Michael Dell Remarks
Putting Linux on the Fast Track
Keynote at the LinuxWorld Expo

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Why Linux?
Linux as an open-source operating system was born on the Internet in the early 1990s around the same time Dell started to use the Internet to fuel our direct business growth that now produces online sales of $50 million per day. We believe Dell and Linux are a powerful combination as more organizations large and small look to build their own Internet infrastructures.

I want to discuss Dell's commitment to Linux in relation to:
- The long-term opportunity we see for Linux;
- What Dell is doing for the Linux community;
- How Dell can help further the adoption and viability of Linux.

The open-source collaborative software development model is built to succeed in the Internet infrastructure space, and it makes more economic sense than a proprietary method offered by most of our competitors. Some of the contributing factors are:

- Lower OS development cost: Community R&D using the Internet makes Linux a more attractive option.
- Support: Often available free and online but companies like Red Hat, Linuxcare, and others are now active in supplying Linux-specific services.
- Lower hardware cost: Multi-platform support means Linux runs on the most cost effective processors and system architectures.
- Stability/Reliability: Our Linux customers rate reliability very high and we know it's true from our personal experiences.
- Flexibility: Customers can have access to the source code and there is no limit on how they use it.

There is little incentive for server companies with proprietary operating systems to support Linux. Their foundations and economic models have been built on offering a closed solution. When they have tried to deviate from this model, such as Solaris-on-Intel, they have produced weak substitutes. We don't believe Solaris-on-Intel is the answer for our customers, we believe the answer is Linux-on-Intel.

Linux can be the disruptive technology that will be the catalyst to standards-based Internet computing.

Dell Uses Linux in Manufacturing

We use Linux internally in our manufacturing operations to efficiently manage the installation of customers' system images. About one million Dell systems have been "touched" by Linux using this process in Dell factories so far this year. The combination of deploying Linux and Dell PowerVault storage worldwide is saving us several millions of dollars per factory per year.

Dell Products Ship With Linux

We're making it easy for customers to get Linux from Dell. The only thing growing faster than Linux is the number of Linux systems Dell is shipping -- shipments of Red Hat Linux increased 500 percent year on year.

Dell is now the No. 2 provider of Linux-based systems worldwide and the first major manufacturer to offer Linux across its full product line. Dell has prepared for wide-scale Linux adoption by investing more engineering resources to Linux than to any other operating system. We're doing this to make it easy for our customers to run Linux; configurations of all Dell products are now designed, tested and certified for Linux. Our factories can now customize each system -- from PCs to servers -- with Linux.

Individual customers are using industry-leading Dell Precision Workstations for Linux software development. We're working with companies such as Eazel to make Linux easier to use on the desktop. On a broad scale, we're working with software vendors in our Application Solution Centers to test Linux proof-of-concept scenarios and to enable Linux software creation.

Dell Is Investing In Linux

Dell is also financially supporting Linux development through Dell Ventures, our venture capital organization. We've invested in leading Linux companies such as:

- Red Hat -- Dell's first outside investment
- TurboLinux -- popular in our Asia-Pacific region
- Linuxcare -- for choice in service and support
- vmWare -- so Linux and applications from another widely-used OS can co-exist on a PC
- Collab.net -- to facilitate open-source development and deployment

Worldwide Infrastructure Spend

Linux will increasingly be a key part of Internet infrastructure spending over the next several years. Dell expects global spend on Internet infrastructure to reach $370 billion by 2003, much of that for servers and storage products. Twenty-five to 30 percent of the total server market is expected to be Linux-based servers. For 1999 to 2004, IDC expects Linux to produce a CAGR in excess of 34 percent, which is more than any other server operating system and is almost double its closest competitor. Growth in Unix servers is projected to slightly decline in that same time period.

This massive buildup of infrastructure is necessary to meet the growing demands on the Internet. The number of people who buy and sell goods and services over the Internet increased to 240 million in 1999. The number of Internet users is forecast to reach 327 million by year-end 2000 and to surpass 600 million in 2003. There will be well over a billion users by the end of this decade.

U.S. Server Market Share
To support this Internet infrastructure build-out, Dell is poised to accomplish in the server market what we accomplished in the traditionally proprietary UNIX-dominated workstation market. In less than three years we grew to be No. 1 in the U.S. and worldwide workstation markets by consistently offering higher performing products at a lower cost than our competitors.

Dell now has 22 percent market share in Intel-based servers overall. Dell PowerEdge servers outperformed servers from our competitors on the recent SPECweb99 benchmark test. About 10 percent of Dell servers ship with Linux and that's a higher percentage of servers with Linux than any of our major competitors. Linux helps us cover 80 percent of the operating system market for servers and server appliances.

How Dell Can Help Linux Succeed
To truly succeed in the market, Linux has to become widely accepted in the enterprise. Through our direct model Dell has the relationships to enable this:
- 90 percent of the Fortune 500 are Dell customers
- Dell is No. 1 in the U.S. with all types of businesses and organizations large and small
- Smaller hardware companies -- even those that specialize in Linux -- can't drive volume and scale like Dell can

Dell offers a company's system image installed on their hard drives from the Dell factory floor; there is no middleman. The scope for this service ranges from a single system to thousands.

Linux services are provided through Dell Technology Consulting and our service partners. These services include:

- Tuning and validation
- Backup and recovery
- Enterprise Data Center Solution design
- Clustering design
- System Migration, and
- Web hosting setup and support

We have also established the www.dell.com/linux Web site to provide customers information about Linux on Dell systems.

Dell Customers Use Linux:

We have large Dell customers using Linux in a variety of settings, including:

- Web site hosting
- Service providers
- Software development
- Manufacturing
- Supercomputing clusters

Some specific examples of Dell customers using Linux include:

- Amerada Hess saved $2 million by replacing an IBM AIX system with a cluster of 96 Dell Precision Workstations to compile seismic data from undersea explosions to identify where to drill
- Pacific Northwest National Laboratory is using a cluster of 97 Dell PowerEdge servers to run large simulations to identify the effects that micro-organisms play as the remedy for hazardous waste for the department of energy
- 40 percent of DellHost customers choose Linux
- Every U.S. Toyota and Lexus dealer will have Dell computers and PowerApp servers running Red Hat to deliver multimedia information to customers and employees.

In Summary

Linux will be a key area of growth for the industry, and for Dell. We're using Linux in our own operations and see the value it provides. We want to help our customers realize the same efficiencies.

We want to be your premier Linux development and Internet infrastructure partner. As the market for Internet infrastructure continues to explode, Linux has the opportunity to make a difference throughout the mainstream of corporate computing, an area where Dell excels.

Ultimately, at Dell, we plan to win with Linux by helping our customers succeed.