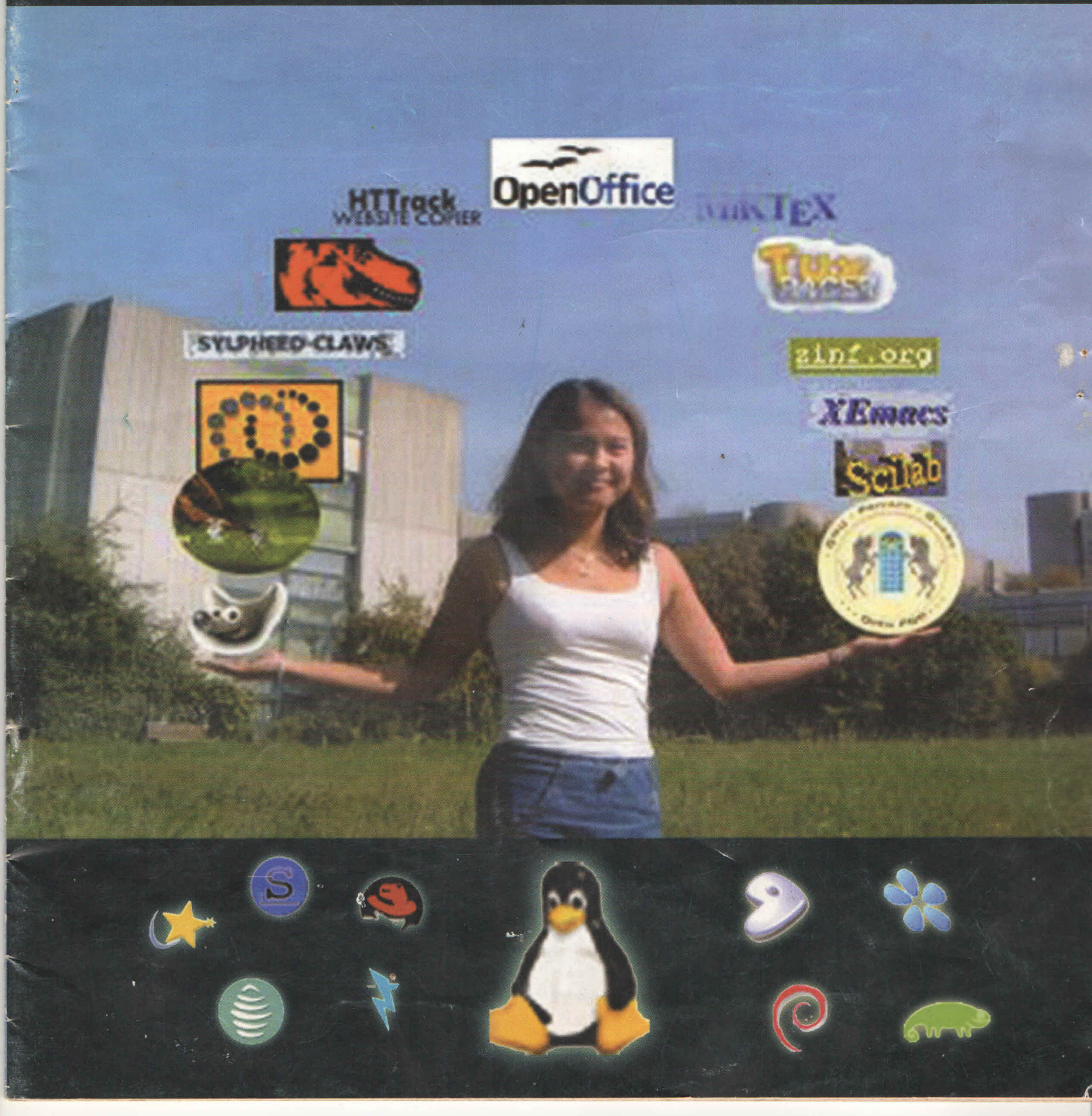
Software Freedom

FEBRUARY 2003 Rs. 5.00



We thank all the contributors & well wishers for making Software Freedom a Successful Magazine. Hope more & more IT enthusiasts will take an active part in this venture. We always need your Support.

Software Freedom

February 2003, Vol 1 Issue 4

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RN. NO. : UTTENG/2002/8552

Edited, Printed, Published & Owned by Sharad Kukreti. Published from 10, Old Survey Road,Dehra Dun - UA. India

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Printed at Saraswati Press, Faltuline, Dehra Dun- UA

Attention Readers

The Software Freedom Team requests it's readers to send in their Feedbacks & Suggestions at feedback@Software-Freedom.Org. Articles related to OSS/FS/ICT are always welcome.

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Front Cover : GNUWIN - II , Credits : Emmanuel Eckard

website : http://www.Software-Freedom.Org

PC @ Rs. 5,000/

by Software Freedom Network

Mr Rajesh Jain M.D Netcore Solution Pvt. Ltd. who once hit the head lines by selling a web site for few million dollors. Now a days trying to put together a unit that is affordable, practical in use , works efficiently and a product one can rely on. The key components are thick servers for server side; thin client and digital dashboard for Enterprise client side and enterprise applications. Thin client–thick server is a linux based platform which can bring down the computing costs by leveraging older computers and combining it with linux base desktop and set of open source applications.He further adds that it is not at all standalone device, a threshold number has to be kept in mind to make an economical viable Thinclient-thick server solution. He aims to provide a computer at an affordabe rate of Rs. 5,000. The company looks forward to target schools, hospitals, cybercafes, call centers, business centers, hotels, factories, hostels etc.

Mr Prakash Advani Senior Vice President, Netcore Solutions ,http://www.emergic.com told Software Freedom Network that the architecture is based on LTSP. Each node containing refurbished used PC will cost Rs 5,000/. He further added that installation cahrges may be extra as applicable by the Channel Partner.

COMPASS 2003

COMPASS 2003,being organised at the Netaji Indoor Stadium, Kolkata, by the Computer Association of Eastern India, will see the congregation of over 100 companies. It opened on 24th Jan'03. According to Linux users group "We will use this opportunity to introduce Kolkata to the GNU / Linux and Free / Libre and Open Source Software (FLOSS), and demonstrate and educate that they can be a viable alternative to Microsoft Windows and proprietary software"

UnitedLinux Releases Version 1.0

Industry Leading Technology Providers Sponsor Launch Event

Today the UnitedLinux group announced the release of Version 1.0 of its UnitedLinux product, a standards-based Linux operating system targeted at the business user. UnitedLinux is the result of an industry initiative to streamline Linux development and certification around a global, uniform distribution of Linux. Founding companies of UnitedLinux are Linux industry leaders Conectiva S.A., The SCO Group (NASDAQ:SCOX), SuSE Linux AG, and Turbolinux, Inc. UnitedLinux Version 1.0 is the engine that powers products to be sold by the four companies, each with its own local language support, value-add features, and pricing. *Detail story on pg:23*

RPM voting for Mandrake Linux 9.1 applications

For the first time in its history, MandrakeSoft is directly empowering the community of Mandrake users to help determine the selection of software for the upcoming release of Mandrake Linux 9.1. All MandrakeClub members can now vote for specific packages so that MandrakeSoft's development efforts will focus on the most often-requested applications. Who knows the needs of the community better than the users themselves? Learn all the details:

http://www.mandrakeclub.com/article.php?sid=304

German City Goes Entirely Linux

Schwäbisch Hall builds IT infrastructure based on SuSE Linux and IBM Servers

The German city of Schwäbisch Hall (population 36,000) will build its IT infrastructure entirely on SuSE Linux - replacing a more costly Windows installation.

The town will deploy SuSE Linux on IBM Intel-based servers as well as up to 400 PCs - saving the city an estimated amount of more than one hundred thousand Euro over the Windows installation.

"My decision for Linux is based on three factors," said Hermann-Josef Pelgrim, Mayor of Schwäbisch Hall, Baden-Württemberg, Germany. "First, I expect a considerable reduction of our IT expenses due to lower software license fees. This will contribute to the consolidation of our municipal budget. Second, based on Linux's excellent grades from the experts on security, our IT structure will become more secure. Third, the choice of open standards ensures interoperability among different technical offerings."

"Schwäbisch Hall's decision reflects the strongly growing acceptance of Linux in enterprises and governments around the world," said Boris Nalbach, CTO of SuSE Linux AG. "With the lower software licensing fees - as well as the lower administrative costs associated with Linux, the town will be able to provide the most cost effective civil services to its citizens."

Initially, the project includes the migration from Windows and Microsoft Office to the SuSE Linux Enterprise Client and OpenOffice.org for 120 client PCs, which will increase up to 400 client PCs in the final stage. On the server side, SuSE Linux Enterprise Server will be deployed on IBM's eServer xSeries systems.

The overall project is accompanied by an innovative financing package that enables the Municipality to accommodate customized extensions.

The Tokyo Declaration
the Asia-Pacific perspective to the WSIS

World Summit on the Information Society (WSIS)
Asia-Pacific Regional Conference

Representatives of the governments of 47 countries, 22 international organizations, 54 private sector entities and 116 non-governmental organizations (NGO) of the Asia-Pacific region gathered at the Asia-Pacific Regional Conference, held in Tokyo from 13 to 15 January 2003, to develop a shared vision and common strategies for the "Information Society". The objective of the conference was to discuss how best to work together to contribute to the region's effective transition to an Information Society that will accelerate and enhance regional economic, social, cultural and technological development.

The conference emphasized that a primary aim of the Information Society must be to facilitate full utilization of information and communication technologies (ICT) at all levels in society and hence enable the - sharing of social and economic benefits by all, by means of ubiquitous access to information networks, while preserving diversity and cultural heritage.

The Conference endorsed the important role that ICTs can play in achieving the United Nations Millennium Development Goals, which describe a fundamental set of principles and guidelines for combating poverty, hunger, disease, illiteracy, environmental degradation and gender inequality.

For details visit :-

http://www.wsis-japan.jp/documents/tokyo_declaration.html

Bengal Plans Linux-based G2G Portal

By Software Freedom Network

The West Bengal government is planning to have a Linux-based G2G (government-to-government) portal following the success of its recently launched G2C (government-to-citizen) portal.

The state government wants to create a cost-effective portal where the database and other important applications will be ported on Linux. "Keeping in mind the financial constraints of the state government we are looking for a technology which will be cost-effective. Linux is an open source code operating system (OS) with low ownership cost, so we would prefer Linux to other operating systems," said West Bengal department of information technology secretary DK Patra.

SUN MICROSYSTEMS BRINGS ADDED VALUE TO LINUX AND OPEN SOURCE WITH A WEALTH OF PRODUCT OFFERINGS, PARTNERSHIPS AND AWARDS

Company Announces Seven Sun ONE Products Now Available on Linux

Bangalore, India - 24 January 2003 - LinuxWorld Conference & Expo - January 22, 2003 — Sun Microsystems, Inc. today announced a broad range of products, programs, and industry awards for Linux that support the company's expansion into the x86 server marketplace.

Highlights of today's announcements include:

* New offerings of the Sun(tm) ONE software stack on Linux, including the immediate availability of both Sun ONE Application Server 7 and the recent delivery of Sun ONE Directory Server 5.1 on Linux. To date, Sun has delivered seven Sun ONE products on Linux, up from only two products that were available six months ago. Other Sun ONE products that support Linux today include Sun ONE Web Server 6, Sun ONE Active Server Pages, Sun ONE Studio 4, Sun ONE Grid Engine, and Sun ONE Grid Engine, Enterprise Edition

* Imminent delivery of other Sun ONE products on Linux, including Sun ONE Portal Server, Sun ONE Identity Server, Sun ONE Calendar Server, and Sun ONE Messaging Server, all of which are scheduled to run on Linux within the year.

* New contributions to the open source community, including today's announcement that Sun is expanding its commitment to the open development of grid computing technologies with the contribution of its Grid Engine Portal portlet technology to the open source Grid Engine Project.

http://gridengine.sunsource.net/ (See separate announcement, "Sun Microsystems Contributed Grid Engine Portal Technology to Open Source Grid Engine Project.")

* In a joint announcement with Ximian, Inc., the Sun ONEEvolution Connector, a joint solution that provides an open, low-costcommunications and collaboration alternative for Linux and Solaris desktop users. The Sun ONE Evolution Connector provides complete integration for Sun ONE users with Linux and Solaris desktops to the open source Evolution email and calendaring workgroup. This enables them to easily collaborate with Windows-based coworkers. (See separate announcement "Sun Microsystems and Ximian Partner to Enhance Enterprise Communication and Collaboration; Sun(tm) ONE Communications Platform Delivers Up to 10X Lower TCO Than Microsoft Outlookand Exchange.")

* All Java(tm) technology offerings for the server and the desktop are tested and available on the Linux Operating System: Java(tm) 2, Standard Edition (J2SE)(tm), Java(tm) 2, Enterprise Edition (J2EE)(tm) including J2EE v 1.4, Java Web Services Developer Pack (Java WSDP), and the Jini(tm) Starter Kit (JSK).

* Mad Hatter, Sun's Linux desktop solution, is slated for beta this spring and for general availability this summer.

* Industry accolades for the Sun(tm) LX50, the industry's firstenterprise-class, low-cost system to ship with pre-integrated and optimizedsoftware and applications. The LX50 won 4 » out of 5 penguins in a recent review in Linux Magazine; received 4 stars in a recent review in New Architect Magazine, http://www.newarchitectmag.com/documents/s=7766/na0103m/index.html and also won the recent LinuxWorld Enterprise Evolution Award,http://www.linuxworld.com/info_content/expo_award_index.shtml

* ACCPAC, a subsidiary of Computer Associates, announced official certification of its ACCPAC Advantage Series(tm) and ACCPAC Pro Series(tm) accounting applications—both have been tested and approved for the Sun LX50. Both ACCPAC Advantage Series and ACCPAC Pro Series are modular suites of financial and operational accounting applications. (See separate announcement "ACCPAC Announces Advantage and Pro Series Available for Sun's Linux Product Line.")

"Enterprises across the world seeking to leverage the value of Linux and open source now have a world class option with Sun," said Jonathan Schwartz, executive vice president, software at Sun Microsystems, Inc.

"Sun continues to be an innovator in Linux — and that's truer than ever as we bring more products, partnerships and programs to Linux and the x86 server and desktop marketplace. Linux is a real growth opportunity for Sunand we are continuing to make enterprise-class software available on Linuxthrough both our Sun ONE offerings and our Mad Hatter project.

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.....SUN MICROSYSTEMS

"We're ecstatic to see the growing industry momentum behind open source desktop technologies and applications, a drive we have helped fuel," said David Patrick, president and CEO, Ximian. "Like Sun, providing customers with choice is a core value for Ximian. We're proud to partner with Sun to further the ease of use, productivity and interoperability needed to propel the adoption of Linux in enterprise desktop computing environments."

Sun has made significant contributions to the open source community over the last 24 months. These have radically changed the desktop computing market with the founding of OpenOffice.org in 2000 and the support and ongoing contributions to the GNOME Foundation.
Sun is driving similar innovations in grid computing with the contribution of the Grid Engine Portal portlet technology to the Grid Engine Project, http://gridengine.sunsource.net/. The portlet, which integrates Sun(tm) ONE Grid Engine software with Sun ONE Portal Server technology, provides an open source code base that securely accesses grid resources via a portal from virtually any location inside or outside the firewall. Another significant open source contribution is the Jini Applications Manager (JAM) prototype that was developed in collaboration with the Swiss Center for Scientific Computing. The JAM technology is the first toolkit that allows Jini technology to be coupled with distributed resource managementtools, such as Sun's Grid Engine Software, to join multiple grids into a virtualized set of resources.
More information on Sun's open source participation and ongoing list of contributions to other open source projects can be found at http://www.sunsource.net

Mad Hatter Momentum
Sun is on track to deliver Mad Hatter, its open standards desktop strategy announced at its Sun Network(tm) conference last September. Sun's desktop strategy will integrate the Linux desktop with a new client solution that eliminates the expense of traditional desktops, while significantly bolstering security and authentication. The Mad Hatter project is based on open source technology and open standards, including GNOME, Mozilla and Star Office(tm), as well as communications client solutions. It is an ideal alternative for enterprise users needing office productivity and communications tools. The Mad Hatter solution is slated for beta release in spring 2003 and general availability in summer 2003.

WSIS delegates fail to agree on open-source 'support'Draft was changed after objections by U.S.

By Martyn Williams

TOKYO — A three-day meeting that brought together Asian governments, organizations, companies and non-governmental organizations (NGOs) ended Wednesday morning with the approval of a declaration that, among other things, calls for encouraging the development of open-source software. A draft of the declaration had called for open source to be "supported" but was changed after objections from the U.S. government delegation late Tuesday night.

Full story at:http://www.infoworld.com/article/03/01/15/030115hnwsisos_1.html

Some Interesting Points

Linux is pronounced as *luh-nuhks* or *ly-nuhks*. Some even say *lee-nooks*

Linus now works for in California. *Home page:* www.cs.helsinki.fi/~torvalds

Red Hat has over 30 million lines of source code, mostly in C

There are more than 200 distributions of Linux today

Did you know that the special effects in *Titanic* were created using computers running Linux?

49% of IT professionals think Linux is essential or important for their corporate strategies.

Linux Installation : Preparing the Disk Drive

By Narsingh Sahu (narsinghsahu@yahoo.co.in)

The antagonists of Linux cite installation problems as a major draw back against Linux. And hence it is said to be the operating system for the geeks. Many forget that the other operating system also cannot be said to be self-installing. Windows, like other operating systems is also difficult to install. However very few people have the experience of installing Windows as it comes pre-installed. Also, the hardware vendors supply their driver software along with the equipment saving the troubles for the Redmond based giant to provide OS level support. Things are going to be easier for the newbies in future as Linux is coming pre-installed in more and more systems coming out from major vendors

One of the major problems of installing Linux is preparation of the disk drive prior to the installation. Since an existing PC is most likely to have Windows already installed, the associated task remains to configure the harddisk for dual-boot.

Disk geometry

A disk drive resembles a CDROM, with concentric circles like those annual growth rings on a cross section of a tree. The concentric circles are called *cyllinders*. Each cyllinder is divided into *sectors*, each of which are of fixed size, often of 512 bytes. When data is read from or written to the disk drive, it is generally done one sector at a time. The cyllinders and sectors are numbered starting from 0. The location of any sector on a disk drive can be designated simply by the number of the containing cyllinder and the number of the sector itself.

Disk drives are often divided into units known as *partitions*, which comprise of contiguous range of cyllinders. They are like water-tight compartments. If data on one partition is corrupt, data on other partitions are not affected. However, if the corrupt partition contains important operating system files, the system itself may be unbootable. A disk drive may contain four ordinary partitions, which are called primary partitions. To overcome the four partition limit, one partition can be designated as an extended partition, which can contain many logical partitions. The logical partitions can then be used like any other partitions.

At any time, one parttion can be designated as the active partition. When the system is booted, the Operating system residing on the active partition is given control. The *master boot record* (MBR), which is used to boot the system, resides on the first cyllinder of the disk drive, beginning in the first sector. The active partition contains additional special information called the *boot record* in its first cylinder. Whenever the system is booted the MBR fetches additional information frm the active partition's boot record.

Each partition has an associated numeric code called the partition type, which is specified when the partition is created. For example the code for Linux *ext2* type partition is 83, and the code for Linux *swap* partition is 82. Generaly, a partition must be *formatted* before it can be used. The process of formatting a partition creates a file system so that data can be stored in it. Swap partitions have no file systems in them, but are there to augment the system RAM. For detailed information on disk drives, file systems and partitions one may refer to the *Linux Partition HOWTO* by Tony Harris and Kristian Koehnntopp (http://www.linuxdoc.org/HOWTO/mini/Partition/index.html).

Partition Requirements

In principle, a Linux system requires only a single partition. Depending on the files and packages that the user wants the system to contain, the partition must be at least 300 MB to 1,200 MB in size. Realistically, the partition should be at least 2,000 MB. The problem remains that the BIOS of many PCs cannot access data which is stored beyond cyllinder 1023 of the disk drive. The recent PCs come with BIOS whichn are free from this problem. But for the older PCs, it becomes important that the Linux boot files and the Linux kernel remain within this limit. To avoid this problem, it is customary to create a special Linux *boot partition*

Continued on Next Page

mounted on /boot that's wholly contained within the first 1024 cylinders of the disk drive. This partition can be relatively small since only about 16 MB are needed. For more information, one may refer to Andries Brouwer's *Large Disk HOWTO* (http://www.linuxdoc.org/HOWTO/Large-Disk-HOWTO.html).

In addition to the main Linux partition and the boot partition, it's customary to create a third partition — the Linux swap partition, which is used as virtual memory. Although Linux can technically operate without a swap partition, it operates much more efficiently with one.

As a rule of thumb, the Linux swap partition should have a size equal to twice the installed system RAM. However, the swap partition should normally be at least 128 MB and should not be larger than 2,000 MB.

Preparing the Disk Drive

A beginner is always adised to backup the important data on the harddisk before reparttioning the drive. One would be safer to use a commercial software utility called PartitionMagic, which can reformat the harddisk on the fly, with little danger of unintentional data loss. Newer Linux distributions like Mandrake and SuSE come bundled with special partitioning utilities that give almost similar functionality. However it is advisable to backup the data unless you are confident that you will not commit any mistakes. For backing up, you can use the utility that come with your existing system, such as the Microsoft Backup or the unix tar command. Other backup utilities like Norton Ghost, PowerQuest Drive Image, or Partition Image for Linux (open source from) are useful alternatives.

Installing Linux on an empty disk drive

The simplest way to deal with the problem of organizing your disk drive for Linux is to start with an empty disk drive. If you're willing to simply delete all of the existing partitions from your PC's disk drive, then your Linux distribution's installation procedure should have no difficulty establishing the proper Linux partitions.

However, by deleting the existing partitions, you lose the data they contain and lose the installed operating system. This is not a good idea. Nevertheless, many people who install Linux on an older, unused PC may be willing to do this.

If you're unwilling to part with your existing data and operating system, you may be able to install a second disk drive and install Linux to it. Installing a new disk drive for running Linux provides plenty of disk space for installing a wide variety of packages and programs.

Most computers have two disk controllers — a primary and secondary controller — and are capable of booting from either of two disk drives associated with the primary disk controller. If your system includes a CD-ROM drive, drive to the primary disk controller. you may need to reconnect it to the secondary disk controller so you can connect the new disk drive to the primary controller. If you're not comfortable working with hardware, most computer stores will install a disk drive for a small fee. Be sure to connect the new disk

Using FIPS

FIPS is a file partitioning utility included by all the major distributions. Many veteran Linux users originally prepared their disk with this utility.

FIPS lets you split a single partition into two partitions, one of which is created from free space at the end of the original partition, which shrinks in the process. For FIPS to be useful, the original partition must contain free space equal to the size of the desired Linux partition, generally 300 MB to 2,000 MB.

However, FIPS has some limitations that can hamper its use by many contemporary, would-be Linux users:

- FIPS has a text-based interface, which is unfamiliar to many contemporary Windows users.
- FIPS won't work with the BIOS of every PC; laptops are particularly likely to present incompatibilities.
- FIPS requires that the original partition be configured with 512-byte sectors.
- FIPS doesn't support NTFS partitions, which are often used by Windows NT/2000.

Continued on Page 8

- FIPS doesn't support Linux EXT2 partitions.
- FIPS requires the drive to have a free primary partition.

Due to the above inadequacies, FIPS may not be worth recommendation for a new Linux user.

Other Tools

PowerQuest's Partition Magic is easily the easiest and the best solution for parttioning an existing harddisk. However, it is a commercial software and comes for about $70, which many may not find worth investing.

PartitionMagic can create, resize, split, move, and merge partitions. It has an easy-to-use graphical user interface that lets you drag and drop partitions. It runs under Windows or from a boot floppy you create when you install it. It makes it easy to resize a Windows partition to obtain free disk space and move the resulting partition to create a place for Linux boot, main, and swap partitions.

The Red Hat Linux distribution includes *Disk Druid*, which enables you to create and delete partitions; however, it does not let you resize or move them. Similarly, Mandrake Linux includes *Disk Drake*, which enables you to create, delete, and resize partitions; however, it does not allow users to move them.

GNU Parted is an open source program that enables you to create, delete, resize, and move partitions. Parted has a text-based user interface and can be run from a boot floppy. For more information, see http://www.gnu.org/ software/parted.

PartitionStar is a commercial program that enables you to create, delete, resize, and copy partitions on your hard drive. The program runs under Windows or DOS. It has a graphical user interface and costs only $10.

Ranish Partition Manager is an open source program that enables you to create, delete, and resize partitions. It has an associated Advanced Boot Manager, which is compatible with Windows 9x/NT/2000 and Linux. For more information, see http://www.users.intercom.com/ ~ranish/part.

Partitioning can be painful and frustrating experience unless you have a fress harddisk or are prepared to lose all data in the old harddisk. However, my experience is that the recent distributions of Mandrake and SuSe are able to address to a large extent. Hence, if you are a newbie and want to install Linux into the existing system which has Windows already installed, get Parttion Magic or distribution from SuSe or Mandrake. If you are brave, however, and are prepared to experiment, go ahead and enjoy the thrill.

News Letter : GNU/LINUXIndia

Formerly LinuxInIndia * Compiled by: Frederick Noronha * Jan 10,2003

Although we pride ourselves on being a software superpowr hardly any of the products we use are made in India. — G. Nagarjuna of TIFR, member of the Free Software Foundation, quoted in a recent news report in the Times of India. See: http://timesofindia.indiatimes.com/cms.dll/html uncomparticleshow?artid=33405578&sType=1

NUMBER 300,000 FROM CHENNAI: The Linux Counter (counter.li.org) is where users of the GNU/Linux operating system can voluntarily register themselves as such. Recently, Harald Alvestrand of Norway, the founder of the Linux Counter, announced: "Account number 300.000 got handed out today - to a Linux user in Tamil Nadu, India." Let look forward to many other GNU/Linux enthusiasts signing up there and proudly identifying themselves as users of Free Software.

PROJECT RESOURCE CENTRE GETS A FILLIP: Thanks to the many students and mentors (over 100) that are now part of this list, the Project Resource Centre has been seeing some interesting discussions. It is a place where students wanting to work on GNU/Linux projects can get ideas and guidance from volunteer-mentors. If you fall in either category (student or possible mentor) please do sign up at http://mail.sarai.net/mailman/listinfo/prc

THE COMPASS TO THE EAST: ILUG-Calcutta is participating in COMPASS 2003 (24-27 Jan 2003) — the biggest annual IT event of the Eastern India. "We are having 18sqm of space and are planning a big show," say localvolunteers. P K Sharma <pksharma@cal.vsnl.net.in> recently gave an idea of plans for participation. To subscribe to this LUG's mailing list send mail to majordomo@ilug-cal.org with the body "subscribe ilug-cal" and an empty subject line. FAQ for the LUG: http://www.ilug-cal.org/node.php?id=3 They seem to be heading for it rather seriously. There are plans for demo's, installations, showcasing various distros, and focussing on GNU/Linux in school / at home / in the corporate world.

If all goes as per plan, there will also be emphasis on the work done in GNU/Linux localization (BanglaLinux), how Free Software can be an enabler and force multiplier etc.This is the first release of Bspeller that makes any sense as it actually works as a Bengali spell checker! More information, instructions, and screenshot can be found at: http://www.bengalinux.org/projects/dictionary/bspeller.php Bspeller-0.3 is now available for download from:http://sourceforge.net/project/showfiles.php?group_id=43331

in e-governance, development possibilities (languages, tools, IDEs etc) , scientific apps (Octave, Blender, etc), high-end computing like clustering and FT, and 'cool stuff' that includes video editing, dual heading, virtual machines, emulators and media streaming (MP3s and video). More details from Indranil Das Gupta <indradg@cal.vsnl.net.in> or Sayamindu Dasgupta <unmadindu@Softhome.net>

WATER... AND GNU/LINUX: Dr Vikram Vyas, who has written an interesting software to help villagers calculate availability of water in their region, is eager to port it to GNU/Linux. If you would be interested in the same, kindly get in touch with him at Vikram Vyas visquare@satyam.net.in

GNU/LINUX IN WEST ASIA: Quite a few GNU/Linux mailing lists are active in the Gulf area. Some see the active involvement of Indian expat communities. One list is Linux middleeast @ yahoogroups.com This group is sponsored by GoldenSun Internet Consulting & Research, Phone 971-4-2728310 /Fax:971-4-2728320 http://www.uaelug.org Its moderator is GSC Prabhakar James, and the LUG was founded in 1999.

DEMO@SCHOOLS IN CHENNAI: bharathi@lantana.TeNeT.res.in informs that work on the GNU/Linux-in-schools front is also being undertaken by Demo@Schools volunteer Suraj Kumar. Contact him at:suraj@symonds.net

THEOPENCD LAUNCHES FIRST EDITION: Something from outside South Asia, but ofpotential interest to many of us. This is a collection of high-quality Open Source Software that runs in Windows. A good bridge for reluctant users of proprietorial software who would like to try out the power of Free/Libre and Open Source Software (FLOSS). Says Henrik Nilsen Omma, one of the project leaders: "Our aim is to create a simple to use CD distribution of Open Source software for Windows, and in that way spread the OSS message.... The disc allows new users can try out Open Source software (OSS) in the comfort of their own, familiar operating system, rather than having to take the drastic step of reformatting their hard drive to install Linux or BSD. The collection, which includes OpenOffice.org, AbiWord and Beonex is primarily intended for non-technical computer users. However, we expect that the disc will appeal first to experienced OSS users, who will hopefully find it a useful vehicle by which to introduce OSS to their less computer-savvy friends."

Continued on Page 12, Col 3

Emerging Trends in Parallel Computing: The High Performance Clusters

by Pradosh K Roy, Past President, CSI
roypkin@yahoo.com

High Performance Computing is witnessing a transitional phase , when more pragmatic , cost effective solutions viz. Cluster Computing and Grid Computing Technologies are competing with traditional supercomputers in achieving trans-Teraflops (even Petaflops) performance[1]. The technologies are already being used in solving some of the typical grand challenge problems related to controlled nuclear fusion ,medical science and molecular biology including genetic engineering , space science and cosmology , meteorology, petroleum exploration and production optimization , machine intelligence and robotics , financial modeling etc. and some strategic problems that await solution may only be solved through our ability to harness the computing capabilities of these emerging technologies.

The Cluster Computing Technology is the result of an innovative synergy of some known ideas from the parallel computing community and some new low-cost technologies from the digital electronics industry. *The legacy concepts are the physical clustering of general purpose hardware resources and the abstract message passing model of distributed computing*. The low cost capability is derived from the mass-market commodity-off-the-shelf [COTS] processors and the networking technology. Together, these basic capabilities and the founding principles [1] have heralded the new domain of *High Performance Cluster Computing* [HPCC].

The Berkley Network of Workstations Project[NOW],the High Performance Virtual Machine project [HPVM] at the University of Illinois , the Beowulf Project at the Goddard Space Flight Centre , NASA and the Solaris-MC project at Sun Labs, Sun Microsystems, Palo Alto are representative cluster systems, with the common goal to provide supercomputing resource from COTS components [2]. However , none of the projects were as successful as the Beowulf Project , which truly represents a COTS supercomputer.

The terms Beowulf and Beowulf clustering describe a technique of connecting commodity computers together using Linux OS to achieve High Performance Computing.

The Beowulf Cluster had its origin in the seminal work by Donald Baker and Thomas Sterling at the Goddard Space Flight Centre, NASA in the year 1994, when a 16 node Linux Cluster (*Wiglaf*) was configured and each node supported 100 MHz Intel DX4 processors , 16MB DRAM, 1GB drive, SiS 82471 Chipsets and a pair of 10Mbps Ethernet Cards. The project spread to other NASA sites, other R&D laboratories and to universities around the world like a *wild fire*. The *Loki Cluster* at Los Alamos National Laboratory that won the 1998 Gordon Bell price/ performance Prize is another example of a successful Beowulf cluster. *The Loki* consisted of 16 nodes of 200 MHz Intel Pentium Pro CPUs, 128MB RAMs,3.2GB IDE Disks networked together with 2 Fast Ethernet switches running under standard Linux software tools , the GNU programming tools and its sustained peak performance was 1.2 Gigaflops.

One of the latest examples of such a cluster,applied successfully to Multivariate Clustering of Ecological Parameters is the '*Stone Souper*' at Oak Ridge National Laboratory[3]. Today there are tens of thousands of Beowulf clusters installed in government , educational and commercial facilities e.g. NASA Jet Propulsion Laboratory[*The Naegling*],Los Alamos National Laboratory [*The Hive*] etc.[4].

The Beowulf strategy has now found its implementation outside research facilities. IBM and the University of New Mexico designed a Server with 512 Pentium III 733 MHz processors transferring data with 64 bit Myrinet which resulted in 3.75 Gigaflops performance. Companies such as Scyld [5] and Paralogic [6] operate by providing customized clusters.

The Beowulf strategy has its immediate impact in enabling high end computing to a broader range of problems. The other notable advantages , apart from cost effectiveness are low vulnerability to vendor specific decisions, rapid response technology tracking and non-proprietary software environment. An important factor that has made the usage of clusters a practical proposition is the standardization of the tools and utilities used by parallel applications e.g. message passing library , data parallel language HPF [2] as well as the stability of the Linux kernel and the availability of standard distributions under GPL. The support for Linux by commercial hardware and software vendors is continuously improving , so it can no longer be ignored as a relevant computing platform.

As a consequence , it is possible to develop ,test and debug applications on clusters, which may finally be ported to dedicated parallel platforms with little modifications. This has the potential of bringing High Performance Computing to the undergraduate classrooms with far reaching consequences. The paper is intended to provide an introduction to the emerging cluster computing technology , its hardware and software components, programming environments and the performance analysis, specifically addressed to the Beowulf clusters. The review is supplemented by quantitative evidence of the effectiveness and power of the cluster approach, wherever feasible. For an authoritative review on cluster computing , the readers are referred either to the Cluster Computing White Paper [1] or to the HPCC volumes[14].Readers willing to explore the field of parallel and distributed computing, may refer to a standard textbook [e.g.15].

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2. The Hardware Components

The hardware components of a cluster are Cluster Nodes and the Network Hardware . The cluster node integrate subsystems viz. the processor , memory , secondary storage and the external interfaces in a single unit. Both 32 Bit/64 Bit processors with popular architectures including Intel Pentium family , Intel IA 64 , Compaq Alpha 21264/21364, AMD K7 Atlhon , Super Sparc III have been tested as Cluster Nodes . Availability of clock rates in excess of 1GHz along with peak performance greater than 1 Gflops , is an important factor which has contributed to the commercial acceptance of the technology.

It has to be remembered here that the cluster concept is distinguished from LAN , as it incorporates cycle harvesting and share intercommunication network with external systems and services. With the emergence of Fast Ethernet exhibiting 100Mbps bandwidth and the availability of moderate cost switches, clusters were found to be useful to an increasing range of applications for which latency tolerant algorithms have now been developed. Also , quite recently , need for the development of networks optimized for the cluster technology was recognized , as a result we have *Myrinet* with its custom network control processor with a peak bandwidth in excess of 1Gbps at latencies on the order of 20 msec . Its costs are comparable to that of Gigabit Ethernet. Also we have zero copy protocols like Virtual Interface Architecture [VIA] family which supports heterogeneous hardware yielding dramatic reduction in latency. Finally *Infiniband , which* promises to reduce the latency approaching 1msec while delivering the peak bandwidth on the order of 10 Gbps is emerging as the industrial standard for cluster computing [1].

For an entry level Beowulf cluster one can experiment with an N port Ethernet Hub or an inexpensive switch , depending on the required system throughput . The Caltech tutorial [7] is a useful guide for enthusiasts and experts alike.

It is quite obvious that with the advances in digital electronics, neither the node nor the network infrastructure is the *operational bottleneck* limiting the applicability of clusters.

3. The Software Components

The software components that comprise the environment of a cluster consist of Programming Tools and Resource Management System Software. Programming Tools provide languages, libraries and performance debuggers where as Resource Management Software relate to installation , administration , scheduling and allocation of both hardware and software components as applied to user workload [1].

Manageability of a system can be the single most important factor in its practical usability. System availability and stability are the two most important factors [8].

Though Unix and its variants e.g. Sun Solaris , IBM AIX , are popularly used on RISC workstations and proprietary clusters , Linux has emerged as the most favored OS for PC clusters , for historic as well as for pragmatic reasons. That is because it provides features typically found in Unix such as preemtive multitasking , demand paged virtual memory , multiuser and multiprocessor support. Most applications written for Unix will require little more than recompilation under Linux environment . In addition , it is flexible and a large amount of application/ system software are available freely , including GNU software and Xfree86 , the public domain X-server.

Thus Linux offers the power and flexibility of Unix , it is readily available ,it is easy to fix bugs and improve system performance[2]. The open source consortium solution OSCAR [9] provides an auto install cluster-on–a-CD that contains the complete cluster computing environment including installation and configuration. Similarly Linux Utility for Cluster Install LUI is an open source tool developed by IBM to perform a replicated network install across cluster nodes. Open source tools for system monitoring and remote control are also available for Linux platform[8].

Turning our attention to Application Development Environments we find that while multiple models have been pursued for parallel programming , one paradigm has emerged as the *de facto* standard . This *communicating sequential process model* or the *message passing model* has evolved through many different implementations resulting in the MPI standard. MPI is an augmenting library that allows users of C , C++, F77 and F90 to access libraries for passing messages between concurrent processes on interconnected processor nodes and is available freely from Argonne National Laboratory [10]. MPI is now found on virtually every vendor multiprocessor SMPs, DSMs and Clusters. While MPI dominate the parallel programming on clusters , other models and strategies are also being pursued. Data parallel programming has been supported through HPF.

While standards have been accepted for programming commodity clusters , such can not be said for environments and tools required to manage resources[1]. Installation and Configuration , Scheduling and Allocation , System Administration , Monitoring and Diagnosis , Distributed Secondary Storage and Availability are the specific areas where current research is being carried out.

4. Performance Analysis & Benchmarking of Clusters.

In a scenario , when performance of an individual CISC processor generally used in commodity clusters rivals that of a RISC node in high-end supercomputer , it is quite natural to make a comparative estimate on the performance of such clustered systems. According to a recent analysis , MPI based MIMD Lattice Computation executes at [11] : 4.1 Gflop/s on 128 Intel 300 Mhz Pentium II ,8.8 Gflop/s on 128 Intel 550 MHz Pentium III , 9.6 Gflop/s on 128 node RISC R10000 , 250MHz , SGI Origin 2000 .Thus a 128

Continued on Page 12

node 550 MHz Pentium III cluster performs at 91.66% efficiency compared to a 128 node 250 MHz R10000 SGI Origin 2000 DSM System for this specific application.

However, performance analysis and benchmarking of the clusters , remains an issue which has to be addressed carefully, because of the hardware /software alternatives/paradigms available for designing such systems. In the author's opinion the analysis should be done in stages where the processor , network technology , resource management software and finally the performance of the system for a specified application should be carried out.

In this context ,it is mentioned that NPB2.3 has emerged as the standard for analyzing the floating point operations of the supercomputers and hence the cluster systems too . NPB2.3 are holistic benchmarks , designed to measure the overall performance of a complex system of which MPI is one part [12].

The performance analysis becomes far more difficult for problems related to High Energy Physics, Multimedia, Petroleum Exploration (particularly geophysical inverse problems which are inherently NP-Hard Optimization problems) & Production Optimization etc. because these applications are rather I/O bound. Thus the performance can not be scaled by simply increasing the number of CPUs [13] , but it is often necessary to take into account the bandwidth of the I/O subsystem too.

5.Conclusion

In conclusion we can say that emerging hardware technologies with maturing software resources mean that cluster based systems are rapidly closing the performance gap with dedicated parallel computing platforms and are *'likely to dominate high performance computing in near future[1]'.*

Selected References.

1.*Sterling,Thomas, 2000, An Introduction to PC Cluster for High Performance Computing in Cluster Computing White Paper ,Mark Baker(Ed),Final Release, http://www.csm.port.ac.uk/*

2.*Buyya,R.,et al,1999,Cluster Computing at a Glance, in Buyya,R.(Ed),High Performance Cluster Computing, Vol. 1,Prentice Hall PTR , New Jersey p.3-45.*

3.*HargroveW.H.,Hoffman,F.M.,Sterling,T., The Do It Yourself Supercomputer, Scientific American,August,2001*

4. *The official web site of Beowulf , http://www.beowulf.org*

5.*The Scyld Computing Corporation , http://www.scyld.com*

6.*The Paralogic Ltd., http://www.plogic.com*

7.*The Caltech Tutorial, http://www.carc.caltech.edu/beowulf/tutorial/*

8.*Skjellum,Anthony,et al, 2000,System Administration, in Cluster Computing White Paper ,Mark Baker(Ed),Final Release,.*

9.*The Open Source Cluster Application Resources, OSCAR,*http://www.epm.ornl.gov/osca, *http://www.OpenClusterGroup.org*

10.*The Message Passing Interface ,* http://www-unix.mcs.anl.gov/mpi/.

11.*Bader,David,2000, Applications , in Cluster Computing White Paper ,Mark Baker(Ed),Final Release,. http://www.csm.port.ac.uk/*

12.*NPB2.3 suite ,* http://www.nas.nasa.gov, *also NASA Technical Report RNR-94-007,March 1994 and NASA Technical Report NAS-96-010,August,1996*

13.*Schikuta,Erich,2000, Parallel I/O , in Baker ,M.(Ed),Cluster Computing White Paper.*

14..*Buyya,Rajkumar(Ed),1999,High Performance Cluster Computing, Vol. 1,Architecture and Systems , 881 p ,Vol. 2 Programming and Applications ,700 p ,Prentice Hall PTR , New Jersey.*

15.*Rajaraman,V.,Siva Rama Murthy, C., 2001,Parallel Computers, Architecture & Programming ,Prentice Hall of India Pvt. Ltd., New Delhi 376 pp.*

- Courtesy : CSI

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News Letter : GNU/ LINUXIndia

They invite all FLOSS enthusiasts to download the ISO, burn CDs and distribute them widely to friends, local schools, universities, and companies. http://www.theopencd.org/ See http://linuxpr.com/releases/5379.html More details from Henrik Nilsen Omma henrik@theopencd.org

SIRTAJ SINGH KANG... IN THE SYDNEY MORNING HERALD :

Australia-based Indian-origin KDE developer Sirtaj Singh Kang is profiled in a prominent newspaper. Taj is one of the two nominated as official KDE spokespeople in Australia.Quote: "When I was around 14, my dad bought us a 286-based computer. It was quite expensive. We weren't poor by any standards but this stuff was still a luxury. Still, for me to get all the tools a kid needed to learn programming cost as much again, even just to get started. Given that software is infinitely reproducible practically for free, there is really no excuse for this especially now that hardware has become so cheap. Give interested people access to software, allow them to improve and redistribute it - that's the way for computing to really make a difference." http://smh.com.au/articles/2002/11/01/1036027033828.html

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WANTED:

Volunteers to support and help the growth of smaller GLUGs and LUGs across India. If you are willing to encourage a Little League LUG to grow and become active, please contact Sukrit D <sd_root@yahoo.com> of Pondicherry who formulated the Little League idea. ILUG-Bhubaneswar was recently discussing what could be done to boost their activities.

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Continued .. Next Page

GNOWLEDGE.ORG:

Dr G Nagarjuna, an eminently optimistic and always-upbeat educationist from Mumbai<nagarjun@hbcse.tifr.res.in> recently announced that he completed setting up a Sourceforge sitefor the Project Resource Centre (a centre for mentors to guide students in Free Software work) and other projects. Says he: "I haven't tested it completely, but it seems to be working satisfactorily. I request the various groups to begin using this facility." Needed: volunteers to maintain the site.http://gnowledge.org Also see http://mail.sarai.net/mailman/listinfo/prc

MAXIMUS2 INITIATIVE:

Maximus2, a wholly owned subsidiary of a British company, is to give away what it terms its powerful office productivity suite — GroupX2 — free of cost. "Every organization with 10 to 500 employees needs this application," it says. "With GroupX2 your company will become more organized, productive and highly efficient. The GroupX2 application is normally priced at $1000 is free (of cost) for the first 2003 companies that register," says the firm. Register at www.maximus2.com This application consists of full working software enabled for 20 users. GroupX2 will "take the pain out" of managing tasks, people, messages, calendars, meetings, contacts and much more. Please note, this is not 'Free Software' but a limited offer of a free-of-cost version for early subscribers. http://www.maximus2.com

BSPELLER, ON THE BENGALI LANGUAGE FRONT:

Thanks to Sayamindu Dasgupta <unmadindu@Softhome.net> for forwarding a post from Taneem Ahmed <taneem@eyetap.org> on the Bengali computing front. What is Bspeller: A light weight text editor with a Bengali spell checker. This program is part of the Bengali dictionary project. Bspeller can also print Bengali text files using OpenType fonts, a feature currently not available in most of the text editors, eg.gedit, kedit, etc.This is the first release of Bspeller that makes any sense as it actually works as a Bengali spell checker! More information, instructions, and screenshot can be found at: http://www.bengalinux.org/projects/dictionary/bspeller.php Bspeller-0.3 is now available for download from:http://sourceforge.net/project/showfiles.php?group_id=43331

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SARAI.NET OFFERS SUPPORT FOR FREE SOFTWARE :

The Delhi-based non-profit has taken another step to support Free Software. Meyarivan mary@sarai.net recently announced the independent fellowships under its FLOSS Initiative. Those selected include projects for: Linux based CNC Controller Sagar Behere [behere at sancharnet.in] and Sandeep Bhambra. The project aims to develop a GNU/Linux based CNC controller using off the shelf hardware. The mechanical design of the CNC machine has been completed and they have developed an add-on ISA expansion card that can control stepper motors simultaneously.Management and Information System - Tapan Parikh/Ekgaon [tap2k at yahoo.org] This project aims to implement a complete, modular Management and Information System (MIS) for village-based savings and lending groups, otherwise known as Self-Help Groups (SHGs).

This MIS would allow central tracking of the internal accounts, financial position, loan repayment performance and related account information for a community of SHGs, federated under a common administrative and financial body, referred to as a SHG Federation, or a Community-Based Financial Institution (CBFI). Library Management Software - Sharmad Naik [sharmad at goatelecom.com] This project will implement a complete library management system. A working version of the software has already been released and future updates will provide complete functionality required for a library.KreSIT (Kanwal Rekhi School of Information Technology), IIT Bombay [http:// www.it.iitb.ac.in/] There are about 19 groups working under the guidance of Dr.Pathak and Ms. C.Vijayalakshmi at KreSIT, IIT Bombay on opensource software.

They have already developed software for distance education and are currently developing various applications in office automation, voip and localization.Sunil Abraham [sunil at mahiti.org] Will test and benchmark free software to ensure that it can be used for mission critical applications. Will conduct research on different types of user communities, usability studies for various interfaces and devices and technology cost calculator for village information kiosks and work on open source storage formats and algorithms for bioinformatics.

INDLINUX DISTRO... AN IDEA WITH LOCAL LANG SUPPORT:

Details of one distro planned, with local language support, are at http:// www.indlinux.org/distro Also see the Indian Linux Project www.indlinux.org and the Indic-Computing Project indic-computing.sf.net

LANGUAGE-RELATED SOLUTIONS:

Says Guntupalli Karunakar <karunakar@freedomink.org> : IIIT Hyd has a good track record on free software, they have released lot of language related stuff under GPL (language dictionaries, machine translation tools etc). See http://www.iiit.net/ ltrc/Dictionaries/Dict_Frame.html and http:/ /www.iiit.net/ltrc/downloads.html

SITE FOR EXCHANGING SOFTWARE:

A youngman from Goa - Ajay - <incubuz@softhome.net> tells of a small site he has built for "exchanging software". Says he: "It is very basic and I plan to build upon it gradually." Check http:// sofall.vze.com

GLUE, AN INNOVATIVE SOLUTION FOR SCHOOLS FROM DELHI:

Feedback from BijonShaha <bbshaha@yahoo.com> about the GLUE, an interesting concept from Ajith <ajith@nsc.ernet.in>: The cd uses the concept of preinstalled and prconfigured LTSP server which has been tar archived on a cd. Installation is basically extracting this tar ball into the new partition in the new ,system, which is very fast. At the first boot it depends on Kudzu for quick detection of hardware in the new machine where it usually has to unconfigure the mismatching hw and configure with the new hardware, and you are ready to use the server!

BHUBANESWAR LUG NEEDS SUPPORT:

This is about a (GNU)Linux Users' Group that needs support.

The Bhubaneswar LUG mailing list was setup sometime in 2000. But there has been only a very posts to this lists. You can join the list by sendign a message to ILUG-BBSR <ilug-bbsr-subscribe@yahoogroups.com> ... This info was posted via LIG, the Linux India General list. See https://lists.sourceforge.net/lists/ listinfo/linux-india-help

BOUQUETS&BRICKBATS

From: Nikhil Shanker nikhil@ilug-hyd.org.in
Subject: Re: NEWSLETTER: GNU/ LinuxIndia Dec 27, 2002

I share the same opinions as Arun Sharma on LIG. The logo reduces "Linux" to a single column. GNU/Linux is acceptable since it caters to some individuals' sentiments, but this looks like an overkill. I think RMS must be show the logo with "LINUX" replaced with "HURD" with the same one column layout. I bet, he'd be satisfied with... e88~-\ 888b |888 | 888 888 888 | 88888b 888 / d888 |Y88b |888 | 888 888 888 | 888 88 e88~\888 I 8888__ |Y88b |888 | 88888888 888 | 888ee88 d888 888 N 8888 || Y88b|888 | 88888888 888 | 88888b 8888 888 D Y888 || Y88b|Y88 | 888 888 Y88 | 888 88b Y888 888 I "88__/ | Y888 "8__/ 888 888 "8__/ 888 88b "88_/888 A b a h

> **SPEECH SYNTHESIS:** Rohit Kumar of the Speech Processing Lab, LTRC at IIIT Hyderabad points to a speech synthesis demo at http://196.12.44.11/~speech/ index.htm Says he: "I look forward to your responses both about the speech quality and the ease of use and understandability of the web interface. PS: For all [GNU/]/

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Linux enthusiasts the speech synthesizer is currently built on Red Hat Linux 7.2 and we have tested it with RHL 8.0."This is insane too. You're quoting a post here, and you GNU-hijack it within the quotes.

This very prominent and noticable GNU-hijacking makes the newsletter more unreadable. Although the content is commendable, the we-will-serve-you-oh-RMS-my-l0rd attitude hides the real juice. Maybe even this comment will only be listed in the "Comments" section of the next version of the newsletter just like Arun's was. But I've been looking at this newletter everytime and seeing more GNU than actual information is really disheartening. The best part is it gets posted to LI and LUGs. Please note that these its not GLI and GLUGs. I imply no disrespect to the poster. Its just an opinion. – Nikhil (nikhil.shankar at acm.org)

YOUR INPUTS and criticism to this newsletter are welcome. Contact us at fred at bytesforall dot org —COPYLEFT 2002, GPL. May be freely circulated provided entire text is retained. FN Frederick Noronha * Freelance Journalist * Goa * India 832.2409490/2409783 BYTESFORALL www.bytesforall.org * GNU-LINUX http://linuxinindia.pitas.com fred at bytesforall dot org * Mobile 9822 122436 (Goa) * Saligao Goa India Writing with a difference ... on what makes *the* difference

Readings on Open Source and related ideas

Compiled by John Naughton

Glyn Moody: Rebel Code: *352 pages new edition (31 January, 2002) Penguin Books; ISBN: 0140298045*: An excellent, readable book which puts Linux into an historical and social context. Based largely on interviews with the main players and precise historical data (Linux kernel releases are dated to the second) it traces Free Software from its early eighties origin with Richard Stallman's founding of the Gnu Project and takes it as far as the end of 2000 with Gnu/Linux becoming a worldwide phenomenon running handheld PDAs, PCs and Macs, IBM mainframes and powering the world's biggest supercomputers.

Glyn Moody charts every milestone in the development of the Linux kernel from Linus Torvalds' first installation of Minix. Equally importantly, he follows the progress of major Free Software projects—essential to the success of Gnu/Linux—from Emacs and GCC to Sendmail and XFree86 finishing with KDE and Gnome.

Just For Fun: The Story of an Accidental Revolutionary: *Linus Torvalds, David Diamond, 288 pages (15 May, 2001) Texere Publishing; ISBN: 1587990806*: A personalised pop-bio of Linus Torvalds.Interesting insights into his personality, but less informative about Open Source. Given the key role he plays in the Linux world (analogous to that played by Tim Berners-Lee in the WWW), however, the personality is relevant.

Free as in Freedom: *Richard Stallman's Crusade for Free Software, by SamWilliams, O'Reilly, March 2002, ISBN: 0-596-00287-4*: Interweaves biographical snapshots of GNU project founder Richard Stallman with the political, social and economic history of the free software movement. It examines Stallman's unique personality and how that personality has been at turns a driving force and a drawback in terms of the movement's overall success. In keeping with the spirit of the subject, the book is also available free on the Net under an Open Content licence.

The Hacker Ethic: *Pekka Himanen, Linus Torvalds, Manuel Castells, 238 pages new edition (1 November, 2001), Vintage; ISBN: 0099426927:* Despite the title The Hacker Ethic is a philosophical essay contrasting the Western capitalist world view with those of hackers. In this context, hackers are those passionate about any subject, not just computers. The book starts with an essay by Linus Torvalds and finishes with a thoughtful 75-page essay by Manual Cassels called "Informationalism and the Network Society". At its heart though, is the paradoxs ummed up on page 60, "Present capitalism is based on the exploitation of scientific communism". This simply means companies make money based on information provided by scientists for free. This results in an ethical quandary.

Companies eagerly seize information freely provided by hackers yet withhold information discovered by themselves. An indefensible position. Himamen claims hackers work because what they're doing interests them and disseminating what they learn brings the respect of their peers while others work for money and enjoy the envy of their peers. His arguments are well illustrated with ideas from Plato, through medieval village life, protestantism, academia, the industrial revolution and more. He concludes the information revolution makes work central to our lives, soaking up the time and energy necessary for play, for the pursuit of personal passions.

Open Sources: Voices from the Open Source Revolution: *Edited by Chris DiBona, Sam Ockman & Mark Stone, 1st Edition January 1999, ISBN 1-56592-582-3, 280 pages, $24.95* The most useful single source book on the movement at present. In it, leaders of the movement come together in print to discuss the new vision of the software industry they have created, through essays that explain how the movement works, why it succeeds, and where it is going. A powerful vision from the movement's spiritual leaders, the book reveals the mysteries of how open development builds better software and how businesses can leverage freely available software for a competitive business advantage. In keeping with the spirit of the subject, all the essays in it are available free (and are freely redistributable) on the Web.

The Cathedral & the Bazaar: *by Eric S. Raymond, 256 pages Rev. Ed (21 February, 2001), O'Reilly UK; ISBN: 0596001088:* A collection of key essays by the man who has become the most prominent evangelist for the Open Source movement. Raymond originally came to prominence as the author of The Hacker's Dictionary . The book title is taken from Raymond's pioneering essay (first published

on the Net) in which he asked how a complex, powerful and robust operating system like Linux could have emerged from the collective efforts of hackers operating without any central guiding authority. A second essay,

"Homesteading the Noosphere", follows up on this theme by conducting a sort of introspective anthropological analysis of the hacker subculture. Although most of what's in the book is also available on the Net, it's useful to have it in print form sometimes.

Code and Other Laws of Cyberspace:

Lawrence Lessig, (June 2000) Basic Books; ISBN: 0465039138 This book is essentially a scholarly working-out of a simple idea — Mitch Kapor's observation that "Architecture is Politics". Lessig, a leading US constitutional lawyer, argues that the freedoms and restrictions enabled and imposed by any space are a product of its physical make-up (what he calls its 'architecture').

So it is with the Internet. But with the Net — unlike the real world — the architecture is not immutable. Quite the reverse — it's entirely comprised of computer code and is thus infinitely malleable. The architecture of the Net can therefore be changed — and if it is then its freedoms and constraints will change. Lessig shows that there are powerful forces at work which seek to change the architecture of the Internet.

A difficult, challenging, sombre book which has transformed the way we think about the Net.Mike Godwin has written a terrifically critical and informative review.

The Future of Ideas:

The Fate of the Commons in a Connected World by Lawrence Lessig, 320 pages (October 2001), Random House Trade; ISBN: 0375505784; One of the great books of our time — in the same league as Popper's The Open Society and its Enemies. Lessig's theme is that the open architecture of the Internet was one of the most liberating inventions in history, and that a powerful coalition of commercial forces is now moving swiftly to close it off and bring the network under the control of established power structures. The consequences will be Orwelliandegrees of surveillance, and a choking off of the inventive explosion enabled by the early Internet. This is a lucid, scholarly and at times terrifying work which some commentators are already comparing to Rachel Carson's Silent Spring — the book which awakened public concern about the environment and spawned the modern environmental movement. Whether Lessig touches as many hearts and minds as Carson did remains to be seen.Steven Johnson has written a very informative review of this book.

Shamans, Software, and Spleens

:by James Boyle,288 pages, new edition, Harvard University Press; ISBN: 0674805232 : An extraordinary book examining the problems posed by the information society. Discussing topics ranging from blackmail and insider trading to artificial intelligence (with stopovers in microeconomics, intellectual property, and cultural studies along the way), James Boyle has produced a kind of social theory of the information age. It aims both to formulate a critical social theory of the information society and to galvanize opposition to pending proposals which would expand intellectual-property protection in the US and internationally.

Copyrights and Copywrongs:

The Rise of Intellectual Property and How It Threatens Creativity by Siva Vaidhyanathan, 288 pages, 2001, New York University Press; ISBN: 0814788068: The author tracks the history of American copyright law through the 20th century, from Mark Twain's exhortations for "thick" copyright protection, to recent lawsuits regarding sampling in rap music and the "digital moment", exemplified by the rise of Napster and MP3 technology.

Digital Copyright :

*Protecting Intellectual Property on the Internet by Jessica Litman*right law, covering its history and its interaction with the new technologies of the Internet.,

225 pages, (November 2000) Prometheus Books; ISBN: 1573928895 : A clear and concise introduction to United States copy

LINUX links

Linux Documentation Sources The Linux Information Sheet

http://www.tldp.org/HOWTO/INFO-SHEET.html

The Linux FAQ: http://www.tldp.org/FAQ/Linux-FAQ/index.html

The Linux Meta-FAQ: http://www.linuxdoc.org/HOWTO/METAFAQ.html

Linux Documentation Project (LDP): http://www.tldp.org/

Linux HOWTO Index: http://www.tldp.org/HOWTO/HOWTO-INDEX/index.html

Linux Online!'s FAQ List: http:/www.linux.org/docs/faq.html

The TUCOWS Linux HOWTO Page http://linux.tucows.com

Linux Firewall & Security Site http://www.linux-firewall-tools.com/linux/

Linux Mailing Lists Archive http://www.tux.org/hypermail/

Linux Man Pages Archive: ftp://ftp.win.tue.nl/pub/linux-local/manpages/

Linux Man Pages via the Web http://www.sonic.net/cgi-bin/man

Linux Documentation at MetaLab http://www.ibiblio.org/pub/Linux/welcome.html

Linux 2.x Documentation at LinuxHQ http://www.kernelnotes.org/info-index.html

http://www.redhat.com/support/docs/faqs/rhl_general_faq/FAQ.html

Linux Knowledge Bases

RedHat's Knowledge Base: http://www.redhat.com/knowledgebase/index.html
LinuxCare:http://www.linuxcare.com/

Important Linux Documents Installation and Getting Started Guide

Installation and Getting Started Guide: http://www.linuxdoc.org/LDP/gs/gs.html

System Administrators Guide: http://www.tldp.org/LDP/sag/index.html

Network Administrators Guide (2nd Ed.): http://www.oreilly.com/catalog/linag2 book/index.html

Network Administrators Guide (1st Ed.): http://www.tldp.org/LDP/nag/nag.html

Linux devfs (Device FileSystem)FAQ: http://www.atnf.csiro.au/~rgooch/linux/docs/devfs.html

Debian Policy Manual:http://www.debian.org/doc/debian-policy/

PPP HOWTO:http://www.tldp.org HOWTO/PPP-HOWTO/index.html

Adhcpd Tutorial: http:www.troubleshooters.com/linux/dhcp.htm

LILO Documentation: http:judi.greens.org/c/h/get/lilodocs.html

Plug-and-Play:HOWTO:http://www.tldp.org/HOWTO/Plug-and-Play-HOWTO.html

Networking

HOWTO:http:www.thelinuxreview.comhowto networking/

Firewall HOWTO:http://www.tldp.org/HOWTO/Firewall-HOWTO.html

Netfilter/iptables Documentation & HOWTOs:http://www.netfilter.org/documentation/index.html

Netfilter/iptables Documentation & HOWTOs:http://www.netfilter.org/documentation/index.html
IPchains HOWTO:http://www.tldp.org/HOWTO/IPCHAINS-HOWTO.html

IP Masquerading HOWTO:http://www.tldp.org/HOWTO/IP-Masquerade-HOWTO/

Linux 2.4 Advanced Routing HOWTO:http://lartc.org/howto/

Filesystem Hierarchy Standard (FHS): http://www.pathname.com/fhs/

Linux Administrators Security Guide:https://www.seifried.org/lasg/ Red Hat Linux FAQ

ILUGs India Linux User Groups [@yahoogroups] (in various cities):

ilug-cbe	Coimbatore, Tamil Nadu
ilug-kottayam	Kottayam, Kerala
ilug-jodhpur	Jodhpur, Rajasthan
ilug-indore	Indore, MP
ilug-ngp	Nagpur, Maharashtra
ilug-tvm	Trivandrum, Kerala
ilug-cal	Calcutta, West Bengal
ilug-cochin	Cochin/Kochi, Kerala
ilug-bbsr	Bhubaneswar, Orissa
ilug-mangalore	Mangalore,Karnataka
ilughyd	Hyderabad,AndhraPradesh
ilugbom	BombayMumbai,Maharashtra
iluggoa	Goa(coversPanjim,Farmaguddi,Margao

groups)ilughyd Hyderabad,AndhraPradesh

ilugctatechnical	Chitradurga,Karnataka
ilugcta-general	Chitradurga,Karnataka

nagpur-linux Linux Group
pda-lug From a college in Gulbarga, Karnataka
lug-northindia North India
Linux_Madurai Madurai, Tamil Nadu
linux-bangalore2001 List to prepare for the Dec 2001 meet there
linux-bangalore-lli Localisation for India
blore-linux Bangalore, Karnataka
nashlug Nashik
jlug Jawaharlal Nehru College, Shimoga
linux-Ahmedabad-users Ahmedabad, Gujarat
vizaglug Vizag, Andhra Pradesh
lugj Jaipur, Rajasthan
linuxatterna Terna Engineering College, Nerul, Navi Mumbai
FLUG Future Linux Users of Punjab
linux-guwahati Guwahati, Assam
mecta2k Delhi Col. of Engg (Master of Engg & Compu Tech)
lug-bhopal Bhopal, Madhya Pradesh
alabhya-linux To learn PCQuest version of Linux
redhat-users NIIT students' group
tamillinux Tamil Nadu
erumbugal-linux Linked to Tamil Nadu (?)
lug-cet College of Engineering, Trivandrum
EA19shivalik Shivalik, IIT Delhi hostel
ilinux Project to develop Linux distbn with
support for Indian languages
klint_life Kernal internals group of the Linux India Foundation for Education
VidyalankarLUG
linux-bangalore-programming

Linux groups from in South Asia and around :

pluc Pakistan
bglug Bangladesh
mauritius-linux Mauritius
thai-linux-webmaster Thailand
libux Libya
LinuxInAfrica Africa... as its name suggests
Linux_Egypt Linux in Egypt
TTLUG Trindade & Tobago
linuxiran Iran
indonesia-linux Indonesia
kafelinux Cheap solution for Internet cafes (Malaysia?)

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Linux_Egypt Linux in Egypt
TTLUG Trindade & Tobago
linuxiran Iran
indonesia-linux Indonesia
kafelinux Cheap solution for Internet cafes (Malaysia?)

International Conference on e-Governance - 2003, Dec 10 - 12, 2003:

Presented by : Indian Institute of Technology (IIT) Delhi, GIFT School of e-Governance

Courtesy: Vivek Gupta
Infosys Research Fellow Doctoral Candidate, Fellow Programme In ManagementIndian Institute of Management Ahmedabad Vastrapur

Objective:A World Citizen Charter would demand national economies to improve qualityof life and ensure better citizen services as strived by various agencies under UN. Electronic government is very timely development being recognized as a potential driver as well as enabler in the way governance can be reinvented to deal with problems efficiently and deliver the services in a more responsive and responsible manner. e-Government solutions are meant to ensuring a more connected infrastructure across federal, state, and local government organizations. There are several issues that concern researcher world-over. Purpose of ICEG- 2003 is not only to provide a forum of discussing research findings, strategies, policies, and technologies supplemented by the learning from the innovative experiments to enable business of government. It also aims to resolve agenda for future research/activities and give impetus to this.For whom ?

This conference is scheduled to provide an opportunity of sharing the research findings and learning from the current experiments of e-government. Participants are expected from every parts of the world including: Faculty/ Scientists, University students, Private sector executive (solution providers), Government officers and NGO/ community volunteers.Who Designs the Conference Program ?An International Advisory Committee (IAC), comprised of internationalexperts and representatives from government and industry, guides the development of the conference program. Steering Committee (SC) of theconference supplements the activities of IAC in deciding the moderators, speakers, and agenda items for conferences. A Technical Committee (TC) will manage the tracks and reviewing process. There is an Organizing committee (OC), which takes care of implementing scheme of things on day-to-day basis(Other committees to be announced shortly) Key Elements of IECG- 2003:The IECG- 2003 offers a unique opportunity to the delegates and attendees acomplete educational experience, with opportunities for collaboration andnetworking among leaders and peers working to make digital government a reality.3-day Conference 5 Tracks - 30 thought-provoking sessionsBest paper award for each track 3 Plenary sessions with 9 Keynote Presentations - by recognized leaders discuss the emerging issues6 half-day Tutorials3-day Exposition - 100+ exhibitors focused on E-Government strategies and technologies inclusive of Industry and Government stalls demonstrate successful partnership and proven solutions that have improved government service at all levels. Briefings from innovators in E-Government in the Exhibition Best Paper Award: $ 500 (25000/) to each 5 t racks with memento and certificate. Tutorial:(10 December 2003)Theme:Best practices of e-government Lessons from e-business corporations in private sector

E-Government: success stories
Formulation of Citizen's charter
Assessment Government Portals
Revenue Models for e-Governance
CRM in GovernmentFees:
Tutorial Fee: $100 per participant (Rs.1000/ for delegates from South Asia) Conference Fee: The conference fee (inclusive of Tutorial) will be $200 per delegate (Rs.5000 for delegates from South Asia) before the Camera Ready deadline and $250 after the Camera Ready deadline.Students: $100 (Rs.1000)for South Asian) Papers Reviewing and Publication: Submitted papers will be reviewed.

Accepted papers, which should not exceedten single- spaced typed pages, will be published by means of paper and electronic proceedings. Best papers will be selected for awards and might berecommended for journal publications. Important Dates:Refereed papers submitted - 30 July 2003Acceptance/Rejection notification - 30 September 2003
Tutorial proposals - 30 September 2003
Panel session proposals - 30 September 2003
Camera ready papers - 30 October 2003
Venue:Indian Institute of Technology Delhi
Contact:ICEG 2003 Secretariat Department of Management Studies Indian Institute ofTechnology (IIT) Hauz Khas, New Delhi (India) Phone: +91 11 26591173, 26596407, 26591171, 26521299, 9811027530 Fax: +91 11 26862620 Email:mpgupta@dms.iitd.ernet.in
Track 1: Management challenges for Government organizations Issue (Sessions):Vision statements for digital government
Policy and program analysis for e-government
Developing a business case for e-government projects
Managing Change: Transforming Organizations and Cultures
Knowledge and content management for effective government
Support of leaders/lawmakers for e-Government
Computer literacy of administrators
Strategies and technologies for Achieving Integrated Operations
Government ERP
Interaction between traditional and digital government services
Sourcing decisions of e-Applications and Services
Building Trust and Protecting Privacy
Wireless Technology for effective e-governance
Architecture and Interoperability
Security of Information Exchange
Assessment of e-readiness of government
Performance measures & benchmarks

Challenges of legacy systems
Competitiveness
Regulations and legislation
Understanding the social benefits
Track 2: Government-to-Citizen Relationships
Issues:
Online government
Raising awareness
Language interface in e-government
Geographic Information Systems (GIS) in government
Participation of citizens in decision-making process
Involvement of the decision-makers
'Security' and 'electronic payment'
Citizen Focus - Citizen Relationship Management
Disseminating Information: Citizen Self-Service· Addressing Diversity of needs
Marketing of Services
Private sector partnership
Assessment of e-government service quality assessment
Track 3: Government-to-Business Relationships
Issues:
Challenges of Government-Business Cooperation
Technology facilitating the G to B Relationship· E-Governance and the
Digital Economy
Role of Academia-Industry-Business & Government
Role of Non-governmental-Organizations (NGOs)
Digital Collaboration with trade/industry Associations
Private sector collaboration
Government e-procurement
Outsourcing systems and services
Track 4: Government-to-Government (G2G) Relationship
Issues:
Formulation of Citizen's charter
The Crisis in Human Capital
Raising Productivity within government
Re-engineering Government processes
Managing workflow for Effective Government
Outsourcing within government
Efficient exchange data

I have a dream - Government Online

An excerpt from a reply to an e-mail by Sameer

Sameer Sachdeva
sachdeva_sameer@hotmail.com

Dear Vivek,
Your fantasy seems to be close to my dream. A dream of"Government Online" But this is not feasible without active citizenparticipation. Citizen needs to be aware of his rightsand duties.

Integrating databases
Establishing common standards
Geospatial information One-Stop
E-Grants
Share tax information between local and central government
Local government request approval by central government
Track 5: Best Business Practices for Effective Government
Issues:
Lessons from e-business corporations in private sectorSocial engineering through information technology
Award-Winning e-Government Case Studies
E-Government: success stories
Innovation and entrepreneurship in e-governance
Assessment Government Portals
E-democracy and other models governance
Citizen Empowerment
Leveraging open-source software
Revenue Models for e-Governance
ASP model in Government
Potential of CRM in Government
Total quality management
Managing Digital Records
Data Warehousing for decision making
Datamining in government
Implementation Issues
E-Government to identify corruption abuses
Benchmark assessment

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If I have seen farther than others, it is because I stood on the shoulders of giants."
Isaac Newton

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With the Freedom to Information Bill (already passed by Lok Sabha; pending with RajyaSabha) citizen will actually be empowered to know fromthe Government what it is actually doing.

And till that date probably we all have to wait....for e-governance to actually come. Today e-governance is more of a hype than a practicalphenomenon. I must say that new and simpler rules for Governance are making the curruption process easier and nothing more.It is leading more to c-goveranance (read corrupt) than e-governance. Mere providing computers togovernment employees is not e-governance. e-Governancehas more about trickling the benefits to the citizensand e-Democracy is one of the major component of it. Do you realaise crores of money is being spent in thename of IT and it gets a easy approval from allquaters and authorization, encouragement as well. Butare those crores going in right direction. Success are seen but are they sustained ? Are theyeplicated?Or let me put it this way Are they Relicable ?e-Governance Projects are implemented as Islands ofsuccess. Only single project identified by GOI is Bhoomi whichis now under plans forreplication.But is the system that existed in Karnataka for Land Records same inother states ? There are lot of questions and issues. Read all the issues at:
http://www.developmentgateway.org/content/itemdetail?item_id=272186
http://www.dvelopmentgateway.org/content/itemdetail?item_id=273365
http://www.developmentgateway.org/content/itedetail?item_id=272398
http://www.developmentgateway.org/content/item-detail?item_id=273368
Also check the newly formed group on e-governancewhich achieved a record membership of 118 within the first day of establishment.http://groups.yahoo.com/group/India-egov/
regards, Sameer

A Brief History of Free/Open Source Software Movement

The free/open source software movement began in the "hacker" culture of U.S. computer science laboratories (Stanford, Berkeley, Carnegie Mellon, and MIT) in the 1960's and 1970's.

The community of programmers was small, and close-knit. Code passed back and forth between the members of the community—if you made an improvement you were expected to submit your code to the community of developers. To withhold code was considered gauché—after all, you benefited from the work of your friends, you should return the favor.It was in this environment that Richard Stallman began his computer science career in 1971, as a graduate student at the Massachusetts Institute of Technology Artificial Intelligence lab.

Stallman worked primarily on ITS, the Incompatible Timesharing System, an operating system home-brewed at MIT to run on the DEC PDP-10. In this collegial environment, Stallman and his colleagues built an enormous array of software tools for the PDP-10.

However, by the early 80's, the hacker community began to break down at MIT and other universities. DEC discontinued the PDP-10. As a result, the ITS software became obsolete, because it was written specifically for the PDP-10 hardware architecture. The PDP-10's replacements, such as the VAX or the 68020, had their own operating systems, but none of them were free software: you had to sign a nondisclosure agreement even to get an executable copy. (DiBona, et al. 1999)Moreover, many of the hackers were hired away by commercial companies who sold proprietary systems.

One of the first to break ranks was a student named Brian Reed at Carnegie Mellon University. In 1980, Reed wrote Scribe, one of the first text-formatting programs to incorporate semantic markup. However, Reed "....then surprised everyone by selling it to a company, instead of sharing it with the community. The company was very proprietary about it, and very obnoxiously put time bombs into it. Somebody I know spent hours debugging why our copy had ceased to work. Eventually he came across the time bomb which had been put in there purely for profit-insuring purposes. He was extremely angry that he had wasted all that time on a bug that had been deliberately created. From the view point of people in the software sharing community, anything artificially put in to stop people from running a program is simply a deliberate bug.

The problem was that nobody censured or punished this student for what he did. He got away with it. The result was other people got tempted to follow his example. Many years later he stated that he believed his own program was much less used as a result of his decision, that it would have become far more popular and influential if he had shared is as was normal." (Bennahum,1996 and King, 1999)

A another major blow also came in 1980, when two companies were formed to sell MIT's Lisp Machine technology. Richard Greenblatt, a senior Lisp machine project hacker at the AI lab, formed a company called Lisp Machine, Inc. (LMI). Another group of hackers, including David Moon, Howie Shrobe, and Howard Cannon got backing to found Symbolics. Between the two companies, they hired away most of the AI lab's staff.

The prospect that all future improvements to the MIT Lisp system and MACSYMA (an artificial intelligence based math engine based on Lisp) would be proprietary angered Stallman. So for a year, he attempted to match feature by feature the improvements in the proprietary.

Lisp systems in the MIT Lisp system. Eventually he gave up, because as talented and dedicated a hacker as Stallman was, he could not keep up with the combined efforts of a team of equally talented hackers. (Lemon, 1997 and Siska, 1997)

"I was faced with a choice. One: join the proprietary software world, sign the nondisclosure agreements and promise not to help my fellow hackers. Two: leave the computer field altogether. Or three, look for a way that a programmer could do something for the good. I asked myself, was there a program or programs I could write, so as to make a community possible again?" (King, 1999)

Determined to recreate the community of cooperating hackers he enjoyed in the 1970's, Stallman decided to devote himself to creating free software. According to Stallman, truly free software must allow every user the right to: run the program, for any purpose. modify the program to suit their needs. (To make this freedom effective in practice, they must have access to the source code, since making changes in a program without having the source code is exceedingly difficult.)

Continued Next Page

They must have the freedom to redistribute copies, either gratis or for a fee.redistribute copies, either gratis or free.distribute modified versions of the program, so that the community can benefit from your improvements. In January 1984, Stallman resigned from MIT so that the university would have no claims on the software he created. (With the blessing of Dr. Winston, then the head of the AI lab, he continued to use his office and MIT hardware.) (Stallman, 1999) Stallman devoted his first efforts an operating system.

Without an operating system, a computer is just a hunk of worthless metal, glass, and plastic. The most commonly used and powerful operating system at the time was the Unix system, first developed by Ken Thompson and Dennis Ritchie at Bell Labs.

Since a lot of software already existed for Unix, Stallman decided to make his operating system Unix compatible, to make the transition from proprietary software to his libré software as easy as possible. He called his project GNU (Gnu's Not Unix), to distinguish his software from the proprietary versions.In 1985, Stallman created the Free Software Foundation, a tax exempt charity, to support his work and that of his collaborators. Stallman personally created an enormous body of software: GCC (C compiler), GDB (debugger), Emacs (text editor), and a number of other tools.To be sure, Stallman's efforts were neither the first nor the only libré software development efforts.

The X consortium, for example, developed the X windowing system. Perl, the most commonly used scripting language for web sites, was developed by Larry Wall while working on a government sponsored project at Burroughs. Another free version of Unix was developed by a group based at the University of California at Berkeley. However, the Free Software Foundation's efforts were probably the most extensive, and the most visible.To ensure that his code would always be freely modifiable and distributable, he created the GNU General Public License (GPL).

The GPL specified that users of the source code could view, change, or add to the code, provided that they made their changes available under the same license as the original code.

He founded the Free Software Foundation in 1985 to promote the development of GNU and other GPL'd software. For the creation of the GNU system, the GPL license, and the Free Software Foundation, Stallman was awarded the MacArthur fellowship in 1990.Now the only thing that the GNU system lacked was a kernel, the heart of an operating system.

In 1990, Stallman's team began work on HURD, an OS based on the MACH microkernel architecture, which was first developed at Carnegie Mellon. (According to Thomas Bushnell, principal architect of HURD, HURD is the first piece of software to be named by mutually recursive acronyms: Hurd = Hird of Unix-Replacing Daemons.

Hird = Hurd of Interfaces Representing Depth). However, work on the HURD progressed very slowly, and the kernel was very incomplete as of 1991.

Enter a 21 year old, second year graduate student at the University of Helsinki named Linus Torvalds (Ghosh, 1998). Torvalds wrote a Unix-like kernel based on Minix, a small Unix clone used as a teaching tool. Torvalds submitted his kernel, called Linux (Linus + Unix) for review to various newsgroups and mailing lists. Several other programmers began to modify and tweak the code, sending their improvements back to Torvalds for inclusion in the next release of the kernel. Eventually, Linux became the de facto kernel for the GNU operating system. In 1997, Eric Raymond published an essay entitled The Cathedral and The Bazaar.

In the essay, Raymond articulated the reasons why he believed that open source licenses—licenses that allowed anyone to freely view, modify, and distribute the code—resulted in higher quality, less expensive software. The essay spread quickly through the programming community.

At the same time, Netscape was involved in a fierce struggle with Microsoft to see whose browser would become the dominant browser on the desktop: Netscape Navigator or Internet Explorer. Microsoft's decision to give away Internet Explorer, combined with their control of the Windows operating system, led to the increasing erosion of Netscape's market share. Netscape feared that Microsoft dominance would shift web protocols from open to proprietary standards that only Microsoft's servers would be able to service. Influenced by Raymond's essay, several managers at Netscape believed that the best way to keep web protocols open would be to release the code to the Netscape browser.On January 22nd, 1998, Netscape announced that it would open the sourc code for Netscape Navigator 5.0.

Their announcement gave the free/open source software community a great boost in credibility in the eyes of business community. Shortly afterward, a coalition of individuals, led by Eric Raymond, Bruce Perens, and Tim O'Reilly, decided that the the free software community needed better marketing. They formed the Open Source Initiative to a) promote the pragmatic benefits to the business community, and b) certify free/open source licenses that meet the Open Source Definition.

The Open Source Iniative's evangelism paid off. Following Netscape's announcement, several additional vendors announced support for Linux, including Oracle, IBM, and Corel. Intel and Netscape invested in Red Hat, the largest English language Linux distributor. (Raymond, 1999)

A statistically insignificant presence in 1997, the popularity of Linux and the free/open source software movement exploded. The International Data Corporation (IDC) estimated that Linux has 25% of the server market, second only to Windows NT which has 38%. With 4% of the market, Linux is also the the third most popular desktop after Apple.

Continued from Page 2

UNITED LINUX

Moreover, IDC estimated that commercial shipments of Linux will grow at a compounded annual growth rate of 25% from 1999 to 2003, compared to 10-12% growth rates for other operating systems. (Note, however, that Linux's installed base was quite small—it's much easier to have high growth percentage rates when your starting absolute numbers are small.)

In August of 1999, Red Hat Linux went public. The stock price soared to $72 dollars the day after the IPO, giving Red Hat a market capitalization of $4.8 billion—a remarkable valuation for a company with a $5,787,945 net loss on $33,031,682 million in revenues for the fiscal year ending in February 1999. VA Linux, a vendor of hardware with Linux pre-installed, netted the largest first day run-up in IPO history, giving VA Linux a $7 billion dollar market capitalization. Other successful Linux IPO's include Cobalt Networks ($3.1 billion) and Andover.net ($712 million).(Scannell, 1999) Other more recent successes:

IBM recently announced that the company would devote almost $1 billion dollars to support Linux. (Burke, 2000) Forrester Research estimates that more than 55% of the world's 2,500 biggest firms use open source software, with almost a quarter using the software in production systems.

(Connor, 2000) Sun recently released Star Office, an office suite similar to Microsoft Office, under the GPL license. (Proffitt, 2000) To be sure, free/open source software still faces challenges. Both Red Hat and VA Linux, two of the most prominent corporate supporters of Linux, still lose money. Even if they become profitable, I find it difficult to imagine that VA Linux or Red Hat will justify their IPO valuations within the next 10 years. Software patent law threatens to strangle free/open source software developers with threats of lawsuits. And dotcoms, early adopters of Linux, continue to drop like drunks on rollerskates. Despite the challenges, free/open source software will likely increase in influence and popularity.

"UnitedLinux has successfully reached its first major milestone by delivering Version 1.0 according to the schedule laid out last spring when the group was formed," said Paula Hunter, general manager of UnitedLinux. "Today's launch of UnitedLinux Version 1.0 is a tribute to the collaborative skills and technical expertise of the four founding companies, as well as to the vision that brought the UnitedLinux organization into being."

About UnitedLinux

UnitedLinux is a partnership of industry-leading Linux companies combining their intellectual property, geographic mind share, sales, support and marketing expertise to produce a uniform distribution of Linux designed for business. UnitedLinux applies the collaborative development model of open source to the business model to enable a one-stop shop for developers, partners and customers to install, support and maintain quality business solutions based on Linux anywhere in the world. UnitedLinux is actively recruiting membership for both industry software developers and those who provide Linux as an integral part of their business solutions. For more information, visit www.unitedlinux.com or call UnitedLinux at +1-781-876-8989.

Built on top of a solid and tested foundation, UnitedLinux 1.0 is an enterprise-class operating system with exceptional stability, scalability and reliability, and its high level of quality has been previously available only in expensive proprietary operating systems. Distributed virtually everywhere in the world and supported by leading global ISVs and IHVs, UnitedLinux Version 1.0 will initially be available in English, Japanese, Simplified Chinese, Korean, Portuguese, Spanish, Italian, German, French and Hungarian. UnitedLinux Version 1.0 will have local language and local time zone support for customers around the world, with access to a channel of more than 16,000 resellers and a global pre- and post-sales support team.

Details of global training and certification programs will be made public in the near future. "As the leading provider of industry-standard Linux hardware and a long time proponent of open-source computing, HP believes in offering our customers the choice to deploy Linux across the platforms that best meet their individual computing needs," said Rick Becker, HP Vice President, Software CTO, Industry Standard Servers. "With the delivery of UnitedLinux Version 1.0 we are able to offer our customers, across the world, additional choice and flexibility, enabling them to deploy the best Linux solution for their business.""Customers want to rapidly deploy Linux-based applications to realize business value, and ISVs want a common, reliable, standards based platform upon which to build their applications," said Steve Solazzo, General Manager, Linux, IBM. "Today's delivery of UnitedLinux Version 1.0, right on schedule, simplifies the tasks for application providers and customers alike, allowing them to more rapidly deploy Linux solutions with confidence."

UnitedLinux Version 1.0 incorporates a wide range of features that enhance its usefulness for enterprise environments. Details are contained in a UnitedLinux white paper at www.unitedlinux.com. Some highlights are:

Standards compliance: UnitedLinux support for key community standards, such as LSB 1.2 and OpenI18N from the Free Standards group, allows broader hardware and software vendor support as well as adoption by large enterprises with heterogeneous IT shops. UnitedLinux Version 1.0 has met the stringent requirements of LSB certification.

Scalability : Enterprise server configurations continue to grow, with larger, more powerful multi-processors handling more users, tasks and threads. Enhancements in UnitedLinux improve Linux's ability to take advantage of larger and more complex systems and thus handle new categories of applications. Specifics include:

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Continued from Prev Page

.....UNITED LINUX

Complete set of software and tools to build server farms, for workloads that would otherwise be unmanageable for a single machine Scheduler enhancements to improve process scheduling on SMPs and avoid the scheduler becoming a bottleneck Asynchronous Input/Output, to minimize waiting on I/O in large, busy systems

High Availability: As Linux has grown from early applications into more business-critical areas, the availability expectations of users have grown as well. UnitedLinux Version 1.0 bolsters Linux's capabilities in avoiding downtime and in diagnosing and fixing problems when they do occur. New capabilities include: A flexible and powerful POSIX-compliant event logging and notification capability Dynamic probes that greatly enhance profiling and debugging, and allow dynamic insertion of breakpoints in code Non-disruptive and tailored dumping of system data Toolkit that significantly improves Linux's ability to record and trace system events Hotplug PCI support, enabling the addition or removal of attached devices without system restart.

Security: UnitedLinux 1.0 improves Linux's suitability for sectors where security is critical, by offering support for Kerberos, a strong network authentication protocol; basic firewall support to separate secure areas of the system from less restricted areas; and a consolidated set of community security enhancements known as Bastille.

File Systems: As the data needs of enterprise users continue to grow, the demands on the underlying file system(s) have grown as well. UnitedLinux addresses this issue by including support for the Journaling File System (JFS), which is an extremely scalable, stable, and high throughput filesystem, and the popular community filesystems Reiser File System (ReiserFS), XFS, and the ext3 filesystem.

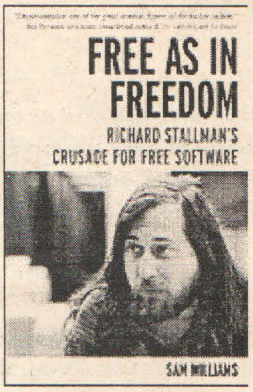
Network/storage/device management: As Linux becomes more widely used, the numbers and types of devices that users need continue to grow. In addition, enterprise customers expect their device drivers to be robust, and network protocols continue to evolve. In addition to basic IPv6 support, UnitedLinux 1.0 meets these challenges by supporting Logical Volume Manager (LVM), a popular community volume manager, and Enterprise Volume Management System (EVMS), a layered, plug-in means of providing exceptional flexibility and extensibility in managing storage. Device drivers supported include Ethernet, Fibre Channel, Token Ring, ODBC, Tape, SCSI, among others.

Platform support and interoperability: For the foreseeable future, enterprises will depend on a heterogeneous computing environment. UnitedLinux Version 1.0 takes advantage of hardware capability across all relevant platforms and architectures, including Intel (32 and 64-bit), AMD, PowerPC (IBM eServer iSeries and pSeries), and IBM eServer zSeries mainframe. Hardware functionality is exploited through advanced features such as large memory support for up to 64 GB of RAM, hardware technology for compressing main memory contents called Memory Expansion Technology (MXT), and graphical connection support.

Development Environment: UnitedLinux 1.0 provides a development environment for ISVs that includes all the compilers, includes, libraries, sources, text editors, graphical user interface support and other tools to enable the building of applications for UnitedLinux.

Products powered by UnitedLinux are being offered by the four founding companies. Details are available on request from Conectiva S. A.unitedlinux@conectiva.com The SCO Group - unitedlinux@sco.com SuSE Linux AG - unitedlinux@suse.com Turbolinux, Inc. - unitedlinux@turbolinux.com

Free as in Freedom



Richard Stallman's Crusade for Free Software

By Sam Williams
March 2002
0-596-00287-4, Order Number: 2874
240 pages, $22.95 US $34.95 CA

Subnetting your local network with DHCP

By Alan Ward

PS. Should anybody want to translate this article: I wrote it in the spirit of the GPL software licence. i.e. you are free (and indeed encouraged) to copy, post and translate it — but please, PLEASE, send me notice by email! I like to keep track of translations — it's good for the curriculum :-)

Our network topology

A DHCP server is a good way of doing this. This is the service you access when using a dial-up Internet connection: you connect to your ISP, who assigns you a temporary public IP address. Most Linux distributions include a DHCP server, which can also be used on a local network.

Initially, you can give the DHCP server a range of IP addresses to distribute: for example 192.168.1.100 to 192.168.1.199. Any host that starts up and asks for an address will get one of these. After the host is switched back off, the address will be liberated and can be re-used on another host if needed.

But Ethernet cards all carry a unique identification number, called a MAC address. This is a 12-digit hexadecimal number that is assigned by the manufacturer, and that is guaranteed to be different from any other Ethernet card, anywhere in the world. A DHCP server can be configured to use this MAC address to always assign the same IP address to the host.

Using this, we can make a list of the MAC addresses of the hosts in our group A, and make DHCP serve them fixed IP addresses on the 192.168.10.0 subnet. The MAC addresses of hosts in group B are served addresses on the 192.168.20.0 subnet, and hosts that are not on either list (visitors' laptops, for example) get an address on subnet 192.168.1.0.

DHCP has an advantage over VLANs in this respect: VLANs are defined for physical network ports, while DHCP uses card addresses. With a VLAN, if you physically change your computer's network connection — as in moving from one room to another — you may also change its VLAN. With DHCP however, its subnet assignation will remain the same.

Setting up DHCP

On most Linux distributions, the DHCP server is called dhcpd, and is started with the standard scripts (the same as httpd, postfix, ...). It can be found in RPM form, as for example in dhcp-3.0-3mdk.i386.rpm. If you already have it installed on your system, try the dhcpd and dhcpd.conf man pages.

To begin, I used the webmin utility to set up a basic subnet DHCP service. Notice that this service has to be on network 192.168.0.0 with netmask 255.255.0.0 . This is because it must be accessible from al subnets.

I then set up each specific host, specifying it's name, hardware MAC address and the IP address I want to serve to it. Note the IP address, now on subnet 192.168.10.0.

To obtain the Ethernet MAC address, most cards have it printed on a label sticking to the card. It yours does not, you can skip this step for the moment.

Finish setting up the DHCP service and fire up the hosts one by one. As each host obtains an IP address (on subnet 192.168.1.0 for the time being), you will see it appear in file /var/lib/dhcp/dhcpd.leases. For example:

```
lease 192.168.1.198 {
  hardware ethernet 00:00:b4:38:cf:6a;
  client-hostname "bis";
}
```

Please note that only addresses obtained from the general subnet will appear here; not when you have given a host a fixed address.

Finish setting up the fixed addresses for hosts on the DHCP server.

Start or restart the DHCP server. Hosts should now be obtaining their assigned IP addresses. You can see this on a Linux host with the ifconfig utility. On a Windows box, you can use winipcfg under Win95/98/ME, or ipconfig (in a terminal window) under WinNT/2k.

But network masks should now still be the default 255.255.0.0. This is not good, as hosts on subnets 192.168.10.0 and 192.168.20.0 can see each others (try a ping). We should now go to each host definition for dhcpd, and in the "edit client options" set its subnet mask as 255.255.255.0 and its default router to 192.168.X.1 for subnet 192.168.X.0. For example, on subnet 192.168.10.0:

Continued to Next Page

Subnetting your local network with DHCP

Continued from Prev Page

Remember to also set the network mask to 255.255.255.0 for the general 192.168.0.0 subnet client options.

You can edit the /etc/dhcpd.conf file by hand. It may even be more clear than the webmin interface. This is what you could have:

```
#
# main subnet, accessed by default by hosts we do not know
#
subnet 192.168.0.0 netmask 255.255.0.0 {
        option subnet-mask 255.255.255.0;
        option routers 192.168.1.1;
        range 192.168.1.101 192.168.1.199;
        }
#
# host definition, one for each known host on our LAN
#
host bis {
        option subnet-mask 255.255.255.0;
        option routers 192.168.10.1;
        hardware ethernet 00:00:b4:38:cf:6a;    # 12-digit hex MAC address
        fixed-address 192.168.10.34;
        }
```

Making the server accessible

In the above example, we made 192.168.X.1 the default router for each subnet 192.168.X.0 . But for the time being, our server has IP address 192.168.1.1 — which means that:

- hosts on subnet 192.168.10.0 will try to obtain an IP address
- they will obtain such an address from server 192.168.1.1
- this address will be on subnet 192.168.10.0, netmask 255.255.255.0
- they are now unable to contact server 192.168.1.1 which is on another subnet!!!

This is why our server must have an extra IP address for each subnet: 192.168.10.1, 192.168.20.1, etc. This can easily be set up by creating virtual network cards eth0:1, eth0:2, etc. with webmin:

You can also create this by hand. On a Mandrake or Red Hat distribution, the files are in /etc/sysconfig/network-scripts. You should already have a file called ifcfg-eth0. Copy this as ifcfg-eth0:1, ifcfg-eth0:2, ... changing the addresses and netmasks as appropriate.

For example, for eth0:1 :

```
BROADCAST=192.168.10.0
DEVICE=eth0:1
NETMASK=255.255.255.0
IPADDR=192.168.10.1
NETWORK=192.168.10.0
ONBOOT=yes
BOOTPROTO=none
```

This is basically all you need. You may now have to enable routing on the server, for example if you are using it to access Internet. But be careful to disable routing between local subnets; 192.168.X.0 should not be able to see 192.168.Y.0 . Use a firewalling package such as iptables to block this. You can also use this to block or allow Internet access from any or all subnets if you wish.

COMPARISON OF OPEN SOURCE VS. PROPRIETARY SOFTWARE IN AFRICA BRINGS UNBIASED INFORMATION TO POLARISED DEBATE

by Philipp Schmidt, Programme Manager Bridges.org
(softcomp@bridges.org)

A study comparing the use of open source and proprietary software in an African ontext will bring unbiased information to a polarised debate that is often marked by unsubstantiated arguments.

Bridges.org, an international non-governmental-organisation (NGO) based in Cape Town, South Africa, in collaboration with SchoolNet Africa, an NGO working with "SchoolNet" formations across the continent, launched the study in January.

In open source software the underlying programming (or "code") is revealed so that it can be modified, and applications are often made available for free use and distribution.

Proprietary software is owned by a particular company and typically the right to use it must be purchased. Users have no access to the inner workings of proprietary software and cannot modify it.

The debate over which kind of software is better for developing countries is heating up, and many argue that the choice will have long-term implications as African countries take steps to join the information society.

And unlike in the developed world, where computer owners are able to make their own software decisions, in the developing world the focus on public access to computers and the Internet means that computer lab managers and government officials are making software choices that affect a lot of people.

The question of which software is more appropriate for the African environment centers on issues like cost, security, availability, support, technology requirements, and ease of use. Moreover, proponents of open source software argue that it offers the only avenue for Africa to develop its own software industry. But many others see proprietary software, such as Microsoft Windows, as a practical requirement for anyone who wants to be competitive in today's marketplace.

Up to now the debate has been characterized by subjective arguments from people who feel strongly about the issues, both because of a desire to do what is "right" for society and because there is potentially significant money on the line. "We want to step into the fray on this topic and provide unbiased information about the issues at stake for Africa. The key point here is that decision-makers need to be empowered to make informed choices," said Teresa Peters, executive director of bridges.org.

The two-year-long study will examine the implications of the choice between open source and proprietary software in an African context by investigating the practical issues facing existing computer laboratories in South Africa and Namibia. In addition it will provide a detailed study of the policy environment and the factors that influence related policy-making processes, again focusing on the policy-level debate and choices made and compare them to similar policies in other countries, as appropriate. "With this study we aim to provide SchoolNets and government officials across Africa with the unbiased background information that they need" adds Shafika Isaacs, Executive Director of SchoolNet Africa.

Expert members of the open source community and representatives of proprietary software companies will be invited to peer review the methodology and results of this study. The study is supported by the International Development Research Centre's Acacia Program and the Open Society Institute.

ABOUT BRIDGES.ORG

Bridges.org is an international NGO based in South Africa with a mission to help people in developing countries use information and communication technology (ICT) to improve their lives. Its main focus is to enable informed policy decisions, which affect people's access to and use of ICT. Bridges.org also gets involved in on-the-ground projects to study the effects of policy decisions and relay lessons learned to the international development community. It brings an entrepreneurial attitude to its social mission, and is committed to working with instead of against government agencies and the business community. More information at: www.bridges.org

Linux is a natural for India

ByParakash Advani (prakash@netcore.co.in)

http://newsforge.com/newsforge/03/01/21/1423219.shtml?tid=19

Today India is a hot topic for discussion as far as Linux is concerned. Many users around the world want to understand the mindset of Indians regarding Linux. This article attempts to give some insight to the market dynamics here, and how they make Linux a natural fit for India.

Linux and open source offer the cost advantage of the software being free, and that's important for Indian people who are flocking to Linux.

To give an analogy which people can relate to, I was speaking to a BPO (Business Process Outsourcing) outfit. These organizations typically perform business activities outsourced from companies situated in the West. For them the cost of a Wintel computer is 60 percent of the employees yearly salary. When they hire a person they end up paying a huge cost for a P4 desktop with Windows and MS Office. If they move to alternatives such as Linux, Open Office, LTSP, etc. the savings the move can bring are huge.

Unix has been popular in India since its early days of computerization. Computerization in India started later than the West, hence India bypassed the mainframe and minicomputer eras and went directly to Unix and Novell.

This was because mainframes and minicomputers were very expensive, and not many India corporates could afford them, nor was trained manpower easily available. Companies implementing computers had to send people abroad for training or had to fly in the trainers. At that time the government didn't think computers were important, so the import duties were high. This made computers even more unaffordable.

Things improved when Unix came. It reduced the costs of hardware, expertise became more common, and duty structures, too, got revised, so all IT Managers in India worth their salt have used Unix at some point in time. They appreciate the power of Unix, and Linux is a natural progression. Most of them find Linux a better version of Unix. This also brings in a pool of talent that is already familiar with Unix that can pick up Linux very quickly.

Intel has been very active in India for a while now, and that has paid off. Intel has more market share in India than in most parts of the World. My estimate would be in the range of 90 percent or higher. One reason for this is that the Indian PC/Server industry is dominated by the white box manufacturers known here as "assemblers." Most of these offer Intel-based solutions only. Since India predominately uses the x86 platform, and that's where Linux runs the best, it's easy to get started with Linux here. But there are occassional Linux problems with incompatible hardware, particularly Winmodems.

India has a huge pool of software and scientific talent. A lot of the engineers and doctors have moved to green pastures — the West — but yet talent levels are reasonably high. These people are also power users themselves, and a lot of them enjoy using and encouraging the use of Linux. Every large organization will definitely have one Linux guru or an enthusiast in it and this helps. This one person will generally drive the management towards deploying Linux. Linux expertise is not as easily available as your neighborhood Windows expert, but it's picking up. In the land of Mahatma Gandhi, freedom comes naturally. Even though free in India is more important than Free (note the capitalization), India is a democracy and people understand and appreciate their freedoms. Also, some Indian companies have burnt their fingers when developers have taken them to ransom by holding back source code and demanding huge sums of money. These companies appreciate software freedom and are willing to contribute to it.

These are some of the reasons why Linux is favorable to India. There are also a few reasons why Linux is not so favorable

Windows is the defacto standard for desktops. Most PCs and laptops ship with Windows, and people think that everyone uses Windows so I should also be using Windows. All the PC vendors and white box manufacturers are very comfortable supporting Windows.

Piracy is rampant, and Windows/MS Office is the top on the list. Here the cost comparison doesn't help Linux because a pirated copy of Windows is considered free. Thankfully, Microsoft is getting after people and conducting raids so people are getting concerned about piracy. Because all of them can't afford Windows, they are now at least considering Linux.

Windows applications are there in plenty, especially custom-developed applications. Most people have no love for the Windows operating system, but the application situation is what holds them back from changing to Linux.

Windows programmers, and thus applications, are easily available. Any person with some knowledge can write a simple business application using VB and Access. This results in more and more Windows applications.

In spite of these limitations, Linux is still picking up, and there is a lot of Linux interest and enthusiasm among the people. Corporate managers, especially the CFOs, are seeing Linux's cost benefits and are adopting Linux in their companies. The government, too, is getting supportive and is trying to emulate what other countries are doing with Linux.

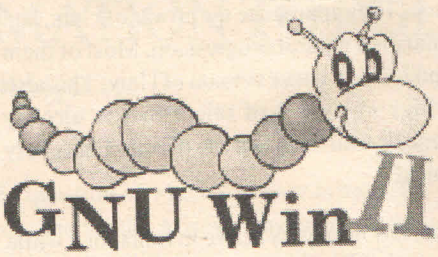
We hope to see Linux proliferate more in this part of the World, and if things keep going the way they are it looks like we will.

GNUWin — Open your Windows !

GNUWin II is a free software compilation for Windows. You will find three main features on it :

- **Software**
- GNUWin II includes numerous programs, completely free, which cover a wide spectrum of uses. The complete application list, sorted by type, is available here.

  The software included in GNUWin is not shareware nor freeware, but original free software and Open Source software, for which the source code is available, and that is and will always be free (free both as in "free speech", and as in "free beer").



Most programs included in this CD are also available for free and Open Source operating systems, such as GNU/Linux, BSD, etc.

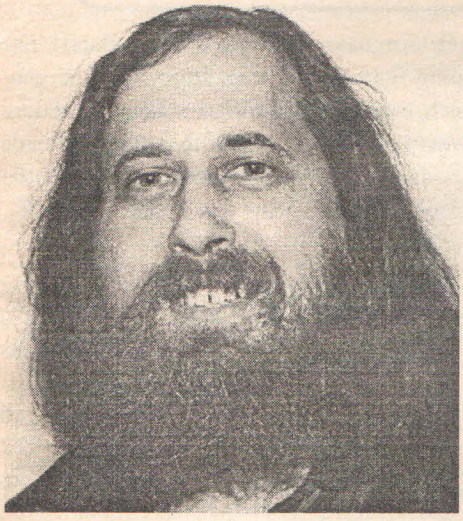
- **Articles**

  You will also find numerous articles that explain the free software and Open Source spirit.

- **On-line help and explanations for GNUWin**
- To help you discover the fascinating world of free software and Open Source, we ourselves wrote a few texts, notably a F.A.Q. (Frequently Asked Questions) that should answer the first questions of most new users. If a particular term sounds unfamiliar to you, the glossary might be a great help. Furthermore, technical words found within the texts are links that lead to the respective glossary entry; you can thus simply click on a particular word if you want an explanation of its meaning.

  Do not hesitate to read through the glossary, F.A.Q. and articles at will.

RMS : A Breif Profile



Born in New York in 1953, Stallman – or RMS as he is popularly known in the fraternity, after his login identity name for the computer at the Massachusetts Institute of Technology (MIT) where he started his programming career – is the only child of a printing press owning father and a liberal-minded schoolteacher of a mother.

Growing up in New York's West side, Stallman graduated from Harvard in 1974 with a BA in physics. In 1971, during the end of his freshman year, he got a job as a staff hacker at the MIT Artificial Intelligence (AI) Lab. (Contrary to popular belief, reinforced by media reports of virus attacks and their creators, a 'hacker' is not a malevolent, evil-minded person tapping away at the keyboard of a computer to break into distant security systems. Rather, a hacker is merely someone who is obsessed with programming and writing code, someone who would rather programme than, say, eat or sleep, someone who has imbibed the spirit of 'playful cleverness'. The more malicious type portrayed in the media is more correctly referred to as a 'cracker'.)

At MIT's AI Lab, Stallman learned operating system development by doing it as part of a long-standing software-sharing community. 'Sharing of software was not limited to our particular community; it is as old as computers, just as sharing of recipes is as old as cooking,' he notes. Stallman wrote the first extensible Emacs text editor there in 1975, for which, in 1991, he received the Grace Hooper Award from the Association for Computing Machinery. ("Calling Emacs an editor is like calling the Earth a nice hunk of dirt," is what one commentator had to say about this powerful, comprehensive Swiss Army knife-style piece of software.)

However, the AI Lab's hacker community and spirit soon collapsed, when corporate interests began luring away all the talented hackers from MIT. For Stallman, the last straw was when the AI Lab decided to use Digital's non-free timesharing system, alongside the fact that the computers then used, like the VAX or the 68020, featured operating systems that required signing a non-disclosure agreement even to get an executable copy.

Stallman found himself confronted with a stark moral choice. He had to choose to do something "for the good...so as to make a community possible again." That was how he homed in on the idea of developing an operating system (OS), the heart of any computer, without which no one can run one.

In January 1984, Stallman resigned from MIT to start the GNU Project to develop the free operating system, GNU. GNU (see www.gnu.org) is a recursive acronym (hackers revel in puns and word play) for 'GNU's Not Unix'. Stallman quit MIT so that the institute would not be able to interfere with the distribution of GNU as free software. GNU is Unix-compatible software, i e, it can run Unix programmes but is not identical to Unix, then the leading enterprise OS, known for its portability.

In 1985, the year after he quit MIT, Stallman founded the Free Software Foundation (FSF) in Boston,dedicated to promoting computer users' rights to use, study, copy, modify and redistribute computer programmes. (Those who imagine that the Free Software Movement arose in response to Microsoft should remember that the Redmont company's breakthrough OS, Windows 3.1, shipped in June 1992, a full seven years after FSF was founded, while its current flagship, Windows 2000, came almost another six years after that.)

FSF is a tax-exempt charity for free software development. It raises funds by selling GNU CD-ROMs, T-shirts, manuals and deluxe distributions (all of which users are free to copy and change), as well as from donations. FSF promotes the development and use of free (as in 'free speech', not necessarily gratis, as in "free beer") software and free documentation. In particular, FSF promotes the GNU operating system, used widely today in its GNU/Linux variant, based on the kernel Linux developed by Linus Torvalds. It is estimated that there are over 20 million users of GNU/Linux systems today. These systems are often mistakenly called just 'Linux'; calling them 'GNU/Linux' corrects this confusion.

They may not know it, but most Indian Internet users are already benefiting from free software, because today, almost all web servers run on free software or variants of GNU/Linux. Even The Economist – a magazine that supports free enterprise and corporate energy – admits that on the server side, GNU/Linux has become so impressive and capable that it now represents a real threat to the Microsoft Windows NT hegemony. According to *The Economist*, over one million websites now run on GNU/Linux.

Many ISPs now base their Internet operations on GNU/Linux, in preference to Windows NT or even Unix. Users in some niche segments like advanced graphics and image processing, swear by GNU/Linux's robustness and reliability.

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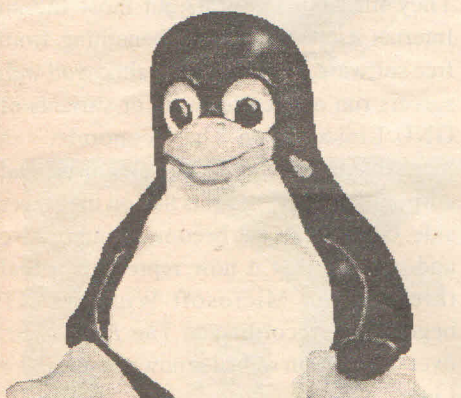
RMS : A Breif Profile

In fact, many of the effects for the film 'Titanic' were created on GNU/Linux machines. "Using 200 DEC Alpha-based systems running the Red Hat 4.1 distribution of GNU/Linux, after upgrading the kernel to support the PC164 mainboard, Digital Domain found a performance increase of three to four over SGI systems. The combination of the GNU/Linux OS and Alpha CPUs also delivered the most cost-effective solution to time and processing demands," according to Daryll Strauss of Digital Domain, the company that developed graphics for 'Titanic'.

GNU/Linux is now a robust operating system, complete with an entire set of tools, utilities and applications, almost all of which are distributed with source code, and free of cost. It is not just the near-zero cost of this particular OS that wins the hearts of network administrators; it is its greater stability. This matters a great deal for remote-managed network servers.



Successful Projects

One small initiative, limited resources but big determinations, to serve the mankind . The south Asian countries have the most developing regions of Asia. Here even the geographic conditions are not favorable. So here it is not just poverty but also the nature disease and almost absence of resources is what one has to combat to make both ends meet. But then there are people and organizations who have voluntarily chosen to battle these adversities. Here we are listing few successful projects :-

THE COMPUTERS IN HOMES PILOT PROJECT: This project aims to narrow the digital divide in less-advantaged New Zealand communities whose schools are in the Decile 1 socio-economic category. The program is an initiative of the 2020 Communications Trust, with financial support from the Ministry of Education, volunteer support from tertiary institutions and community groups, plus paid support technicians. The project is administered by the 2020 Communications Trust. A two-year pilot began in July 2000, in communities associated with schools in Cannons Creek (Porirua) and Panmure Bridge (South Auckland). In April 2001 the pilot was extended to families associated with two isolated rural schools in the North Island's East Coast. Another urban extension came in August 2001, associated with Wellington's Newtown School.25 families in each area have been provided with CANZ recycled Pentium 75-100 computers with Windows 95, MS Works, MS Word, a package of shareware educational games, modem, internet connection and a phone line where necessary.Participating families pay $50 and sign an agreement which commits parents to attend five training sessions, call the designated technician if their computer develops faults, make family rules about use of the computer and the Internet, supervise use of the computer and teach a family member or neighbor the IT skills they have learned.The budgeted cost per family is $3,000. This includes the computer, training, technician support, software, Internet access, telephone connection and project management costs.

The Bhoomi Project: This project is being implemented in Karnataka, This project is one of its kind. BHOOMI is a self-sustainable e-governance project for the computerized delivery of 20 million rural land records to 6.7 million farmers through 177 Government owned kiosks in the Indian state of Karnataka which has eliminated red tapism and corruption in the issue of land title records, and is fast becoming the backbone for credible IT-enabled Government services for the rural population. Bhoomi means land, so this project focuses on rural agricultural land reforms.

The main objectives of this project is to:

Create a transparent and effective land record delivery system: In the traditional system, records were not open for public scrutiny resulting in manipulation and favoritism. Bribes were extracted for issue of records. 2. Enable hassle-free mechanism for change of land titles: The process for applying for transfer of title was cumbersome, time consuming and open to harassment. 3. Ensure that the solution is tamper-proof and easy to administer: Instances of Government land being illegally transferred in names of influential persons had been noticed. 4. Leverage the natural advantages of digitized data: It was not possible for the administrators to procure, collate and analyze data from the manually maintained records. 5. Use this platform as the backbone to deliver additional value to the citizen: Getting the farmers to accept IT into their daily lives was one of the objectives. Land Records offered a high value-add to the farmers for this, given the problems they

faced on a variety of fronts: for example, the sanction of crop loans, since banks would insist on production of land records; delay in the disposal of court litigation due to non-availability of records. Other stakeholders had complained of non-availability of land, crop data for planning. With the implementation of the bhoomi project, the farmers benefit like never before. Farmers, the prime beneficiaries are protected from harassment and extortion. Their time is saved. Access to farm credit will become less cumbersome because of easy availability of land records. Collation of data regarding crops will make it possible for essential inputs like seed, fertilizer and pesticide to be supplied to farmers in a planned manner. Farmers will also find it easier to pursue land related litigation in courts.

In the traditional system, farmers were dependent on the village officials for effecting a change (mutation) of land title due to inheritance, purchase, gift etc. In the computerized system, the farmers can file applications at the computerized kiosks, get acknowledgement, monitor progress (using touch screen kiosks) and obtain the revised document in a fixed time frame without the need to approach Government functionaries. With this backbone now in place, and accepted by the farmers and the government, additional services both related to the Land Record Data (bank loans) as well as independent information like market prices for commodities can now be delivered. An opaque system which was primed for exploitation has been replaced by a transparent, secure and monitorable system.

Grameen Bank Project :

In Bangladesh Grameen Bank which provides micro-credit loans to landless rural women. Grameen Bank Project began in one village in 1976. In 1983 it was transformed into a bank under a law passed for its creation. It is owned by the poor (women). It works exclusively for them. "Borrowers have been given a loan to buy a mobile phone and other things,". "And they open up telecenters in their own villages and provide services for sending and receiving messages. In Bangladesh there are not many land phone lines, and they are very expensive. They are not available in the remote areas. So they are providing an alternative connectivity service. So these are some of the ways of connecting and bringing economic opportunities to the poor. Thias bank gives loans and scholarships and life insurances to the poor women farmer and their families."Computer Exchange provid s computers to third world countries, and some computers are provided to Bangladesh from Computer Exchange

M.S. Swaminathan Research Foundation (MSSRF):

In the southern part of the Indian subcontinent this research foundation was registered in 1988 as a non-profit Trust. The basic mandate of MSSRF is to impart a pro-nature, pro-poor and pro-women orientation to a job-led economic growth strategy in rural areas through harnessing science and technology for environmentally sustainable and socially equitable development MSSRF is doing researches in the following five areas: Coastal Systems Research, Biodiversity and Biotechnology, Ecotechnology and Sustainable Agriculture, Reaching the Unreached, and Education, Communication, Training and Capacity Building. The flagship project of the Informatics Group is the Information Village Research Project.Apart from the headquarters at Chennai, the Foundation has many field centres in Tamil Nadu, Pondicherry, Kerala and Orissa.The Foundation operates through the following pathways to agricultural and rural development: conservation and enhancement of natural resources, promotion of sustainable livelihoods, gender equality and voicing the voiceless as well as information and skill empowerment. Through the Hindu Media Resource Centre the Foundation promotes public understanding of science through media practitioners. The Foundation is known for its emphasis on bottom-up participatory approach which places people before technology.

The Kothmale Internet Community radio project :

In Sri Lankat this a particularly interesting approach in rural areas. This pilot project, which aims at assessing the potential benefits of new communication technologies to remote areas, is being implemented by UNESCO in collaboration with the Ministry of Posts, Telecommunications and the Media, Sri Lanka Broadcasting Corporation, Sri Lanka Telecommunication Regulatory Commission and the University of Colombo. Kothmale is located in the central part of Sri Lanka. It takes about three hours bus ride from the capital city Colombo to reach the location. Kothmale community radio serves a target area of 20km radius, which includes a number of rural towns such as Gampola, Nawalapitiya and Thispane. The project uses community radio as an interface between the Internet and rural communities. While UNESCO provided computer equipment and training the Government of Sri Lanka through its Telecommunication Regulatory Commission provided the Internet connectivity to the community radio.

1. Radio programme to "Radio Browse" the Internet (information interpreted in local language) Here, the community radio broadcasts a daily two hour radio programme, in which community broadcasters interpret information from selective Internet sites. The listeners can direct queries to the radio station to find specific information from the Internet. The advantage is that the community radio provides the requested information in local language making Internet information accessible to those who do not understand the English language.

2. Community radio function as a mini Internet Service Provider to the community with free Internet access.

3. Community database development The community radio also develops its own computer database (Internet WEB site http://www.kirana.lk)

Microsoft on the prowl for unlicensed users in Kerala

Courtesy : **Sanu George, Indo-Asian News Service**

Thiruvananthapuram, Jan 30 (IANS) In its drive against copyright infringement, Microsoft has sent undercover legal officials to catch computer resellers in Kerala using unlicensed versions of the software giant's programs. According to industry sources, four computer resellers have already been fined Rs.30,000 each for selling Microsoft products without licences and given a stern warning.

"Two people posing as architects arrived at the office of a leading computer reseller and asked for the latest personal computer. After the machine was supplied with unlicensed software, the two architects revealed they were Microsoft officials and took action against the reseller," a reseller here told IANS, requesting anonymity.

Sources said four resellers were sent notices and asked to meet the Microsoft attorney at a resort in suburban Thiruvananthapuram.

"What we have been told is that they were all fined Rs.30,000 and let off with a warning," said a computer reseller.

The Microsoft officials also visited a few computer institutes here and gathered information about the sellers who had supplied machines to them.

All Kerala Computer Products and Dealers Association president John Kottara said while Microsoft was within its rights to act against unlicensed users, the industry was not sure how to respond to these undercover checks.

"We have not yet decided how to handle this situation," Kottara said.

J. Salim, who runs an IT institute here, told IANS: "In the long run, such raids might hamper the prospects of Microsoft."

He added, "One way is to go in for Linux. This free operating system is becoming very popular."

RAMCO SYSTEMS NEXT GENERATION SOLUTIONS GAINING MOMENTUM

Press Release : **Tonmoy Phukan**

Bangalore January 30, 2003: Ramco Systems is now in the process of leveraging the investment made into a whole new generation of enterprise products, custom built solutions and technologies. The initial feedback from prospects and customers is very encouraging.

Ramco Systems Limited announced their third quarter results today. The total income Ramco Systems Limited (India) was recorded at Rs.19.24 Crores for the quarter ended December 31, 2002. The global revenues of Ramco Systems Ltd, including revenues from subsidiaries in USA, Switzerland, Singapore and Malaysia and branches in UK and Germany registered USD 8.29 million.

"Our efforts and investments into the new generation of technology has given us great depth in providing a new class of enterprise solutions. We expect our technologies and solutions to make a significant mark in the global market in the medium term", said Mr. P R Venketrama Raja VC, Managing Director & CEO of Ramco Systems.

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