

Drobo[™] Industrial Design

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Introduction

Storage has traditionally been difficult to understand and manage, especially for those of us who are not in the storage industry. Tasks such as pooling drives, scaling capacity, and protecting against data loss are complex for businesses and individuals alike. In addition, the explosion of rich media and unstructured data requires more sophisticated digital storage. Plus, legacy solutions can also be too complex or too limited for today's needs, especially if users are also demanding a fast and reliable storage system.

Drobo™ products deliver breakthrough ease-of-use, affordability and value through our patented BeyondRAID™ and hybrid storage technologies. Now businesses and professionals will *have the best storage experience ever*.

Drobo BeyondRAID technologies enable a unique combination of simplicity and storage sophistication in stark contrast to legacy storage systems. Drobo's are part of a new breed of storage systems focused at small to medium sized business users. Advantages include: data safety and real-time capacity expansion, with an overall design that addresses diverse workload needs such as media, virtualization, and cloud-attached storage. Drobo's provide an easier way for a non-IT person to deploy and manage a performance storage system without the enterprise price tag.

Hybrid storage is a Drobo technology that automates the provisioning, deployment and performance acceleration for a fast tier of solid state drive (SSD) storage in the Drobo B1200i array. Users can now take advantage of traditional hard disk drive (HDD) capacity plus SSD acceleration across all of their applications. This process happens automatically and transparently as soon as SSD drives are added to the deployed Drobo. Because, Drobo is aware of the differences between streaming and transactional data, it enables instantaneous and intelligent data tiering to increase performance by directing transactional data to the SSDs.

Industrial design is one of the many benefits of this very cool looking product family. It's award winning designs successfully marry style and usability. Whether your Drobo is simply sitting on your desk or traveling with you to the Galapagos Islands for a shoot, you can rest assured that your Drobo is up to the challenge.

Four white papers describe why Drobo provides user's with a truly modern storage experience:

1. **BeyondRAID** breaks down the barriers of a traditional RAID implementation to greatly simplify storage deployment and management, and it protects both data and files
2. **Hybrid Storage** is enabled by BeyondRAID. It delivers automatic storage optimization based on the type (or "tier") of the data or files stored
3. **Industrial Design** highlights that it is possible to combine functionality, style, usability, manufacturing quality, and a lot more into a very cool looking product line
4. **User Interface** makes pooling drives in a single chassis easier than previously possible

This white paper explains Drobo BeyondRAID and its associated benefits.

Industrial Design

While Drobo's internal firmware capabilities revolutionize the way we use and manage storage, that isn't the only remarkable thing about Drobo. Its unique industrial design and user interface take storage ease-of-use to another level.

With traditional storage you must buy drives from the array vendor or you're faced with having to struggle with screw and clips. Then after they're deployed, you discover that they're too large or too loud. When capacity runs low or something goes wrong, you often have to be pro-active and use the admin tool to find out what's going on. Drobo makes this all much easier.

Storage Without Screws

Every Drobo has a unique carrier-less design, so there is no need to first insert a drive into a carrier. Just insert bare 3.5" drives into a Drobo the same way you would insert cassettes into a tape deck.



Figure 1. Data is analyzed in-flight as it enters a Drobo and is placed on the drives.

Drobo has a latch/spring mechanism, making it easy to insert and eject drives. Just hold down the latch to slide a drive in; and to remove a drive, just press down on the latch and the drive is automatically ejected.

Insertion and removal of drives in a Drobo can be done while the Drobo is powered on and in use. It's easy to replace a failed drive and to scale up when you need more capacity—without downtime.

Traffic Light Easy

The primary management interface for a Drobo is the lights on the front of the chassis. Just looking at a Drobo quickly tells you if it's healthy and if enough storage capacity remains.



Figure 2. Drive status indicators exist for each drive and a capacity gauge shows what percentage of overall capacity is currently being used.

The individual drive status indicators tell you the status of the drives or an action that needs to be taken. For example, if a drive happens to fail, the light for that drive will blink red. If you are running low on storage capacity, an empty drive bay shows yellow, indicating that you should insert another drive in that bay.

As you fill your Drobo with data, the capacity gauge starts to illuminate capacity gauge lights, ten in all. For example, if 20% of the overall capacity is used, two lights will be lit. A Drobo can have a capacity gauge because it is data aware (as described in the BeyondRAID paper).



Figure 3. Drobo is so simple that the instructions fit inside the front cover. They tell you what the lights mean and what action you need to take.

Storage Designed For You

There are Drobos that are designed for the desk, the desk or rack, or just a rack in a server room/closet.



Figure 4. Drobos are available in a wide range of sizes and types to best fit your environment.

Unlike most storage arrays, desktop Drobos actually look great on your desk. They are compact and quiet and they look good. Because of the carrier-less architecture, the chassis is not that much larger than the drives it holds. The fan(s) are variable speed and spin fast (make noise) only when the system needs more cooling and spin down when it's not in use.

Drobos are carefully designed from the ground up and are made of high-quality materials. One Drobo innovation (becoming more popular in consumer products) is its magnetic front bezel. Instead of being held on by friction clips or tabs, the Drobo front bezel is secured only by magnets. All you have to do is place the bezel on the front of your Drobo and it is automatically aligned and secured. Even in server closets, it's a bezel you will actually want to use! The high-intensity indicator lights shine through the bezel, so whether the bezel is on or off, Drobo's primary form of management (lights) is front and center. Even the lights can be dimmed on some desktop Drobos for comfort in an office or home environment.

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