

# Linux: Moving Deeper into the Data Center



Pete Morowski, vice president of software for the Dell™ Product Group, highlights the adoption of the Linux® operating system in enterprise environments, discusses how Dell has encouraged industry support for Linux, and emphasizes the value of running Linux on standards-based hardware.

The development and adoption of the Linux® operating system (OS) have changed remarkably over the last decade. The growth first occurred in the open source community. Then the IT industry began to look at Linux, starting the evolution that has fundamentally changed how the OS is viewed. Pete Morowski, vice president of software for the Dell™ Product Group, reflects upon the growing popularity of the Linux OS in enterprise computing environments.

## *What are some of the biggest trends with regard to Linux?*

As Linux evolves, it remains true to its open source roots while expanding the base of customers that it serves. The latest trend focuses on enterprise stability and manageability. Products such as Red Hat® Linux Advanced Server now provide customers with a Linux distribution that combines enterprise capabilities, such as clustering, with a more traditional deployment model. With releases scheduled every 12 to 18 months, Advanced Server provides a stable, supportable platform for running enterprise solutions. The industry continues to provide distributions, such as Red Hat Linux Professional, for those customers wanting the latest community updates and the ability to tweak the operating system. Both offerings further demonstrate the flexibility of this open source platform.

## *How is Linux used in enterprise computing environments?*

When Linux first entered the commercial sector, use of the operating system occurred on the edge of the enterprise—on Web servers, for example. From there, Linux moved into the

infrastructure for deployments such as file-and-print servers. Today, Linux is moving deeper into the data center—a growing trend among many medium- and large-size businesses, organizations, and research institutions.

That movement is occurring in conjunction with the evolution of hardware-based solutions, such as clustering. Now organizations are looking not just at an individual server, but at a combination of servers, storage, high-speed interconnects, and switches that together can handle very complex computing problems and mission-critical processes. Many of these environments use the Linux OS.

We're seeing a displacement of RISC-based machines, even in the data center, by standard hardware and software. We're only in the early stages of this transition, and I believe this trend will really start to take root during the next year.

## *How have Linux offerings from Dell evolved?*

When Dell first came into the Linux space, we really focused on building the environment that was necessary to get Linux up and running. A critical initial step was to work with vendors—our partners—to write open source drivers so that the peripherals used in the enterprise would be available in Linux.

In 1999, Dell began offering factory-installed Red Hat Linux on Dell servers and workstations. Since then, Dell has become a leader in the marketplace for systems running Linux. Factory installations give customers greater choice and can speed system deployment in their particular environment.

Dell then started providing solutions, such as Web servers, as well as more complex clustering solutions, such as Oracle9i™ Real Application Clusters and our high-performance computing clusters. All of these offerings provide practical value to the customer today, and we're going to continue to focus on meeting customer needs.

We also will work to round out the Linux offerings—the supportive software and applications that an enterprise needs to have a full complement of applications and infrastructure in its environment. For example, the Dell|EMC partnership recently released EMC® PowerPath™ software for Linux, which will provide full redundant storage and access to storage, which currently is not available in Linux. Our goal is to get more companies in the industry to fully embrace Linux over proprietary UNIX®-based platforms.

### ***How do you plan to engage more companies and organizations?***

The Dell Direct Model provides us with a steady feedback loop from our customer base. This information, along with our industry-wide relationships, enables us to quickly identify and address their needs. For example, at the hardware level, we help our suppliers or partners understand and develop open source drivers for Linux.

Dell is a practical advocate for expanding the Linux market. We have active partnerships with Oracle and Red Hat. On the high-performance computing front, we have worked closely with MPI Software Technology, Inc. (MSTI), Cray, and Platform Computing to provide complete cluster solutions that include hardware, software, and services.

### ***Please tell us more about the Dell relationships with Red Hat and Oracle.***

We launched the Dell and Red Hat One Source Alliance program in 2000 to provide a single source for Linux solutions as well as hardware and software technical support. We recently extended this program to include a full portfolio of life-cycle services, comprising assessment services, planning and proof-of-concept services, and application porting and implementation services.

Supportability is a key requirement in the adoption of any platform or solution. Dell addresses this, both directly and in partnership with Red Hat. Dell support for Linux follows the same support model for all Dell products, and we plan to expand our support and services capabilities for Linux beyond where they are today.

Our relationship with Oracle is key. Dell and Oracle have worked together to deliver the first Oracle9i Database Certified Configuration running Red Hat Linux and the first Oracle® clustering certification on Dell|EMC storage. The ability for organizations to run Oracle software on Linux platforms should further broaden the acceptance of Linux as an enterprise OS. The Oracle9i Real

Application Clusters configuration, for example, brings high availability to mission-critical computing.

### ***What scenarios are good candidates for Linux deployments?***

Linux can be a big win in the upfront acquisition cost because it runs on standard hardware. When an organization can maintain its knowledge base, it can achieve as big a win—or bigger—in the life-cycle management cost.

Two fundamental decision points usually influence the deployment of an OS: one is the applications and the ability to move these applications to the new OS. The other is the IT culture.

The best candidates for Linux in the enterprise are organizations that can leverage their existing knowledge base. If a company has a large installed base of UNIX machines, almost any application in that environment is a candidate. IT professionals can leverage the knowledge they've gained from administering UNIX applications. They don't need to learn something new, and they can begin deploying their applications on a more cost-effective infrastructure.

### ***What advantages do Linux-based systems offer?***

One is flexibility, which standards provide. These systems are not locked into a specific, proprietary vendor implementation. Second, companies can expand and deploy their data centers as needed and on demand. In proprietary UNIX deployments, organizations often must buy capacity in bulk, ahead of their demand; yet when the capacity is needed, it might not be the right size or fit. As a result, the investment becomes obsolete much quicker. Linux running on standards-based hardware gives organizations much better utilization of the technology that they're buying.

### ***What about price/performance gains?***

By recompiling the code and running on a new platform, organizations can gain more horsepower, realize a higher return on investment (ROI), and achieve better performance. That's really the value proposition. The difference in price/performance between running Linux on Dell systems and running UNIX on a proprietary system is significant—Linux on Dell is much less expensive and offers excellent performance.

### ***How would you summarize Dell's Linux strategy?***

Our Linux strategy is built on the same core tenets that drive how we approach the enterprise as a whole. Those tenets include accelerating the adoption of relevant standards, reducing cost for customers, reducing complexity and risk, and speeding time to deployment. Our goal is to standardize and simplify enterprise computing, and our Linux strategy is just an extension of that. We like to call ourselves the practical advocate for the use of Linux. In other words, we focus on letting IT professionals derive value *now*. 