

## From Vision to Realisation - ReadVerify Appliance from Crossroads Provides the Zuse-Institute Berlin with Precisely the Right Information about Tapes and Drives

*"The data provided by the ReadVerify Appliance from Crossroads far exceeded my expectations of the information held on the tape drives."*

*~ Dipl. Inf. Wolfgang Pyszkalski - Head of the IT Services department of the Zuse-Institute Berlin*



Zuse-Institute Berlin  
www.zib.de

### Field

Research/Teaching

### Benefits

- Easy installation and integration into existing backup environment
- Proactive information about quality of tapes
- Secure and fast statements about utilisation and performance of tape drives
- Secures readability of long-term tapes
- Ensures backup quality

### The Zuse-Institut Berlin

In 1941, an idea revolutionised the world of information and communications technology: the Z3. In the living room of his parents' home, Konrad Zuse constructed the first freely-programmable electronic calculating machine. Today, the Z3 is regarded as the world's first fully-functional computer. After many attempts, models and setbacks, Konrad Zuse succeeded in implementing his innovative vision.

More than 60 years later, the Zuse-Institute Berlin (ZIB) still perpetuates the ideas of the man whose name it bears. Always intent on making a contribution to solving highly complex problems, the ZIB operates as a research institute for application-oriented mathematics and IT. For the fields of science, technology, the environment and society, the ZIB has been very successful developing innovative solutions to problems that cannot be solved by traditional methods—solutions that are visionary but nonetheless, feasible and in the spirit of the resourceful Konrad Zuse.

### *IT Services Department of the Zuse-Institut Berlin*

Highly-innovative research establishments like the ZIB, where complex algorithms and complicated mathematical models are generated, know the particular importance of data for research work. The IT Services department of the ZIB, headed by Dipl. Inf. Wolfgang Pyszkalski, therefore, concerns itself not only with the planning, procurement and maintenance of IT resources but also pays particular attention to backing up data securely. The goal is to store data from research projects and documentation safely and permanently. Today, more than a petabyte of data is created at the ZIB that needs to be managed and stored so that findings can be used long term. Despite the large volume of data generated, the IT Services department is happy to reveal that it has no significant problems with its daily data backup and archiving.

### *The Vision? More Information from the Backup Media*

Pyszkalski was very interested—at the suggestion of SUN Microsystems—when he encountered ReadVerify Appliance (RVA) from Crossroads. "My vision was to obtain more information regarding the quality of the drives and tapes than can be found in the normal logs," is how Pyszkalski explains his interest in the appliance from Crossroads. There was already a suspicion that tape drives contained more information than was indicated. However, the ZIB had not previously possessed a satisfactory method for actually reading this valuable information from the backup media. So, the idea, initially, remained a vision.

### *The Realisation? ReadVerify Appliance from Crossroads*

How easily and, at the same time, highly-effectively this vision could be made reality, was something that Pyszkalski and his department were able to realise, following a brief evaluation and the purchase of RVA. Thanks to the installation of RVA into the existing backup environment of the ZIB, the research institute was handed a helpful tool that enables it to export all essential information from tapes and drives. RVA was connected to the storage area network (SAN) of the ZIB, to which the 28 tape drives of the SUN STK SL8500 robots, with their total of 13,500 slots for tape cassettes, are attached. The installation ran smoothly, and RVA was soon able to commence functioning and supply the desired information.

### *Answer to Open Questions*

"I do not rack my brain over questions that I am unable to answer," to quote a remark from Konrad Zuse. The employees of the IT Services department of the ZIB have, however, received the answers to some of their most pressing questions by using RVA: How well are the drives of the tape library utilised? How do they perform in interaction with the servers? What is the state of the tapes being used? As RVA monitors the condition and quality of the drives and tapes and, if the need arises, sends alerts, so it is possible to deal with problems before serious errors arise. Errors that can lead to a backup taking too long or crashing, to defective tapes being used when backing up data, and, in the worst case scenario, to their no longer being readable on recovery. "After the employees, the data takes top priority at the ZIB," explains Pyszkalski. "We, therefore, need a tool that supplies us with information proactively. Only then can we guarantee the high quality and reliability of our tape backup. With the ReadVerify Appliance, we now have the possibility to monitor our backup system and take action at an early stage, if the need arises."

### *Visions that Pay Off*

For the ZIB, using RVA has been a worthwhile undertaking in many ways. Not only has the quality and reliability of the entire tape backup process improved, but there is now greater potential for savings. The precise image of tapes and drives provided by RVA enables backup media to be used and any acquisitions to be planned optimally. Furthermore, with the optional feature of RVA, Archive Verification, the ZIB has the possibility to guarantee the readability of long-term data optimally so that information valuable for research is not lost. System reading of samples of the tapes by means of automated processes identifies problems before they become serious, and the system directly informs the qualified personnel of the ZIB. Thus, the probability becomes extremely low that data from long-term archiving will, unnoticed, become no longer readable and, therefore, potentially be lost.

Visions pay off—and visions should be turned into reality. Konrad Zuse already knew that, and the ZIB knows it too. RVA from Crossroads has made a key contribution to implementing the vision of the ZIB—that more information could easily be obtained from the backup system. Konrad Zuse would have been pleased.



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#### **ABOUT CROSSROADS**

Headquartered in Austin, Texas, Crossroads Systems delivers flexible solutions to connect, protect, secure and restore business-critical "data-at-rest." Crossroads (symbol: CRDS) is currently traded on Pink Sheets and also posts its financial disclosure reports, press releases and other related documentation on the OTCIQ web service of the Pink Sheets website. For more information, please visit [www.crossroads.com](http://www.crossroads.com).



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