Quick Start Guide on Data Compass

A substitute for the users before DC publicly released with a user manual

8/16/2008

SalvationDATA Technology, LLC.

Customer First Team

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About this Manual

This quick start is intended to give the user of the SalvationDATA Data Compass the maximum amount of knowledge possible to maximize their efficiency in its use before a detailed and profound user manual released on September. For advanced uses which may not be included in this quick start, please feel free to contact our technical support.

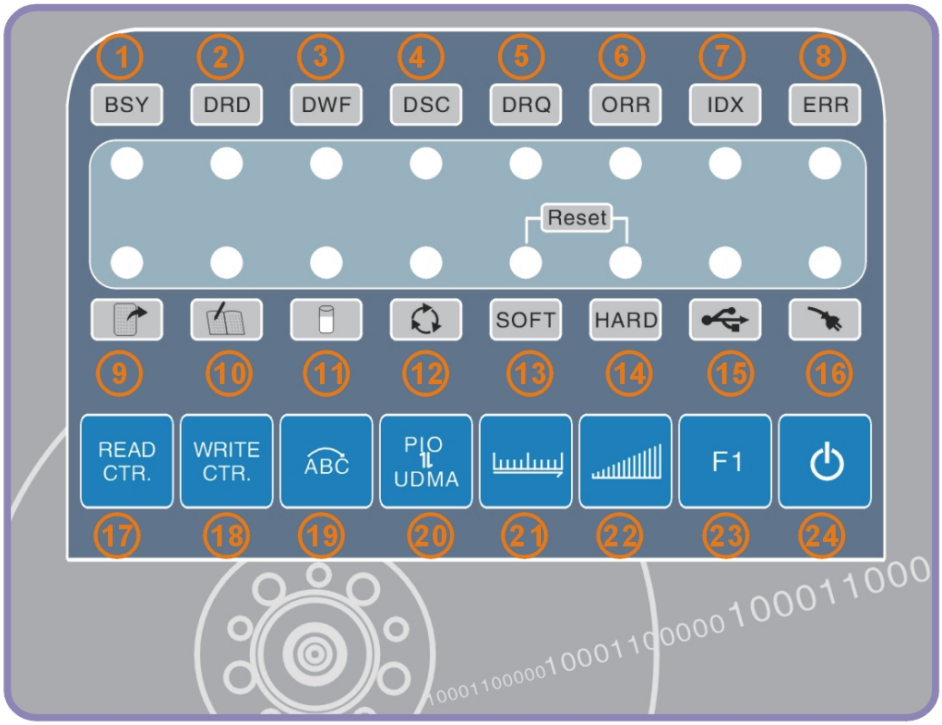
This is NOT the user manual of Data Compass.

Navigating the SalvationDATA Data Compass hardware console

DATA COMPASS Specifications

Item	Specification
Dimension (length*width*height)	16.2*11.3*3.2(cm)
Weight	0.43kg
Transmission Type	USB 2.0
Standard Interface Type	3.5” PATA
External Interface Type	3.5” SATA、2.5” PATA/SATA
Support Type	3.5” IDE/SATA HDD, 2.5” IDE/SATA HDD
Control Button	8
Buzzer	1
Indicator	16
Power Supply	16-24V DC≥3A
Operating System	WINDOWS 2000/2003/XP/VISTA
Language	English

LED Indicators



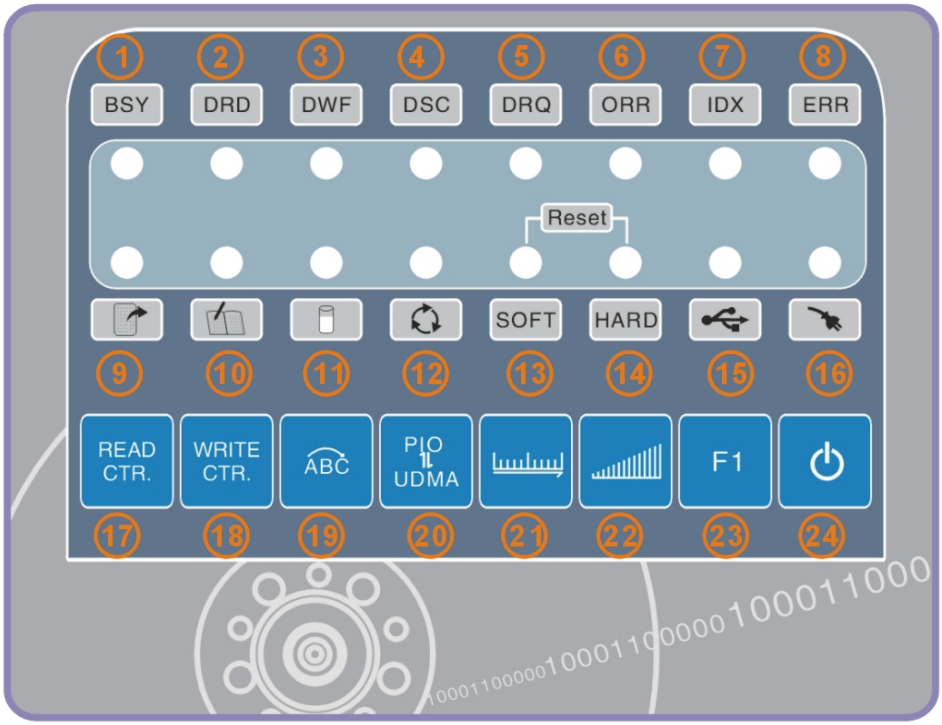
The indicators from 1 to 8 are the drive status register, which shows the drive's ATA status:

1. BSY: Drive Busy
2. DRD: Drive Ready
3. DWF: Drive Write Fail
4. DSC: Drive seek complete
5. DRQ: Drive Request
6. ORR: Correct
7. IDX: Index
8. ERR: Error received from the drive's error register

The indicators from 9 to 16 are the DC working status register, which denotes the operations applied by DC automatically and working status of DC:

9. This light indicates the read towards the Source HDD is enabled
10. This light indicates the write to the Source HDD is enabled
11. This light indicates that the read status of the Source HDD;
12. This light indicates UDMA transmit mode enabled
13. This light indicates that one Soft Reset has been carried out by DC
14. This light indicates that one Hard Reset has been carried out by DC
15. This light indicates that USB connection is in proper condition and functional;
16. This light indicates that DC is powered on and functional

Quick Functional Buttons



The Quick Functional Buttons from 17 to 24 allow you to set parameters and operate the main functions directly:

17. Read CTR: Enable/Disable Source HDD Read
18. Write CTR: Enable /Disable Source HDD Write
19. ABC: Do the Skip Operation
20. PIO-UDMA: toggle switch for UDMA/PIO
21. Increase readiness time by one second, which lengthen read timeout to read more sectors;
22. Decrease readiness time by one second; which shortens read timeout to read faster;
23. F1: Reserved button
24. Power switch

Chapter 1 Installing the SalvationDATA Data Compass

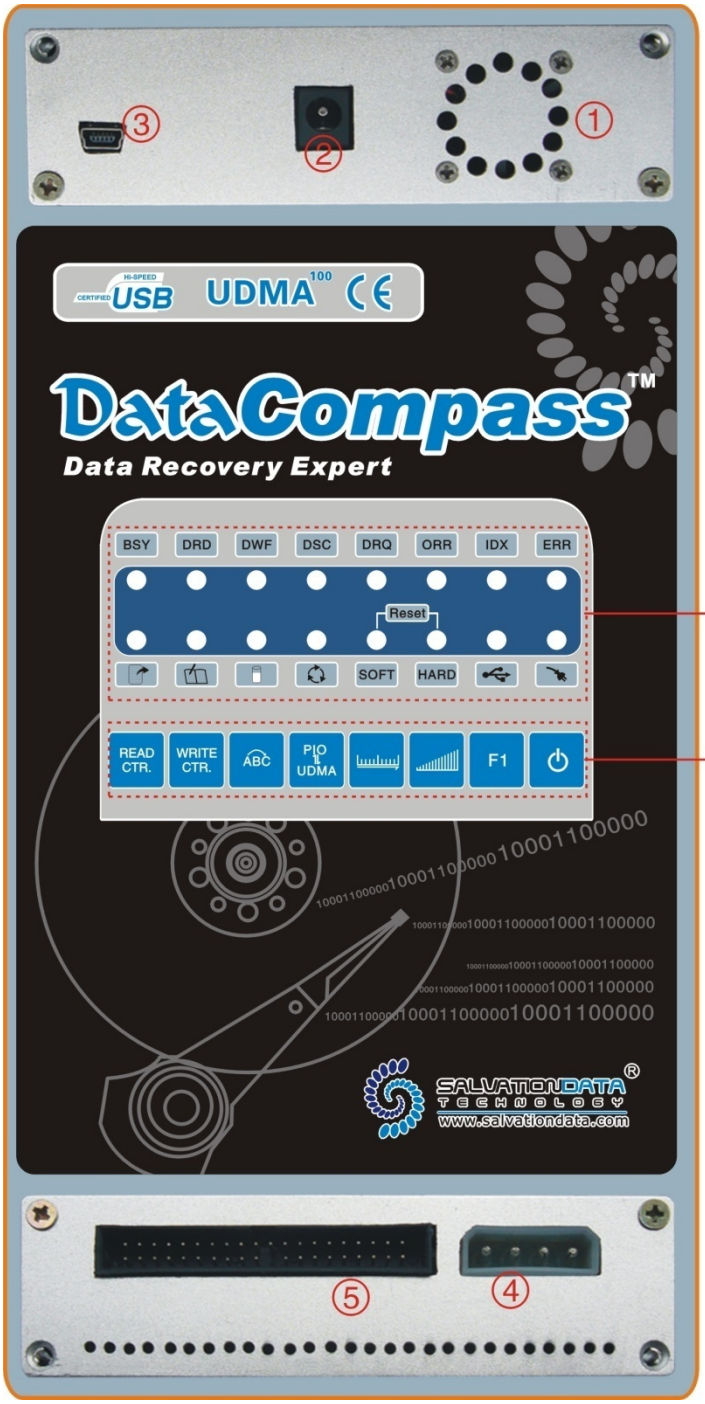
SalvationDATA Data Compass works on any computer with 2 USB interfaces (one for DC console, one for ShadowDisk), however a computer with higher performance will allow you a faster speed in reading and recovering the patient drive since DC will use the CPU of your computer for many of its calculations.

Basic configuration（PC or Laptop）: 845 chipset motherboard with 2 USB interfaces; Celeron 1.0 GHz CPU, 512 MB RAM, DVD-ROM;

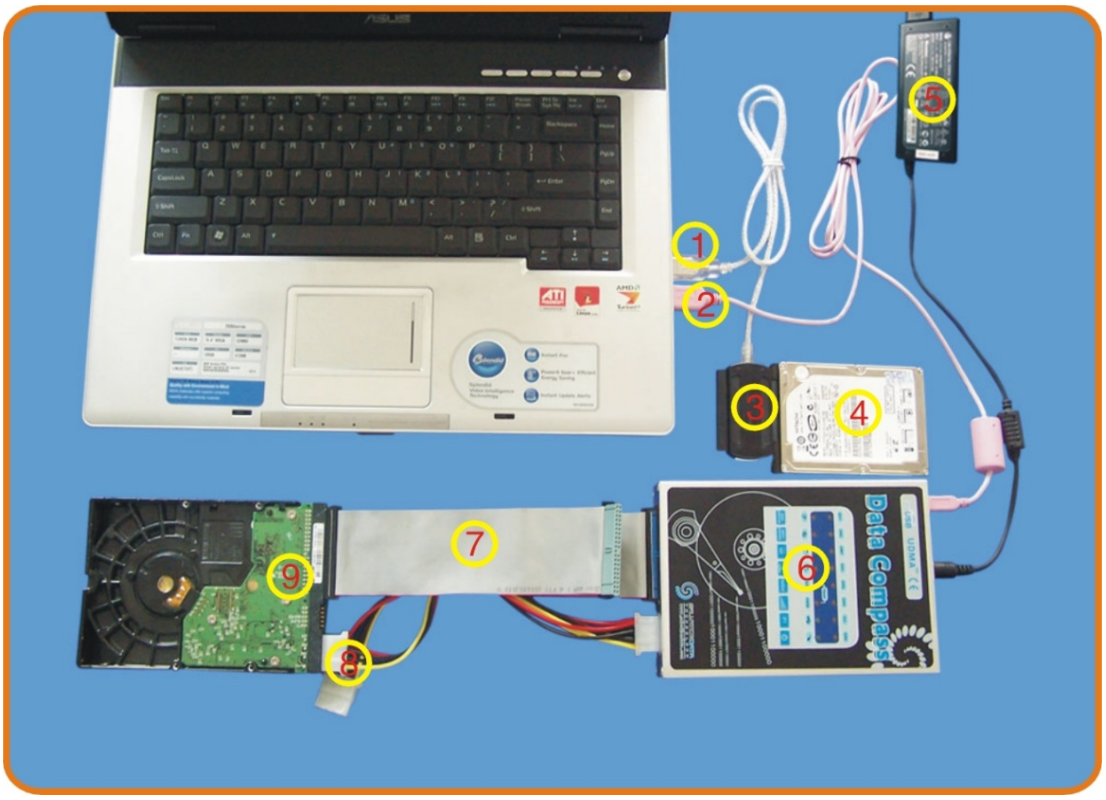
Recommended configuration: 865 chipset motherboard with 2 USB interfaces; Pentium 4 1.5 GHz CPU or faster, 1024 MB RAM, DVD-ROM.

Chapter 1 A) Connecting SalvationDATA Data Compass to your computer

Connect the source drive to DC (3.5” PATA drives can be connected to DC directly, while 2.5” drives and SATA drives should be connected to DC via corresponding adaptors provided, see below).
Data Compass uses a normal AC adapter for laptop as power supply; it supplies power to the DC console and the source drive.
Data Compass connects to the workstation computer via simply a USB cable.
The ShadowDisk connects to the workstation computer via the USB to ATA adaptor.

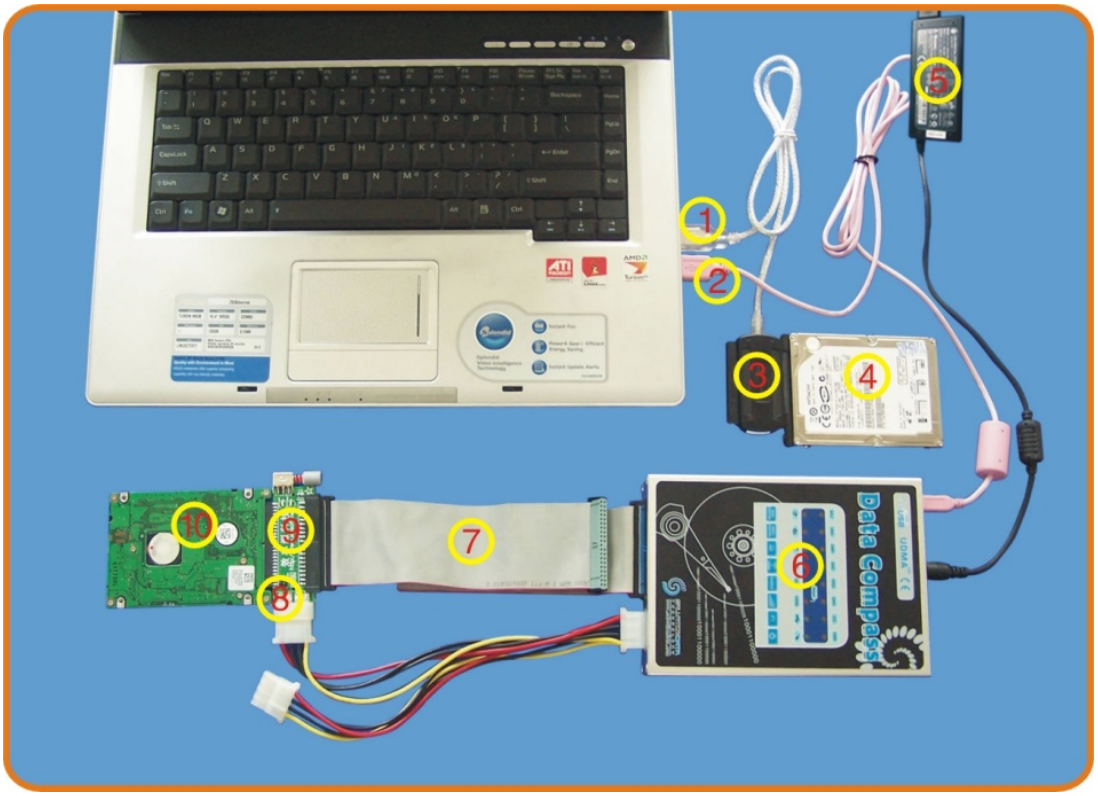


In case the source drive is 3.5” PATA HDD



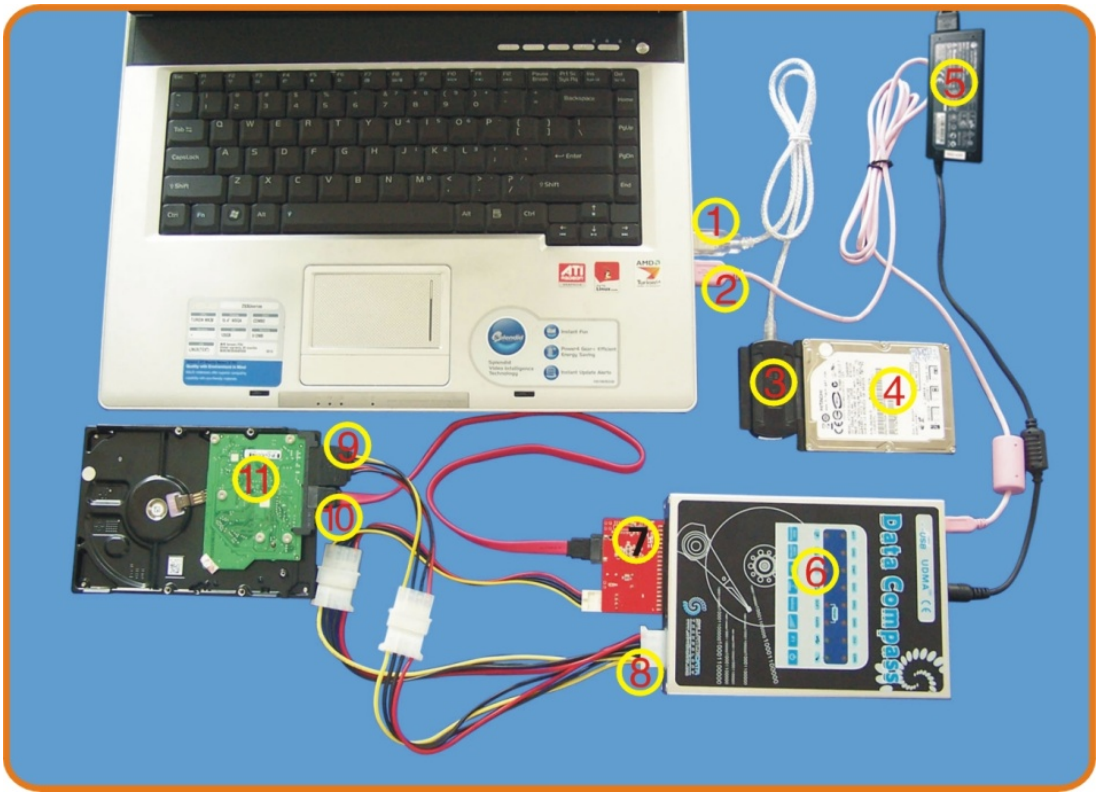
① USB Cable to 3-in-1 Adaptor
② USB Cable to DC
③ 3-in-1 Adaptor
④ ShadowDisk
⑤ Laptop Power Supply
⑥ DC Console
⑦ IDE Cable
⑧ Power Cable
⑨ Source HDD

In case the source drive is 2.5” PATA HDD



① USB Cable to 3-in-1 Adaptor
② USB Cable to DC
③ 3-in-1 Adaptor
④ ShadowDisk
⑤ Laptop Power Supply
⑥ DC Console
⑦ IDE Cable
⑧ Power Cable
⑨ 2..5” to 3.5” IDE Adaptor
⑩ Source HDD

In case the source drive is SATA HDD



① USB Cable to 3-in-1 Adaptor
② USB Cable to DC
③ 3-in-1 Adaptor
④ ShadowDisk
⑤ Laptop Power Supply
⑥ DC Console
⑦ IDE to SATA Adaptor
⑧ ATA Power Cable
⑨ SATA Power Cable
⑩ Source-Adaptor SATA Cable
⑪ Source HDD

Chapter 1 B) Skipping the New Hardware Wizard

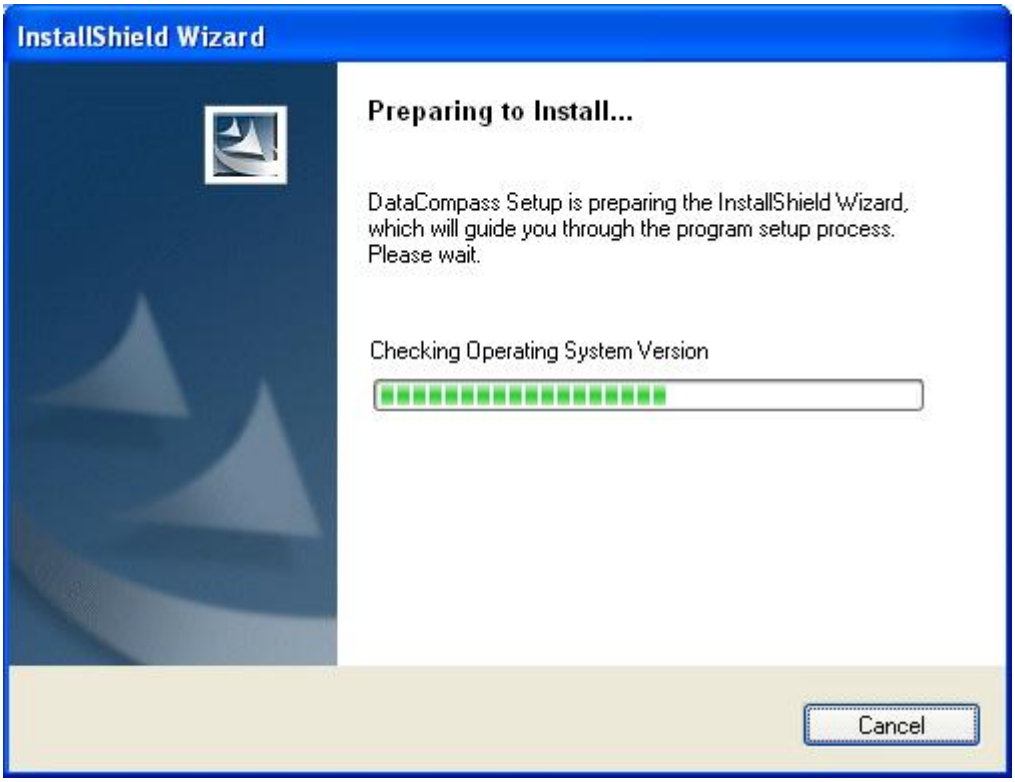
After connecting the DC to PC with the USB cable provided, the operating system may detect it as a new USB device and ask for a driver install. Please skip this step by clicking the "Cancel" button.

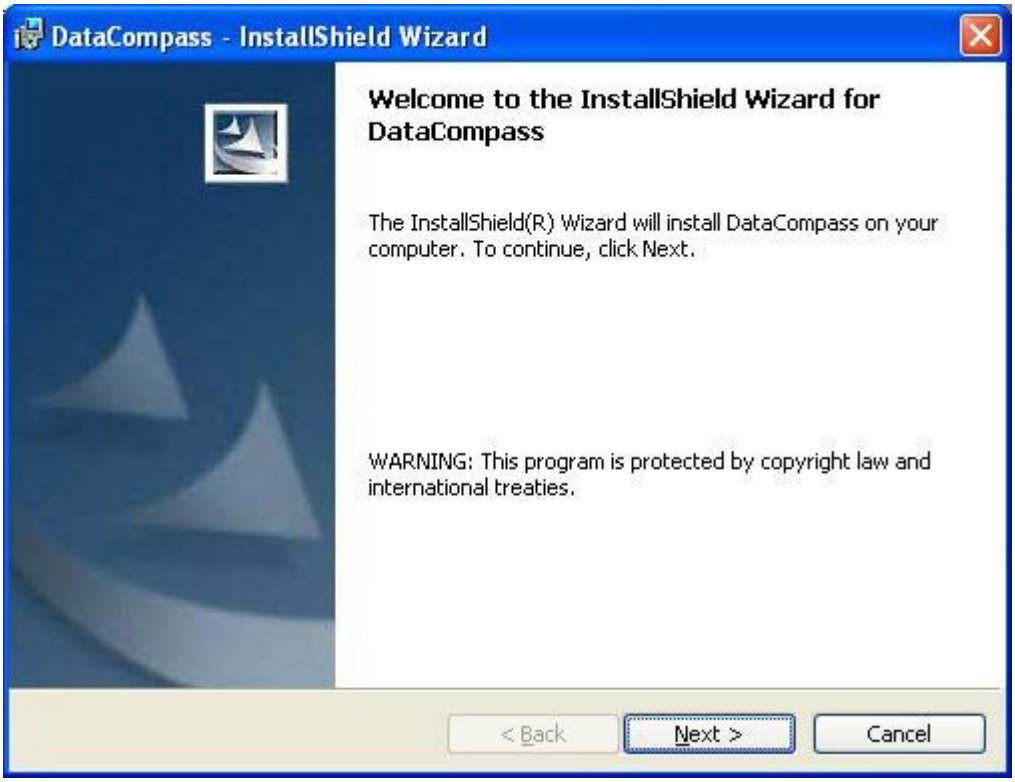
Chapter 1 C) Software Installation

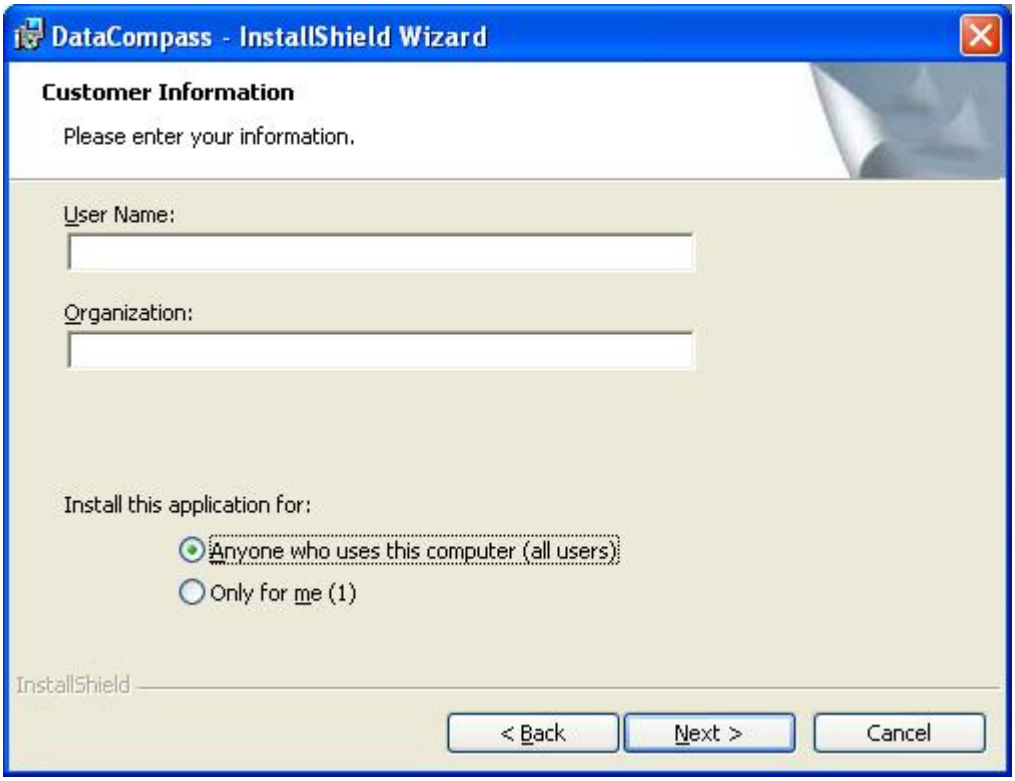
Insert the program DVD included in the package. It runs automatically and shows you the following installation wizard:

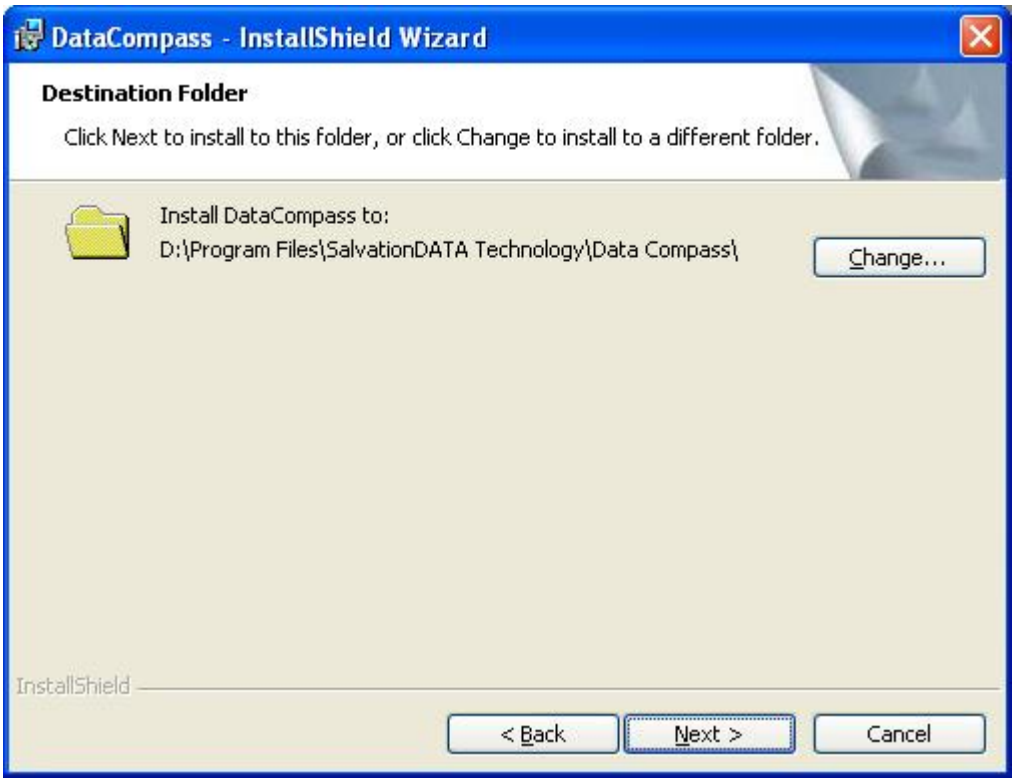
Click on the INSTALL button and select the product you want to install, Data Compass

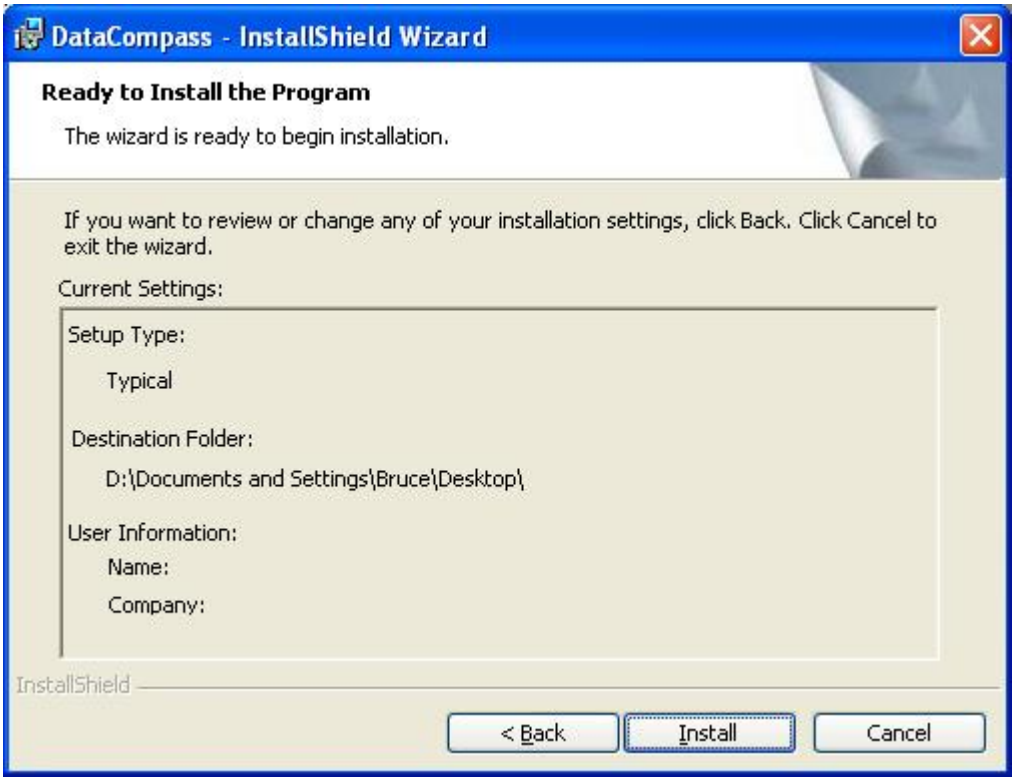
The installation wizard activated, and it will guide you through the Data Compass software installation.

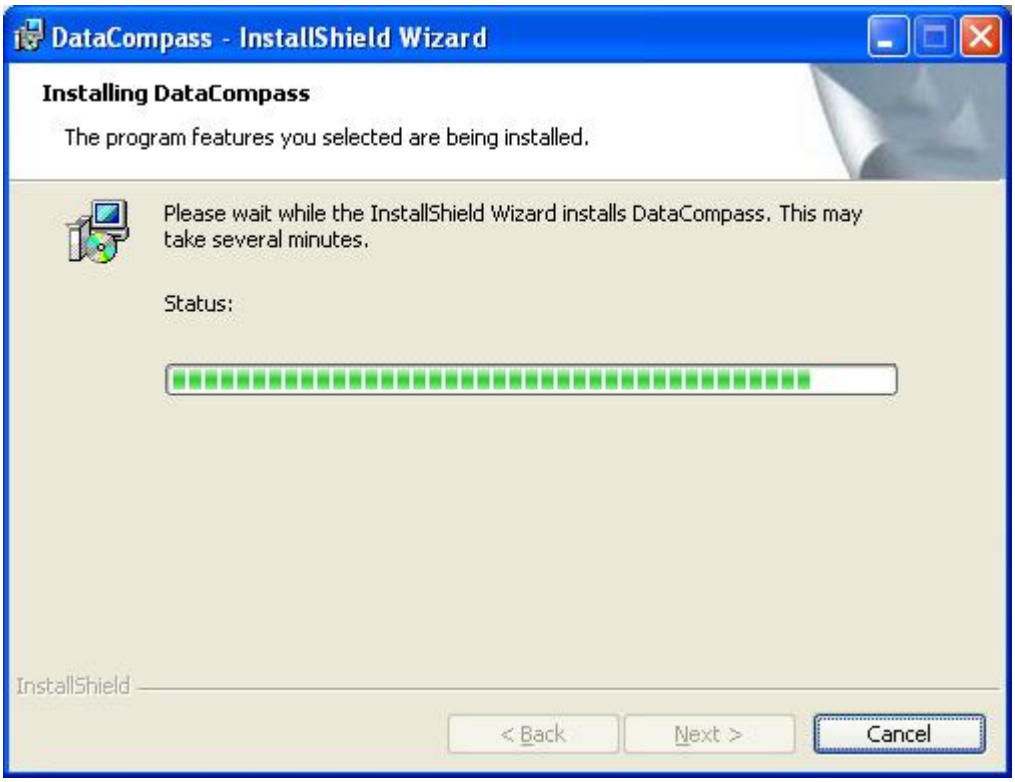


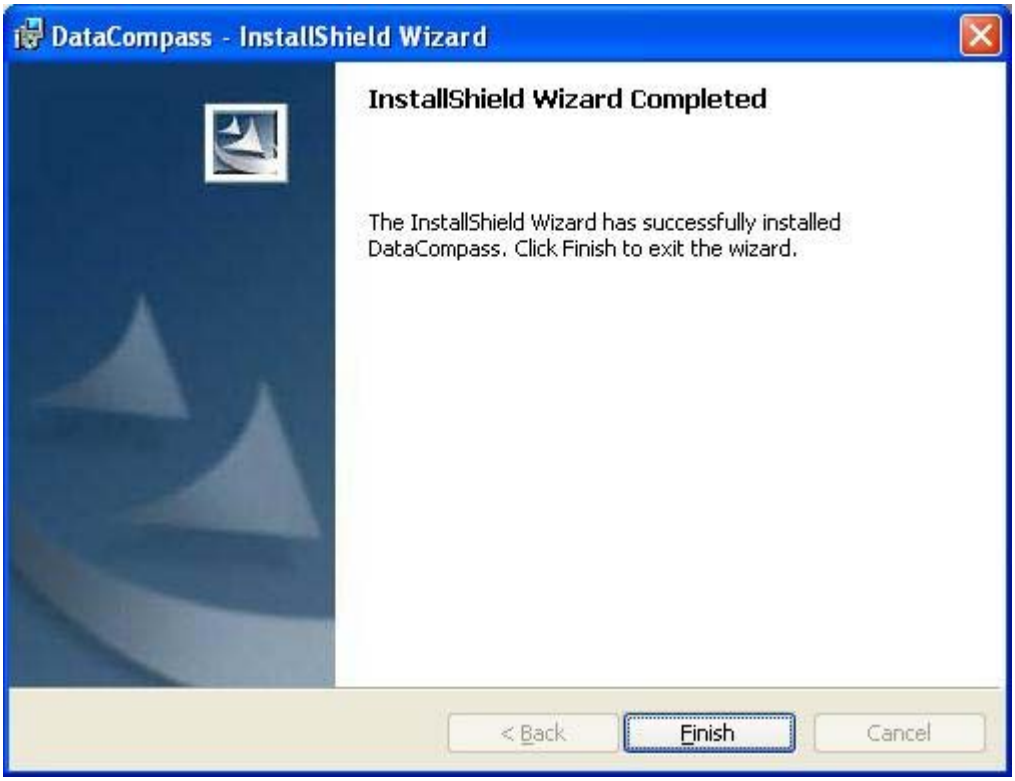




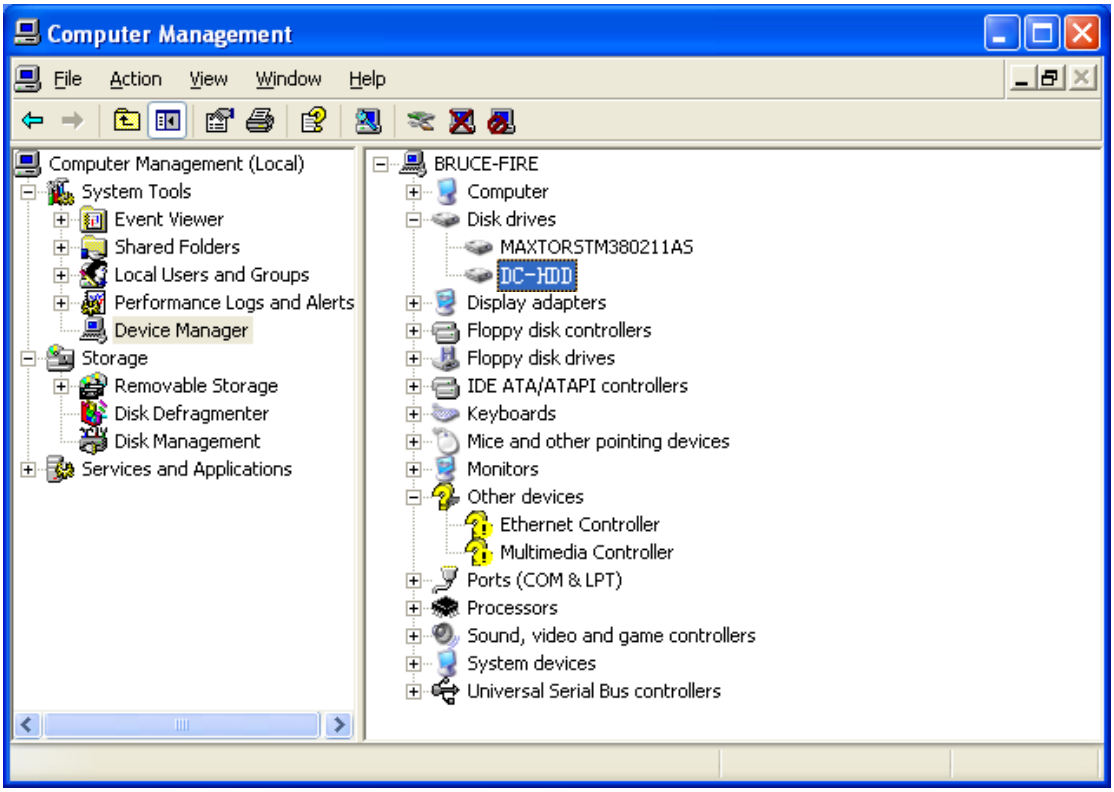






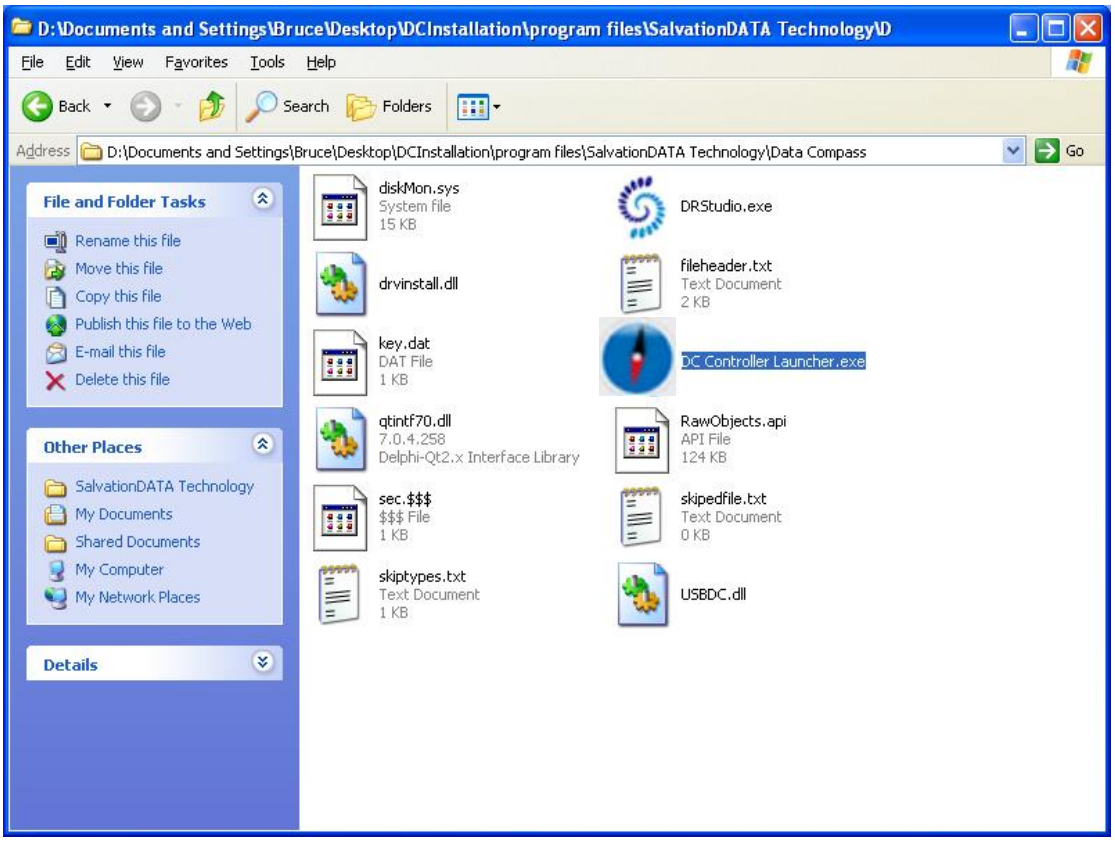


You can see Data Compass listed in the Device Manager as “DC-HDD” drive if the above was done correctly.



Chapter 1 D) Driver Installation

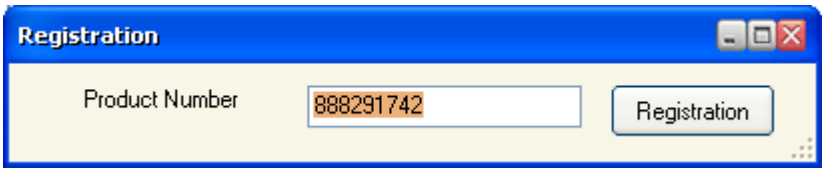
The driver installation for Data Compass is very easy: For the first time you execute the “DC Controller Launcher” program from the installation path or the Windows start menu, the system will install the driver automatically.



Click “OK” to restart the computer, the driver installation is finished.

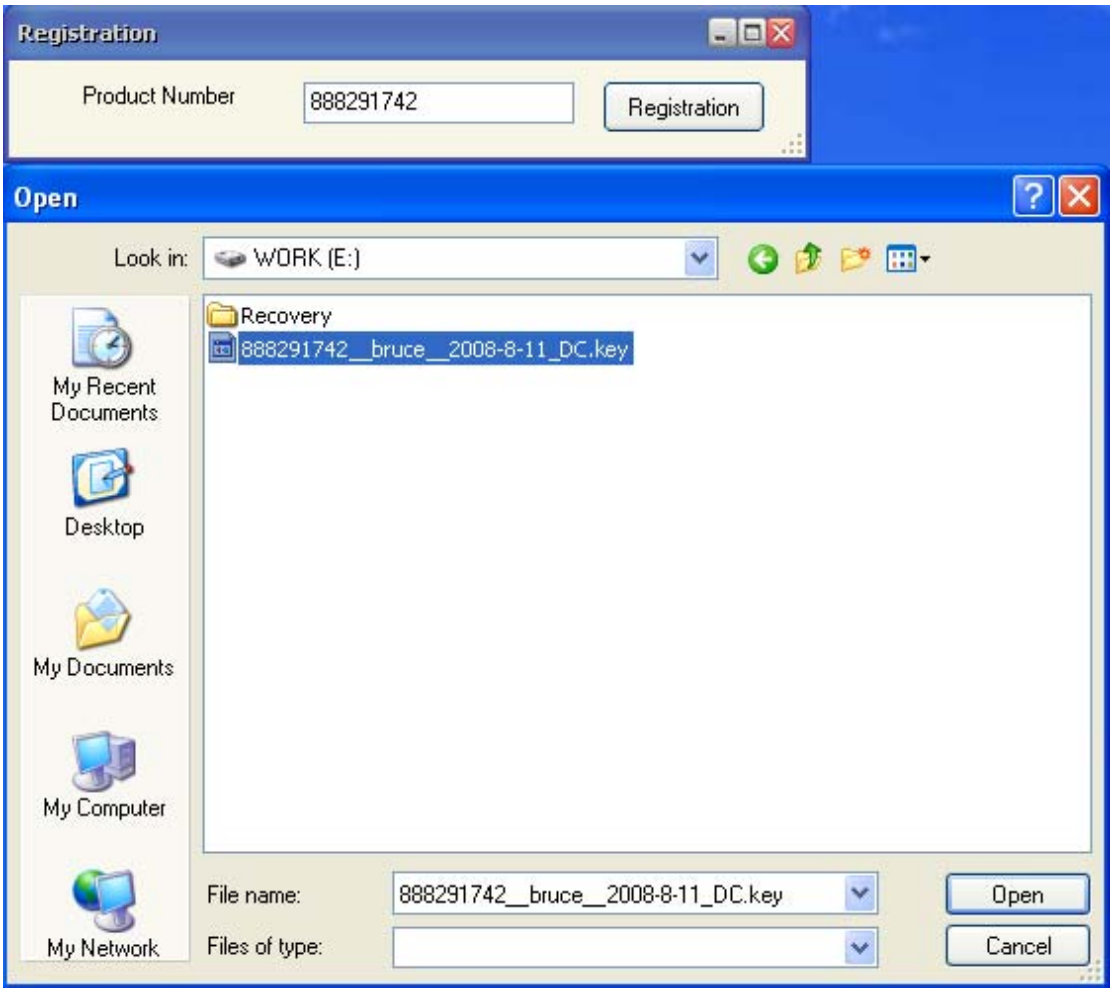
Chapter 1 E) Registering Data Compass Online

Run the “DC Controller Launcher” program from the installation path or the Windows start menu again, a window will popup and indicate you to register the product.



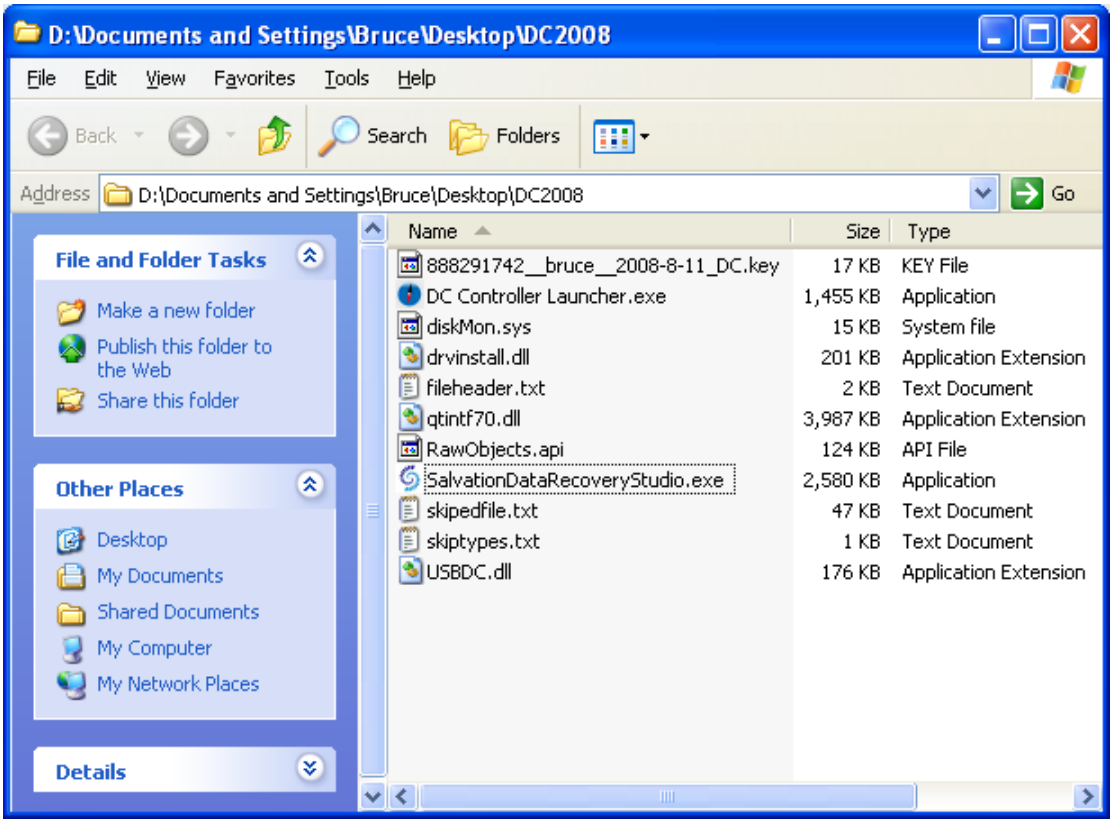
You should visit us at **http://code.xlysoft.net/validen.aspx** and register your Data Compass online using the Product Number showing in the popup window, and then (it takes minutes to hours due to the global time difference) you will receive a license ".key" file sent from the registration system to your registered Email.

After receiving the ".key" file, just click on the “Registration” button, select the license ".key" file you received and click OK:



After registration, the window will be closed and the total installation finishes. The registration is required for one time only, and it will be valid for a lifetime. After the registration, the next time when you execute the program, even you are using it on another computer, the registration window will not show up again.

There license key will be copied to your installation path also for the use of the DR-Studio software.



** You need to copy the license from the installation path to the new installation path manually in case you want to use DC on another PC.*

Chapter 2 Navigating the Data Compass Control Panel software

The SalvationDATA Data Compass is built and run in a Windows environment. In the control panel software, there are several types of buttons which require different operations:

1. Toggle Switch buttons


OFF


ON

this type of buttons control the ON/OFF of the features or operations. When the green light on the switch is on, that indicates the current feature or operation is enabled, vice versa. You control this type of switches by clicking the left and the right end of them to toggle from ON and OFF.

2. Adjusting Tuners

you adjust this type of tuners by pulling the pointer to the scale you want.

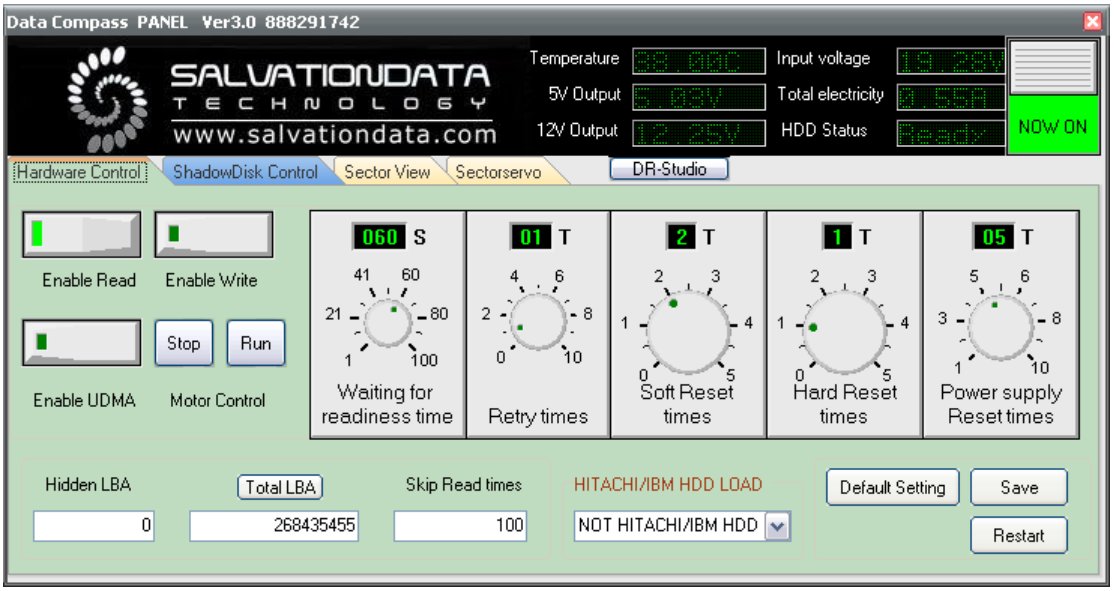
3. Functional Buttons

you click on this type of buttons to activate the corresponding functions or operations.

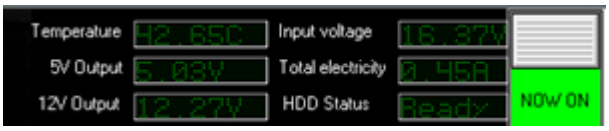
4. Power Switch

it toggles from ON and OFF each time you click on it.

Chapter 2 A) Elements of the Hardware Control tab



HDD working condition monitor



Includes:

Real time Temperature monitor

Real time Input voltage monitor

5V output/12V output voltage monitor

Real time Total electricity monitor

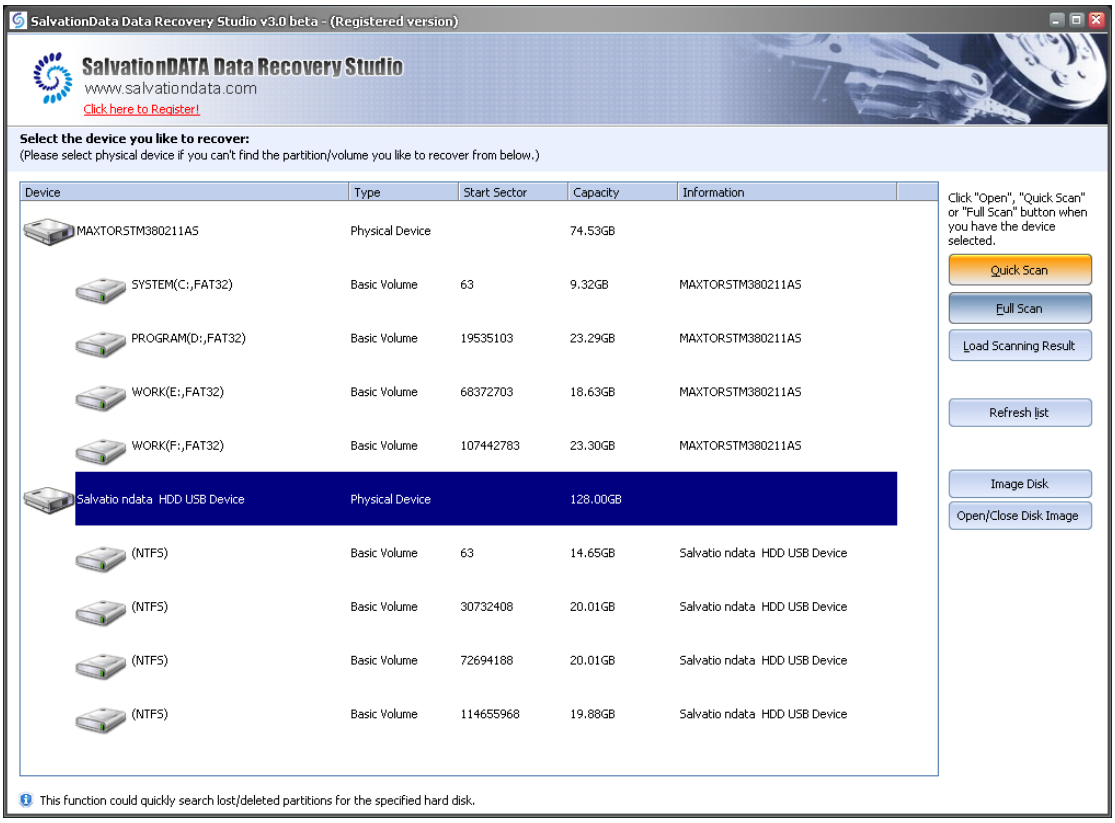
Real time source HDD Status monitor*

** The HDD status should be ready before you carry out the data recovery/ simply disk image from the source drive. However, sometimes this status would not be showing correctly the real time status.*

DR-Studio quick launcher button

DR-Studio

This button is used to launch the DR-Studio which reads and extracts files from the source HDD. By activating the DR-Studio, you will be enabled the ability to scan/retrieve files on the source drive.



See below chapter on DR-Studio for details. DR-Studio should be activated after you finish the configurations using the DC controller panel software.

Hardware Control Parameters Setting

Default setting: control parameters set by DC automatically.

Enable Read: Read operation on source HDD is accessible.

Enable Write: Write operation on source HDD is permitted.

Enable UDMA: UDMA transmit mode is adopted automatically.

Motor control: stop or run the source HDD spindle motor.

Hidden LBA: You can define how many LBA you want to hide from the beginning which is no need to be recovered.

Total LBA: This button enables you to acquire the source HDD's total LBA and show in the underneath colunm. You can then edit the LBA in the colunm if you need to hide LBA from the end.

Skip Read times:

A sector of HDD may be read by more than once in data recovery. When HDD encounter with serious problem of bad sectors, you can set the HDD to jump for some read times to ignore the bad area. To skip read does not mean we will skip those sectors, the system will read backward after the skip so that the most sectors can be read out.

HITACHI/IBM HDD LOAD:

You can boot the undetected Hitachi drives SA-Independently here. Just choose the corresponding HITACHI/IBM HDD series to load the source HDD.

Waiting for readiness time:

All HDD need time to get ready after power on or some other operations. Different HDD takes different time. The HDD with problem (especially with physical problem) may take longer time to get ready.

Here you can set the time base on the HDD's own conditions.

Retry times: Sometimes the data you need may fail to be obtained once. In this kind of condition, you need retry for the failed sectors. Here, you can set the retry times by yourself. The more times you try the bigger chance for you to get the data.

Soft Reset times: Send reset instructions to reset the HDD.

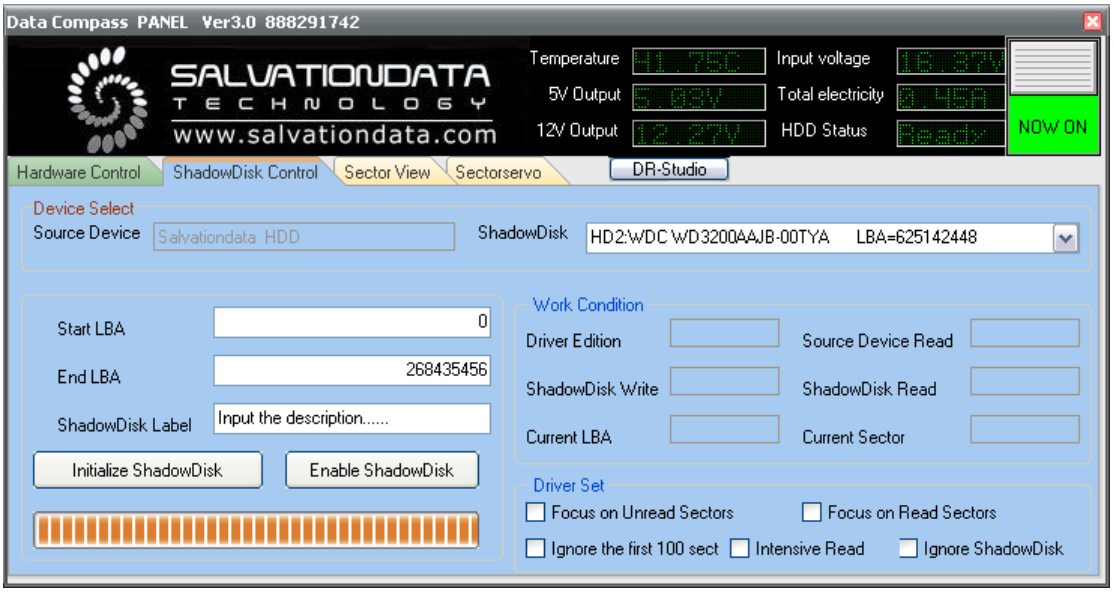
Hard Reset times: Send electronics signals to reset the HDD.

Power supply Reset times: Turn off and on the source HDD power supply to reset the HDD.

Save: Save change of hardware control parameters.

Restart: start the DC Controller again.

Chapter 2 B) Elements of the ShadowDisk Control tab



Source HDD: The failed source disk connected to Data Compass for data recovery. It will be shown as "DC-HDD" here. Source HDD is locked to be the one connected to the Data Compass; you can not change it from here.

ShadowDisk: Choose one HDD as the ShadowDisk. ShadowDisk could be any HDD which is being connected to the workstation computer (includes fixed HDD and external drives). It can be any good drive that has a capacity that is at least as large as the source drive.
Caution: The HDD used as ShadowDisk should be in a good condition. The data originally in the drive used as the ShadowDisk will be lost after initialization.
We don't need to define the destination HDD here in the control panel software, since we will have it defined in DR-Studio software

Start LBA: set a starting LBA address for the ShadowDisk. If you set a number bigger than zero here, the sectors before that LBA address will not be used. We suggest you leave it as default.

End LBA: set an ending LBA address for the ShadowDisk. If you set a number smaller than the total LBA value here, the sectors after that LBA address will not be used. We suggest you leave it as default.

ShadowDisk Label: you can add some of your comments here for identifying the current ShadowDisk from others before initialization. (You will be having more than one ShadowDisk in real practice when dealing with several cases, it is very important for you to match the ShadowDisk with the source drive).

Initialize ShadowDisk: After setting the ShadowDisk, we need first to initialize it to ensure the data on the ShadowDisk to be in correspondence with the source HDD.
Caution: The ShadowDisk capacity must be larger or at least the same as the source HDD. After initialization, we can create the ShadowDisk label for your convenience.

Enable ShadowDisk: enable the ShadowDisk to implement. This button will be active only after the initialization finishes.

Work condition

It gives feedbacks of the operations.

Driver Edition: The driver version of your Data Compass.
Source Device Read: Indicating how many times the source HDD was read.
ShadowDisk Read: Indicating how many times the ShadowDisk was read.
ShadowDisk Write: Indicating how many times the ShadowDisk was written.
Current LBA: The present LBA address that is being read.
Current Sector: The current sectors that is being read.

DC Panel Filters:

Ignore ShadowDisk: Disabling the read forward function. You will read the source HDD directly. The index and data in the ShadowDisk will be rebuilt during the direct read. This is used when you believe the data included in the ShadowDisk is incorrect and you want to read again from the source HDD. We suggest you leave it unchecked.

Focus on Unread Sectors: Read only the sectors in the source HDD which haven't been mirrored to the ShadowDisk. By checking this enables you a faster read speed.

Focus on Read Sectors: Read the sectors which has been read and mirrored in ShadowDisk only. By checking this option the source HDD is disabled, you read only the sectors in the ShadowDisk. This is used if you believe the data has been read is enough for your data recovery need. It makes your data recovery faster since you are working in a source-independent mode.

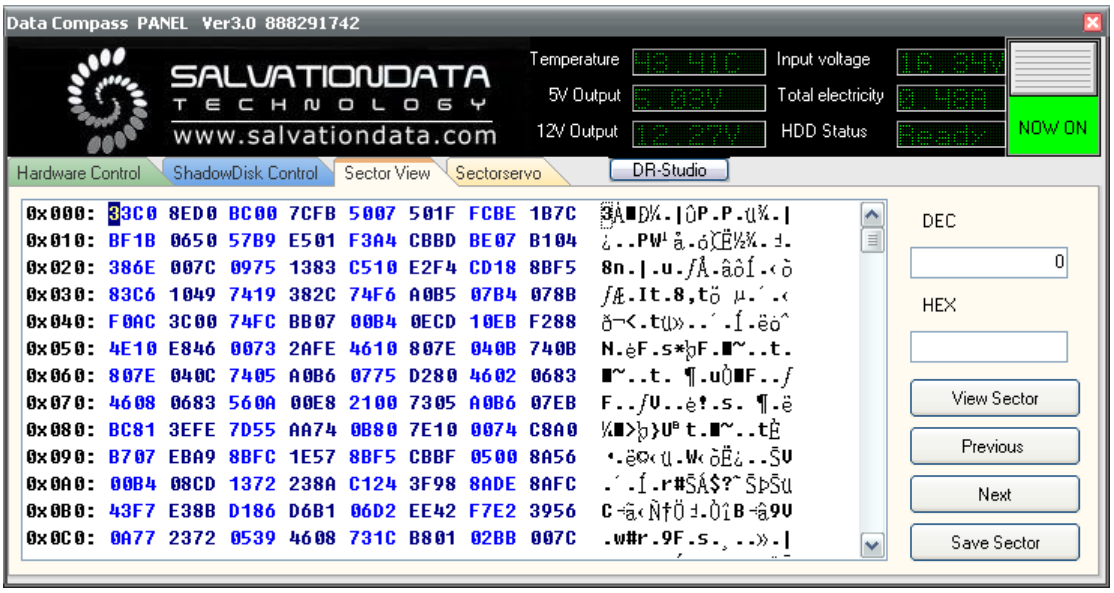
** If you check both the [Focus on Unread Sectors] and [Focus on Read Sectors] options, DC will not be able to read any data since these two options are opposite logically.*

Ignore the first 100 sectors: After DATA COMPASS identify the HDD's partition information, the Operating System will load the source HDD's partitions which will result in a low speed for the data read. In order to enhance the read speed, you can shield the first 100 sectors to avoid that. This option is *recommended.*

Intensive Read: Increase the source HDD's work intensity, especially the head's working intensity by increasing its power currency supply. This function is recommended to be adopted for some very important data recovery because this is in a risk of degrading the source HDD.

Chapter 2 C) Elements of the Sector View tab

Check the data condition in data area.



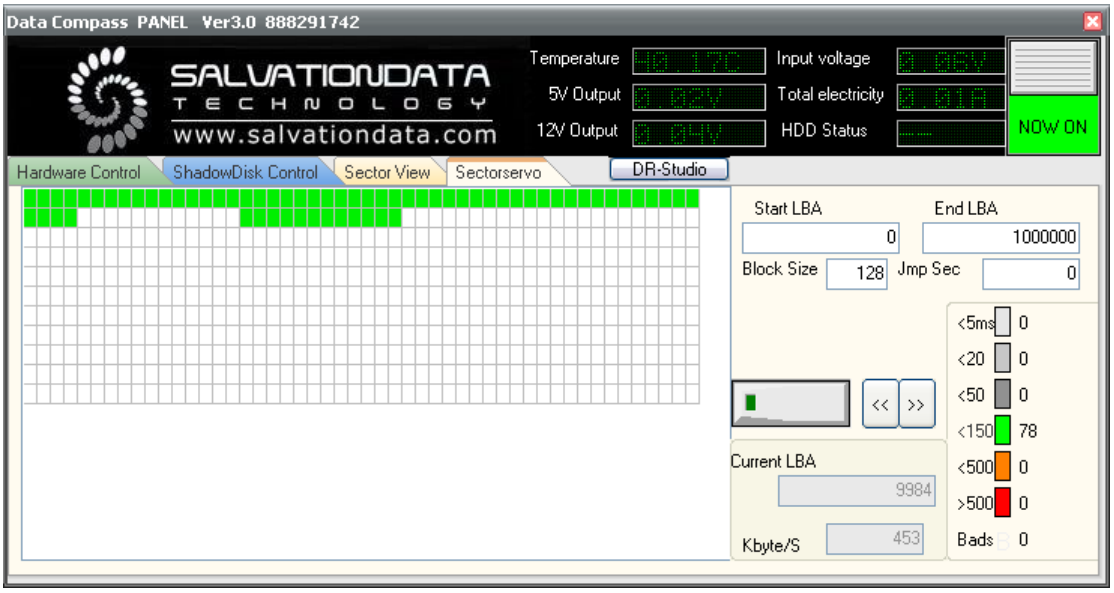
DEC/HEX: The data digital convertor. You can set the sector address that you want to access.

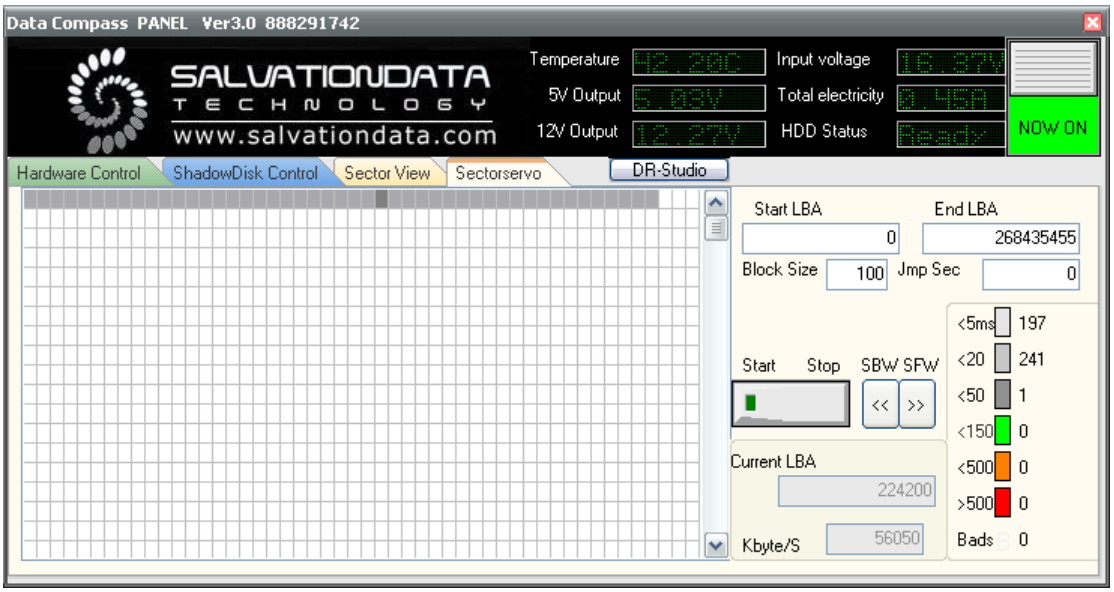
View Sector: After setting the sector address, press “View Sector” to view the data in the defined sector.

Previous: It is used to view the data in the previous sector.
Next: It is used to view the data in the next sector.

Save Sector: Save the changes you’ve made to the current sector.
** Here you can verify if the data area can be accessed. Before you start data recovery or disk image from the source HDD, you have to make sure you can access the data area of the source HDD, otherwise your recovery or image will be in vain.*

Chapter 2 D) Elements of the Sector Servo tab



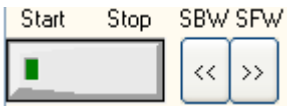


Start LBA: Set the start LBA for HDD scan.

End LBA: Set the end LBA for HDD scan.

Block Size: Set how many sectors to be included in one block in the scan.

Jump Sectors: Set how many sectors to be skipped after finishing a scan to one block in this scan. This is used in case you want to get a fast general status of the drive. We suggest you leave it to be default.



Press “Start”/”Stop” to start/stop the scan operation.

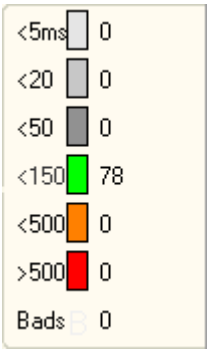
SBW: Skip backward for 1000 Blocks

SFW: Skip Forwards for 1000 Blocks

Current LBA: The current LBA that is being read.

Kbyte/S: The current speed of the HDD scan.

The symbols, indicating the status of the source HDD.



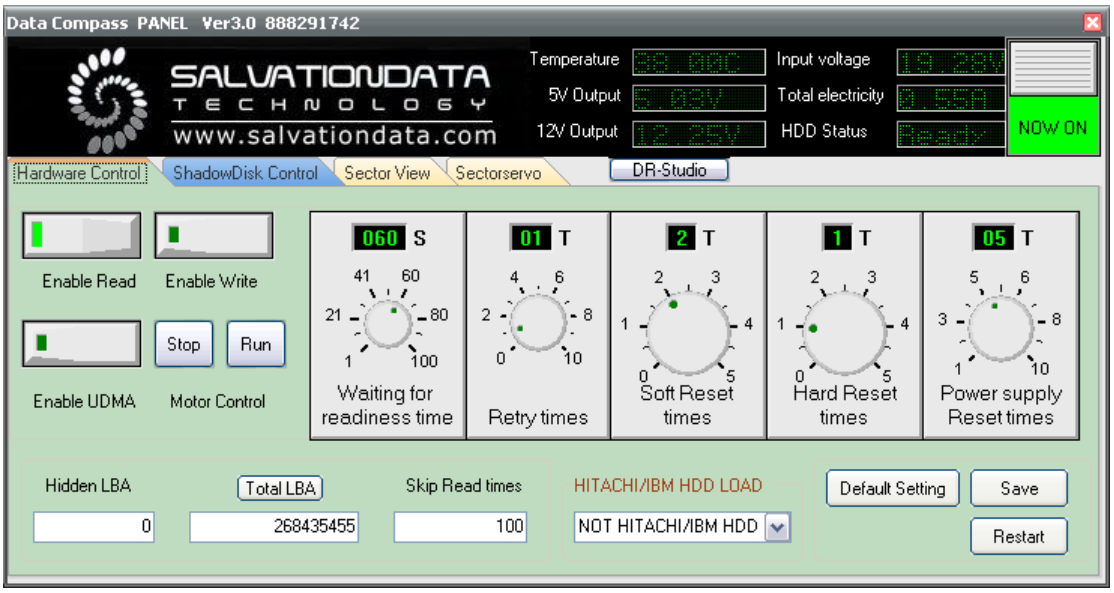
Chapter 3 Getting Started

Now that the Data Compass has been properly connected, and you have learned how to configure the ShadowDisk, we just need to power on the system and launch the Data Compass to get started.

Chapter 3 A) Launch the DC Control Panel software

Execute the DC controller Launcher from the installation path or the start menu. As a beginner, you are suggested leave all the settings to be default. Advanced users can set the parameters based on the condition of the source HDD.

Activating the DC console:

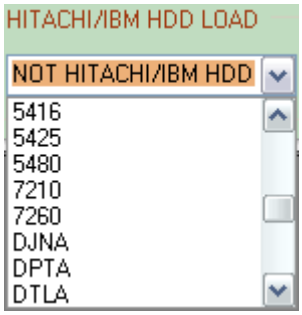


We can configure the working parameters here. If you are a beginner, we suggest you leave all settings to be default.

Attention: Make sure the [Enable Read] button was ON in order to read data from the source HDD.

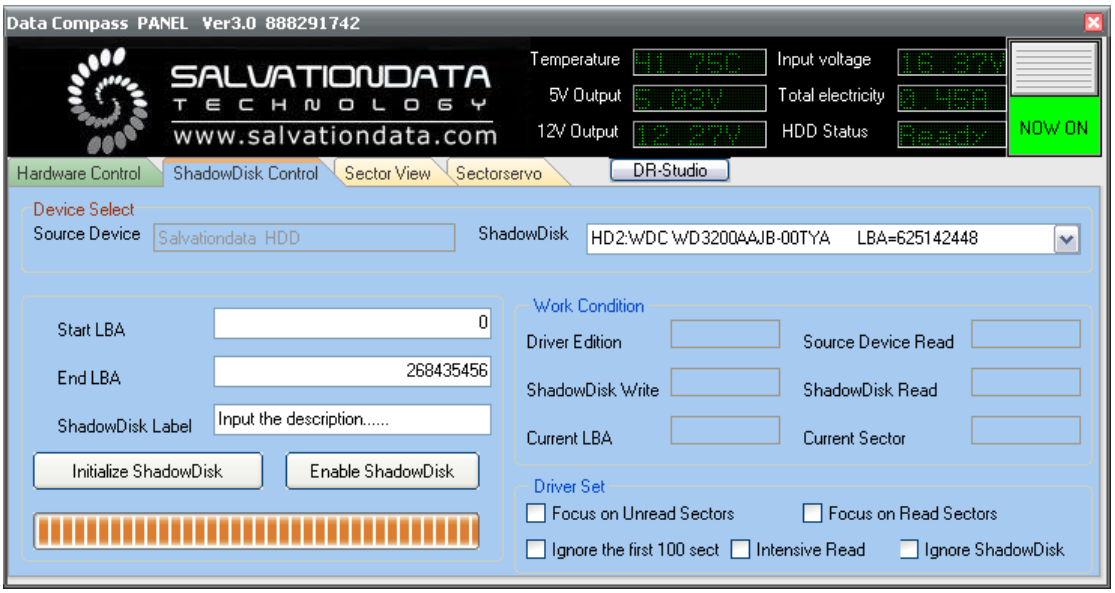
For undetected HITACHI/IBM HDD, we can load from BOOTER file (Analog technology) in order to access the data area. You need only to select a corresponding family to your source drive and it will be finished automatically.*

** This function is for Hitachi drive use only; we will soon enable this function for Seagate, Maxtor and others.*



After booting the drive with Analog technology, usually we would go to the View Sector tab (see below chapter) to verify if the data area is accessible after the manual boot (verify if the boot works).

Go to Shadow Disk Control Tab to initialize and enable the ShadowDisk:



First choose one HDD from the drop down menu to work as the ShadowDisk. ShadowDisk could be any HDD which is being connected to the workstation computer (includes fixed HDD and external drives). It can be any good drive that has a capacity that is at least as large as the source drive.
Caution: The HDD used as ShadowDisk should be in a good condition. The data in the ShadowDisk will be lost after initialization.

Then Initialize ShadowDisk: If this is the first time this drive used as the ShadowDisk, we need first initialize it. You need only to click on the "Initialize ShadowDisk" button and wait for a few minutes.
Caution: The ShadowDisk capacity must be larger or at least the same as the source HDD. After initialization, we can create the ShadowDisk label for your convenience.

Finally Enable ShadowDisk: enable the ShadowDisk function. The drive set will start working as a ShadowDisk for the source HDD until you disable the ShadowDisk function.

Work condition: you can receive a real time feedback for the operations.

The configuration of the DC Panel Filters:

Ignore ShadowDisk: Disabling the read forward function. You will read the source HDD directly. The index and data in the ShadowDisk will be rebuilt during the direct read. This is used when you believe the data included in the ShadowDisk is incorrect and you want to read again from the source HDD. We suggest you leave it unchecked.

Focus on Unread Sectors: Read only the sectors in the source HDD which haven't been mirrored to the ShadowDisk. By checking this you will be focused on the unread sectors in order to retrieve as many data as possible from the bad sectors. This option will be used after at least one total read towards the source drive; otherwise it won't make any sense.

Focus on Read Sectors: Read the sectors which has been read and mirrored in ShadowDisk only. By checking this option the source HDD is disabled, you read only the sectors in the ShadowDisk. This is used if you believe the data has been read is enough for your data recovery need. It makes your data

recovery faster since you are working in a source-independent mode.

** If you check both the [Focus on Unread Sectors] and [Focus on Read Sectors] options, DC will not be able to read any data since these two options are opposite logically.*

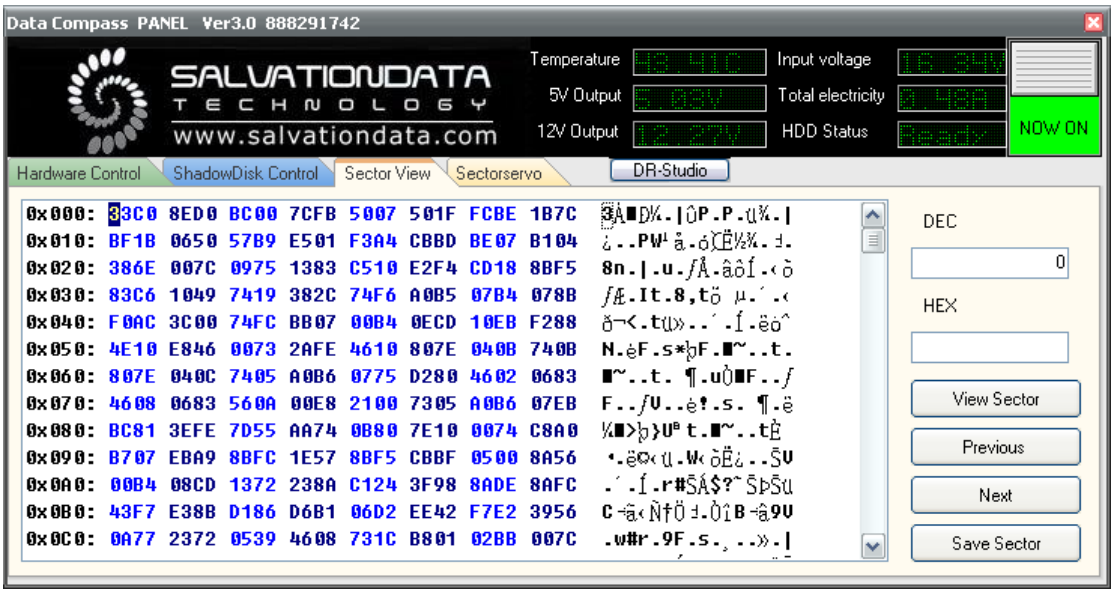
Ignore the first 100 sectors: After DATA COMPASS identify the HDD's partition information, the Operating System will load the source HDD's partitions which will result in a low speed for the data read. In order to enhance the read speed, you can shield the first 100 sectors to avoid that. This option is *recommended.*

Intensive Read: Increase the source HDD's work intensity, especially the head's working intensity by increasing its power currency supply. This function is recommended to be adopted for some very important data recovery because this is in a risk of degrading the source HDD.

Verify the accessibility of the source drive

After setting up the ShadowDisk properly, we will move on to **verify the accessibility of the source drive**, so that we are sure our following operation won't be in vain before starting.

Go to Sector View tab; define one sector (usually the sector 0) to be viewed in the sector editor. The visibility of sector 0 indicates a high possibility of recovering data from the source drive suffering from severe logical and physical damages.



Sector 0 Visible through Data Compass driver

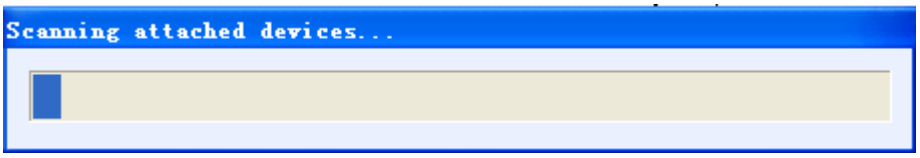
** Invisible Sector 0 will be showing empty content or 4040 value.*

Chapter 3 B) Launch the DR-Studio Data Recovery software

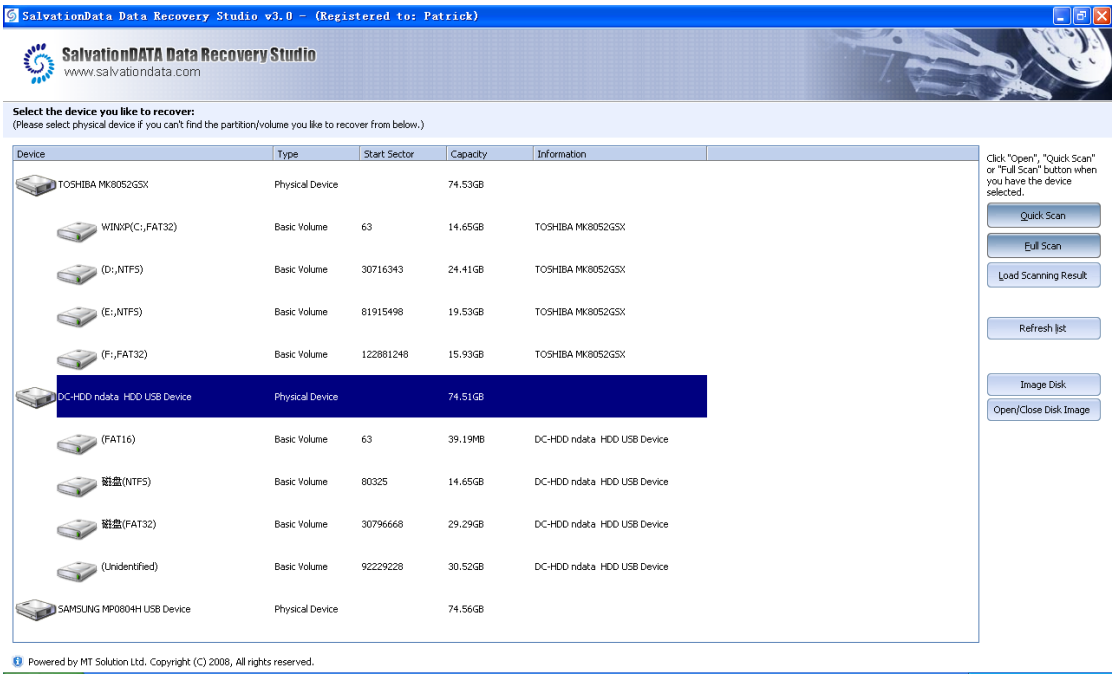
Here we have made all the preparations for data recovery, the next stage in the process should be use the accompanying DR-Studio software to extract the data. Just click on the DR-Studio button to start the built-in logical data recovery software DR-Studio of SalvationDATA.

** We have our own logical recovery software DR-Studio built in. Meanwhile, you can use any other data recovery software you are familiar with in practice. Data Compass accepts any other software to works with the control panel so that to better your use experience. But our DR-Studio is strongly recommended since it is optimized for working with Data Compass.*

By starting the DR-Studio, it will first scan all the attached storage devices and show you in the device list.

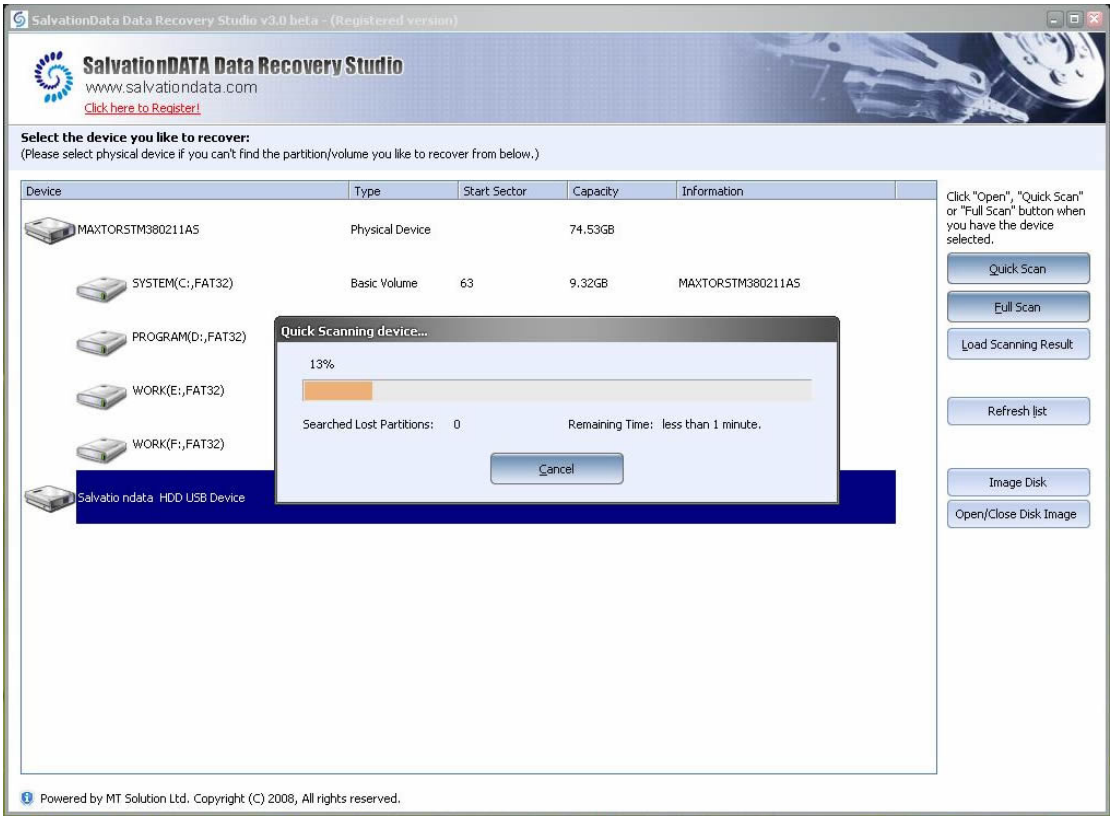


The source HDD will be detected as “DC-HDD” drive (if your DC default setting does not enable read at startup) or as the real parameters of the drive (if your DC default setting enables read at startup). There will be no difference for your data recovery.

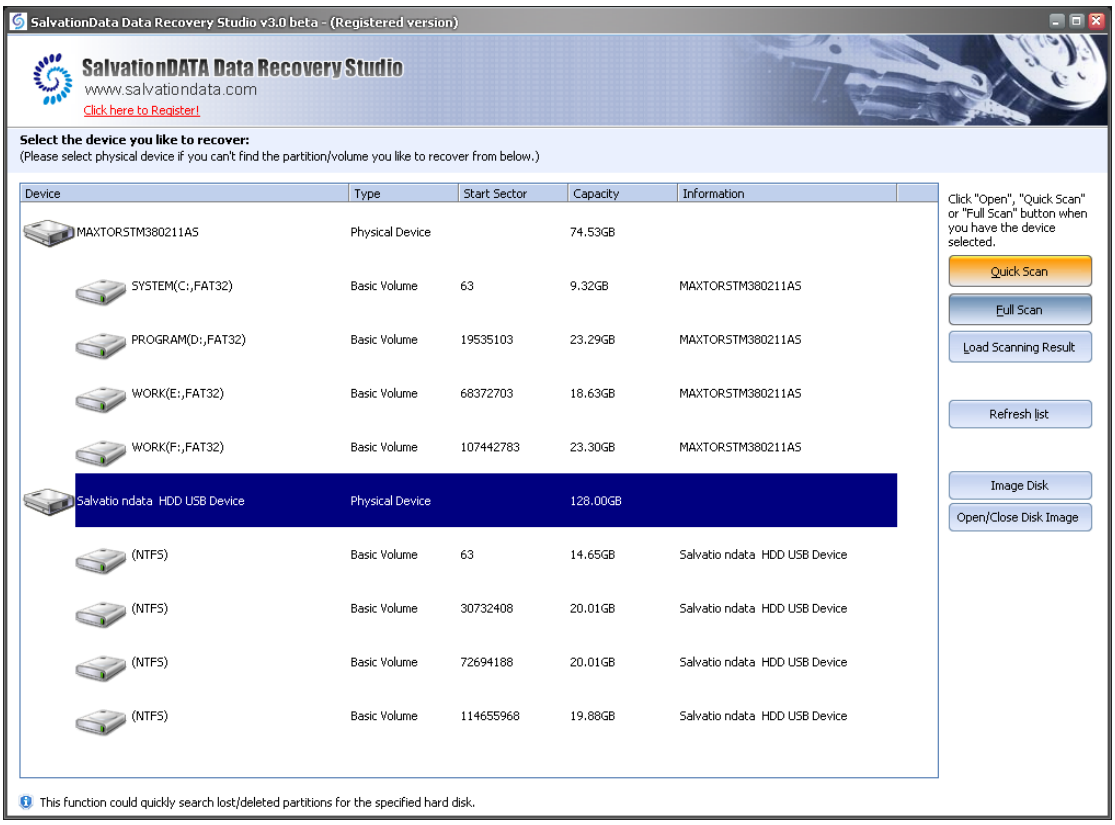


Quick Scan

The general process is to choose the source HDD there and execute a **[quick scan]** to get the partition info first. It will take you a little longer time if the source HDD had a severe bad sector problem.

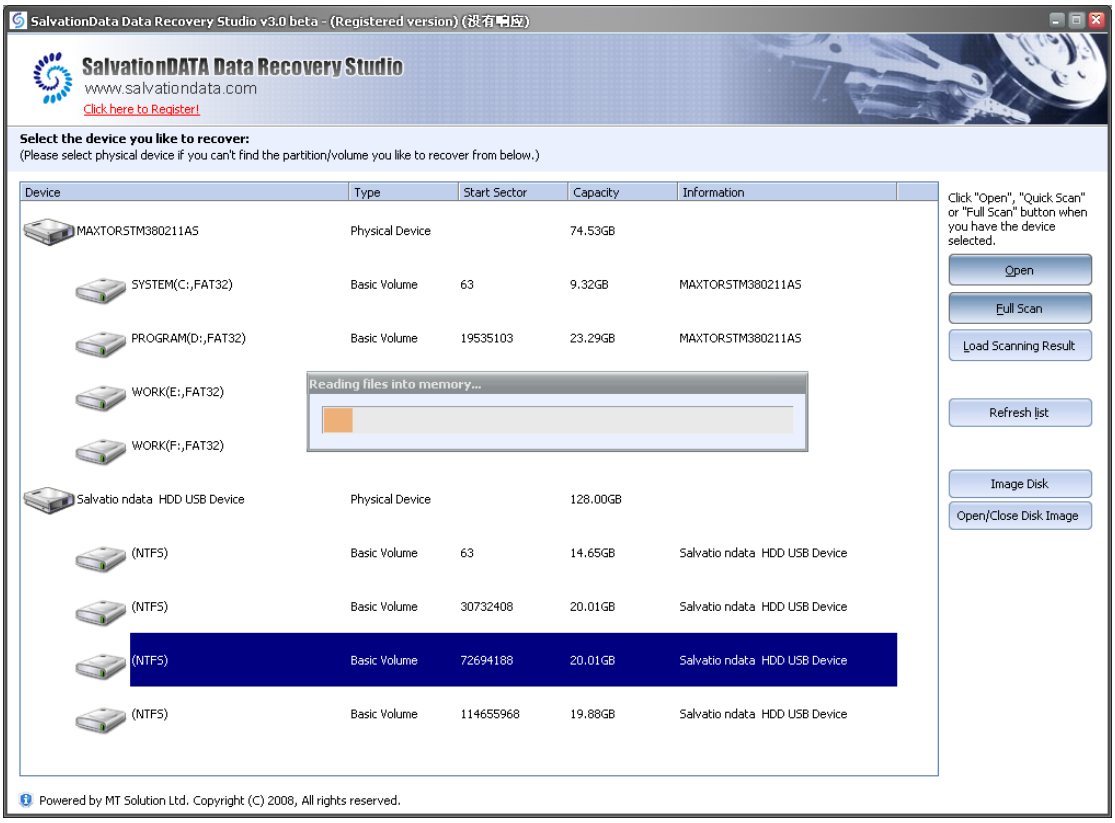


All the partitions (all formats) will be listed after the quick scan to the device, as below:



Open the partition

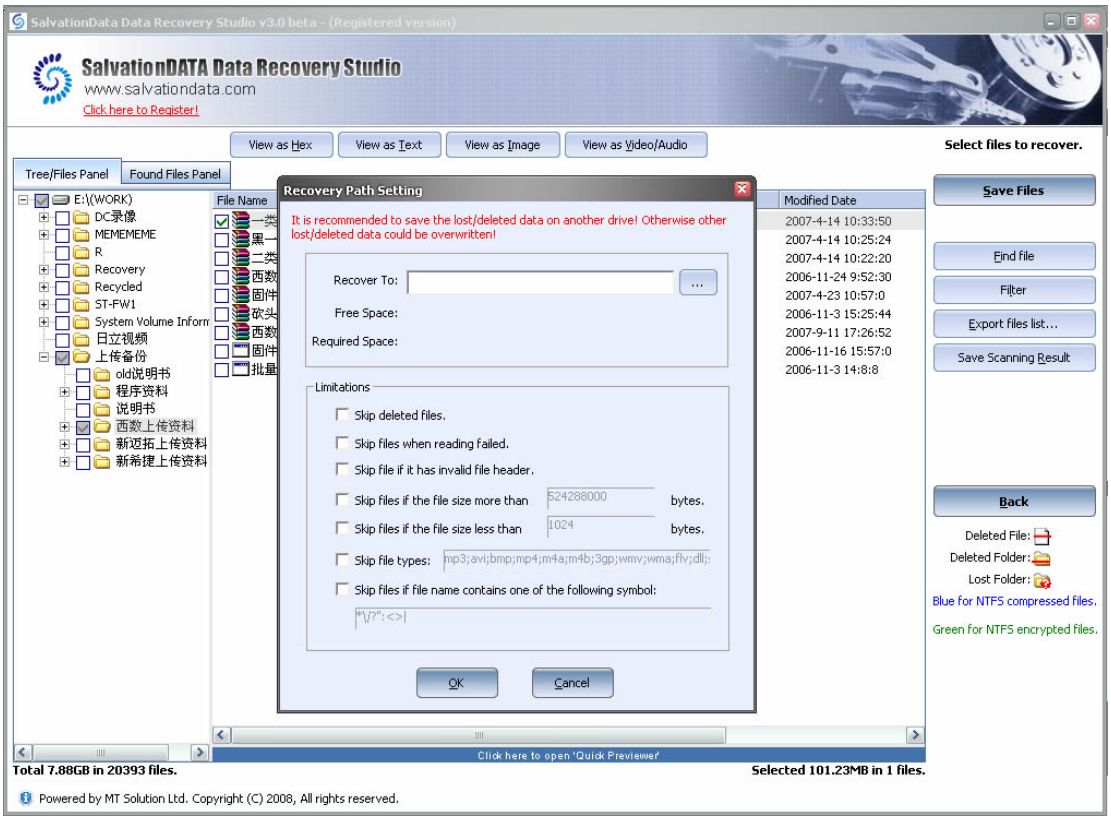
Now we have seen the partitions of the source HDD, we can then **open the partition** and check the file structure and hopefully we can see the files we want there.



Save Files

Choose the files or folders that need to be recovered and click "**Save Files**" to extract it to a path defined in the [Recover To] window.

**More detailed actions could be configured according to your need.*



More details and advanced uses of this powerful tool will be told in the coming user manual of Data Compass. This quick start indicates you a general recovery flow only.

We will keep adding case studies to DC in real practices on the client forum; register your login and get access to them ASAP at **http://www.salvationdata.com/forum.htm**.