

## RAID Data Recovery

# Data Recovery of RAID 5 Array on HP ProLiant ML380 G6 Server

### Data Recovery Case

In this case study, we highlight a recent successful data recovery project involving a damaged RAID 5 array. The failure of two hard drives in the server resulted in severe data loss, disrupting business operations. Our team successfully recovered the business file server, an HP ProLiant ML380 G6, restoring critical data and ensuring business continuity.

### Cause of Failure and Recovery Request

The logical RAID server volume failure was attributed to mechanical issues with two hard drives. The RAID 5 array, consisting of three hard disk drives, stored important data on the D partition of the HP ProLiant server. Users relied on this partition for shared files, encompassing various documents and file formats.

### Evaluation of RAID Array Members

Thorough testing of all three hard drives revealed significant issues. They exhibited excessive noise, slow reading speeds (averaging 5MB-10MB per second), and multiple bad sectors. Given the physical problems, running data analysis directly on the drives posed a risk of further damage.

### Bit-by-Bit Cloning of Hard Drives

To mitigate the risk of damaging the source drives, we decided to clone the hard drives to binary images. This approach preserved the integrity of the original devices. While the cloning process took several days due to the high-capacity drives (two 160GB and one 500GB), it was essential to prevent further data loss.

### Seagate Hard Drives Recovery and RAID 5 Analysis

With cloned copies of each RAID member, we focused on analyzing the RAID configuration. Entropy analysis with the correct block size and drive count confirmed that the drives were part of a RAID 5 volume with 128-sector block size and 16-block delays. As the RAID controller did not support RAID 6, our attention remained on RAID 5 recovery.



### Constructing the Logical Volume and Data Recovery

Using the advanced RAID recovery software, we reconstructed the logical volume with precise RAID parameters. It is crucial to consider only working RAID member drives with up-to-date data to avoid potential file damage. Once the logical volume was established, we successfully copied all customer data from the D partition to a USB external hard drive.

### Conclusion

Through our meticulous data recovery process, we successfully restored the business file server, salvaging critical data from the damaged RAID 5 array on the HP ProLiant ML380 G6 server. The recovery ensured business continuity, allowing the client to continue operations using a new server equipped with SAS hard drives.

This case study underscores the importance of implementing robust backup strategies and engaging professional data recovery services to mitigate the impact of data loss.

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