



Storage Connection

Essential Information for Storage Management

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Portlock Joins Open Source Development Lab

“We’re very excited about joining OSDL and participating in its initiatives to promote Linux as an enterprise-class operating system.”

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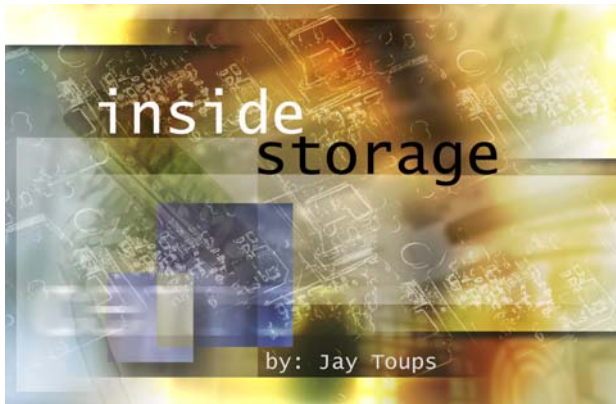
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Fast Forward to a 64-Bit World?

There are plenty of data and storage management issues to contend with, even in today's 32-bit enterprise computing world. Now take a few moments to look into the future a year or two. What will your business do when 64-bit hardware and software and applications begin to infiltrate your network infrastructure and unleash another exponential increase in the business data you need to serve, store and protect? The answer is, get ready before the avalanche of data you know is coming arrives. Because even though it's likely to be some time in the future for most organizations, the 64-bit-computing world is getting closer by the day. And it's a safe bet that implementing more efficient migration, data recovery and backup and restore operations today will result in lower TCO and greater ROI on your storage investments tomorrow.

What's driving the adoption of 64-bit computing? It's clearly the enterprise demand for server-side Linux and support from the leading chip and box makers. What's more, with the recent arrival of the Linux 2.6 kernel and its ability to run on both 32- and 64-bit architectures, there's now an enterprise-tested OS that will support 64-bit processors from both Intel and AMD. To fully exploit a 64-bit chip requires a 64-bit OS, and to date only Linux fully supports 64-bit processing with x86-based CPUs. Intel's latest Xeons and future Prescott-based CPUs will support the same 64-bit software as AMD Athlon 64 and Opteron chips. And like the AMD chips, the new Intel CPUs will continue to support your 32-bit applications as well.

Bits, Bits, Bits: IT is all about Bits

Currently, desktop and notebook processors like the Pentium 4 process data in 32-bit increments; 64-bit chips can process data in 64-bit increments. Among other benefits, 64-bit chips allow computer makers to put more than 4GB of memory into computers, the current ceiling for 32-bit systems. More memory lets a computer run more demanding applications such as complex databases or graphics-intensive software. In servers, this capability is already invaluable, and a growing number of workstation users are demanding larger amounts of memory. Soon enough, enthusiastic home users (no doubt led by the insatiable 'gaming' community) will be asking for greater amounts of memory and performance.

But Linux is no one- or two-trick Penguin. Linux is also proving itself in powering automobile microprocessors, customer kiosks, cell phones and most recently, enterprise and even consumer desktops. By expanding its reach to end users in a vast array of markets around the world, it's increasingly clear that Linux can serve as a unifying operating environment, rather than being applicable only to specific systems or application areas.

The rapid evolution of Linux into a viable environment for enterprise networking, as well as research and development, and high-performance computing tasks has begun to seriously challenge proprietary software vendors and convert skeptics who once dismissed the whole open-source approach as a low-cost alternative to proprietary operating system environments. As one example of this rapid market evolution, Novell's SUSE LINUX Enterprise Server (SLES) is an enterprise-ready server operating system available for all relevant hardware platforms—from AMD/Intel 32-bit and 64-bit processors to the entire IBM eServer series featuring the POWER Architecture—including mainframes. SUSE LINUX Enterprise Server features a uniform code base for all platforms. Developers simply recompile for the specific hardware

platform and their application will run on SLES without modification.

However, a joint announcement by Novell and HP at BrainShare 2004 underscores that Linux isn't just for servers anymore. The two companies announced an agreement to certify and support the SUSE LINUX operating system on select HP Compaq client systems. What makes the announcement significant is that it pertains to garden-variety desktop and notebook PCs, not just technical or scientific workstations where Linux already has a base of users. IDC's forecast for paid Linux client operating system new license shipments calls for a 2002-2007 compound annual growth rate of over 25%. As applications and hardware become available, a steadily increasing percentage of these Linux desktops will be 64-bit machines. In 2003, HP was the worldwide leader in revenue and unit shipments for x86 and Itanium Linux servers, according to IDC.

"We expect Linux client growth to be led by emerging markets in Asia-Pacific, Latin America and Central Europe," said Al Gillen, research director, System Software at IDC. "Adoption will be less broad in well-established markets due to momentum of the installed base for both operating systems and the applications that are installed aboard those environments. We see an opportunity for Linux client systems, and the package that HP and Novell plan to offer could be an attractive option for users considering a Linux client solution."

Here, There, Every Ware?

The increasing success of Linux is also attracting support from commercial software suppliers whose customers demand ever-heightening levels of system scalability, reliability and portability. Customer adoption is causing aggressive Linux porting and development among ISVs. For example, Novell is delivering its advanced network, collaboration, directory and security services on SUSE and RedHat Linux, and some of the world's most powerful and

sophisticated technical applications now run on Linux. In addition, leading databases from Oracle, Sybase, and MySQL AB provide even more options for production Linux environments. Database servers are one place where 64-bit environments have long been required, so it's no surprise to see the first 64-bit Linux offerings billed as industrial-strength database platforms.

In January 2004, Novell completed its acquisition of SUSE LINUX, one of the two leading enterprise Linux companies. With the services and capabilities the combined company brings to the table, Novell now offers complete Linux deployments from the server to the desktop with all the capabilities and services organizations need to build enterprise-strength Linux solutions. These acquisitions are significant for literally all organizations who are (or will be) adopting open source software because they moved Novell from the periphery of the open source movement to the center in a remarkably short period of time. What's more, Novell has also delivered Nterprise Linux Services 1.0, including the company's award-winning and market-proven directory, security, messaging and network management services.

64-Bit File Storage: Better in the Nth Degree

With the arrival of NetWare 7.0, additional networking services that Novell customers have come to rely on and respect will sit on top of both the NetWare and Linux kernels. For example, as part of its strategy to provide key services on both kernels, Novell is currently rumored to be porting Novell Storage Services (NSS) to Linux. A 64-bit storage system first offered on the NetWare 5 platform, NSS allows for unlimited disk volumes that can be up to 8TBs (Terabytes) in size. For example, a single file of 8TBs can fill one volume. This might be necessary to accommodate a huge database table. Alternately, a single disk can be logically separated into an unlimited number of volumes to meet security or application requirements. NSS uses a 64-bit interface, offering significantly more addressing capacity for more

objects than ever before. This “journaling” file system keeps track of volumes, partitions, and files differently and uses less server memory than earlier NetWare File Services versions. Because of the journaling file system, NSS is more far more resistant to errors from server crashes and offers higher reliability and fewer fault conditions.

NSS can manage a virtually unlimited number of file objects. NSS also uses free space from multiple storage devices. You can create unlimited volumes and store up to **8 trillion** files in a single volume up to 8 terabytes in size. NSS allows you to aggregate free space from multiple devices to create a single, virtual storage resource called a pool. In its current form NSS abstracts the four physical NetWare partitions to present you with segments of contiguous free space from them. After you create your pools of storage, you can create an unlimited number of volumes in the pool.

Whether your network spans the planet or a single building, files are the foundation of electronic business. No networked organization can afford unreliable file service, especially when the files being managed are continually growing and requiring more and more storage space. Demands for more storage space force network administrators to demand more from their file systems. They want a file system that can scale to a growing business, be easily maintained, and better protected against corruption. They also want the ability to quickly recover and restore these mission-critical file systems in the event of a disaster, large or small, no matter which platform is affected.

End-to-end 64-bit computing, on Linux? It's no longer a diagram on a chipmaker's drawing board—or an ingenious idea forming in Linus Torvald's fertile brain. The box makers are gearing up to support 64- and 32-bit compatible hardware. ISVs are beginning to update their applications, and in some cases, start over again. Not so with Portlock. With Portlock Storage Manager support for SUSE LINUX and RedHat Enterprise Servers now in Beta release, Portlock will be among the

first storage management solution vendors to provide full support for provisioning, managing and recovering Novell Storage Services when it becomes available on Linux. The result will be a 64-bit file storage system that enables easy migration of truly massive amounts of data from UNIX, Windows and NetWare platforms to Linux, along with proven server and storage management reliability and performance from Portlock to ensure your move to the Linux, and eventually a 64-bit world, is a smooth one.

Founder and president of Life Mechanics, Inc., a full service writing agency based in Darby, Montana, Jay Toups is a writer and marketing communications consultant for Novell, Portlock and other leading technology vendors. Mr. Toups studied English literature, music, beer, psychology and business management at the University of Southern Mississippi from 1976-1980. His lifelong technology education began when first introduced to UNIX in 1981.

Visit www.wordwrench.com for more information.



Butte, MT - March 12, 2004—Portlock™, a leading storage management solution provider, today announced a Supporting Member membership agreement with the USENIX Association headquartered in Berkley, California. “This agreement with USENIX, along with our recent OSDL announcement, is a key part of Portlock’s continuing strategy to be the industry leader in Storage Management on the Linux platform,” said John J. Hanley, President and CEO of Portlock.

“USENIX, the Advanced Computing Systems Association, is delighted to welcome Portlock as a Supporting Member,” said Cat Allman, Director, Sales & Marketing, USENIX Association. “Portlock’s commitment to providing essential, reliable storage tools on leading server platforms, including Linux, makes the company a natural fit with our global membership of researchers and practitioners.”

About Portlock

Portlock is a leading provider of storage management, server-to-server migration and disaster recovery solutions, support and services, dedicated to innovation, development, and customer support. Portlock corporate headquarters are located in Butte, Montana, and London, England, with additional offices worldwide. Portlock’s Storage Manager product for Linux enterprise distributions is now available as a beta release for evaluation. For more information, visit www.portlock.com.

About USENIX

USENIX, the Advanced Computing Systems Association, fosters technical excellence and innovation, supports and disseminates research with a practical bias, provides a neutral forum for discussion of technical issues, and encourages computing outreach into the community at large.

USENIX conferences have become essential meeting grounds for the presentation and discussion of the most advanced information on the developments of all aspects of computing systems. For additional information visit www.usenix.org

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Leader in storage management and server-migration solutions to participate in Lab Data Center Linux Working Group

BEAVERTON, Ore. – March 11, 2004 - The Open Source Development Labs (OSDL), a global consortium dedicated to accelerating the adoption of Linux, today announced that Portlock, a leading storage management solution provider, has joined OSDL and will participate in the Lab's Data Center Linux Working Group.

Portlock develops one of the network industry's most popular storage management solutions for NetWare operating environments. Portlock currently has a Linux beta version of its storage management solution available for customers considering NetWare and Linux migration strategies.

"We're very excited about joining OSDL and participating in its initiatives to promote Linux as an enterprise-class operating system," said John Hanley, president and CEO of Portlock. "Portlock is committed to being an active member of OSDL and the Lab's Data Center Linux Working Group and offering our expertise in storage management on the Linux platform."

"Storage is a critical part of any organization's IT solution and it can often be a bet-the-company decision," said Stuart Cohen, CEO of OSDL. "We're pleased to have Portlock participating in OSDL initiatives and sharing their experience in storage solutions for Linux."

About Portlock

Portlock is a leading developer of storage management, server-to-server migration and disaster recovery software, support and services, dedicated to innovation, development, and customer support. Portlock Headquarters are located in Butte, Montana, and London, England, with additional offices worldwide. For more information, visit www.portlock.com.

About Open Source Development Labs (OSDL)

OSDL - home to Linus Torvalds, the creator of Linux - is dedicated to accelerating the growth and adoption of Linux. Founded in 2000 and supported by a global consortium of Linux customers and IT industry leaders, OSDL is a non-profit organization that provides Linux expertise and computing and test facilities in the United States and Japan available to developers around the world. OSDL members include Alcatel, BakBone Software, Cisco, Co-Create, Computer Associates, Dell, Ericsson, Force Computers, Fujitsu, HP, Hitachi, IBM, Intel, Linuxcare, Miracle Linux Corporation, Mitsubishi Electric, MontaVista Software, NEC Corporation, NEC Soft, Network Appliance, Nokia, Novell, NTT, NTT COMWARE, NTT DATA INTELLILINK, Red Hat, Sun Microsystems, SUSE LINUX, TimeSys, Toshiba Solutions, Transmeta Corporation, Trolltech, Turbolinux, Ulticom, Unilever, VA Software and Wind River Systems. Visit OSDL on the Web at www.osdl.org.

OSDL is a trademark of Open Source Development Labs, Inc. Linux is a trademark of Linus Torvalds. Third party marks and brands are the property of their respective holders.



Scripting Features of Portlock Storage Manager

Portlock Storage Manager has the ability to handle basic scripting of the imaging function. This allows you to create an automated image of a server to a specified location. That location may be a locally attached disk (not recommended) or an FTP server.

Remember as with all imaging functions of Portlock Storage Manager all of the Pools will be deactivated and the volumes dismounted prior to the image taking place. Users will not be able to access the server while the image is taking place.

If you choose to make the image to a locally attached disk the reason that this is not recommended is that in general the reason for making an image in the first place is for disaster recovery purposes. If something happens to the hardware (disk controller failure, power surge etc) then you run the risk of losing both the server and the image.

A much better location to store an image of your file server is an FTP server. It can be any type of FTP server from a Windows workstation running Windows 2000 or Windows XP (Microsoft includes a free FTP server), Macintosh, Linux, NetWare, UNIX or even a mainframe. Portlock

Storage Manager uses standard FTP server commands in order to save the image to your chosen FTP server.

A new feature in the latest version of Portlock Storage Manager (v3.28) means that images that are saved must have a .img extension (when imaging to an FTP server) otherwise the image will not proceed, This was introduced in response to customer requests because if you saved an image as image.001 and you had left the default of auto naming enabled with Portlock Storage Manager the first file called image.001 was written over automatically (with no warning) with the second image file of image.001.

A little about auto naming and Portlock Storage Manager. When auto naming is set to default Portlock Storage Manager will create sequential files after the initial filename. The filenames that could make up an image become:

image.img
image.001
image.002, etc.

If you have large data volumes, it may not be practical to use the scripting command to image your server. In this case you may have to revert back to a manual method in order to image both the C: drive and the SYS: volume.

Note: Please do not consider using keyboard “stuffing” programs such as STUFFKEY.NLM. As Portlock Storage Manager features evolve, errors may occur with the software, and you risk destroying data on the server if an unexpected response happens when using these types of programs.

Now we need to go through the scripting features of Portlock Storage Manager. First we will go through each of the commands that are available to do the scripting.

Image to a locally attached disk / network drive

It is possible to create an image to either a local disk or to a network attached drive. Simple make sure that the drive is attached or that you boot the server with a suitable DOS client boot diskette. Login to the server and then Portlock Storage Manager will be ready to make an image to that specified location.

```
sys:stormgr\stormgr -script -os=65 -imageall -imagefile=g:imgfile.img
```

The command shown above would create an Portlock Storage Manager image on the G: drive called `imgfile.img`. It is important that the filename only be in 8.3 format (depending on the version of DOS used) to ensure the greatest compatibility.

`-imagefile=drive:filename.img`

Allows you to specify the image file name that is to be created.

`-imageall` is the only option to image everything. You cannot specify any particular object to image.

The other options will be discussed in the Image to an FTP Server section next.

Image to a FTP Server

Imaging to a FTP server is very simple using Portlock Storage Manager all you need provide is a valid username and password for the server. The FTP server's ip address that you wish to image to must be used on the command line. Portlock Storage Manager issues standard FTP server commands in order to create and save the image on an FTP server. This makes it extremely easy in most companies to create an image to a remote destination to aid in a disaster recovery plan.

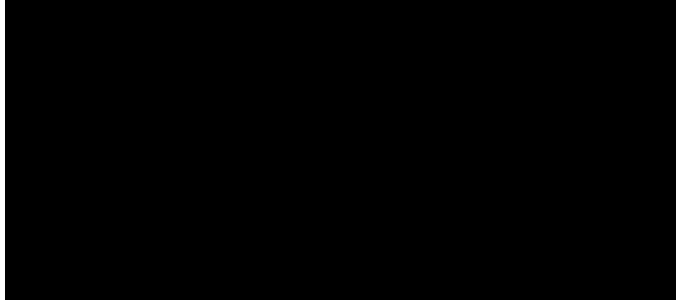
In our example we will be creating an image of a NetWare 6.5 server and sending it to a FTP server

that is located at 192.168.1.100. This FTP server allows anonymous access (if it didn't then you would just use a valid username and password combination).

The command line for the example would be as follows:

```
sys:stormgr\stormgr -script -os=65 -imageall -imageftp=192.168.1.100,anonymous, user@test.com,imgfile.img
```

NW658P1-SRU1:sys:stormgr\stormgr -script -os=65 -imageall -imageftp=192.168.1.1



`-script` Turn on scripting.

`-os=65` Set the version for NetWare emulation (3, 4, 5, 6 or 6.5) For Windows workstations set to 6

`-imageall` Image all disk drives and all partitions / volumes

`-imageftp=ip_address,ftp_user,ftp_password,filename`

`-imagefile=filename`

When you press Enter after typing the command line parameters Portlock Storage Manager will then load, it will pause at the licensing screen for a few seconds and then continue on. Make sure that NWConfig, NSSMU, etc. are not loaded or Portlock Storage Manager will not be able to proceed. We suggest that you do a "dry run" of the image using the command line option to see that there are no other programs that need to be unloaded before Portlock Storage Manager can proceed with the image.

```

Portlock Storage Manager      Copyright 2000-2004 Portlock Software
Storage Manager will now deactivate Pool SYS.
All volumes on this pool will be dismounted.

Deactivating Pool SYS
Please Wait

Press ESC to cancel

```

Once the imaging process starts all Pools will be deactivated and all volumes will be dismounted. All of the Pools Traditional Volumes will be checked in the normal manner to ensure their integrity, and the image of each will occur.

```

Portlock Storage Manager      Copyright 2000-2004 Portlock Software
Image Status for NSS Pool SYS
NSS Pool Name:   SYS           Complete: 32.00%
Block Size:     4,096 bytes    Elapsed Time: 04:13
NSS Pool Size:  3,999 MB       Estimated Time Left: 08:41
Segment Count:  1              Blocks to Image: 311,984
Current Segment: 0             Blocks Imaged: 101,859
Segment Size:   3,999 MB       Bytes Written: 479,457,984
Space Used:     1,218 MB       Compression Ratio: 1:1
Space Free:     2,780 MB       Performance: 1,610 KBS
Pool Volumes:   1 volume

Image Progress:  ██████████
Connected to FTP server 192.168.1.100 on port 3409
Image File: imgfile.img
Image Size: 479,457,984 (current image file)

Press ESC to stop

```

Once the image is completed, all of the Traditional Volumes will be remounted and the Pools reactivated.

Note: Pool volumes are not remounted; they must be manually mounted after the conclusion of the image.

Some customers automate the imaging procedure using Novell's CRON.NLM program which allows you to specify the time of day the Portlock Storage Manager image process can take place, such as after regular business hours.



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I am trying to image a NetWare server to a workstation (TCP-IP) connection. Everything goes fine until I launch the workstation as a remote host and I get this message “Error: Portlock Remote Wizard” Unable to launch Portlock Remote access on your desktop. What am I doing wrong?



The Portlock Remote Wizard is just to take remote control of Portlock Storage Manager. You cannot use it to receive an image from Portlock Storage Manager.

To receive an image on a Windows machine we recommend using the “free” FTP server that comes with Windows 2000/XP. This can be installed on your machine from Add/Remove Programs.



I am having difficulty creating an image of my server using the TCP/IP way of transferring the image from server to remote client. I use the receive command on a client computer which has a drive capacity of 26.9GB. The server in which I’m creating an image of has a capacity of 9GB. However, I got this error: Could not write to file: No space left on the device. How can I fix the problem?



Make the file size smaller; use the following command to create a file smaller than 4GB, i.e., 2GB:

```
recv-autosize=2000 -autoname ipaddress filename
```



We are running NW5 SP6a, 1 disk, 3 partitions: diagnostic partition 31MB, DOS startup 94MB, NW386 (traditional), 17GB and 2 volumes in the NetWare partition.

For this server to be upgraded to NW6, the DOS partition needs to be over 100MB. I managed to resize (shrink) both volumes and then the NW partition by 120MB, but in resizing the partition I had no access to the Starting and Ending positions - just Size or Free Space. The partition is smaller now, but it needs to be at the end of the disk to make room for a larger DOS partition! Am I missing something here?



Here's a method to increase the size of your DOS partition.

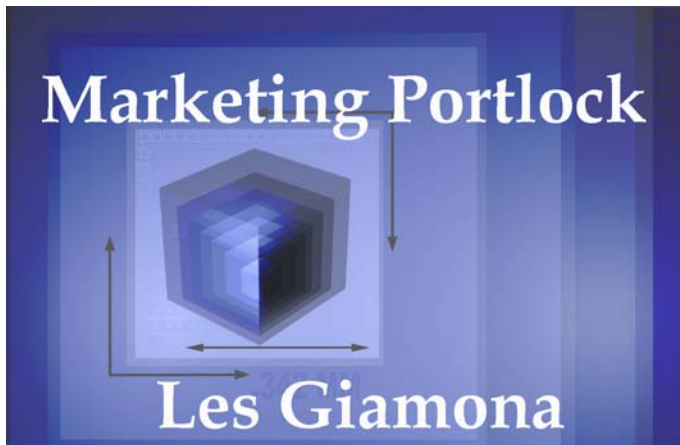
1. Make an image of the disk using Portlock Storage Manager. This is purely for safety.
2. Attach an IDE drive to the server and then copy the DOS partition and the other partition on the drive over to the IDE drive using the Partition Copy commands with Portlock Storage Manager. During the copy process you can resize the DOS volume to the size that you require.
3. Once this is finished you can delete the DOS partition and the other NetWare partition from the original drive. (Hence the suggestion to image in Step 1 for safety should the wrong partition be deleted.)
4. Now copy back the DOS partition at its increased size.
5. Copy back the NetWare partition
6. Remove the IDE drive and boot up your server.



While updating system files the admin accidentally deleted the old files instead of archiving them. Can Portlock Storage Manager help me recover those lost files?



Sorry, if the old files have been deleted, our software cannot help you. Recovering deleted files is a job better suited for your backup software.



Novell BrainShare 2004

From hosting two full Portlock Tutorial Sessions, to helping a new customer recover a crashed server, to the still-unresolved case of the missing carpet pad for the Portlock booth (which we “Portlockers” all paid dearly for with sore feet), there were many memorable moments for Portlock and its employees at Novell’s BrainShare 2004 Conference in Salt Lake City, Utah from March 21-26.

This was my first network computing industry trade show, as well as the first for Portlock as a BrainShare Gold Sponsor, so there were many high-profile projects and last-minute details to complete before actually showing up in Salt Lake City to meet our current and future customers on the tradeshow floor.

I had heard many stories about what to expect at BrainShare. But until one actually participates in an event of this size, it’s difficult to know exactly what the job will entail. However, it didn’t take more than a couple of hours to figure out that talking with some of networking’s elite administrators, developers and CXOs was not only fun, but very hard work! After wearing out our feet as we stood talking to eager customers in the Portlock booth for 4 straight days, I can honestly tell you that the show left a lasting impression on the feet and minds of all members

of the Portlock team as we brought our company’s message to thousands of attendees. From what I understand Novell measured a 20 percent gain in attendance from the 2003 show, which by any standard was a successful effort.

Novell Gears Up for Growth

BrainShare 2004 keynote presentations were worth the trip alone as the keynote speakers were excellent and consistent in their message that Novell is committed to the vision of one Net. From Jack Messman (CEO) to Chris Stone (vice-president, office of the CEO) and other Novell executives, all spoke about how the company has delivered on the promises made at BrainShare 2003. I must add that it was very entertaining when Mr. Stone and Mr. Messman held a surprise roundtable discussion with Linus Torvalds, yes, the same Linus Torvalds who is the creator of Linux. This provided the attendees and sponsors a warm and fuzzy feeling that Novell and their partners are on the right track in bringing open source solutions, standards-based Web services, secure identity management, and a more customer- and partner-focused organization to the forefront.

The strongest statement came from Mr. Messman in regard to NetWare 7.0 in which he said, “the services that you have come to love and respect will sit on top of both the NetWare and Linux kernels.” He also said, “Let me make one point very clear: We are not dropping NetWare; we are adding Linux.” Keep beating that drum, Mr. Messman! Portlock embraces that statement as it fits our strategic goals and long-term plans for the direction and enhancements of our market-leading product mix.

Portlock Wins New Customers

At Portlock we also believe in honoring promises to our customers, and we have kept the promise of serving the needs of Novell’s NetWare customers by consistently delivering reliable software for managing storage on the latest

versions of NetWare. We are also keeping pace with Novell by delivering best-in-class support for enterprise Linux distributions and will fully support Novell Storage Services (NSS) for Linux when it is shipped by Novell. In fact, Portlock is among the first storage management companies to support both leading Linux enterprise distributions, and in a product that already supports NetWare and even Windows platforms. Check out our 30-day trial version of Portlock Storage Manager for Linux offering, now in Beta release and available on our web site at www.portlock.com.

BrainShare 2004 was incredibly successful in many ways for Portlock, and one way in particular was that it allowed us to meet and greet so many of our customers and update them on all the new product features and enhancements scheduled for release. It also gave us an opportunity to introduce our products to potential new customers. We even had a potential customer come to our booth on the show floor desperately seeking a solution from Portlock: "My client's server is down and could we help her, please?"

Trade show or not, of course we could help her, what a silly question. Our first task was to get her client on the phone with our technical support group, so we could ascertain what the problem was from a technical perspective. As it turned out, our technical support person had them download our enterprise class product Portlock Storage Manager so they could isolate the problem. After the problem was isolated we directed them on the steps necessary to fix the problem and, presto, the server came right up and was operational again. They were very excited and amazed at how easy our software was to install and use. (*Read all about it later in this issue.*)

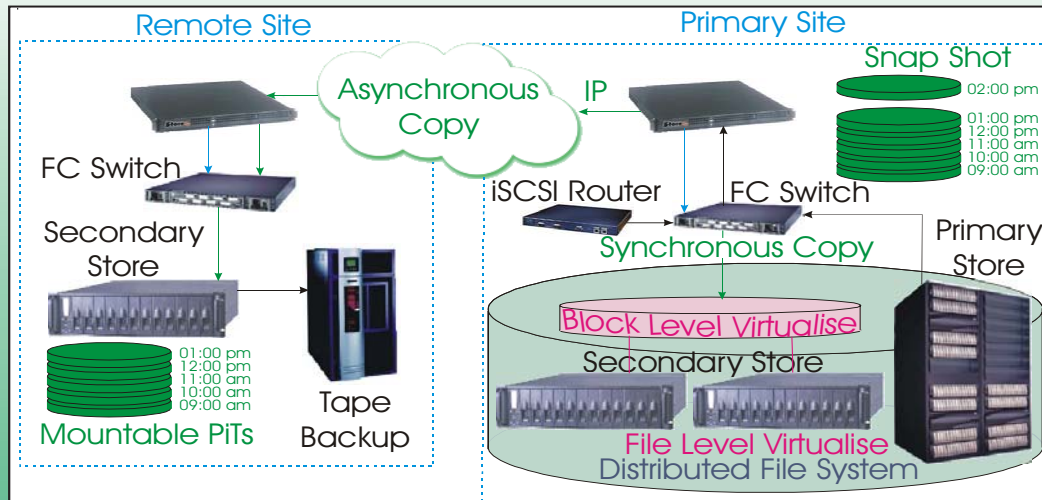
The above example exemplifies the quality and utility of our products, and what lengths Portlock will go to solve a potential customer's problem. It's all in a day's work for us, whether we are in the office or on the road!

Bottom Line: *BrainShare Rocked*

Well, you'd have to be living under a rock to not know that Novell and other Linux solution vendors such as Portlock are generating real excitement with market-focused product innovation around Linux. BrainShare 2004 served notice that Portlock, like Novell, is fully committed to serving your evolving needs as a networking customer, supporting the open source model of community development, and lastly, driving our business and revenue outlook with tightly integrated enterprise-class storage management software, services and professional support.

Not only was the show a huge success for our fast growing software company, Portlock employees and management all had a great time at BrainShare. Next time, I'll be fully prepared for a week of intense Portlock customer interaction, and more discovery of Novell's latest and greatest networking technologies. I'll pack comfortable shoes and bring lots more "spiffs" to give to our booth visitors. And above all, I will personally pack the carpet pad to ensure the Portlock booth has the softest, most inviting floor in the entire Salt Palace exhibition hall.

No matter how complex your requirements



If it can be done with storage - we'll show you how



Solution Centre Limited, Vickers House, Priestley Road, Basingstoke, RG24 9NP, UK
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Our Professional Service teams can provide you with a technical resource to help you run your business more efficiently. IT departments are often busy fighting fires and do not have time to take a strategic view of their business and the benefit IT provides. We provide consultancy and implementation services in the areas of our specialisation:

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In principle, it is generally true to say that centralising and consolidating functions and management reduces cost and improves availability. Most of our services have these aims.

Within those areas of expertise typical uses of our Professional Service teams include:

Storage Discovery and Consolidation

- Audit infrastructure to identify a starting point
- Implement Highground software for a defined period to analyse data and trends
- Produce forecast reports
- Develop and document storage strategy
- Design scalable solution
- Consolidate primary and secondary storage
- Consolidate servers
- Optimise performance
- Confirm acceptance to criteria



Diana Darrington is the Network Administrator of SOSystems in Orem, Utah. SOSystems provides complete computer systems for credit unions.



I had the opportunity to attend Novell's BrainShare conference in Salt Lake City a few weeks ago. Since I am local here in Utah, I hadn't left my home yet on Wednesday morning when I got a call from a co-worker. One of our client's servers was down. They had just tried to reboot the server since the tape drive wouldn't eject the tape. They had taken the server down properly, DOWN, EXIT (yes, it was NetWare 4.2). Everything was normal. When the server came back up, it was prompting them for a server name. NO!

Many of us know what that means, the SYS volume didn't load. I luckily had one of our technicians on site, and together we walked through to see what was going on. We found that all the drivers for the hard drives had loaded, but that the volumes would not mount. Vrepair couldn't even see any volume information, neither could install. I could see my BrainShare experience dwindling as visions of a total server restore came in my mind. I needed to get up to Salt Lake, and maybe even get some help; it was certainly worth a try before we started to rebuild the server from tape backup.

My first stop was back in the one Net Solutions Lab, I found the sysops for the Support Forums. I told them my plight, they gave me a few ideas, but they sounded skeptical. They mentioned a product from Portlock and recommended I go over and talk with them. Discouraged, and frustrated, I knew my boss would not approve the purchase of a product for the client, I looked around for more help. I happened across

a gentleman that works for Novell that I used to work with. He even works with the storage products. I told him my situation. Since it was on an older version of NetWare, he found someone else for me to talk to. This gentleman was also skeptical. Then came a familiar recommendation, that I go talk to the folks at the Portlock booth.

Okay, twice I had been referred to this company, so I wandered over to their booth, not knowing what they would be able to do, especially where I knew I couldn't buy anything right at the moment. I explained to them my story, and they immediately sprang into action. They had an associate of theirs, Leonard Holling, call my associate that was on site. Leonard walked him through downloading the evaluation version of Storage Manager, installed the product, and then they looked at the server. They found that the volume information look just fine. Leonard suggested that the drivers for the hard drive and/or controller may have become corrupted. We gathered the same drivers off a NetWare 4.2 server at our location, sent them over to our associate on site, and he put them into place. Low and behold the server came up just fine! I was so excited I couldn't believe it! We just avoided a complete server restore by using the evaluation version of Portlock's software, Storage Manager.

I ran over to their booth to tell them the news! We were all excited, although I don't think they were surprised. I grabbed all the literature on their products, and am looking forward to purchasing this product soon.

Diana Darrington is the Network Administrator of SOSystems in Orem, Utah. SOSystems provides complete computer systems for credit unions. They also offer an office automation solution using NetWare and GroupWise. Diana provides any support needed for these systems. She has worked in the computer and networking field for 14 years. She has gained many certifications over the years including; MCNE, CNI, A+, Project+.



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