

## Green Benefits

- Supports Corporate “Green” Initiatives
- Mitigates Recycling Obligations
- Avoids Premature Disposition of Tape Media
- Improves Backup System Efficiency

## Manage More Than Backup Tape End-of-Life

Tape is a high-capacity, low-cost solution for securing large amounts of backup and archive data, while providing the lowest cost, most portable and environmentally-friendly solution. Use of tape continues to increase sharply as the amount of electronic information grows and enterprises face increasing legal and regulatory pressure to store electronic information. As the number of tape media required to support these processes increases, managing life cycle phases of tape media, from acquisition through useful life and ultimate disposal, has become a significant task and presents a challenge not fully addressed by most IT administrators. Tape resource management has also recently become a focus of corporate “green” initiatives and an important part of a comprehensive examination of backup operations with the intent to control costs and reduce companies’ carbon footprint.

Green initiatives encourage reuse of tape media at end-of-life through reselling or recycling, but used tape often contains sensitive or confidential company information that could potentially fall into the wrong hands. To avoid potential exposure, data eradication is recommended before reusing tape media because simple erasure does not guarantee data has been completely and permanently removed. Eradication involves applying a high-intensity magnetic field using professional-grade degaussing equipment, which is a labor and resource intensive process. A simpler, though less green alternative is to simply destroy tapes by incinerating or cutting and pulverizing them before discarding. Whatever method is chosen, dispensation of tape media in an environmentally-responsible manner is clearly not a trivial task.

Forward-thinking IT administrators have expanded their approach to backup systems going green beyond managing end-of-life of used tape, to include the concept of “resource stewardship” – a holistic approach to environmental protection. Resource stewardship calls for reducing the environmental impact of all life cycle phases of systems, not just the consumable E-waste at end-of-life. For tape backup systems, an important aspect of resource stewardship is better backup system design that improves operational efficiency and minimizes tapes in use at a given time. Resource stewardship uses hardware resources and consumables efficiently and continues through responsible tape disposal. Reselling or recycling used media plays an important role, but reducing tape requirements up front becomes key to helping proactively reduce tapes being managed and ultimately requiring disposal.

Data compression and de-duplication reduce space requirements for storing backup and archive data, significantly reducing tapes required for data protection operations. However, to comprehensively control and minimize tapes in use at a given time, system reliability issues attributed to failure of tape media, tape drives or interaction of the two must also be addressed. IT administrators commonly mitigate risk of these causes of failed backups by making copies of the same backup, prematurely cycling tape media and/or destroying potentially good tape media after a failure – all activities that increase the number of tapes managed, creating unnecessary waste. Typical tape management techniques are low-tech approaches that ensure tape vendor’s directions for handling and storage are

followed, tapes are replaced regularly and tape drives are cleaned according to manufacturer's recommended schedules. These practices are prone to arbitrary decision making about tape viability and do not assure successful backups, ability to quickly find and replace failed tape(s) or avoid disposing of tapes prior to true end-of-life. All these circumstances contribute to increased requirements for tape that translate into end-of-life management issues.

To improve reliability of data protection operations and manage tape resources in an environmentally friendly way, a comprehensive tool to statistically measure and analyze backup system and media performance is needed. Crossroads ReadVerify Appliance (RVA) is a tape backup system monitoring appliance that installs and configures easily and immediately begins reporting on the health of the backup infrastructure, including individual tape media. Too often, when a backup application reports media errors, the assumption is the media is bad and the tape is discarded. However, tape drives are often the root cause of errors, and a misdiagnosis can lead to throwing away good media (and money). RVA provides a method to diagnose a degrading backup environment and correctly identify root cause. Tapes will not be disposed of until they truly reach end-of-life.

RVA further contributes to resource stewardship by improving backup system efficiency and reliability. Measuring utilization of each unique drive makes analysis data and reporting available on drives that are over- and under-

utilized, providing a method to tune the system. Users are alerted to potential system imbalances, system configuration issues or problems with individual drives and/or media. Proper configuration of data management applications and system infrastructure improves performance and reliability and optimizes use of storage devices and tape media. Increased system reliability contributes to resource stewardship goals, validates efficient system designs and translates into real savings by eliminating duplicate backups and optimizing use of tape resources. RVA can help defer tape purchases, reduce recycling obligations, control disposal costs and contribute to corporate green initiatives by minimizing tapes required to support data protection operations.

Given the complexity of environmentally-friendly tape disposal, IT administrators should focus on effective resource stewardship in all phases and aspects of their backup systems to help mitigate tape end-of-life issues. Crossroads RVA helps achieve resource stewardship objectives by improving backup and archival systems performance and reliability, contributing to efficient use of backup resources, using tape until true end-of-life is reached and reducing the number of tapes required to support operations. These benefits will conserve resources, reduce toxins entering the waste stream and mitigate recycling activities. Results are significant contributions to efficient resource usage and waste prevention that moves IT processes toward corporate green goals and initiatives.



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#### ABOUT CROSSROADS

Crossroads Systems, Inc. (NASDAQ: CRDS), is a global provider of solutions and services that ensure stored data is proactively protected and reliably recovered. Crossroads offers organizations powerful data protection, proactive data security, intelligent storage connectivity, unmatched performance, and significant cost savings. Founded in 1996 and headquartered in Austin, Texas, Crossroads holds more than 100 patents granted and pending and has been honored with numerous industry awards for innovation in data protection and storage. Visit [www.crossroads.com](http://www.crossroads.com).

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