UnitedLinux Version 1.0
Product Specifications

We've Shaped the Future
of Enterprise OS Software

UNITEDLINUX

We're All Business

A next generation enterprise-class Linux operating system

Targeted at server platforms, the advanced features of **UnitedLinux Version 1.0** position it against traditional RISC UNIX systems and other Linux distributions such as Red Hat Advanced Server. The key technologies included also make it an ideal platform to build alternatives to Microsoft's back office solutions. **Though UnitedLinux can successfully compete feature-per-feature against other distributions, its value proposition also lies in the strength behind the consortium: the channel, the OEM support, the testing, mission critical reliability, and version stability.**

UnitedLinux is an attempt to stop the fracturing and fragmentation within the Linux community.

UnitedLinux is a standards-based, Linux operating system developed by Conectiva, SCO, SuSE, and Turbolinux. Designed to be an enterprise-class, industry-standard Linux operating system, UL provides a single stable, uniform platform for application development, certification, and deployment and allows Linux vendors, Independent Software Vendors (ISVs), and Independent Hardware Vendors (IHVs) to support a single Linux offering rather than many different versions.

UnitedLinux Benefits

Standards compliance: UnitedLinux supports key community standards such as LSB 1.2 and OpenI18N from the Free Standards group. Adhering to these standards allows broader hardware and software vendor support as well as adoption by large enterprises with heterogeneous IT shops.

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:

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

Reliability: 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 is suitable for sectors where security is critical. Security features in UnitedLinux include:

- **Kerberos, a strong network authentication protocol**
- **Firewall support to separate secure areas of the system from less restricted areas**
- **Bastille, a system hardening application**
- **Support for filesystem access control lists.**

File Systems: UnitedLinux addresses the growing need of enterprise users for robust and scalable file systems. Journaling file systems offer improved scalability, stability and throughput. UnitedLinux includes support for the following journaling file systems: ReiserFS, Ext3, XFS and JFS..

UNITED LINUX

Logical Volume Manager Support: Volume managers allow for flexibility, stability, improved performance and redundancy by logically linking multiple physical hard drives in to one volume. UnitedLinux includes two major volume management technologies, Logical Volume Manager (LVM) and Enterprise Volume Management System (EVMS), a layered, plug-in means of providing exceptional flexibility and extensibility in managing storage.

Platform support: UnitedLinux Version 1.0 will be available for the following architectures: x86 32-bit, IA64, x86-64 and IBM z, i and pSeries.

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

Product Features

Servers

Web server
- Apache web server
- Apache extension modules
- PHP and PHP Extensions
- Tomcat

File and Print Server
- Windows (Samba 2.2.5)
- Mac (netatalk)
- UNIX (CUPS for print, NFS for file server)

Name server and Internet/intranet connection server
- DNS (bind)
- WINS (Samba)
- DHCP server and client
- FTP and TFTP

Mail and news server
- SMTP (Postfix and Sendmail)
- POP
- IMAP
- INN

Proxy server
- Squid

SQL database server
- PostgreSQL and MySQL

ODBC, JDBC
- Appropriate standards based extension for heterogeneous OS access support

Authentication server
- Windows domain controller (Samba)
- OpenLDAP
- Kerberos 5
- PAM modules
- NIS server

Time server
- NTP

Text editors
- vim

Acrobat Reader

KDE 3.0

GNOME 2.0

Mozilla 1.0

SLP server

OpenLDAP 2.1

Installation

Automated installation
- The installer can read all options from an XML file to perform an unattended installation.

Installation methods
- Local CDROM
- NFS-mounted directory
- Local hard disk partition

High Availability

UL leverages technology from the Linux-HA project in a modular fashion. Software packages are provided that cover major areas of HA clustering, from simple two-node failover clusters to load balancing server farms. This support is permanently guided by community standardisation efforts such as Open Clustering Framework and Service Availability Forum, in order to allow for seamless integration with other software and continuous tracking of the needs of the installed user base worldwide.

MXT (Memory eXpansion Technology)

This hardware technology for compressing main memory content effectively doubles the amount of memory and is completely transparent to the system.

LVM (Logical Volume Manager)

Subsystem for on-line disk storage that manages disks and subsystems by grouping arbitrary disks into volume groups. The total capacity of volume groups can be allocated to logical volumes, which are accessed as regular block devices. LVM also provides logical separation of storage, the ability to move data from one physical device to another while on-line, and dynamic block device resizing.

MAX. LOGICAL VOLUME SIZE: 256Gb using 4Mb extents — 1Pb using larger
MAX. # OF LOGICAL VOLUMES: 256
MAX. # OF VOLUME GROUPS: 99
MAX. # OF PEs PER PV: 65534

NGPT (Next Generation POSIX Threads)

Derivative of the GNU Pthreads, achieves near full POSIX compliance. It adds MxN threading and improves on the POSIX compliance of pthreads, making it more in line with UNIX operating systems.

POSIX Asynchronous I/O (Split-phase I/O)

First phase — the initiating request queues the I/O at the device

Second phase — performed as part of the I/O completion, propagates results of the request

Raw I/O

Provides high-bandwidth, low-overhead SCSI disk I/O by transferring data directly to a buffer in the application address space, bypassing the kernel buffers and I/O queueing code for SCSI and FibreChannel devices

Hyper-Threading

Enables multi-threaded applications to execute threads in parallel within each individual server processor

ACPI (Advanced Configuration and Power Interface)

New open industry specification for power management and interface configuration

SAN (Storage Area Network)

High-speed, special purpose network that interconnects different kinds of data storage devices with associated data servers on behalf of a larger network of users

SNMP/CIM (Simple Network Management Protocol/Common Interface Model)

SNMPv3 protocol governing network management and monitoring of network devices and their functions

UnitedLinux Version 1.0
Product Specifications

Large Memory Support

Can take advantage of the Intel Physical Address Extension to support up to 64GB of physical RAM and the full 4GB of virtual addressing space per process. Can also enable flat 64-bit memory addressibility with the AMD x86-64.

IPv6 (Internet Protocol Version 6)

Supports the next version of the Internet Protocol, which removes the limitation of addresses and improves routing and network autoconfiguration

Directory Services

Latest available protocol for LDAP, LDAPv3, offering a better way to manage large user bases

Technical Details

LSB 1.2 runtime environment

All libs, all commands, all interfaces

glibc 2.2.5

Standard Linux and UNIX shells

bash, csh, ksh

textutils, fileutils, sh-utils, sharutils, util-linux, SYSVinit, vixie-cron

Remote shell tools

ssh, scp

Networking tools

ping, traceroute, nslookup

IPv6

Basic tools like ifconfig/route and config location

Firewalling tools

ipchains, iptables, masquerading

Scripting languages

python, perl, PHP, TCL/TK, ruby

Java runtime

JRE version 1.3.1 (Sun and IBM versions)

XFree86 4.2

libs and server

X print service

libXp.so.6

Free fonts and input methods for wide character support

KDE 3.0 and GNOME 2.0 libraries

High availability

Heartbeat, Linux Virtual Server (LVS), DRBD, Mon

CUPS 1.1.15

SQL support

PostgreSQL 7.2.2 and MySQL 5.23.52

I18n

pt_BR, es, XFree deadkeys patch

Hardware monitoring tools

lmsensors, etc.

Remote boot

TFTP, PXE, etc.

Wireless tools and device support

Journaling File Systems

EXT3, ReiserFS, JFS

Other file systems

ISO9660 (CDROM), NTFS (Microsoft Windows NT), BFS (UnixWare, boot file system), SYSV (SCO/XENIX/Coherent), FAT/VFAT (Microsoft DOS and Windows 9x), HFS (Macintosh), HPFS (OS/2), and more.

Virtual Private Network

VPN with IPSec, advanced routing capabilities

Interoperability

In heterogeneous environments: Windows networks, Novell networks, Unix networks

Authentication Methods

PAM, Kerberos 5, SASL and SASL2, Smart Card, X.509

Firewall capabilities

SPF, specific application support, full NAT, packet marking

Network intrusion detection

Signatures based — contains thousands of security incidents in its database, multi-platform, full TCP stream reassembly, application level decoding, IP defragmentation support, port scan detection, SNMP traps, alert classifications, support for multiple sensors, SQL database reports generated on the fly, easy and flexible signature description language

Development environment

C (gcc), C++ (g++), Java, Perl, Python, Ruby, Tck/Tk, diff, patch, make (GNU make), lex (flex), yacc (bison), GNU automake & autoconf, GNU, binutils, libtool, gdb

For more information about UnitedLinux, go to www.unitedlinux.com.

UNITEDLINUX