



TECH NOTE

VICON TECHNICAL SERVICES GROUP

Subject: ViconNet Kollektor SATA – HDD Replacement - Procedure
Product: KE, KP- Serial 30000 & up
Number: 1400-0001-95-00
Date: 3/31/2006

This document covers the replacement and setup of Serial ATA (SATA) hard disk drives (HDD) in the ViconNet Kollektor (KE, KP). Replacement HDD's should always be Vicon approved. Installation of the Windows Embedded OS for the Kollektors and ViconNet is covered in separate documentation. Kollektors starting with sn 3xxxx typically utilize Serial SATA hdd.

HDD replacement requires a specific installation sequence. Each step is dependent on the other. Basic PC hardware knowledge and Windows configuration is suggested. (*A+ cert or equivalent knowledge*)

Replacing the drive is not difficult, but requires careful attention when removing and installing the hard drive, configuration in Windows and Viconnet storage database setup.

HDD in Kollektors usually follow a drive letter and label / name convention in Windows.

C: /Embedded OS E:/ DB-1 F:/ DB-2 G:/ DB-3

Sometimes external RAID storage is used and may display as E: RAID-1 F: RAID-2 G H etc.

NOTE: This procedure does NOT cover Parallel "PATA-IDE" hdd or Kollektors configured for internal RAID storage.

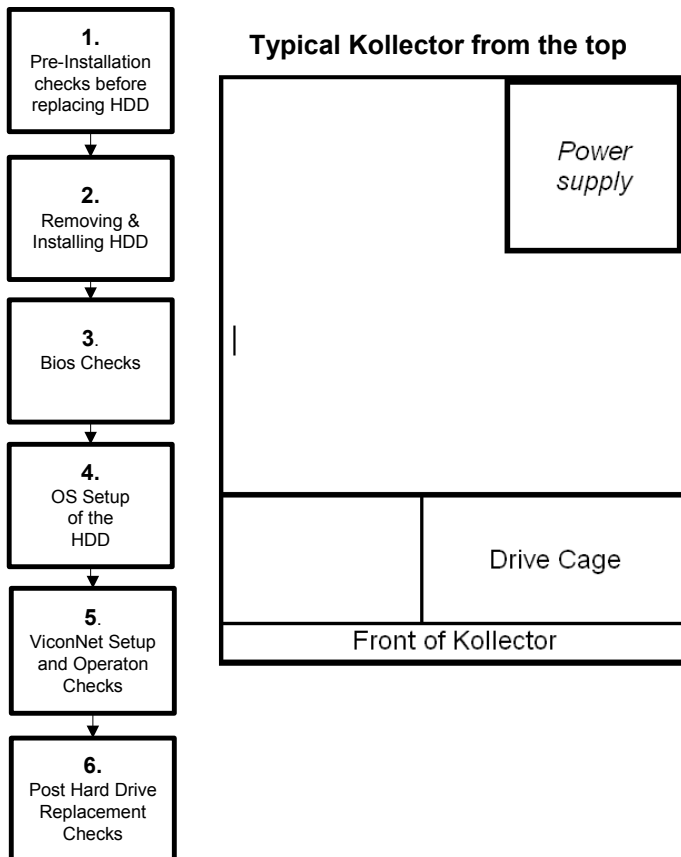
What you'll need.

- o Tools suitable for PC servicing.
- o PS 2 keyboard, Mouse, Monitor.
- o The new HDD drive.
- o OS disk L1 if replacing the OS drive
- o ViconNet 3.x and ptz driver
- o USB Thumb drive

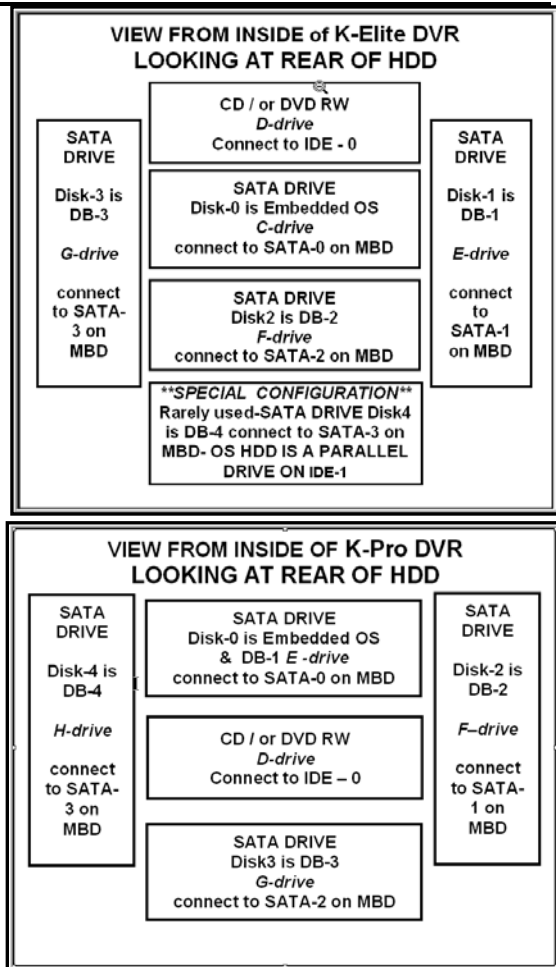
Overview.

Below is the installation sequence; A view of a Kollektor from the top and a typical hdd drive arrangement. Please observe **TIPS**, **NOTES** and **Cautions** for the things to watch out for.

Installation Sequence



Typical HDD layout



DETAILED PROCEDURES

1. PRE- INSTALLATION BEFORE REPLACING HDD

- ▶ The DVR must NOT be connected to the LAN
- ▶ Defective drive has been determined in the OS and physically in the DVR.
- ▶ Back-up to a USB Drive Settings folder from C:\ViconNet\VNData\
Optionally save Storecfg.txt file from first data drive, typically found E:\ViconNet\VNData\DB\AVDB\StoreCfg.txt

To do the above requires preventing ViconNet from starting during boot.

(This may have been done during the diagnosis of HDD failure...)

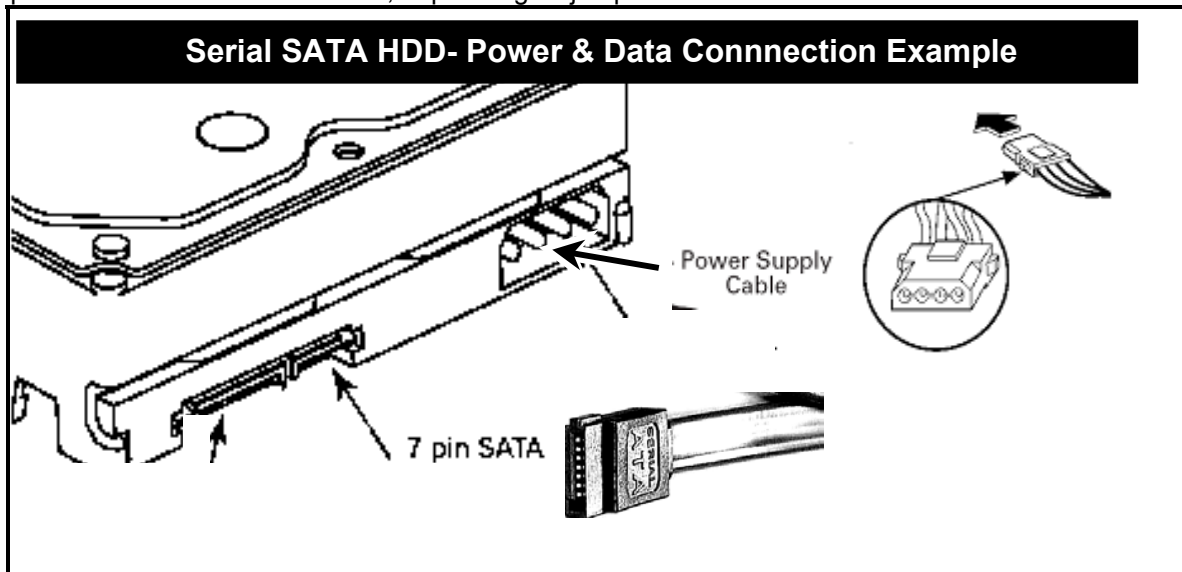
- ▶ Start the DVR using a PS2 keyboard (not USB!)
- ▶ Press and hold the shift key – do not let go! Eventually Windows will start
- ▶ A Windows Administrator login will display.
- ▶ Click login with the mouse while still holding the shift key
Do not let go for about 30 sec. (If not the ViconNet app will start)
- ▶ Find the Startup menu in Programs. Drag the Viconnet shortcut out of Startup. **TIP see pg 7*
- ▶ Place it on the menu just above startup (we will put it back later)

OR, as the dvr is booting access Kollector recovery console.

- ▶ When at a C:\Windows prompt, type in “ **batch appremove** “ then enter.
- ▶ Type exit, enter, DVR will reboot.

2. REMOVING – INSTALLING HDD

Remove & installing the HDD requires finding the physical location of the HDD in the DVR, its jumper settings and connection to the **Serial cable** (*parallel ATA not covered here*). The assumption is a direct replacement of the defective drive, duplicating its jumper and connections on the new drive.



Locating the drive.

The hard drives are located in and around the drive cage. Depending how many drives are in the system determines its physical location and drive letter.

On a KE

- ▶ The OS C: drive is usually connected on its own **serial** cable
- ▶ The CD-ROM is on a separate IDE **parallel** flat ribbon cable
- ▶ On a KE, all HDD, E,F,G **serial** hdd will be on their own **serial** cable, which is connected to separate hdd serial connectors on the motherboard

On a Kpro

- ▶ The same physical Serial drive is the C:Embedded OS & the E is 2nd partition of the C drive,
- ▶ F,G,H in a KP is a 2nd, 3rd and 4th HDD, each on their own **Serial** cable.
- ▶ The CD / DVD is on a separate parallel IDE cable.

**TIP The actual drive “letter” can be determined by physically disconnecting the drive. On restart of Windows, see what drive is missing.*

3. BIOS – Typical Bios is from a DVR sn starting at 3xxxx. Intel 915xxx MBD / Bios

Bios is entered to confirm the presence of the hdd.

To enter Bios press F1, F2, then Delete (one of these will enter bios)

**TIP Do not connect any USB drives when checking and configuring HDD in Bios and Windows*

KOLLECTOR ELITE

Typical bios would have

Bios - IDE	
Pata Master	CD/DVD
<i>Pata Slave</i>	<i>none</i>
SATA Port -0	HDD
SATA Port -1	HDD
SATA Port -2	HDD
SATA Port -3	HDD

Equivalent drive in Windows

What the drive is in Windows	Drive letter & label in Windows	NOTES
CD-Rom O	D	Is a PATA IDE master
OS drive	C: Embedded	Motherboard Sata- 0
Data drive	E: DB-1	Motherboard Sata- 1
Data drive	F: DB-2	Motherboard Sata- 2
Data drive	G: DB-3	Motherboard Sata- 3

Note:Special hdd configuration rarely used may NOT follow configuration above (KE480 or KE with 1.6TB storage)

KOLLECTOR PRO

Typical bios would have

Bios - IDE	
Pata Master	CD/DVD
<i>Pata Slave</i>	<i>none</i>
SATA Port -0	HDD
<i>E drive is 2nd partition of the C hdd – option during OS install</i>	
SATA Port -1	HDD
SATA Port -2	HDD
SATA Port -3	HDD

Equivalent drive in Windows

What the drive is in Windows	Drive letter & label in Windows	NOTES
CD-Rom O	D	Is a PATA IDE master
OS drive	C: Embedded	Motherboard Sata- 0
Data drive	E: DB-1	Motherboard Sata- 0
Data drive	F: DB-1	Motherboard Sata- 1
Data drive	G: DB-2	Motherboard Sata- 2
Data drive	H: DB-3	Motherboard Sata- 3

Note:Special hdd configuration rarely used may NOT follow configuration above (KE480 or KE with 1.6TB storage)

- ▶ More drives may exist. This may not show up in bios.
- ▶ Windows can be checked later for the presence of the drives.
- ▶ After the Bios has been checked, restart the pc

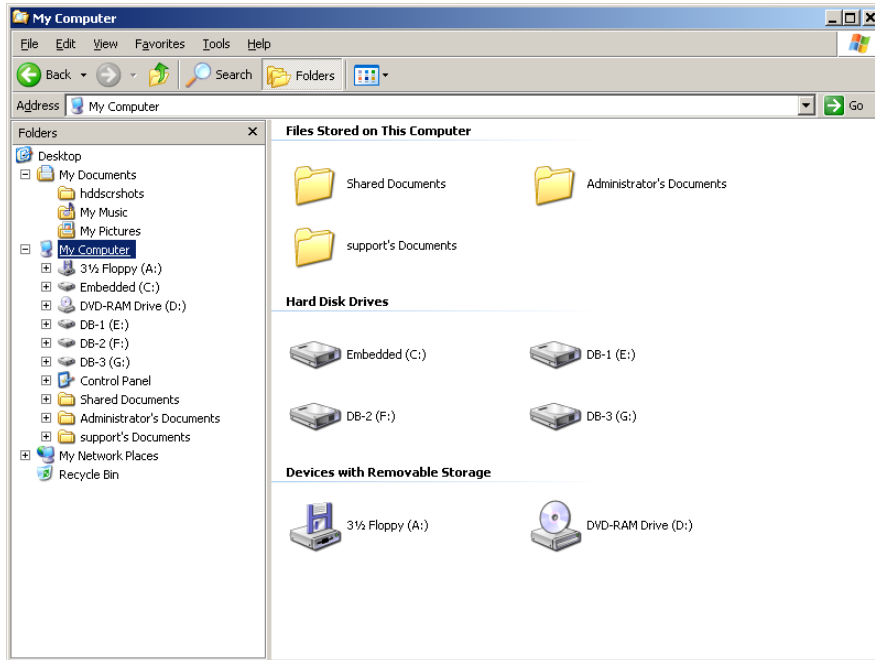
4. WINDOWS OS

Windows OS will display the connected and formatted status of the drives.

If the drive is already formatted, it will display in My Computer and Disk Management. It's volume name must be checked to conform to E: DB-1 F: DB-2 etc. It must be reformatted in Windows before using it in ViconNet.

If a new unformatted drive is installed, it would have to be added into Windows through Disk Management Utilities. Often Windows “**New Partition Wizard**” will appear (see *Disk Management*, next page). Follow the prompts to add the drive. Always add it as Primary Partition, format NTFS, Default allocation, No compression. Quick Format is faster (2-5 mins) If Quick Format not checked, format might take 1-4 hours, but is more thorough. Drive letter and volume name should be same as one this new drive is replacing.

Typical Kollector KE240-16-xxx with DVD burner



IMPORTANT NOTES:

- ▶ Disk 0,1,2,3 is how Windows Disk Management sees the drives as connected to its SATA & IDE in Bios.
- ▶ An additional IDE / SCSI controller would display its connected drives in Windows Disk Management, but not Bios.

(Caution: A DVR that has internal RAID drives configured as MIRROR will only display 2 of the possible 4 drives of the MIRROR configuration. DVR models that have MIRROR Raid are not dealt with here. Contact Vicon Technical Support if the DVR has very large internal storage; Example KE120-16-1200. Its hdd are configured in a separate BIOS after main BIOS.)

- ▶ The drive letter and name is automatically assigned by Windows depending on the order of connection on its Serial cables and IDE channel it is connected to.
- ▶ Sometimes the drive letter is not correct.
Example: F:\ DB-1 E:\DB-2 and so on. When this is seen you MUST check that all connected drive are seen in bios. Then in computer management / disk management verify the drive is formatted. If needed change the drive letter so E: F: etc are
- ▶ Once the drive is added, restart Windows.
- ▶ Confirm it has the correct letter and drive label.
- ▶ All Data drives should be formatted with allocation size of 64K (not the default one).

Disk Management:

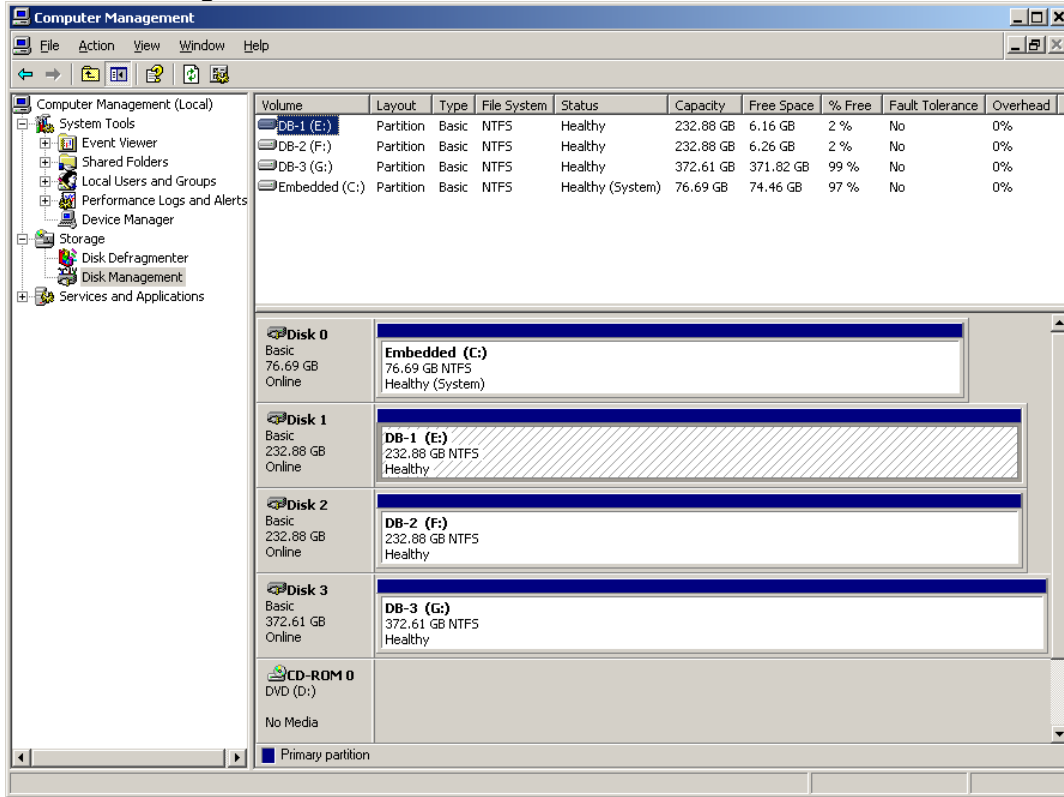
The next section details confirming and adding a drive in Windows Disk Management.

Disk management is found in;

Control Panel, Administrative Tools, Computer Management, Storage, Disk Management.

Follow these suggested steps / sequence to bring the hdd into Windows.

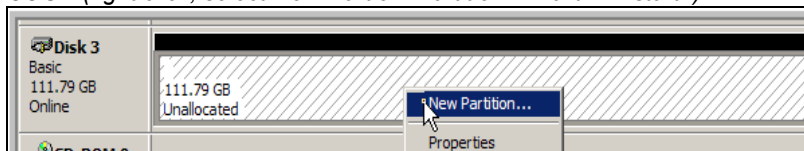
1. Windows Disk Management



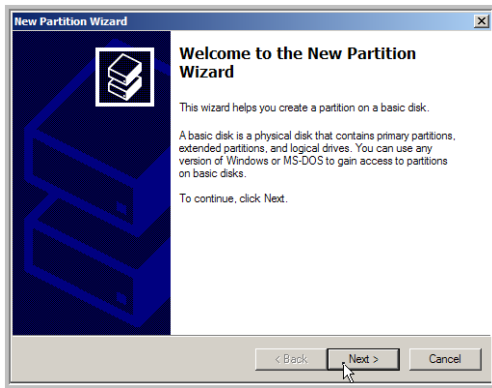
2. Windows Disk Management G drive not allocated



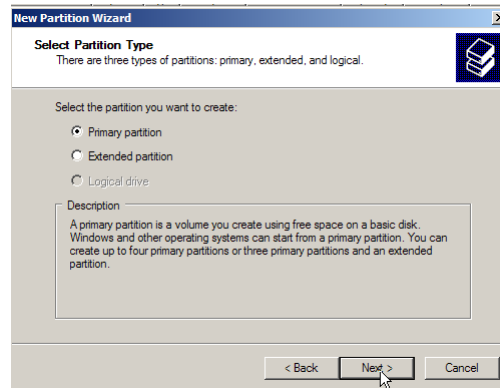
3. Adding the partition (right click, select New Partition. Partition Wizard will start..)



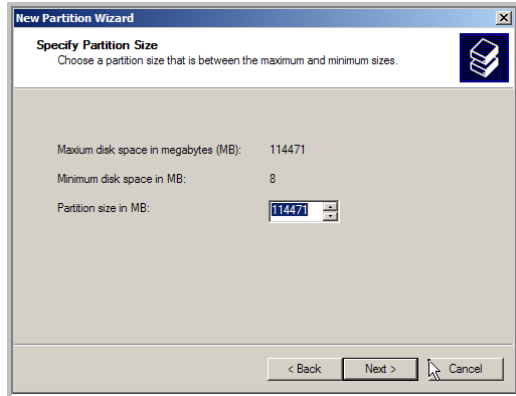
4. Partition wizard



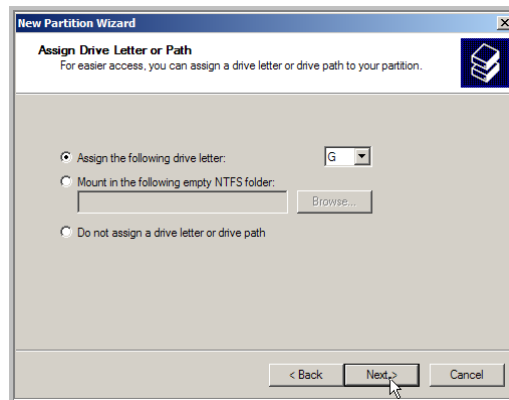
5. Select Primary partition



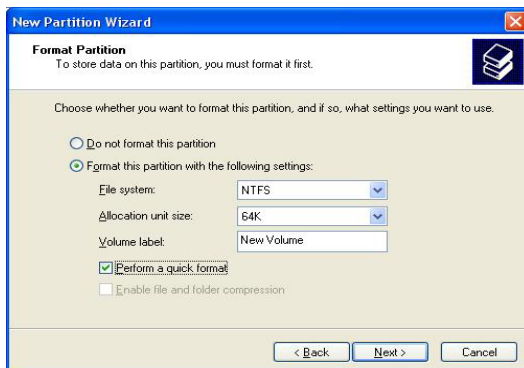
6. Set partition size (max the hdd)



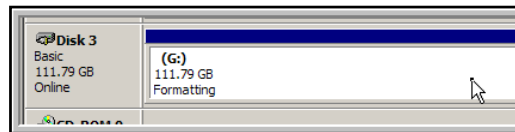
7. Assign drive letter



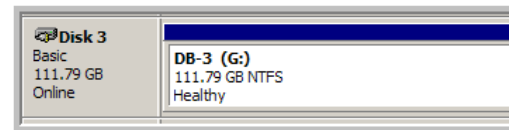
8. Set file system NTFS, 64K allocation, quick format, volume label.



9. Formatting



10. Format done



Step 5 ViconNet next page...

5. VICONNET

The new drive will be added back into ViconNet after it has been properly configured in Windows.

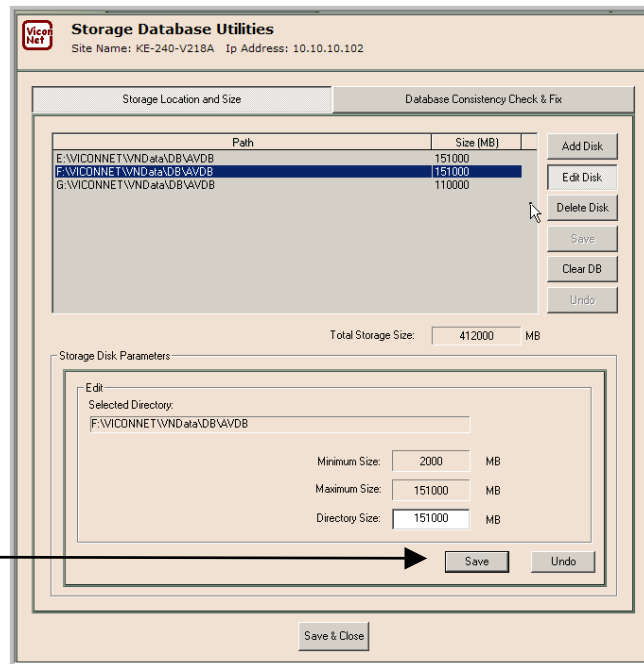
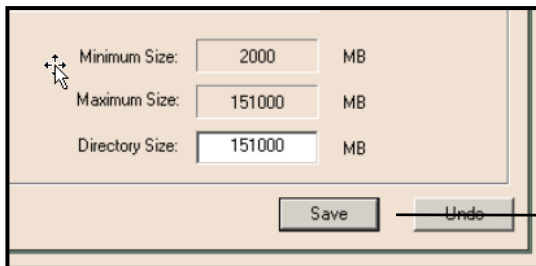
- ▶ Locate the ViconNet startup shortcut and start ViconNet.
- ▶ Pay attention and note any messages that may appear.
- ▶ The HDD size will vary with the actual HDD.

Checking Storage Database

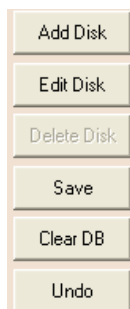
In ViconNet, click Setup, Main Settings, select Storage Database Utilities.

To add or edit the drive back to Viconnet click

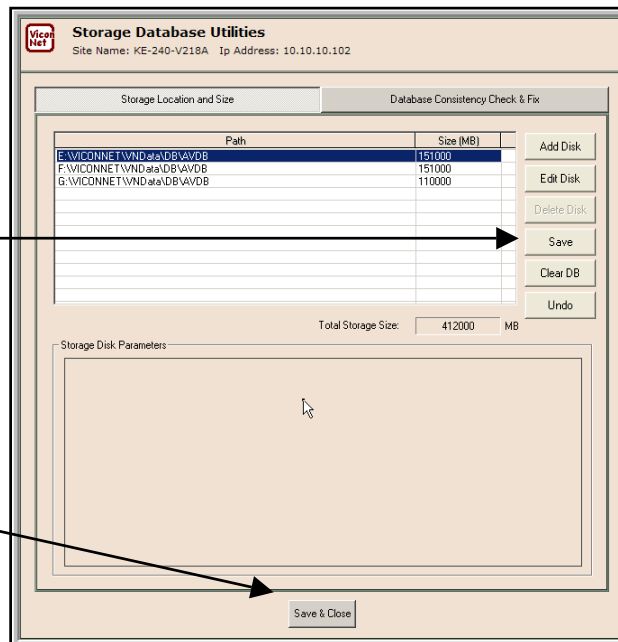
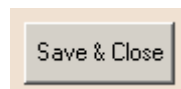
1. **Edit** To edit the size of a disk already in Viconnet
2. **Add** to add a hdd not previously configured
3. Enter the same value in Directory Size that is displayed in Maximum Size
4. Click **Save**



5. And **Save**



6. Save & Close



*******IMPORTANT*******

To finish, put the ViconNet shortcut back into Programs / Startup.

Restart the Kollector and test that ViconNet starts automatically.

6. POST HARD DRIVE CHECKS

Hard Drive replacement is complete. Verification of system performance should be done. Check the following,

- ▶ No errors from the Kollector when the system was restarted.
- ▶ Auto Recording is setup with the desired cameras.
- ▶ Recording duration and number of cameras is correct.
- ▶ Playback is OK

Note: the hdd size that was replaced determines the current available record rate.

ADDITIONAL INFORMATION

Windows START menu:

- ▶ By default Windows START does not show the "Programs" menu, it only shows the "Run", "Shutdown", and "Log off".
- ▶ To see the Programs menu, change the task bar settings from standard to classic.
- ▶ Right click on START
- ▶ Left click Properties
- ▶ Select Classic Start
- ▶ Apply then OK.

Proceed to Programs from Start menu

Format HDD in Windows XP

- ▶ Press the "START" button.
- ▶ Choose the "Run" option from the start menu; click the "ok" button".
- ▶ The following window will be opened.
- ▶ Type "compmgmt . msc" in the "open:" dialog; as showed in the picture below. **See fig 1.**

fig 1.

- ▶ Click the "ok" button.
- ▶ The window in fig 2 will be opened.

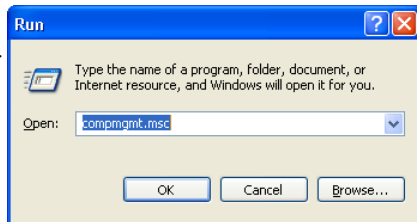
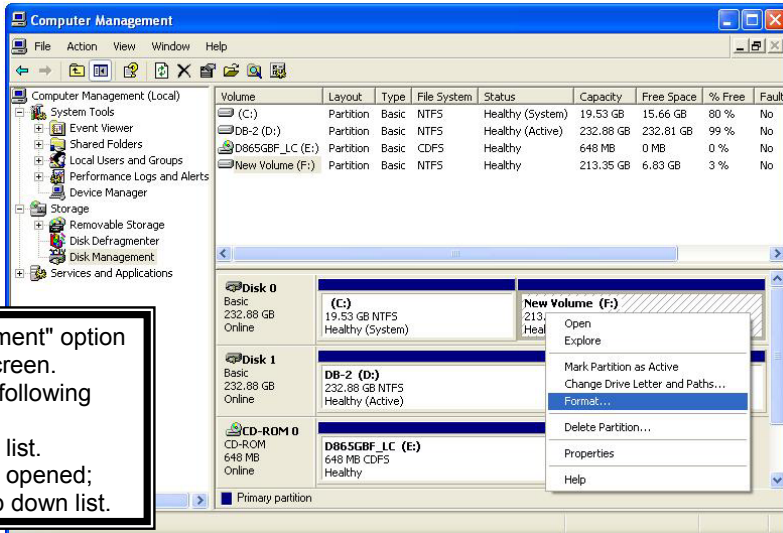
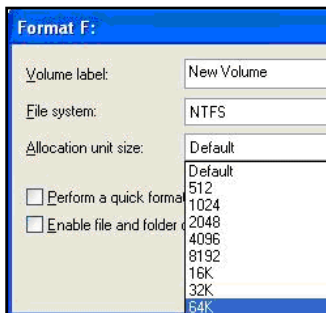


fig 2

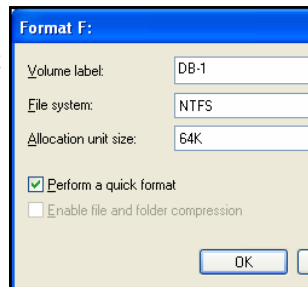


- ▶ **See fig 2.** Select the "Disk Management" option from the list on the left side of the screen.
- ▶ Right click on the first DB drive; the following drop down list will be opened.
- ▶ Choose the "format" option from the list.
- ▶ **See fig 3** The format window will be opened; select the "64k" option from the drop down list.

fig 3
Select "64k"



- fig 4.
Enter the correct volume label.
(DB-1 for E:
DB-2 for F:
etc)
Check "perform a quick format"



Press the "ok" button. Format is complete when "healthy" is displayed. Repeat the format steps on all the remaining Database hard-drives; local and external (Raids).