



TECH NOTE

VICON TECHNICAL SERVICES GROUP

Subject: ViconNet Kollektor PATA - HDD Replacement - Procedure
Product: KE KP KN
Number: 1400-0001-87-02
Date: 4/26/2007

This document will cover the replacement and setup of a hard disk drive (HDD) in the ViconNet Kollektor. Replacement HDD's should always be Vicon approved. This document applies to **Kollektors using IDE drives only** on the KE, KP & KN. Installation of the Windows Embedded OS for the Kollektors and ViconNet is covered in separate documentation. HDD replacement requires a specific installation sequence. Each step is dependent on the other. Basic PC hardware knowledge and Windows configuration is suggested.

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 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

NOTE: This procedure does not cover Serial ATA drives 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 J2 or K if replacing the OS drive
- o ViconNet 2.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****

<p>Installation Sequence</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center;">1.</p> <p>Pre-Installation checks before replacing HDD</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center;">2.</p> <p>Removing & Installing HDD</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center;">3.</p> <p>Bios Checks</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center;">4.</p> <p>OS Setup of the HDD</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center;">5.</p> <p>ViconNet Setup and Operator Checks</p> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">6.</p> <p>Post Hard Drive Replacement Checks</p> </div>	<p style="text-align: center;">Kollektor from top</p>	<p style="text-align: center;">Older Kollektor Typical HDD layout</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr><td colspan="3">Drive Cage- front</td></tr> <tr><td></td><td>CD Rom</td><td></td></tr> <tr><td rowspan="2">G data hdd</td><td>KE OS hdd (KP-KN OS & E are same hdd)</td><td>F data hdd</td></tr> <tr><td>E data hdd</td><td></td></tr> <tr><td></td><td>floppy</td><td></td></tr> </table>	Drive Cage- front				CD Rom		G data hdd	KE OS hdd (KP-KN OS & E are same hdd)	F data hdd	E data hdd			floppy	
Drive Cage- front																
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	E data hdd															
	floppy															
Newer Series Kollektor Drive Layout seen from inside from the rear																
	<p>Kollektor Elite sn 3xxxx</p>	<p>Kollektor Pro sn 3xxxx</p>														
	<p>HDD0= C:\OS drive XP OS CD-RW= D:\CDROM Read-Write HDD1= E:\DB-1 Data Hard Drive</p>	<p>HDD2= F:\DB-2 Data Hard Drive HDD3= G:\DB-3 Data Hard Drive HDD4= H:\DB-4 Data Hard Drive</p>														

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.3/22/20074/26/2007
- ▶ 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\StoreCfq.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 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)

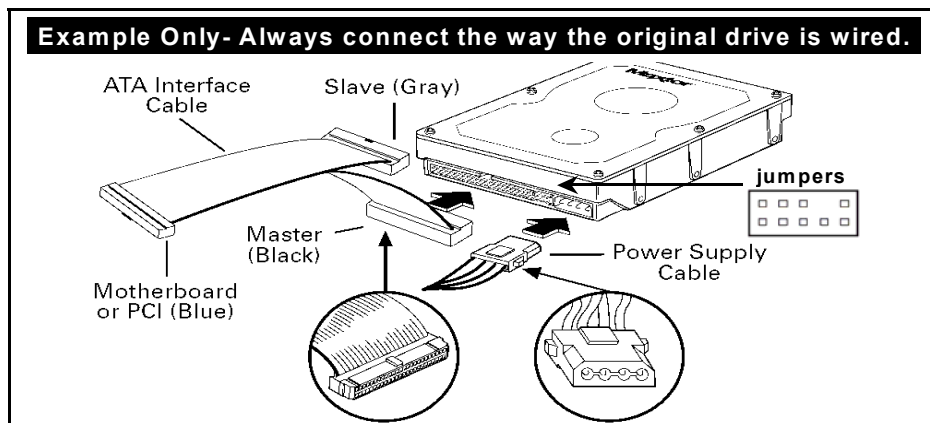
OR, as the dvr is booting access Kollector recovery console.

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

2. DRIVE JUMPER SETTINGS

- a. **HDD Maxtor or Hitachi Drives**
- b. Remove & installing the HDD requires finding the physical location of the HDD in the DVR, its jumper settings and connection to the IDE cables (*serial ATA not covered here*).
- c. The assumption is a direct replacement of the defective drive, duplicating its jumper and connections on the new drive.
- d. If a different drive manufacturer is the replacement, please observe drive jumper settings for the specific drive.

Maxtor

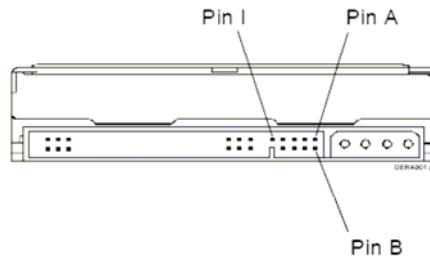




Hitachi

When replacing the Maxtor drives with Hitachi drives, note down the jumper setting from the Maxtor (master,slave, CS etc.) and apply the jumper setting to the Hitachi to match the same operation (master, slave, cable select etc.)

7.1.1 Jumper pin identification



Please Note: Pins A/B settings start from Right to Left moving to Pin I.

The white label on the Hard Drive displays the Pin Outs settings starting from the left side of the Hard Drive.

7.1.3 Jumper positions

7.1.3.1 16 logical head default (normal use)

The figure below shows the jumper positions used to select Device 0, Device 1, Cable Selection, or Device1 (Slave) Present.

I	G H	E F	C D	A B	DEVICE 0 (Master)
I	G H	E F	C D	A B	DEVICE 1 (Slave)
I	G H	E F	C D	A B	CABLE SEL
I	G H	E F	C D	A B	DEVICE 1 (Slave) Present
I	G H	E F	C D	A B	Shipping Default Condition (CABLE SEL)



Locating the Drive.

****See pictures on first page.**

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 to the same IDE cable as the CD-ROM
- ▶ E only in a KE is the second hdd. It is connected to its own IDE cable.
- ▶ F in a KE is a third HDD, connected to same IDE cable as the E drive.
- ▶ G in a KE is on its own IDE cable, connected to an additional controller on the motherboard or separate IDE controller card.

On a Kpro or KN

- ▶ The OS C: drive is usually connected to the same IDE cable as the CD-ROM
- ▶ E in a KP/KN is a partition of the C drive, no second drive for the KP
- ▶ F in a KP/KN is a second HDD, on its own IDE cable.

**TIP The actual drive "letter" can be determined by disconnecting the drive, start Windows, see what drive is missing.*

3. BIOS

Bios is entered to confirm the presence of the hdd.
 To enter Bios press F2, then Delete (one of these will enter bios)

**TIP Keep any USB drive unplugged when checking and configuring HDD in Bios and Windows*

Typical bios would have

Equivalent drive in Windows

Bios - IDE		What the drive is in Windows	Drive letter & label in Windows	NOTES
Primary master	Hdd 0	OS drive	C: Embedded	
Primary slave	CD rom	Cd rom	D: CD rom	
Secondary master	Hdd	Data	E: DB-1	F: DB-2 in Kpro or KN
Secondary slave	Hdd	Data	F: DB-2	G: DB-3 in Kpro or KN

- ▶ A third or more drive 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

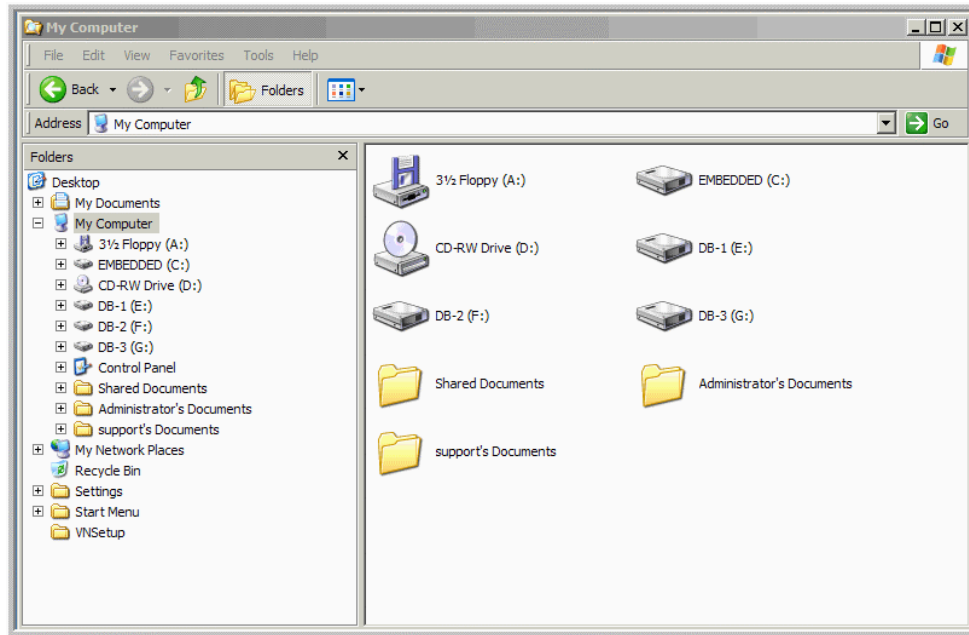
4. WINDOWS XP OPERATING SYSTEM

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 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 Kollektor KE240-16-440



Hard Drive allocation chart. (Typical configuration, your system may be different)

What the drive is in Windows	Drive letter & Label in Windows	What Disk Management sees in the KE	What Disk Management sees in the Kpro & KN	NOTES
OS drive	C: Embedded	Disk 0	Disk 0	J2 OS is for KP&KN J2 partitions C with and E
Cd rom	D: CD rom	CD-Rom 0	CD-Rom 0	
Data	E: DB-1	Disk 1	Disk 1 F drive	
Data	F: DB-2	Disk 2	Disk 2 G drive	

NOTES:

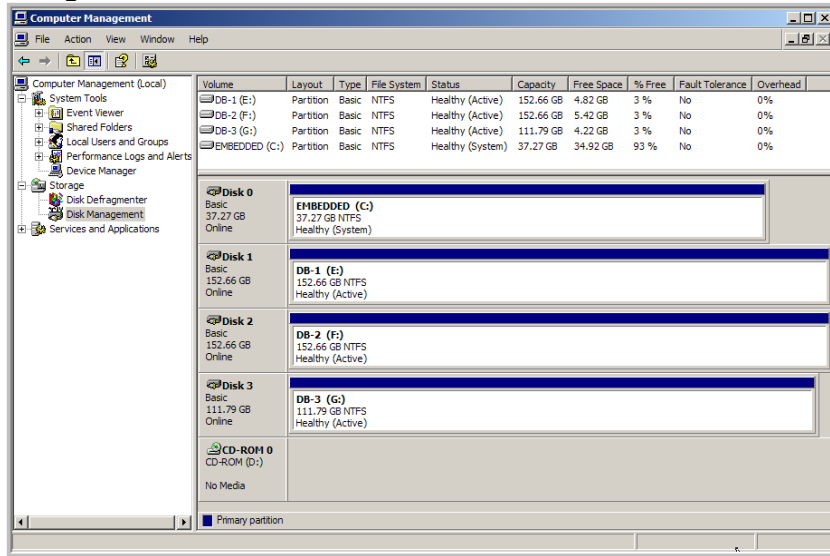
- ▶ Disk 0,1,2,3 is how Windows Disk Management sees the drives as connected to its IDE in Bios.
- ▶ An additional IDE / SCSI controller would display its connected drives in Windows Disk Management, but not Bios. (**Caution:** A DVR that has internal RAID drives configured as MIRROR will only display 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 IDE 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.

Follows is the suggested steps / sequence to bring the hdd into Windows

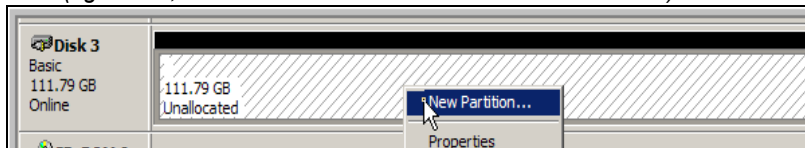
1. Windows Disk Management



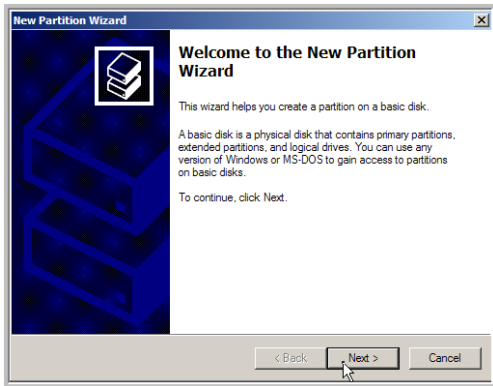
2. Windows Disk Management G drive not allocated



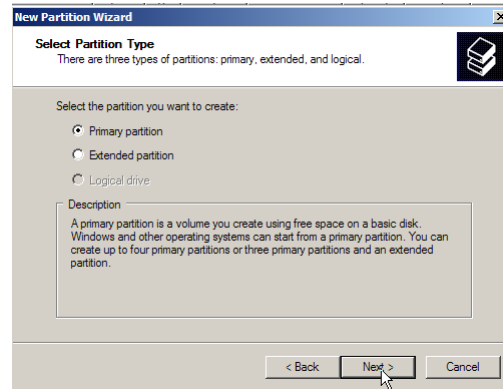
3. Adding the partition (right click, select New Partion. Partition Wizard will start.)



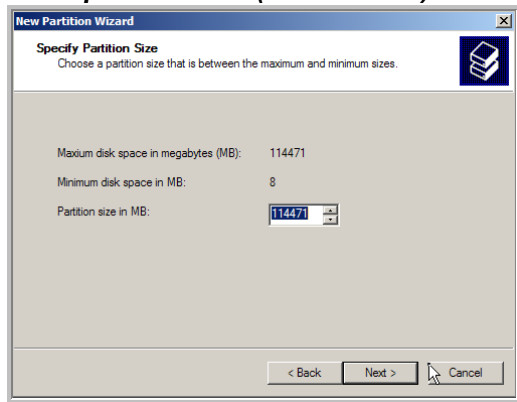
4. Partition wizard



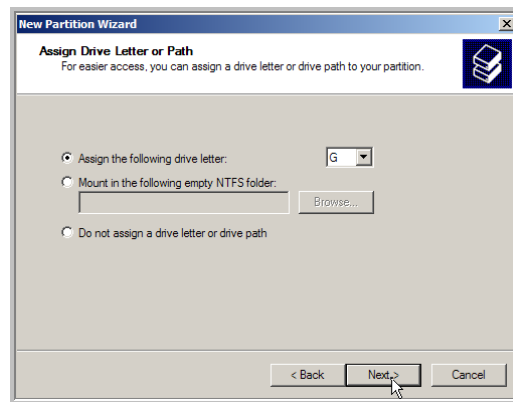
5. Select Primary partition



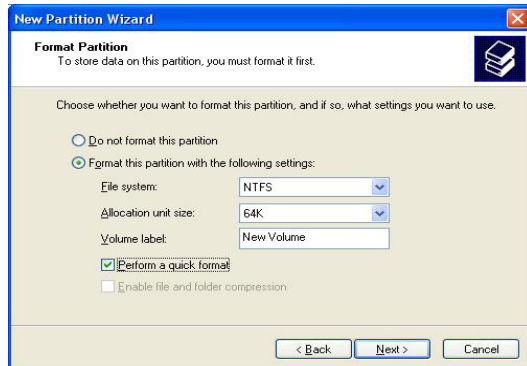
6. Set partition size (max the hdd)



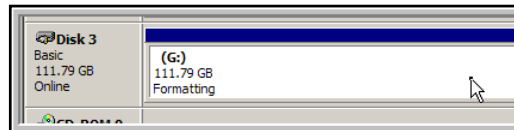
7. Assign drive letter



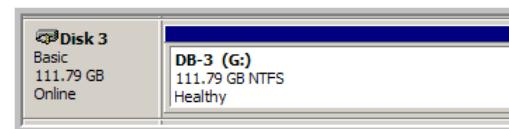
8. Set file system NTFS, 64K allocation, quick format, volume label.



9. Formatting



10. Format done



5. VICONNET BOTH 2.0 AND 3.0 VERSIONS

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

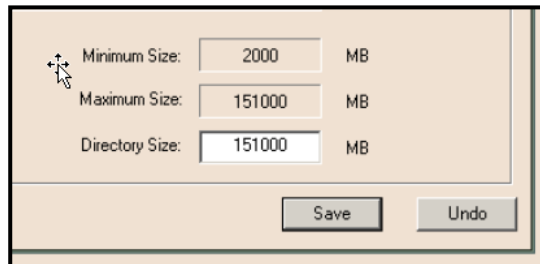
- ▶ Locate the ViconNet startup shortcut and start ViconNet.
- ▶ Pay attention and note any messages that may appear.

Checking Storage Database

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

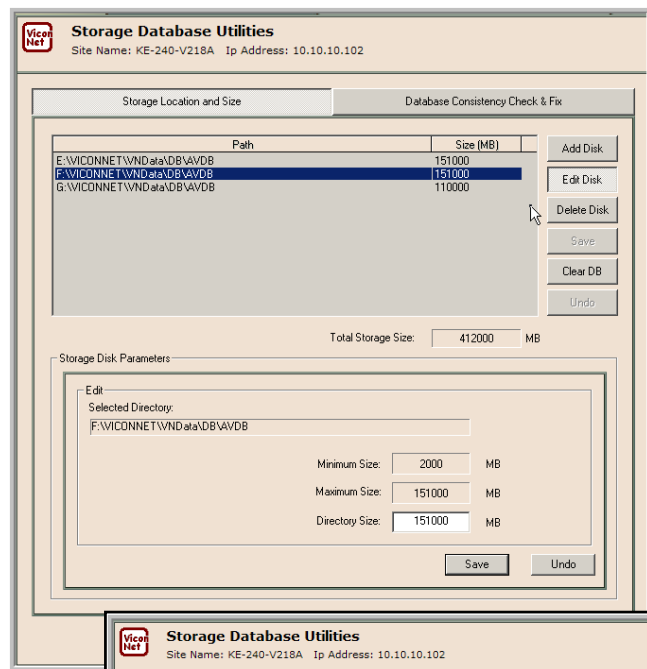
To add or edit the drive back to Viconnet click

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**



Minimum Size: 2000 MB
 Maximum Size: 151000 MB
 Directory Size: 151000 MB

Save Undo



Storage Database Utilities
 Site Name: KE-240-V218A Ip Address: 10.10.10.102

Path	Size (MB)	
E:\VICONNET\NData\DB\AVDB	151000	Add Disk
F:\VICONNET\NData\DB\AVDB	151000	Edit Disk
G:\VICONNET\NData\DB\AVDB	110000	Delete Disk

Total Storage Size: 412000 MB

Storage Disk Parameters

Edit
 Selected Directory: F:\VICONNET\NData\DB\AVDB

Minimum Size: 2000 MB
 Maximum Size: 151000 MB
 Directory Size: 151000 MB

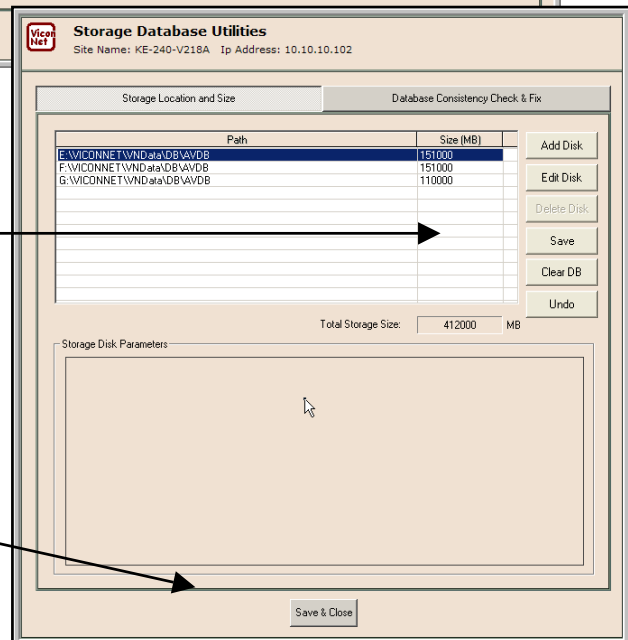
Save Undo

5. And **Save**

Add Disk
 Edit Disk
 Delete Disk
 Save
 Clear DB
 Undo

6. Save & Close

Save & Close



Storage Database Utilities
 Site Name: KE-240-V218A Ip Address: 10.10.10.102

Path	Size (MB)	
E:\VICONNET\NData\DB\AVDB	151000	Add Disk
F:\VICONNET\NData\DB\AVDB	151000	Edit Disk
G:\VICONNET\NData\DB\AVDB	110000	Delete Disk

Total Storage Size: 412000 MB

Storage Disk Parameters

Save & Close

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

To finish, put the ViconNet shortcut back into Programs / Startup.
 Restart the Kollektor 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 Kollektor 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: depending on the hdd size that was replaced will determine the current available record rate.

ADDITIONAL INFORMATION

Windows START menu:

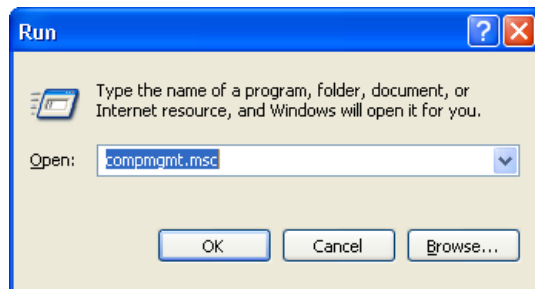
- ▶ By default Windows START does not show the "Programs" menu, it only shows the "Run", "Shutdown", and "Log off".
- ▶ To see the Programs menu, change the task bar settings from standard to classic.
- ▶ Right click on START
- ▶ Left click Properties
- ▶ Select Classic Start
- ▶ Apply then OK.

Proceed to Programs from Start menu

Format HDD in Windows XP

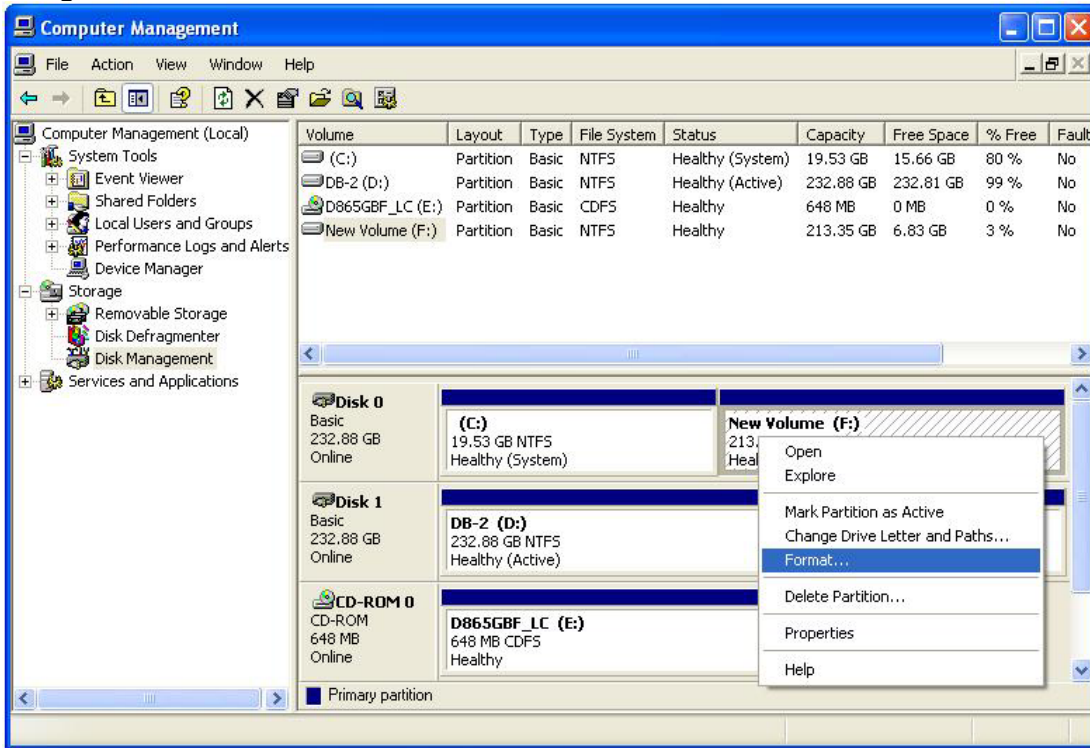
- ▶ Press the "START" button.
- ▶ Choose the "Run" option from the start menu; click the "ok" button".
- ▶ The following window will be opened.
- ▶ Type "compmgmt.msc" in the "open:" dialog; as showed in the picture below. See fig 1.

fig 1.



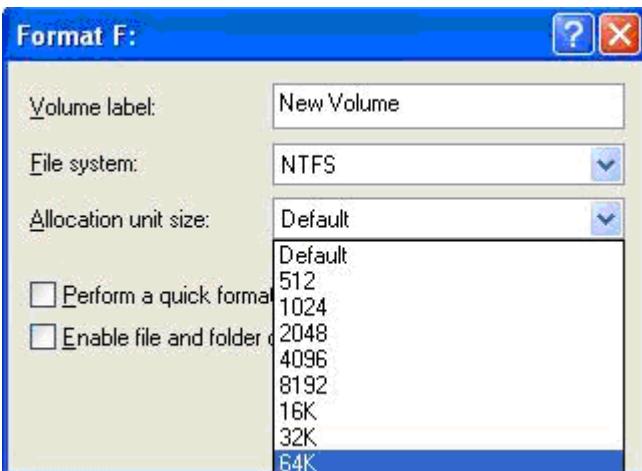
- ▶ Click the "OK" button.
- ▶ The following window will be opened. See fig 2.

fig 2



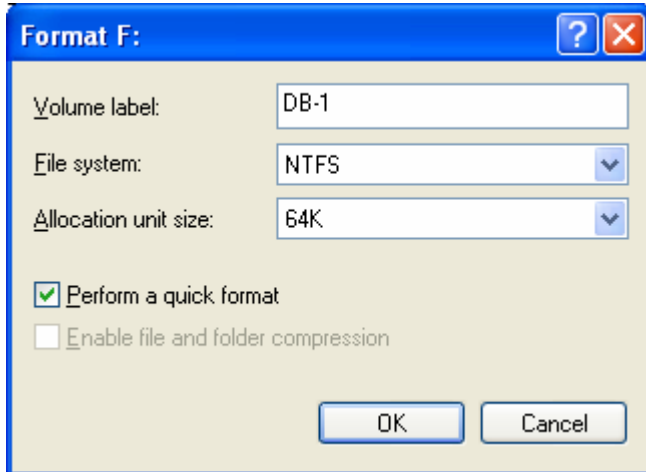
- ▶ Select the "Disk Management" option from the list on the left side of the screen.
- ▶ Right click on the first DB drive; the following drop down list will be opened. See fig 2.
- ▶ Choose the "format" option from the list.
- ▶ The following window will be opened; select the "64k" option from the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

fig 3



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

Fig 4.



- ▶ 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).