FEATURE

OSDL – Building Momentum in 2004

A report card on Linux's "center of gravity"

BY BILL WEINBERG

The year 2004 began auspiciously with the introduction of the 2.6 Linux kernel and advanced rapidly for the Open Source Development Labs (OSDL), its membership and the communities it represents and serves. Let us reflect on OSDL's achievements over the last year. This article will introduce readers unfamiliar with OSDL to its activities, update long-time OSDL watchers and offer a glimpse into new activities envisioned for the next 12 months.

OSDL Turns Five

The Open Source Development Labs was founded in 2000 by Computer Associates, Fujitsu, Hewlett-Packard, Hitachi, IBM, Intel and NEC as a non-profit venture dedicated to accelerating Linux adoption in the enterprise. Initially, OSDL, with physical plants in Beaverton, Oregon and Yokohama, Japan, provided a hosting and testing infrastructure for Open Source projects on hardware that was representative of enterprise deployment, but beyond the means of most community members.

Since its inception five years ago, OSDL has expanded its mission and now strives to be the "center of gravity" for the Linux industry. Today, the organization continues its support of community development and testing projects, augmenting those activities with:

- Specification initiatives and support for standardization initiatives for key enterprise business segments;
- Activities to benefit enterprise end users;
- Initiatives to support ISV adoption of Linux as a host platform;
- Legal activities around copyright, patent and other IP issues;
- Direct participation by OSDL engineering staff in Open Source projects;
- Funding key developers and projects, starting with Linux creator Linus Torvalds and other key maintainers.

OSDL Initiative Update

Most of OSDL's activities and resource investments center on establishing and advancing initiatives designed to make Linux enterprise-ready. These initiatives gather requirements from OSDL members, member customers, other end users and community members that call for industry-specific capabilities in Linux and its software stack.

OSDL Working Groups are staffed by

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representatives of member companies with OSDL facilitators, and are organized into Technical, Marketing and Steering Committees. Their output consists of capabilities and specification documents that serve to encapsulate real-world enterprise needs, identify gaps in existing Linux system capabilities and application stacks, inform the roadmaps of Linux distribution suppliers, and validate and build on existing open standards and community-based development efforts.

At present, the OSDL sponsors three initiatives: Carrier Grade Linux, Data Center Linux, and new in 2004, Desktop Linux:

CGL – Carrier Grade Linux

The CGL initiative, begun in 2002, is the most mature of the three. CGL defines a capabilities set for Linux so it can be deployed as the management and control plane operating system for modern core/edge voice and data applications. CGL reflects the development and deployment needs of global telecommunications equipment manufacturers (TEMs) and network equipment providers (NEPs) and their customers, carriers and operators. Specifically, CGL addresses capabilities in

- Standards-compliance and APIs;
- Hardware support;
- Availability;
- Clustering;
- Security;
- Performance;
- Serviceability.

The *Carrier Grade Linux Requirements Definition* had undergone two revisions going into 2004, and in the last 12 months has seen aggressive adoption, implementation and deployment by Linux distribution suppliers, TEMs, NEPs and end users.

CGL is not a *standard*; it's a *specification* that requires compliance to standards (like POSIX, LSB and IPMI) and includes dozens of industry- and application-specific capabilities that can be implemented in various ways (e.g., hot-swap, persistent device naming). As such, OSDL speaks not of *compliance*, but of *registration* where CGL platform providers can document how their software and hardware implements the specification.

Shipping CGL Linux Version 1.1 Platforms

Today MontaVista Software, Red Hat, SuSE, TimeSys, TurboLinux and Conectiva ship Linux distributions or platforms that implement the CGL 1.1 specification.

Announced CGL Linux Version 2.0 Platforms

Hewlett-Packard, MontaVista, SuSE and Wind River have announced plans to offer platform registered to the CGL 2.0 specification. At press time, TimeSys and several others were shipping registered products.

TEMs and NEPs Developing or Deploying with CGL 1.1

An impressive list of global TEMs and NEPs have standardized on CGL-based platforms and are developing and shipping equipment running versions of Carrier Grade Linux. These companies include Agilent UK, Alcatel, Cisco, Datang, Deutsch Telecom, Ericsson, Fujitsu, Huawei, Iskratel, Lucent, NEC, NTT, Nokia Networks, Samsung and Siemens.

CGL Looking Forward

The CGL Working Group is presently studying its next steps and new directions. It is currently circulating an upward- compatible 3.0 specification among developers that it hopes meet the ever-evolving needs of TEMs and NEPs. The initial release of a 3.0 specification is meant to give Linux distributions vendors an early view at the technology slated for inclusion in Carrier Grade Linux later in 2005 and 2006. It is not intended for registration purposes.

To learn more about Carrier Grade Linux, see the article by OSDL's John Cherry in this issue of LinuxWorld Magazine and visit http://www.osdl.org/lab_activities/carrier_grade_linux.

DCL – Data Center Linux

The goal of the DCL initiative is to define and instigate implementation of a Linux-based OS platform, middleware and application stacks for business-critical deployment in industries such as financial services, healthcare, insurance, manufacturing and other enterprise settings.

The Data Center Linux Working Group began its activities at about the same time as Carrier Grade, but DCL has taken different turns and its evolution has taken longer. While Carrier Grade Linux focused primarily on special hardware support in the Linux kernel, robustness and capabilities, with a bit of high-availability middleware thrown in, Data Center

OSDL 2004/2005 Milestones and Highlights

- The CGL 2.0 Specification and DCL Version 1.0 Capabilities Document were published
- The Desktop Linux Initiative was started
- OSDL membership doubled
- The Linux Legal Defense Fund was set up
- OSDL created a direct presence in Asia
- Linux Users Advisory Councils were set up in North America, Europe and Japan
- The OSDL University Affiliate Program was established
- Directors of engineering and legal affairs were hired
- OSDL Special Interest Groups were formed
- ISVs got involved
- OSDL and FSG collaborated on the release of LSB 2.0
- Linux Kernel Testing – STP Project with PLM
- Support was given to the Linux Developer Certificate of Origin (DCO)
- OSDL provided direct engineering participation in over a dozen OSS development projects
- OSDL jointly sponsored IDC's report, "The Linux Marketplace – Moving from Niche to Mainstream"
- The first OSDL Enterprise Linux Summit was held in January 2005

Linux focuses primarily on the stack and the workloads above the kernel, emphasizing enabling technologies like storage and security. Where Carrier Grade services a well-defined community of TEMs, NEPs and other device OEMs, Data Center must meet the requirements of a vast global community of enterprise data center users, administrators and systems architects.

Because of the breadth of the challenge, and because of Linux' rapid organic growth in the server market, OSDL's Data Center Linux initiative is proceeding along different lines from Carrier Grade. The most noticeable difference was seen in the development and publication of a *Data Center Linux Technical Capabilities v1.0* document in 2004. Rather than provide a cut-and-dried specification for a type of Linux platform implementation, it posits a series of workload types and stacks to service them, then identities viable Open Source and commercial software components to populate those stacks.

In many cases, the DCL initiative just needs to identify the gaps that remain in successful software stacks; in others, the Working Group strives to kick start development by the community and getting ISVs to migrate.

To learn more about the status of the initiative and the efforts of the DCL Working Group, see the article in the January issue of LinuxWorld Magazine by OSDL's Lynn de la Torre and visit http://www.osdl.org/lab_activities/data_center_linux.

DTL – Desktop Linux

Proprietary software currently owns the enterprise desktop from the OS through middleware to the application. Despite impressive gains in engineering workstations, enthusiasts' desktops and a range of custom (embedded) client devices, Linux's penetration of the global commercial desktop market is still short of 3% according to IDC.

Recognizing the challenge of removing the barriers to Linux adoption on the desktop, the OSDL membership has focused exclusively on the enterprise desktop. This key slice of the desktop universe is populated by corporate information workers, technical workstation users and single-purpose PC applications like point-of-sale devices.

The limited scope gives the Working Group a more attainable goal and retraces the original adoption route of the dominant Microsoft Windows desktop. Windows (and DOS before it) rolled out first in corporate and technical settings. Only by gaining currency in the workplace did desktop computing make its way into the home and classroom.

Early in 2004, the DTL Working Group began mapping out the scope of its efforts. Later OSDL hired a full-time DTL roadmap coordinator and the DTL membership had its first face-to-face meeting in July 2004.

To avoid the quixotic efforts at building consensus of prior attempts, the DTL working group carefully defined its goals early on:

- Enumerate models that represent actual enterprise use, and specify which capabilities a Linux desktop system needs to address each of those models. Those models are
  - Technical Workstation User
  - Office Worker
  - Transaction Worker
  - Fixed-function PC-based Devices
- Assess mismatches and gaps in existing desktop implementations and use models, and work with the Open Source community to fix those problems.
- Identify and remove the barriers that ISVs face in porting to and developing on Linux.

Listening Carefully

Besides constraining its goals, the DTL initiative has taken pains to listen to OSDL members, OSDL-sponsored Linux User Advisory Councils (LUACs) and other end users and ISVs. Two valuable lessons learned from these interactions in 2004 were:

- Successful desktop Linux adoption stems from successful data center adoption.
- Desktop Linux adoption in the enterprise can't occur without the support of ISVs and in turn means giving them support.

The Desktop Linux initiative plans to release a *DTL Capabilities 1.0* document in early 2005 that describes the analysis done so far by the DTL Initiative.

To learn more about the Desktop Linux initiative and the activities of the DTL Working Group, you can read the article in this edition of LinuxWorld Magazine about DTL by Philip Peake, Lynn de la Torre, David Boloker and Craig Manning, a collaborative effort between OSDL and DTL members, and see http://www.osdl.org/lab_activities/desktop_linux/.

OSDL Membership Grows & Diversifies

OSDL began with seven founders – all of them companies that supplied silicon and systems to the enterprise and beyond.

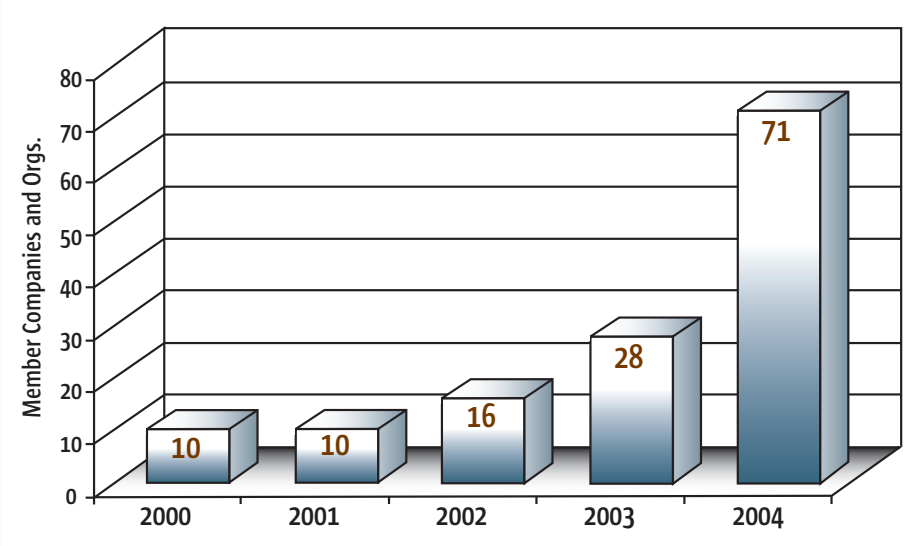

FIGURE 1 OSDL MEMBER COMPANIES RANKS FROM 2000 THROUGH 2004

Starting with CGL in 2002, membership grew to include distribution suppliers, TEMs, NEPs and other OEMs interested in Linux for carrier-class applications. Then, with the surge in interest in Data Center Linux and the nascent Desktop Linux initiatives, membership growth has reflected the diversity of the ecosystem cultivated by the OSDL.

Membership More than Doubled from 2003 to 2004

The most visible manifestation of this diversification is the 2.5x growth in the companies joining OSDL during 2004 versus 2004 (Figure 1). The distribution of OSDL's current membership among end users, carriers, integration and other services providers, ISVs, Linux distribution vendors, TEMs, NEPs, device OEMs, systems and silicon manufacturers and academia also illustrates Linux' appeal across a widening audience (Figure 2).

For the OSDL member roster, see http://groups.osdl.org/osdl_members/osdl_roster/.

New OSDL Programs in 2004

While most of OSDL investments center on building and growing its three initiatives, 2004 saw programs started that benefit Linux enterprise users and the Open Source community:

Linux Legal Defense Fund

In response to legal threats made against end users by SCO and SCO's on-going copyright-related litigation, OSDL established a $10 million Legal Defense Fund to help defend community members and companies from legal threats. The fund is intended to pay for the legal defense of qualified plaintiffs in such cases, as well as cover the legal expenses of community members subpoenaed to testify.

OSDL SIGs – Broader Outreach

The substantial progress of the three initiatives last year revealed the need for a new kind of forum to push the technical content of the working groups out to the developer community. To address technical areas common to CGL, DCL and DTL such as security and storage, OSDL initiated new Special Interest Groups, or SIGs, that are open public discussion forums. OSDL members as well as individual contributors can participate freely in OSDL SIGs.

To learn more, join an existing OSDL SIG or suggest new areas for Special Interest Groups, see http://www.osdl.org/lab_activities/Sigs/.

OSDL-Sponsored ISV Survey and Forum

In the first half of 2004, OSDL staffers polled top-tier ISVs and met with dozens more at LinuxWorld Expo in San Francisco to understand what they think of Linux as a platform for their shrinkwrapped wares. Key findings included the challenges ISVs face in hosting on Linux, the Linux distributions typical ISVs support, information on ISV product mix and Linux adoption trends, ROI for application hosting on Linux and the regionalism of Linux support. The results of the survey and on-going ISV activities have informed OSDL initiatives and inspired new ways to accelerate adoption.

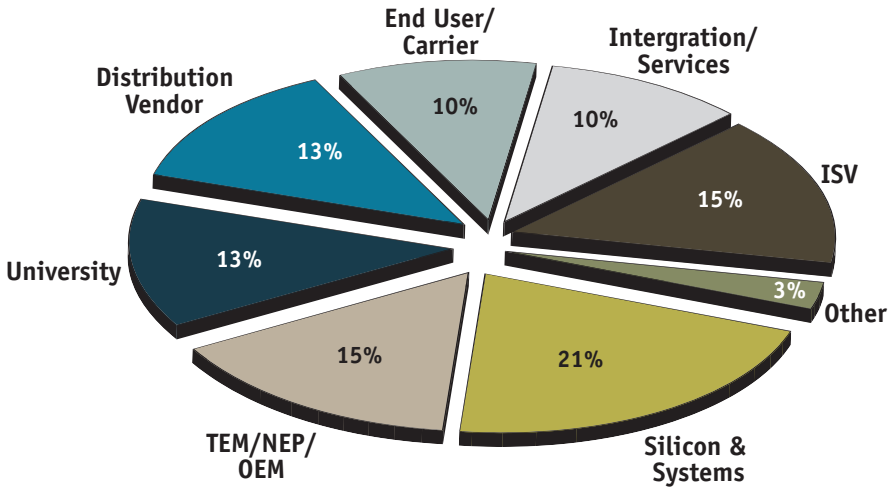

FIGURE 1 OSDL MEMBER DISTRIBUTION AMONG MEMBER TYPES IN 2004

Linux User Advisory Councils - LUAC

In response to a request by its member companies the OSDL last year began asking groups of enterprise end users to share their adoption experiences and collect requirements for consideration in the next generation of OSDL Linux initiatives. The Linux User Advisory Councils (LUACs) began meeting quarterly in North America, Europe and Japan and are composed of 15-20 member companies in each region. LUAC members include representatives from industries and segments as diverse as banking, insurance, aerospace and defense, retail, telecommunications, public utilities, regional government and even scientific users in fields like weather simulation. Today the LUACs are pretty self-governing, delivering both strategic insights to OSDL initiatives and in some cases providing new members to the OSDL itself.

Expansion in Asia

While three of the seven OSDL founding companies are from Japan, and while the OSDL has maintained sister labs in Oregon and in Japan since its inception, until 2004 relatively little OSDL investment went to other parts of the vast and varied Asian marketplace. During 2004, in deference to the huge gains Linux and Open Source are making in China, India and Korea, OSDL created the new role of director of Asia, opened an OSDL office in Beijing, recruited eight new Asian members and engaged in new dialogs across Asia.

Conclusion

2004 was an exceptionally rich time in terms of industry-wide Linux adoption, with OSDL both driving its growing acceptance and striving to keep up with the whirlwind of technical and commercial advances in the rapidly expanding ecosystem. Perhaps you should consider becoming a member of the OSDL yourself as part of your organization's evolving Open Source strategy.