Cepoint RM and RS Series NAS Server (Windows version)

Creating RAID-5 volume in Windows 2016 Server

NOTE: Your operating system and boot files cannot reside on the RAID-5 disks. However, you can put the system swap file on a RAID-5 volume.

Requirements

- A minimum of three hard disk drives. IDE, SCSI or mixed architecture is permissible.
- All disks involved in the RAID-5 volume must be dynamic disks.
- Operating system boot and system files must be on a different volume.

How to Set Up the Disk Management System

1. Click **Start**, point to **Administrative Tools**, and then click **Computer Management**.
2. Click the plus sign (**+**) next to **Storage** to open the Storage console tree.
3. Click the **Disk Management** folder.
4. On the **View menu**, point to Top, and then click **Disk List**. In the right pane, a column listing the attributes of each disk in the system is displayed.
5. On the **View menu**, point to Bottom, and then click **Graphical View**.

   A color coded graphical view of the disks on the system is displayed.

The **Disk Description** pane (that is displayed in gray) is on the left side of the volume description that is displayed in color. The disk description contains information about each disk's disk number, whether it is a basic or dynamic configuration, its size, and its status (online or offline).

The volume descriptions are color-coded. They hold information on each volume such as the drive letter (if assigned), whether it is allocated or unallocated, the partition or volume size, and the health status of the volume.

How to Make Sure That Disks Are Set Up to Support RAID-5

- Disks: You must have a minimum of three disks to support striping.
- Type: Any disks involved in striping must be dynamic. Conversion from basic to dynamic goes very quickly without data loss. After you complete this procedure, you must restart the computer.
- Capacity: The RAID-5 volume can take the whole disk or as little as 20 megabytes (MB) for each disk.
- Unallocated space: Any disks that you want to upgrade to a dynamic disk must contain at least 1 MB of free space at the end of the disk for the upgrade to succeed. Disk Management automatically reserves this free space when it creates partitions or volumes on a disk, but disks

with partitions or volumes that are created by other operating systems might not have this free space available.
- Status: The status of all disks involved in a stripe volume must be online when you create the striped volume.
- Device Type: You can install striping on any dynamic disk even if there are mixed drive architectures on the computer. For example, IDE, EIDE, and SCSI drives can all be used in one stripe volume.

How to Upgrade to Dynamic Disks

If the disks that are going to be involved in the stripe volume are already dynamic disks, skip this section and go to the next section ("How to Convert to Stripe Volume").

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 prevent you from completing this procedure.

To upgrade a **basic disk** to a **dynamic disk**:

1. Before you upgrade disks, quit any programs that are running on those disks.
2. *Right-click* the gray **Disk Description** pane that is located to the left of the color-coded volume panes, and then click Upgrade to Dynamic Disk.
3. If the second disk in not a dynamic disk, follow the steps earlier in this article to upgrade it to a **dynamic disk**.

How to Convert to RAID-5

In this scenario, there are four disks on the computer: Disk 0 , Disk 1, Disk 2 and Disk 3 . Disk 0 is reserved for the operating system and boot files because they cannot reside on a RAID-5 volume. The other three disks are the RAID-5 disks. There is 1 gigabyte (GB) of free unallocated space on each disk to commit to the RAID-5 volume.

NOTE: 1 GB of free space on each of the three disks gives you a total usable volume of 2 GB because of parity information that is written as part of each stripe.

1. In the **Disk Management tool**, *right-click* the unallocated space on one of the dynamic disks where you want to create the RAID-5 volume, and then click **Create Volume**.
2. After the **Create Volume Wizard** starts, click **Next.**
3. Click **RAID-5 volume**, and then click **Next.**
4. Click the disks in the left pane under All Available Dynamic Disks, and then click the **Add** tab.

   The disks that are displayed in the right pane are labeled **Selected**.
5. Look at the bottom of the Select Disk dialog box under the Size label.

   The For All Selected Disks box displays the maximum size of the RAID-5 volume that you can

make.

NOTE: The volume on each disk is the same size in the completed RAID-5 volume. For example, if you have 100 MB on the first disk, you have 100 MB on the second disk. You can reduce the size of the volume from the maximum size that the wizard automatically shows. To do so, click the arrow on the Disk Size box to lower the volume size on this disk. On a three-disk system, the total RAID-5 volume storage size is double the size that you enter here. The Total Volume Size box lists your total storage space.

6. Click Next. At this time, you may want to assign a drive letter (you can also do this at any other time). To do so, click Assign Drive Letter, and then enter an available drive letter.

   Alternatively, you can click **Do not assign drive letter or path**. You can also click **Mount this volume on an empty folder that supports drive paths**. However, this selection is beyond the scope of this article.
7. Click **Next.**
8. Click **Format this partition with the following settings**, and then follow these steps:
   1. Type the file system type; FAT32 or NTFS is acceptable.
   2. Leave the default selection in the Allocation Unit Size box.
   3. In the **Volume Label** box, you can keep the default **"New Volume"** label or you can type your own label.
   4. At this time, you can click to select the **Quick Format** check box and the **File and Folder Compression** check box. You can also defer both of these tasks if you like.
9. Click **Next,** check your selection in the Summary window, and then click **Finish**.

The RAID-5 volume is displayed on the three disks on your system. They have the same color code, the same drive letter (if you mapped the drive during the procedure), and they are both the same size. If you clicked the **Quick Format** option, the status of the disks is displayed as **"Regenerating"** while the drives are being formatted. After the disks are formatted, the status of the disks is displayed as **"Healthy".** The RAID-5 volume is ready to be used; you do not have to restart the computer.