IBM TotalStorage NAS 100
Complete System Recovery Procedure

This document describes the method to recover the NAS 100 system when all four drives fails. These procedures are intended to be used by skilled maintenance personnel after the customer calls IBM for support. This processes is not designed for use by customers in the field.

Re-configure NAS100 Disks

To recover the whole system, the 2 steps described below must be followed.

1. Copy the pre-installed BASIC system image on to a blank drive. This is done on a NAS100 that has a VGA card, a video display and a USB keyboard.

2. Configure 4 hard drives on the customer's NAS100. A VGA card and USB keyboard are *not* required for this operation. The customer's NAS100 is used in headless mode (no video and no keyboard).

1. Copy Pre-installed BASIC System Image

This procedure requires a VGA card and a USB keyboard. Prepare the following items to create recovery image:

- NAS100 system unit with a VGA card and USB keyboard loaned from IBM Development.
- Display monitor connected to VGA card.
- Master Recovery hard drive loaned by IBM Development.
- New hard drive(s) (replacements for the failed hard drive(s)) and the customer's good hard drives (total is 4 hard drives).

1.1 Creating Recovery hard drive

1. Insert the Master Recovery hard drive into drive bay 1 and the drive that will become the customer's hard drive 1 into drive bay 2.
2. Push the Clear CMOS button (see "Clearing CMOS data" in the Hardware Installation and Service Guide).
3. Boot NAS100 and enter BIOS setup by entering F1.
4. Enable the following settings in Advanced "PCIPnP Configuration" menu:
	USB function
	Legacy USB Support.
5. Disable the Watchdog timer in Advanced "SuperIO Configuration" menu.
6. Boot up from the Master Recovery hard drive.
7. When the menu appears, select **"2. Make Another Recovery HDD Template**".
8. "Enter destination drive number[0,1,2,3]" message will appear. Press **1**.
9. Some messages appear. Press **Enter**.
10. When the "Are you sure you want to ZAP Physical Fixed Disk Drive 1(Y/N)?" Message appears, enter **Y (Enter)**.
11. When the "Press any key to continue" message appears, press **Enter**.

12. DriveImage Pro will start and the creation of the recovery hard drive will begin. When the message "Make another[Y,N]?" appears, press **N**. The DOS prompt will appear.
13. Press **Ctrl**+**Alt**+**Del** to reboot the NAS 100.
14. When the menu appears, select "**3. Copy Version Images to Another Recovery HDD (if exist)".**
15. The message "Enter destination drive letter[C,D,E,F]?" appears, asking for the drive name for the recovery hard drive.
16. Press **D**, and the copying process will start.
17. After "Copy to another drive[Y,N]?" is displayed, press **N**.
18. Power off the system.

1.2 Restoring OS image

1. Insert hard drive 1 (created in step 1.1) into drive bay 1. Hard drive 1 is the recovery hard drive at first and it will become the System disk that has C: system volume.
2. Insert 3 drives (new drives and the customer's drives) into drive bays 2, 3, and 4.
3. Boot from hard drive 1.
4. Select **"1. Start System Recovery Process".**
5. Restoration of the system image will start**.**
6. When the command prompt appears, power down the NAS100. Remove all 4 drives from the NAS100 if the above steps are not being performed on the customer's NAS100.

2. Configure 4 hard drives

This procedure should be performed on the customer's NAS100 because the machine unique information is in the setup. If installed remove the vedio adapter and USB keyboard.

1. Insert the 4 hard drives that were prepared as described above in "Copy pre-installed BASIC system image" into the customer's NAS100.
2. Push the Clear CMOS button (see "Clearing CMOS data" in the Hardware Installation and Service Guide).
3. Boot the NAS100. The system will be booted up from hard drive 1, and the system configuration will start automatically. It takes about 1 hour. During configuration, the following procedures will be performed:
   Mini setup for the OS (SID, PID, user name and company, licence agreement, etc.)
   Convert basic disk to dynamic disk
   Add mirror
4. After completing step 3, reboot the NAS 100.
5. Log into the NAS 100 via a web browser (see "Accessing the NAS 100 using DHCP using LAN 1 port" or "Accessing the NAS 100 using a static IP address on LAN 2" in the Hardware Installation and Service Guide).
6. Easy Setup will start(do not go into setup) just select the Maintenance tab.
7. On the next screen, select "Terminal Services". This will start a Terminal Services session. Log into the NAS100 as "Administrator".

8. Click the Start menu and select "Run".
9. In the dialog, type "cmd" and hit enter.
10. In the command window, type "dir d:\factory_default\WINNT" and hit enter.
11. If the directory does not exist, continue on to the next step. If the directory exists, go to step 14.
12. Type "createFD" and hit enter. After the createFD command completes, return to step 10 and check that the directory now exists.
13. Type "exit" and hit enter.
14. Continue on to "Creating the RAID 5 drive".
15. Right click on "My Computer" and select "Manage".
16. Open the Disk Management tool.

Creating the RAID 5 drive

1. Right click on the "Unallocated Space" in Disk 0 and select "Create Volume" from the popup menu.
2. In the Wizard, click Next.
3. Select "RAID-5 Volume" and click Next.
4. Select Disks 1-3 under "All available dynamic disks" and click Add.
5. Click Next.
6. Click Next.
7. Click Next.
8. Click Finish. The RAID 5 array will begin regenerating. After it has finished regenerating (approximately 5 hours), data can be restored to the drive.