Knowledge Base

HOW TO: Mirror the System and Boot Partition (RAID1) in Windows 2000

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The information in this article applies to:

- Microsoft Windows 2000 Server
- Microsoft Windows 2000 Advanced Server

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SUMMARY

This step-by-step article describes how to mirror the system and boot partition on a Windows 2000 Server. This scenario is based on the assumption that the system and boot files are on disk 0 and disk 1 is unallocated space.

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Requirements

- At least two hard disk drives; IDE, SCSI, or mixed architecture is permissible.
- The second drive needs to be at least the size of the volume on which the operating system boot and system files reside to permit mirroring.
- The Windows 2000 system and boot files need to be together on the same volume to be mirrored.

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Set Up the Disk Management System

1. Right-click **My Computer** , and then click **Manage** to open the Computer Management tool.
2. Expand the **Storage** node.
3. Click **Disk Management**.
4. On the **View** menu, point to **Top**, and then click to select **Disk List**. In the right pane, the attributes of each disk in the system are displayed.
5. On the **View** menu, point to **Bottom**, and then click to select **Graphical View**. At the bottom of the right pane, a color-coded graphical view of the disks on the system is displayed:
    - **Disk description panel**: The disk description panel, which is gray, is located to the left of the volume description, which is in color. The disk description contains information about each disk's disk number, basic or dynamic configuration, its size, and online or offline status.
    - **Volume description panel**: The volume description panels are color-coded. They hold information on each volume such as the drive letter (if assigned), allocated or unallocated, the partition or volume size, and the health status of the volume.

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Upgrade to Dynamic Disks

Raid systems require Dynamic disks under Windows 2000. Any disks that you are upgrading must contain at least 1 megabyte (MB) of free space at the end of the disk for the upgrade to succeed. Disk Management automatically reserves this free space when creating partitions or volumes on a disk, but disks with partitions or volumes that are created by other operating systems may not have this free space available.

NOTE: You must be logged on as an administrator or a member of the Administrators group to complete this procedure. If your computer is connected to a network, network policy settings may also prevent you from completing this procedure.

To upgrade a basic disk to a dynamic disk:

1. Before you upgrade disks, close any programs that are running on those disks.
2. Right-click the gray disk description panel, and then click **Upgrade to Dynamic Disk**.
3. If the second disk in not a dynamic disk, follow these steps to upgrade it to a dynamic disk.

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Mirror the Boot and System Volume

In this scenario, disk 1 is the disk on which the image of disk 0 will be mirrored.

NOTE: Partitions are referred to as volumes when the disks are dynamic.

1. Disk 1 must be unallocated space before you can proceed with mirroring.
2. Right-click **disk 0**, which contains the boot and system files, and then click **Add Mirror**.

3. A dialog box opens in which any disk on your system that is available for mirroring will be displayed. Under **Select a disk to use as the mirrored space for Boot and System**, select the disk of your choice (in this example, it is Disk 1), and then click **Add Mirror**.

    Both Disk 0 and Disk 1 will now have the same color code, the same drive letter, and the volumes will have the status note "Regenerating" displayed while the information is being copied from the first disk to the second disk. The volume of the new mirror will automatically be sized by the system to the same size as that of the original boot and system volume.

4. After you receive the following message, click **OK** to acknowledge it:
    DISK MANAGEMENT
    You have mirrored your boot volume. To be able to boot from the mirrored disk, add the appropriate entry to the boot.ini file.

5. If you now want to boot from the new mirrored disk, you have to change the Boot.ini ARC path that points the computer to the partition in which the system files are located.

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Troubleshooting

After you upgrade a basic disk to a dynamic disk, any existing partitions on the basic disk become (dynamic) simple volumes. You cannot change the dynamic volumes back to partitions.

Dynamic disk cannot contain partitions or logical drives, nor can it be accessed by MS-DOS or by any Windows operating systems other than Windows 2000.

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REFERENCES

For additional information, click the article numbers below to view the articles in the Microsoft Knowledge Base:

113977 Booting From Mirror After Primary Partition Is Lost

120227 Steps to Recover a Failed Mirrored System/Boot Partition

114779 Overview of Disk Mirroring (RAID Level 1) in Windows NT

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