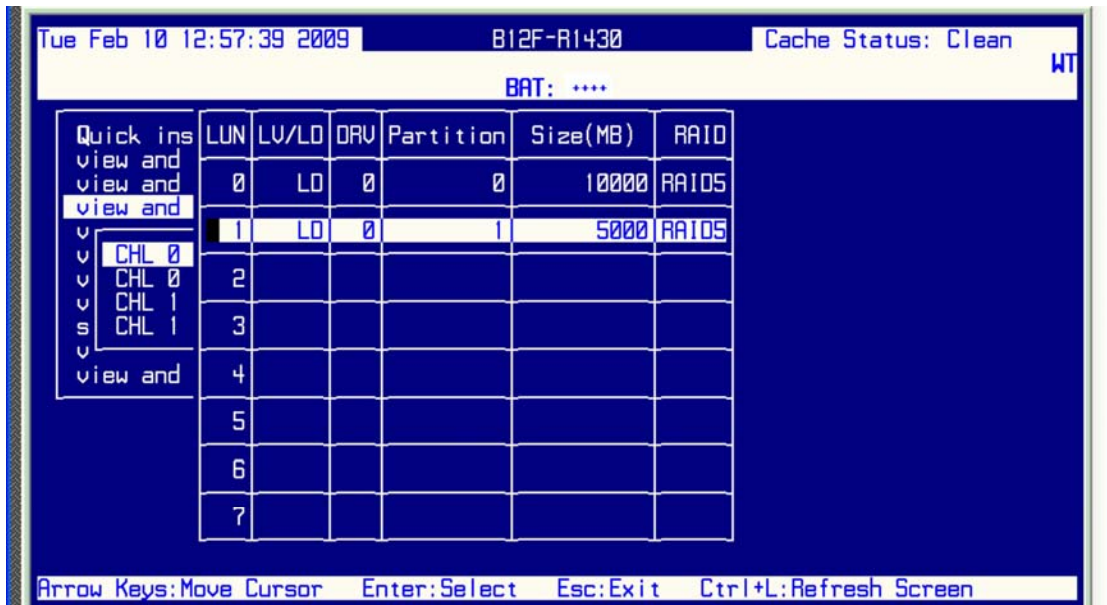


Figure 10. New Partition Mapped

C. Expand the Original Logical Drive in Computer Management Utility
Step 1.

Now return to the Windows Computer Management utility >> Disk Management to view the additional disk.

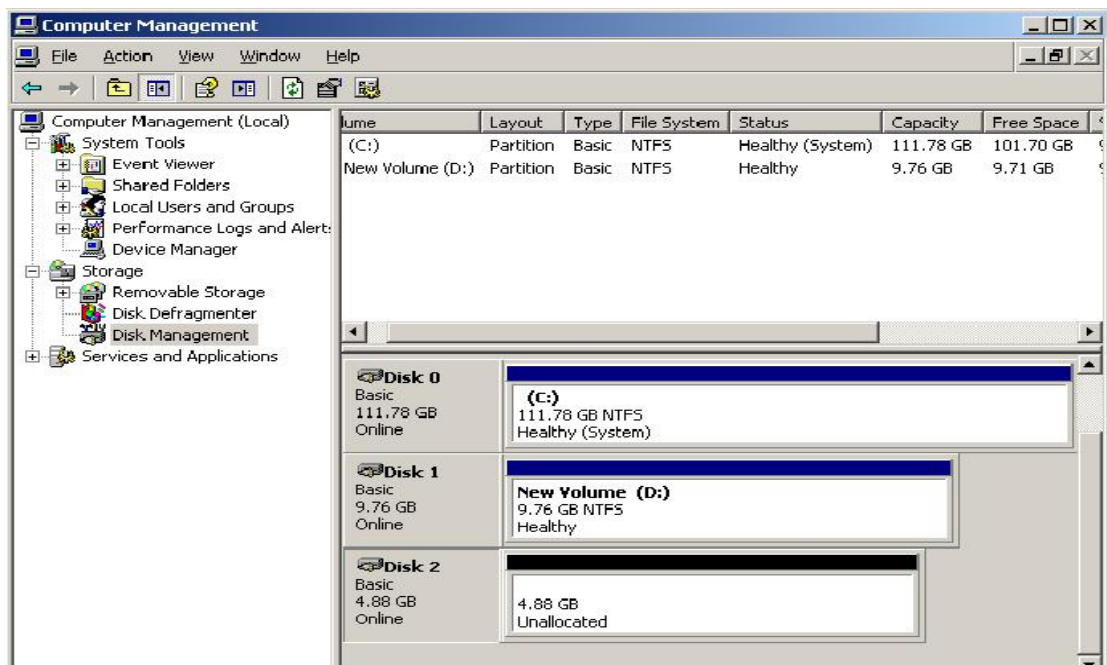


Figure 11. Computer Management Utility Showing Newly Added Disk

Step 2.

Right click on the additional disk and select “Convert to Dynamic Disk...”

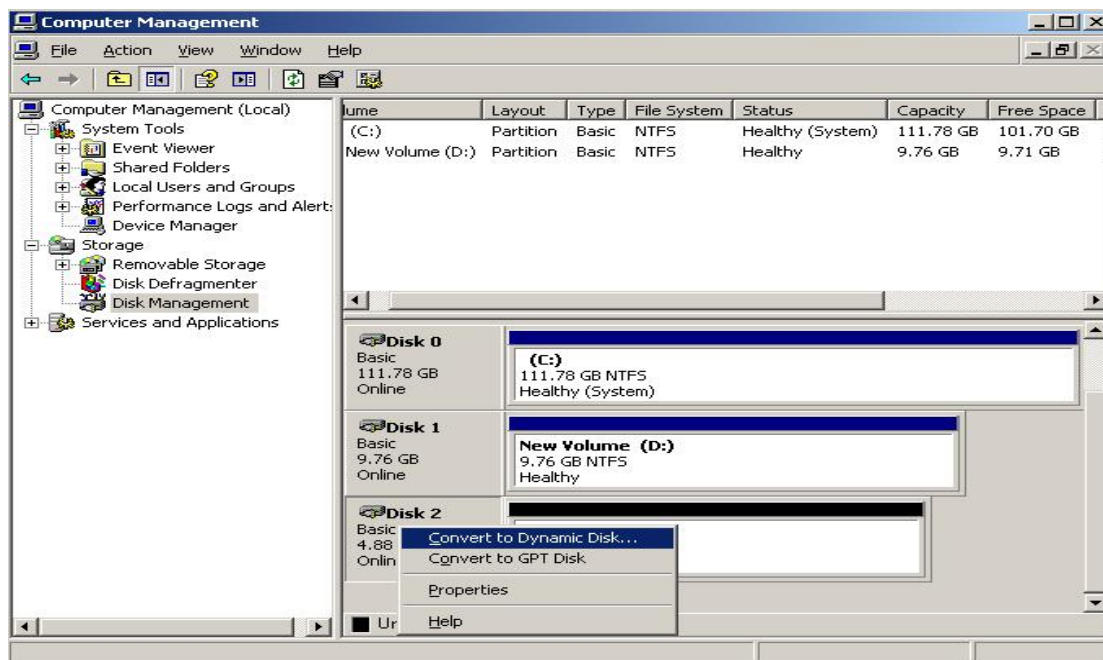


Figure 12. Converting the Additional Disk to Dynamic Disk

Step 3.

Right click on the original disk and select “Convert to Dynamic Disk...”

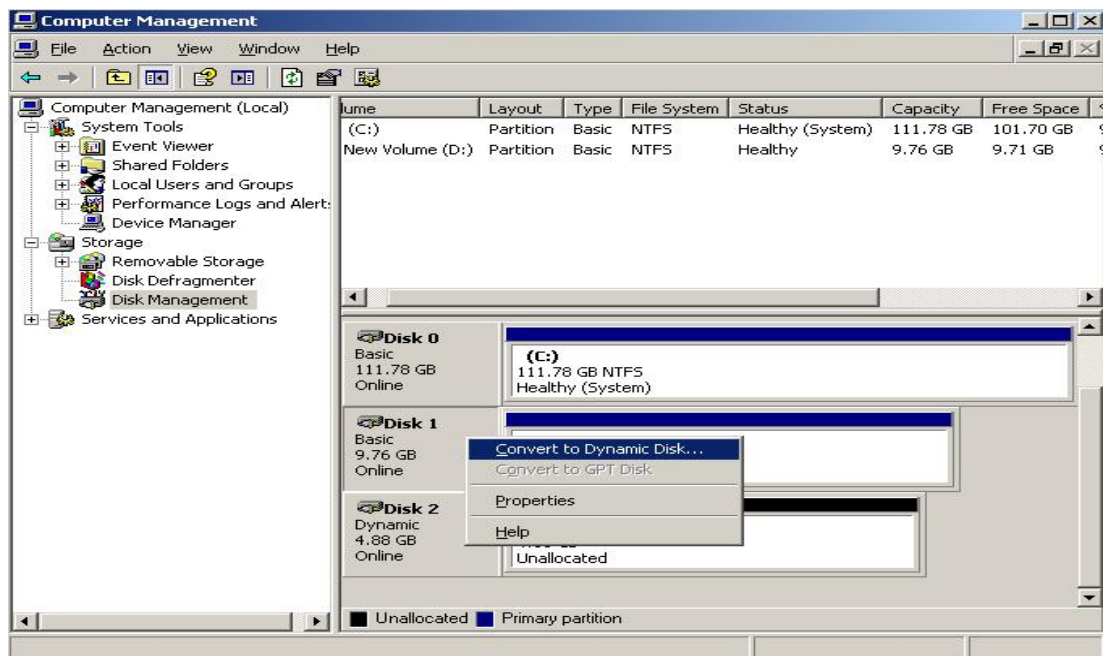


Figure 13. Converting the Original Disk to Dynamic Disk-part 1

Step 4.

Click on “Convert” as shown in Figure 14.

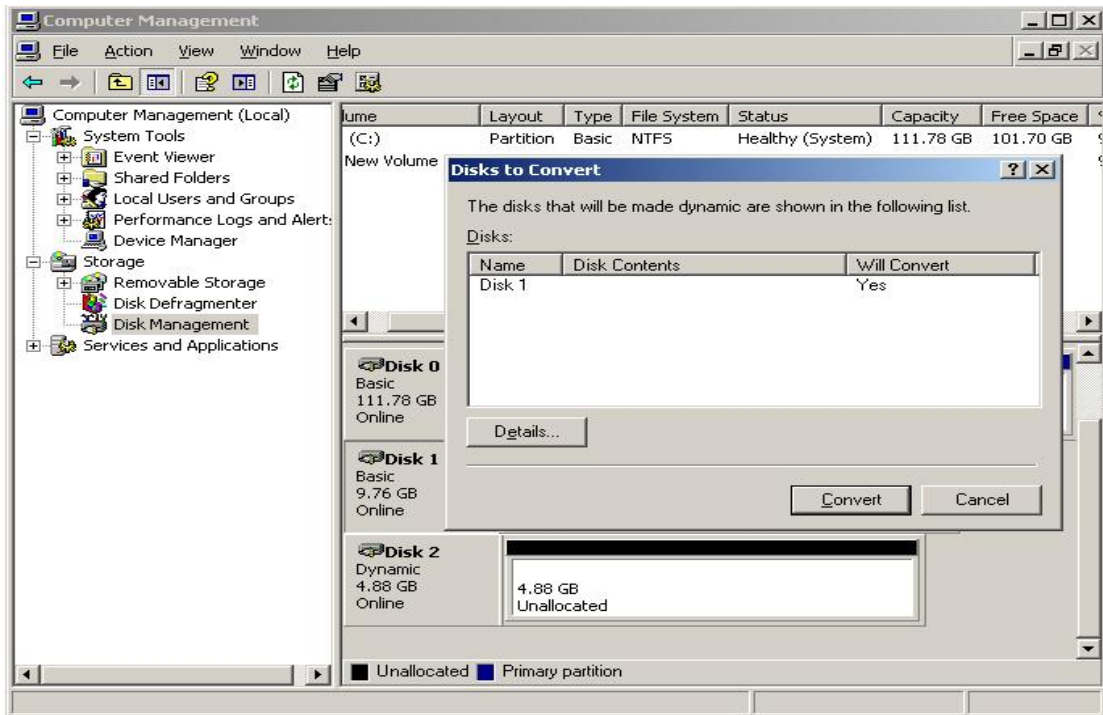


Figure 14. Converting the Original Disk to Dynamic Disk-part 2

Step 5.

Click on “Yes” in the prompt dialogue box as shown in Figure 15.

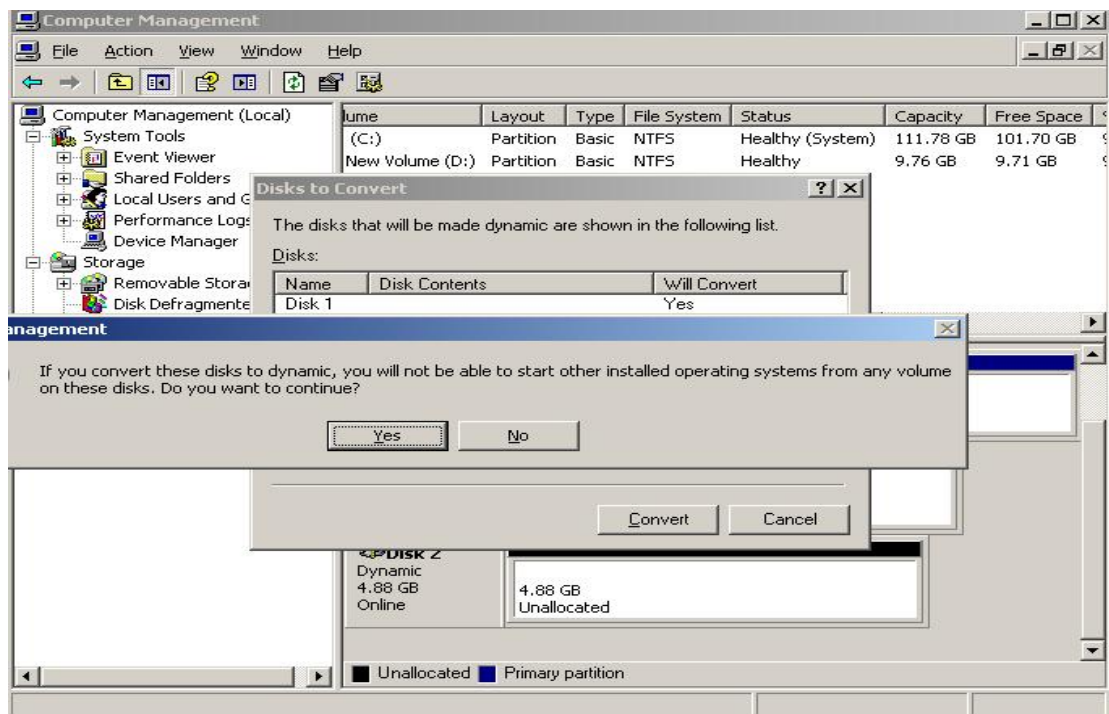


Figure 15. Converting the Original Disk to Dynamic Disk-part 3

Step 6.

Click on “Yes” in the prompt dialogue box as shown in Figure 16.

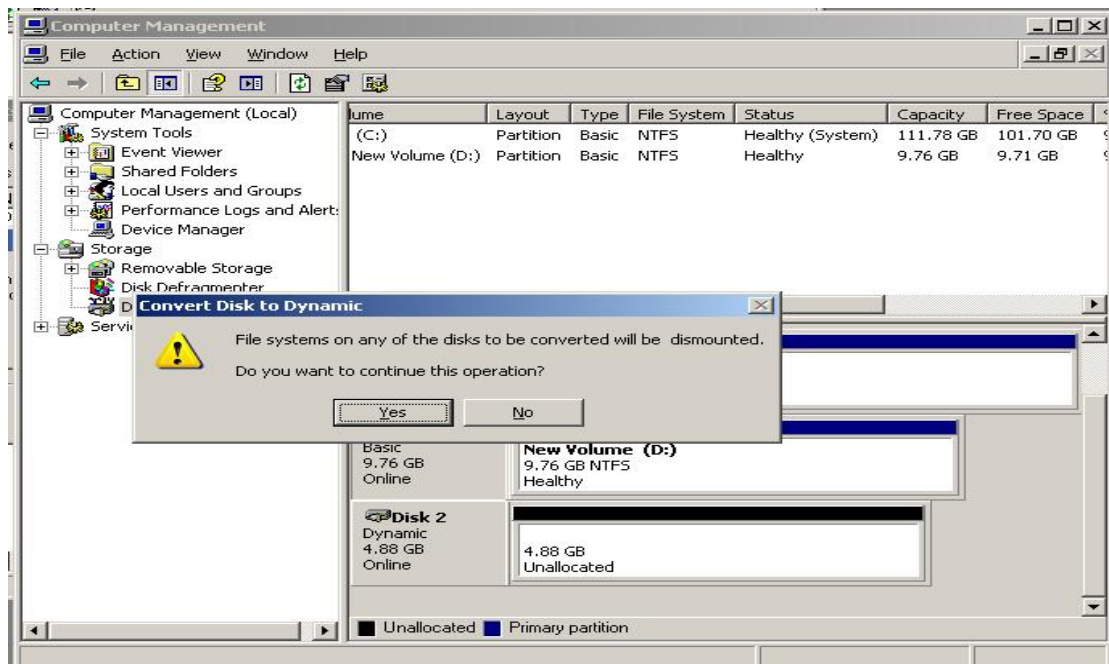


Figure 16. Converting the Original Disk to Dynamic Disk-part 4

Step 7

The original logical drive is now a dynamic disk.

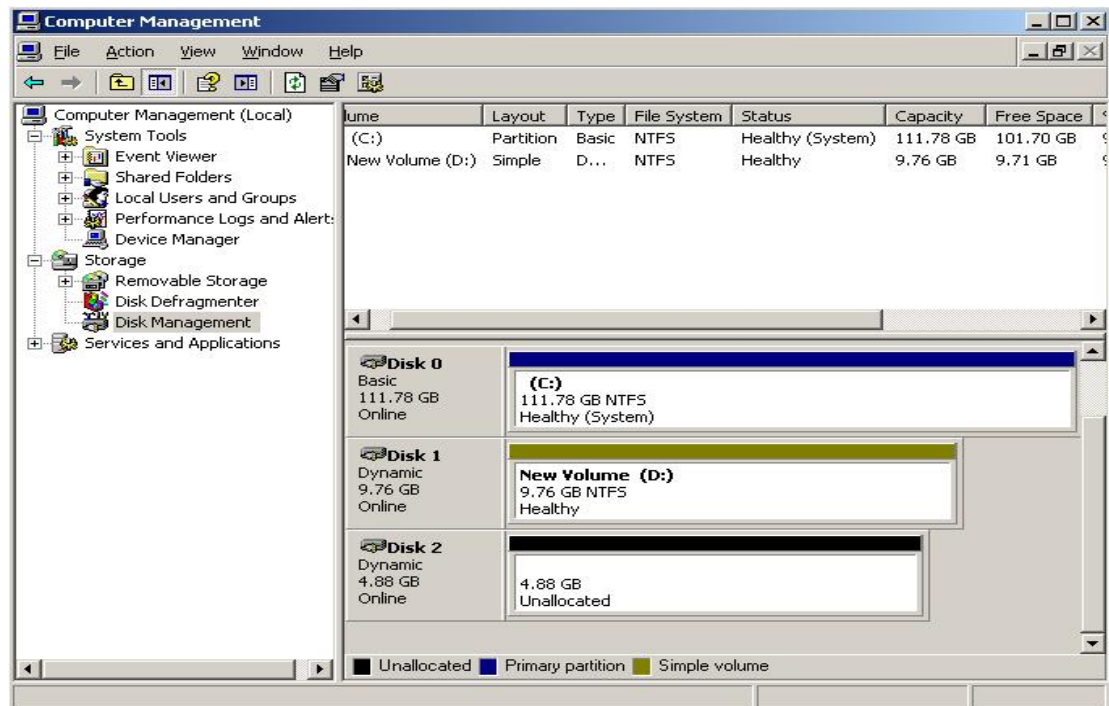


Figure 17. Dynamic Disk Conversion Done

Step 8.

Right click on New Volume D, and select “Extend Volume...”

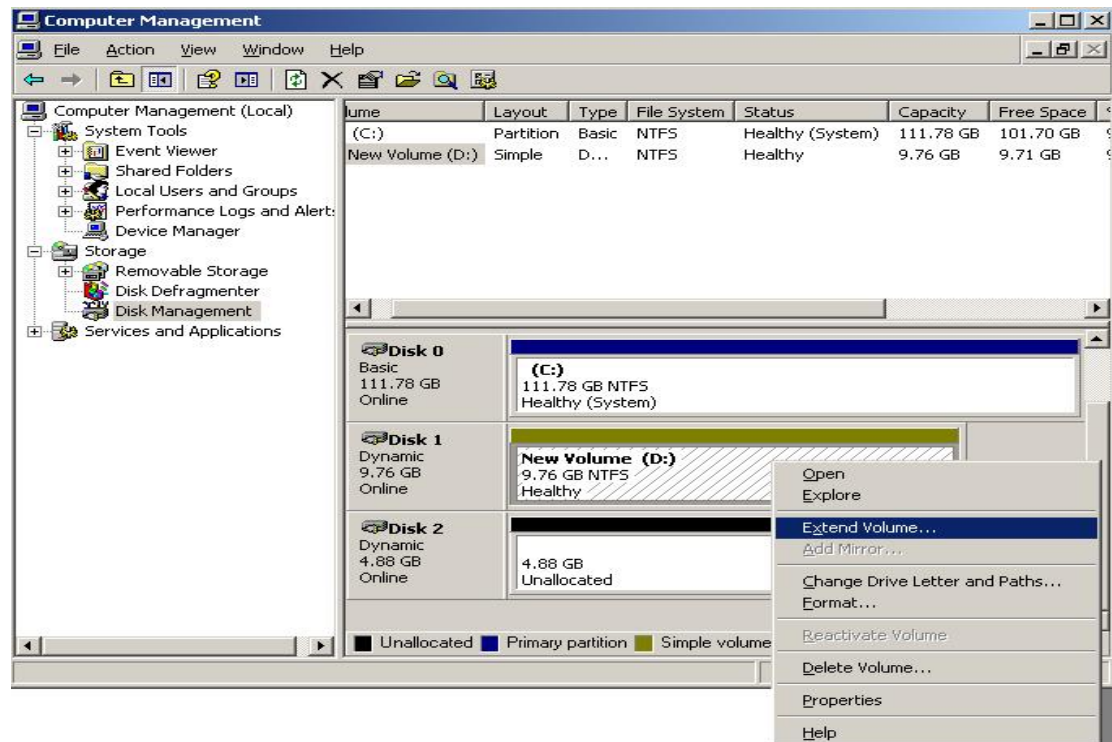


Figure 18. Selecting “Extend Volume...”

Step 9.

Click on “Next” in the Extend Volume Wizard.

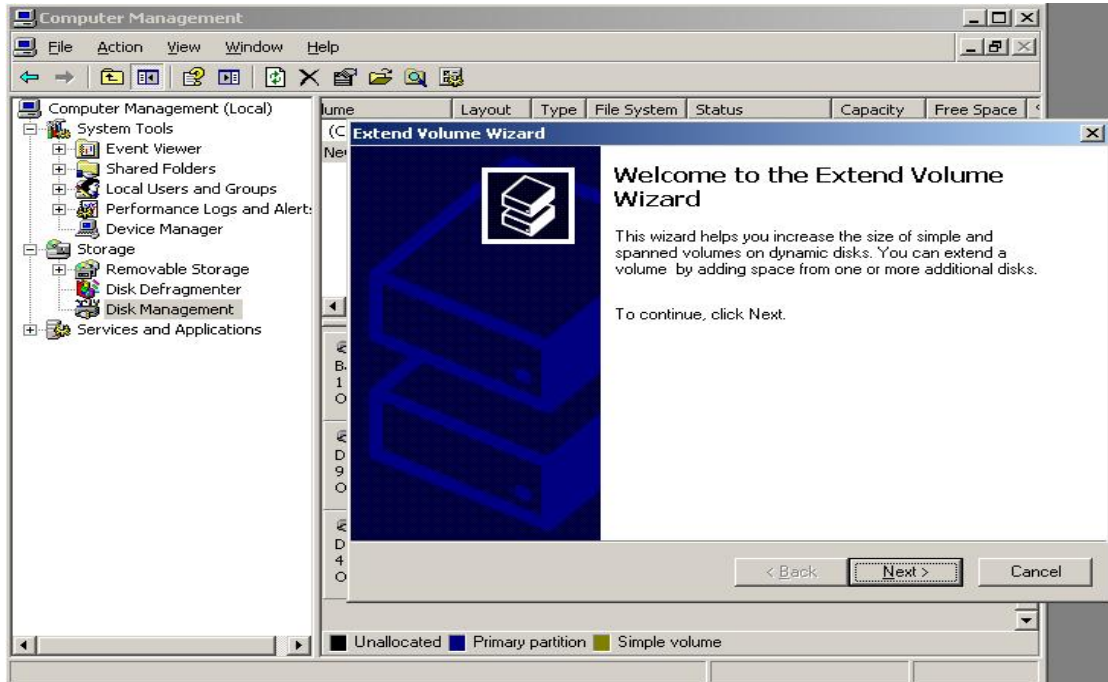


Figure 19. Extend Volume Wizard

Step 10.

Select the available disk and click on “Add>” to move it to the white column on the right.

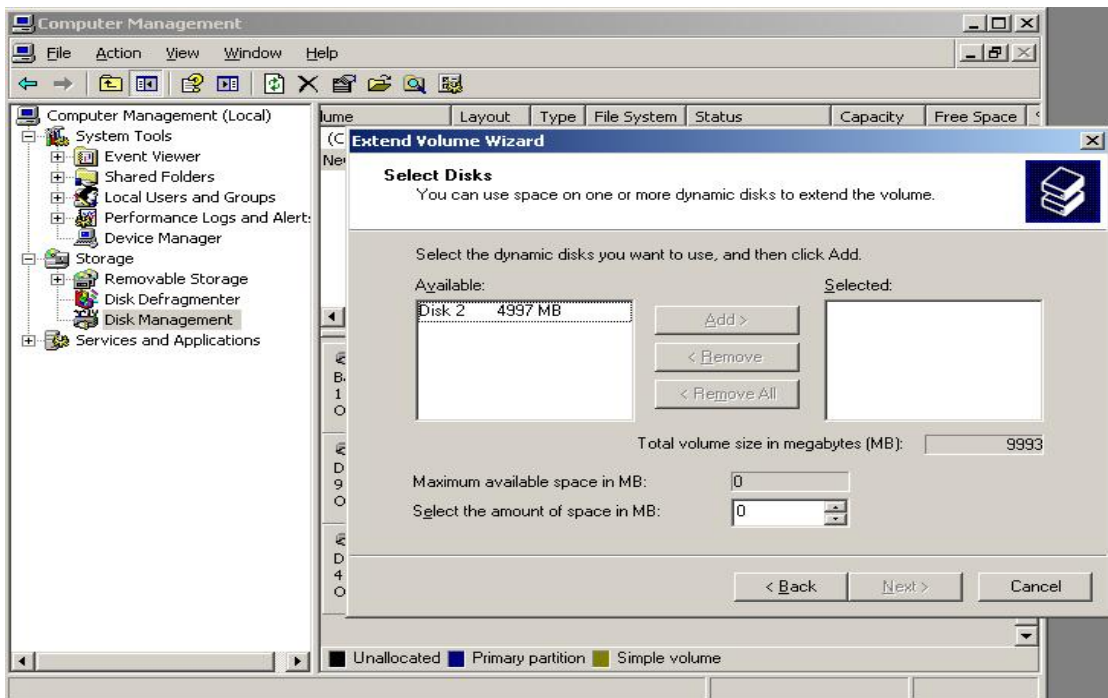


Figure 20. Selecting the Disk to Expand the Volume with

Step 11.

Click on "Next>."

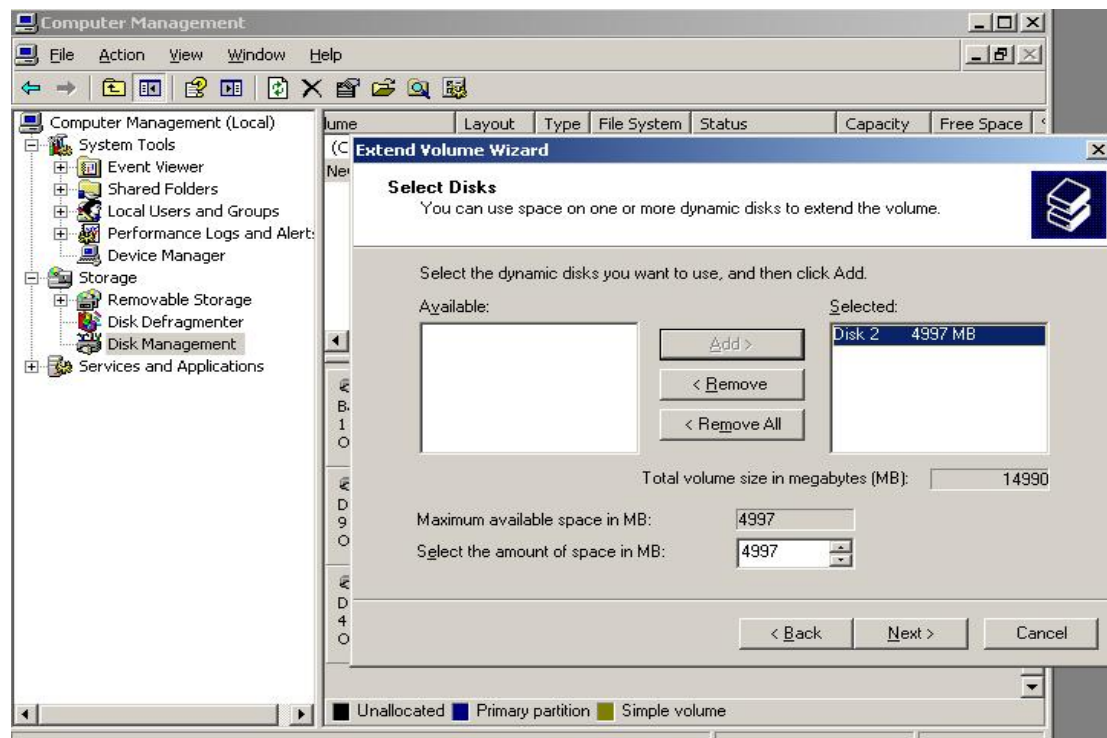


Figure 21. Confirming the Disk Selection

Step 12.

Click on "Finish."



Figure 22. Completing the Expansion

Step 13.

Then user can view the expanded volume.

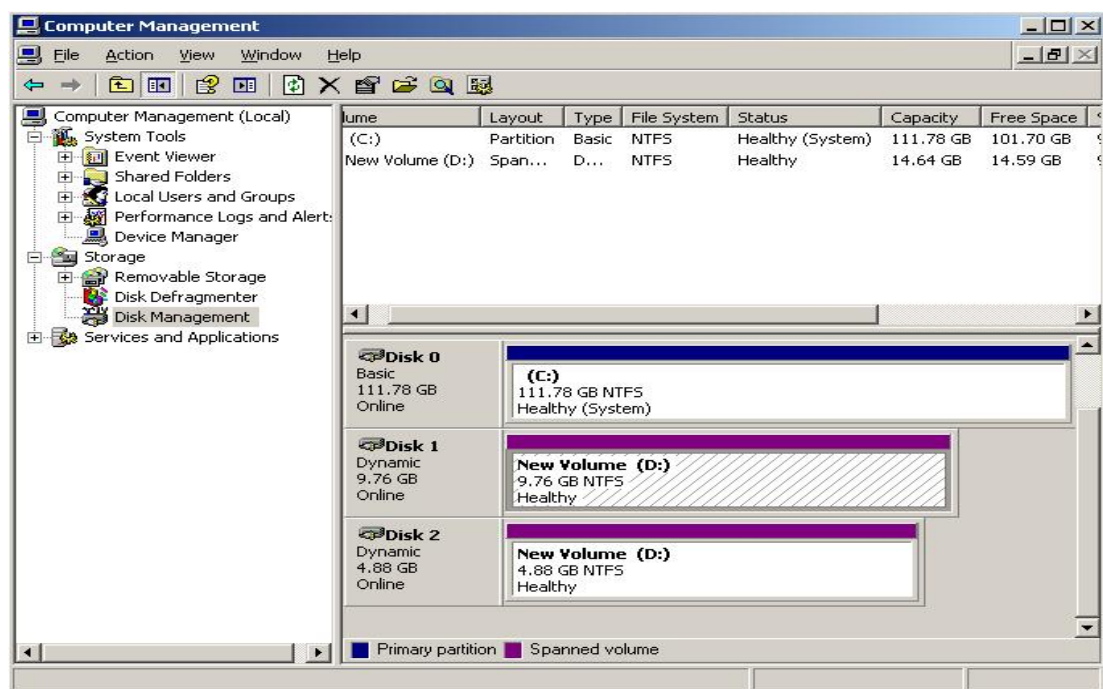


Figure 23. Viewing the Expanded Volume

The total capacity of the logical drive has now been increased to 14.64GB