Hard Drive Connection Kit

First Things First

Before you attempt to connect your disks using the RRO Hard Drive Connection Kit, we recommend that you contact an RRO data recovery expert by email, fax, or real-time chat, at no charge.

Email: cs@raid-recovery-online.com

Online Chat: http://messenger.providesupport.com/messenger/rro.html

Telephone:

UK (Europe)	+44-20-3289-1711
USA	+1-415-287-0588
International	+972-52-2877477
Fax	+972-3-6131999

To begin a free RAID diagnostic, please complete the Free Online Diagnostic form available at http://www.raid-recovery-online.com/free_online_diagnostic .

Shortly after you submit the form, an RRO data recovery expert will contact you and guide you through the process. If necessary, we will send you a Hard Drive Connection Kit (delivery within 24 hours in Western Europe and the USA).

The Hard Drive Connection Kit

Purpose of the Kit

The Hard Disk Connection Kit provides remote access to your damaged RAID disks, allowing RRO to diagnose your disks and recovery options. If you lack the equipment required to connect the disks to a stand-alone computer, you can order a Hard Drive Connection Kit from RRO.

Kits are delivered by UPS/FedEx by overnight delivery, to all locations in Western Europe and the USA.

Kit Contents

The Hard Drive Connection Kit contains a controller that is suitable for connecting IDE/SATA/SAS/SCSI disks, and also contains explanations on the following topics:

1. How to set up the appropriate environment for recovery.
2. How to connect RAID disks to the recovery system.
3. How to operate the recovery system and initialize data recovery.

Delivery of your Kit

Order your Hard Disk Connection Kit online, at http://www.raid-recovery-online.com/kit . Specify the type of kit you require (based on your hard disk type). If you are in Western Europe or the USA, you will receive the Kit by UPS/FedEx overnight delivery.

Setting Up the Data Recovery Environment

System Requirements for stand-alone workstation:

1. PC with XP or Vista installed.
2. 1 RAM memory or more
3. Appropriate controller and cables to connect disks.
4. Blank target disk (recovered data will be written on this disk)
5. Broadband internet connection.

Target Disk

Your target disk will be used to store data during the diagnostic and recovery process. Connect a blank target disk whose capacity is at least equal to the volume of data contained in the RAID array. For example, if your RAID array has a capacity of 40 GB, your target disk should have a capacity of at least 40 GB.

To simplify the connection process, we recommend using a SATA or IDE hard disk.

You can connect the target disk to the stand-alone workstation as an external drive (using a USB or Firewire connection), or connect it directly to the motherboard. Hard disks and kits are available for sale through RRO at http://www.raid-recovery-online.com/kit .

Connecting a Disk from your RAID Array

Which disks do I connect to the stand-alone workstation?

If you have a RAID 0 array (Stripe), connect all the hard disks in the array. Otherwise it will be impossible to recover any data.

If you have a RAID I (Mirror RAID), connect at least one of the RAID disks. RAID 1 contains one or more pairs of disks. We recommend that you connect pairs of disks. In this way, if one of the disks in the pair is damaged, RRO will be able to recover the data from the second disk.

If you have a RAID 5 array, your data is recoverable even if one of the disks is damaged. In any case, we recommend that you connect all the disks in the original array. RRO will select the most appropriate combination of disks for recovery. If RRO's recovery experts identify the need to disconnect one of the disks, our experts will guide you through this process.

Note: *In the case of mechanical damage to one of the disks (if your disk emits a burnt smell or strange noises), we recommend that you disconnect this damaged disk and consult with an RRO recovery engineer before connecting this disk to the stand-alone computer.*

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Disk Connection Options

Connect your original RAID array disks to the computer using a non-RAID controller, in one of the following options:

1. Using a simple IDE/SATA/SAS/SCSI disk controller, where the disks are not defined as a RAID array. Several disks can be connected to a single controller, but each disk must be defined independently,

OR

2. Connect the disks directly to the motherboard. SATA disks, for example, can be connected directly to a motherboard using a SATA cable and electric cable,

OR

3. Connect the disks directly using an external connection (USB2, FireWire 400/800 or similar connections).

Please follow the detailed instructions ahead.

What is the correct way to connect RAID disks to a computer when RRO recovers my data?

If your disks are IDE or SATA disks, we recommend that you connect them directly to the computer's motherboard. For example, if your RAID array contains *three* SATA disks, verify that there are *four* empty internal SATA-type slots on the computer motherboard. Three slots will be used to connect the RAID disks and the fourth slot will be used to connect an OS disk (which is not related to the RAID disks). In an organization with several computers, you might have to check several computers before you find the most suitable stand-alone workstation for the diagnostics and recovery process.

If your computer motherboard does not have the required number of available slots, we recommend that you purchase an appropriate SATA/IDE controller. You can purchase a controller directly from RRO at cost.

SAS/SCSI disks can be connected only using a specific SAS/SCSI Non-RAID controller. An appropriate controller can be purchased from RRO at http://www.raid-recovery-online.com/kit .

How to Connect Your Hard Disks for RRO?

This section contains detailed instructions for several connection methods:

- How to connect SATA/IDE disks directly to your computer motherboard
- How to connect disks using an external connection
- How to connect SATA/IDE disks using a specific controller
- How to connect SCSI disks using a specific controller
- How to connect SAS disks using a specific controller

> **Important:** *Make sure that your computer skips the disk scan process. When you restart your computer and your OS loads, play special attention to your computer screen. If the OS goes into SCANDISK or CHKDISK mode, press ENTER to skip the disk scan.*

How to connect SATA/IDE disks directly to your computer motherboard

First connect the disk that functioned as the system disk (the disk that was not part of the RAID array). This is the disk on which your OS (Vista/XP) is installed.

Now, use a suitable IDE/SATA cable to connect the RAID array disks directly to your computer's motherboard. Connect each individual disk to an electric outlet.

How to connect disks using an external connection

Connect each disk separately using an external USB 2 or Firewire 400/800 device. We recommend that you press the **Start** button of the externally connected disks only *after* the operating system has loaded.

How to connect SATA/IDE disks using a specific controller

Make sure that you have a specific SATA/IDE controller available.

Connect each disk using a separate controller and electric cable.

When you turn on the computer *but before the operating system loads*, follow screen instructions to access the controller definitions. Important – make sure that each disk is defined independently through its controller and is not defined as a RAID disk.

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How to connect SCSI disks using a specific controller

Make sure that you have a specific SCSI controller available.

Use a **single** SCSI cable to connect **all** the disks to the controller. Use **separate** electric cables for each disk.

There are two types of SCSI disk connections – 68 pins and 80 pins. If your disk has an 80-pin connection, use the appropriate adapter. Otherwise, connect the disk directly using the SCSI cable.

Use a single SCSI cable to connect all the disks to the controller. Use separate electric cables for each disk.

Suitable controllers and cables are available for order directly from RRO, with overnight delivery. See http://www.raid-recovery-online.com/kit .

How to connect SAS disks using a specific controller

Make sure that you have a specific SAS controller available.

Use a **single** SAS cable to connect **all** the disks to the controller. Use **separate** electric cables for each disk.

Suitable controllers and cables are available for order directly from RRO, with overnight delivery. See http://www.raid-recovery-online.com/kit .

Before Turning on Your Computer

Important: *Make sure that your computer skips the disk scan. When you restart your computer and your OS loads, play special attention to your computer. If the OS goes into SCANDISK or CHKDISK mode, press ENTER to skip the disk scan.*

Starting the Recovery Diagnostic

After connecting your disks, notify the RRO recovery expert that your environment is ready for the diagnostic process. To connect to RRO and start the diagnostics process, please go to http://www.raid-recovery-online.com/free_online_diagnostic and fill the diagnostics form.

Our RRO recovery expert will immediately contact you by telephone and by email, and give you a one-time download link to initialize the diagnostics. Contact RRO at http://messenger.providesupport.com/messenger/rro.html and a recovery expert will guide you through this process.

RRO's recovery engineer will view your display and perform an initial diagnostic of the disk configuration. If the disks are connected correctly, a complete diagnostic process will be performed. At the end of the diagnostic, you will receive a list of all the files that are recoverable. At that stage, you may proceed with the recovery by approving the list and we will recover the data.