ARCvault from Overland Storage — "Simply" Right for the SME

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Management Summary

We live in an era where "bigger is better". When we go shopping for furniture, for example, the chairs and sofas are "overstuffed and oversized", which is convenient for many of us are "overstuffed and oversized" from too many visits to the fast food outlet, where "supersize that" has become the norm. Unfortunately, the furniture, and the "value" meal, always costs more. When we go to the supermarket, the giant size box may appear to be the best bargain, but it usually carries a relatively steep purchase price. Is it really a bargain? How much food do we waste because we buy the largest size even though we may be shopping for only one or two, and not a family of five or six? Is a gallon of milk the *right size*, or is a quart better? If you are shopping for one, then you may end up throwing away half of the container because it has gone bad. When it comes to perishable food, the better value may be the smaller size!

A similar story holds true in the data center of every small- and medium-sized enterprise (SME) where over-provisioning may not be the intent, but is often the result of IT acquisitions. For several years now, server and storage vendors have been downsizing their offerings to fit the environment. Not every enterprise needs a 64-CPU SMP server or a multi-terabyte storage array. Dual- and quad-processor systems with one or two terabyte storage capability have found their way into the data centers of every enterprise, large and small. Unfortunately, not as much attention has been paid to the autoloaders and tape libraries that are required for backup, recovery, and archive services. Here, "super-size that" has remained the menu of the day. If you are the CIO of a Fortune-500 company with thousands of servers and tens of thousands of employees, no problem. IBM and Sun (STK) have silos that can handle literally thousands of cartridges and tens of terabytes of data. However, what do you do if you manage a department, or an entire enterprise, with less than 50 servers and under 300 employees? Do you even need a 100-cartridge library to backup a few TB a week? Of course, if someone wanted to offer you a 100-cartridge tape solution for under $10K, you might take it. Unfortunately, that is not going to happen. What do you do when your data center needs to back up 5TB/week on a limited budget?

Overland Storage asked this question – and answered it. They have just announced an expandable tape system for the SME: a 12-cartridge autoloader to support 9.6TB of data, upgradeable to a 24-cartridge library for the SME with a requirement to support up to 19.2TB of data. Is this the right solution for your data center? To find out, please read on.

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The SME Data Center Scenario

The small and medium-sized enterprise (SME), or remote department of a larger firm, faces many of the same storage problems as the largest enterprise – tremendous growth in on-line storage (doubling annually), a complex storage environment, an ever-shrinking backup window, and a limited budget. Unfortunately, the requirement to retain information necessary to satisfy the demands of regulatory legislation compounds the growth of data, and no end is in sight. Some of this data, while not mission-critical, clearly is business-critical. In order to protect executives from possible litigation, the enterprise retains this information for many years. However, the data center may never need to read it. Storing it on spinning media, in a disk-to-disk (D2D) architecture, is a waste of IT resources, data center real estate, and the energy required to keep the discs spinning and to cool the data center from the heat generated by these devices. These are all factors involved in computing the total cost of ownership (TCO) of IT infrastructure that could seriously affect departmental budgets and enterprise profitability.

Unfortunately, over the years, heterogeneous server proliferation has added significantly to the complexity of the IT architecture, with the data center installing a variety of servers to satisfy specific application requirements. Along with different servers, the data center has installed a variety of tape storage devices: *DAT*, *DDS*, *DLT*, *LTO*, and others, depending upon the standards for a particular server solution. This results in the necessity to stock not only a variety of spare devices to protect against mechanical failure, but also the necessity to stock a variety of tape cartridges to ensure that there is sufficient media on hand to satisfy the needs of any application requirement. As data centers look into consolidating their servers to improve processor utilization, they are also looking into **consolidating, and simplifying, their tape storage**. To enable a simplified, unattended operation, the staff needs to select a single, standard tape format with which to implement an automated backup and/or archiving environment. They also need to select an automation solution - autoloader or library - to meet their application and budget needs.

What is the difference between an *auto-*

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loader and a *library*? An autoloader is a data storage device usually consisting of one tape drive, a method of loading tapes into the drive via a robot, and a storage area for the tapes. A tape library is a larger device with multiple drives and expanded cartridge slots. An automated solution simplifies the environment and eliminates the need for manual handling of tape, eliminating the possibility of human error, but requires the addition of a barcode reader in the device to identify the cartridge containing the data. This also enables the IT staff to automate the initiation of the recovery process to reduce out-of-service time. The length of time to complete the backup or recovery procedure is dependent upon the throughput and capacity of the drive. See Exhibit 1, above, for a partial list of tape automation requirements.

In terms of capacity, current standards such as LTO-3, with a native capacity of 400GB, far exceed the capacity of formats introduced only two years ago, let alone some of the legacy drives which populate the enterprise data center. DDS-4 has a native capacity of 20GB, while DAT72 supports 36GB of uncompressed data. LTO-3 supports twice the capacity of LTO-2; in addition, it protects the investment made in LTO-2 media. LTO-3 can read and write on an LTO-2 format cartridge, as required, and can read LTO-1 format cartridges, protecting enterprise investment. In terms of throughput, LTO-3 again exceeds the capability of all of the legacy devices, with a native throughput of up

to 80Mb/s. DDS-4 and DAT72 have a throughput of only 3Mb/s, while LTO-2 transfers data at 35Mb/s. This has a direct bearing on the amount of data stored in the library, the length of the backup/recovery window and the number of cartridges that the IT staff currently manages, either in a stacker, on a shelf, or in the trunk of a car.

The autoloader or library needs to identify the cartridge via barcode, be reliable, and have the capability of remote maintenance to simplify the process, enabling management via the internet, and to ensure business continuity. In addition, in order to satisfy regulatory requirements, a library must have a means to eject the cartridges for storage in an offsite location.

In order to achieve a higher level of backup/recovery performance, some data centers will implement a more expensive disk-to-disk (D2D) strategy; however, the total cost of ownership issues can have a serious impact on the budget for the long-term archiving of terabytes of data. Implementing a disk-to-disk-to-tape (D2D2T) environment can improve the long-term TCO efficiencies by moving archive data to tape. Still others, for example SMEs, prefer a traditional tape environment in order to maintain existing procedures and keep the costs as low as possible. No matter which architecture you choose, however, there is at least one company, Overland Storage, which can satisfy your backup/recovery/archive needs. Moreover, Overland Storage has now directly addressed the automation needs of the SME with the first entries in their latest product family, *ARCvault*.

Who is Overland Storage?

Overland Storage is now 25 years old and a market leader in the innovation of simply protected storage solutions. These are smart data protection appliances and software modules, designed to work together, affordably, to ensure that mission-critical and business-critical information is protected, readily available, and always there. Overland Storage has offered three product lines aimed at supporting the multi-tier storage requirements (see Exhibit 2, above) of the mid-range enterprise for the highest capacity at the lowest possible price, while maintaining strict adherence to ease of use standards.

Exhibit 2 – Data Center Requirements
- Lowest possible price;
- Scalable platform with the highest possible capacity;
- Ease of integration and simplified maintenance;
- Near enterprise-like reliability;
- High performance to satisfy backup window requirements; and
- Space-efficient form factor.

- *Ultamus* Series – A line of protected primary storage (online) appliances;
- *REO* Series – Disk-based backup and recovery appliances for secondary storage needs; and
- *NEO* Series – A scalable tape automation solution for third tier requirements with an entry price of about $10K, expandable up to 1000 cartridges using a pair of NEO8000s.

Now, Overland has developed a new line of tape automation appliances to address the departmental and SME class of users: the *ARCvault 12 Autoloader* and the *ARCvault 24 Tape Library*.

The ARCvault Solutions

The ARCvault family complements the NEO family for **entry-level** requirements that need to optimize the use of a single, upgradeable platform to deliver features needed to satisfy the requirements of both backup and recovery and archive applications. The ARCvault 12 and ARCvault 24 provide the budget-constrained data center with outstanding capacity and performance, and low TCO, in support of the backup and recovery requirements of any growing enterprise. With a transfer rate of up to 576GB per hour, the data center can backup a 1TB database in two hours without the intervention of data center personnel.

They employ a 2U rack-mount format, designed to be space-efficient in the data center, while delivering the highest capacity possible with LTO-2 and LTO-3 tape drives, with a native capacity up to 400GB, using an LVD SCSI Ultra160 or Ultra320 interface. The ARCvault platforms typically consume

about 80 watts of electricity, minimizing the power costs that can eat up a data center budget. Both platforms are easy to integrate into your existing IT architecture and are easy to manage through a web-based remote management module or via an integrated touch-screen panel. They share many common features such as firmware, removable drives[1] and magazines, robotics, and remote management. Media management is available through a built-in barcode reader that comes standard in every unit.

Overland Storage designed the ARCvault family to be highly reliable and field-upgradeable, to protect the investment that customers may make today in an ARCvault 12, upgradeable to a 24-cartridge ARCvault 24. There are four CRUs in the platform: a chassis, tape drive, magazine, and drive cover assembly. Both units are rated with an MSBF of over 1 million, an MTBF greater than 250,000 hours (not including tape drives), with an MTTR of less than 30 minutes. Overland Storage provides a standard warranty that includes their one-year *XchangeNow* support, with extended service options available.

ARCvault is compatible with the leading operating systems, including *HP-UX*, IBM *AIX*, Linux, Novell *Netware*, *SCO UNIX*, Sun *Solaris*, and *Windows NT/2000*, and all of the most popular backup software applications. Overland Storage provides on-site support around the world, through a network of authorized service providers.

ARCvault 12 Autoloader

The ARCvault 12 is an entry-level value autoloader that delivers capacity for small-business backup/recovery and archive needs. It consists of a 2U chassis with a single LTO-2 or LTO-3 tape drive and a removable 12-cartridge magazine for easy loading and exchange of media. The LTO-2 drive has an Ultra160 LVD SCSI interface, while the LTO-3 drive has an Ultra320 interface. The 12-slot magazine can support 4.8TB of LTO-2 media or 9.6TB of LTO-3 data. The ARCvault 12 is available starting at only $3,995 with an LTO-2 drive, or $5,095 with an LTO-3 drive.

ARCvault 24 Library

Overland Storage has positioned the ARCvault 24 as a rack-optimized library that delivers affordable capacity and performance for medium-sized backup/recovery and archive applications. It consists of a 2U chassis with one or two LTO-2 drives, or a single LTO-3 drive, a mailslot, and two removable 12-cartridge magazines for easy loading and exchange of media. The LTO-2 drive has an Ultra160 LVD SCSI interface, while the LTO-3 drive has an Ultra320 interface. The two 12-slot magazines can support 9.6TB of LTO-2 media or 19.2TB of LTO-3 data. The ARCvault 24 is available starting at $4,795 with a single LTO-2 drive, or $5,895 with an LTO-3 drive.

Conclusion

ARCvault completes the third tier solution set for Overland Storage, enabling a low-cost, pgradable solution for the data center with limited expansion requirements. With a maximum capacity of 19.2TB, ARCvault provides the SME with an acquisition price tailored to their needs, yet with enough throughput to complete the backup or recovery process in a timely fashion. With the risks associated with the loss of data, can your data center afford to continue without an automated backup and recovery system? If the answer is no, then look at the ARCvault from Overland Storage. It may be the salvation of your entire business the next time disaster strikes.

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[1] ARCvault drives are not hot-swappable.

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