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IBM Moves Toward a 'Cloud Computing' Infrastructure

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IBM’s Blue Cloud is not a cloud computing service itself, but a set of infrastructure technologies with which to build one.

Event

On 15 November 2007, IBM announced Blue Cloud, a set of technologies that enable development of a cloud computing infrastructure. The initial offering includes an IBM BladeCenter hardware platform running Xen and Linux on x64 and Power blades. It also includes Apache Hadoop, an open-source implementation of Google's MapReduce parallel computing environment. The targeted release date for Blue Cloud is 2Q08 with a beta available during 1Q08. Pricing has not yet been determined.

Analysis

IBM announced in October 2007 that it would partner with Google to deliver a cloud computing environment to assist universities in teaching the development of cloud-based parallelized applications. IBM, Google and the University of Washington plan to build clouds based on this technology. Blue Cloud is IBM's commercialized version of the technology that underpins this joint initiative.

"Cloud computing," as the term is popularly used, refers to the delivery of a range of IT capabilities (such as infrastructure applications) as an externally sourced service. Since IBM does not provide Blue Cloud as a set of external infrastructure services, Gartner does not consider Blue Cloud itself to be a "cloud computing offering" — but in the future, we do expect IBM to deliver such an offering based on Blue Cloud. Today, an enterprise may purchase Blue Cloud as hardware and software that enable it to set up its own cloud infrastructures — which, in turn, may be used to deliver cloud-based infrastructure services to internal or external users. IBM is experimenting with Blue Cloud implementations in a number of financial institutions and government entities and an automotive company.

The infrastructure services provided on Blue Cloud start with a utility infrastructure model. Utility infrastructure users can obtain a virtual Linux server or cluster of servers, on which they can "install" whatever Linux-based software they desire. Blue Cloud does not provide a multitenant software environment. Each Linux cluster instantiated is an isolated environment that shares only the underlying hardware infrastructure. Blue Cloud also includes Apache Hadoop, which can be used across the Linux cluster. Hadoop is a software platform to write and run applications that process large amounts of data in a parallel processing framework, and is the key element that makes Blue Cloud appropriate for data-intensive Web 2.0 applications.

Blue Cloud's provisioning and management environment is one if its key features. Via a Web-based interface built using Tivoli, WebSphere and DB2, users can request access to infrastructure resources from the cloud. However, users consuming Blue-Cloud-based services do not have access to any of these particular IBM software products unless they are separately loaded on top of the virtual machine.

Blue Cloud is not currently tied in any significant way to the mainstream product strategies within IBM, but we expect the vision embodied in Blue Cloud will have increasing impact. Through mid-2009, we expect IBM to develop new hardware platforms uniquely suited to Hadoop-style distributed-computing workloads as well as software and professional services offerings targeting software-as-a-service-style applications.

RECOMMENDATIONS

All enterprises:

- View this as a first, largely research-driven step by IBM toward cloud computing. Expect to see its impact on broader IBM offerings in 2H08 and 2009.
- Watch for vendor rhetoric around cloud computing to expand during 2008 as more infrastructure and application platform vendors jump into the game. Participating vendors, technology standards and a rich set of enterprise offerings are unlikely to stabilize before 2010.

Leading-edge enterprises:

- Examine what class of applications is suitable for emerging cloud computing infrastructure exploiting Hadoop-style distributed computing. If exploring creating your own cloud computing infrastructure, consider Blue Cloud for these experiments. Companies that are primarily interested in consuming cloud computing services (such as infrastructure, platforms or applications) are not candidates for Blue Cloud.

RECOMMENDED READING

- "Web Platforms: Web-Centric Delivery Models for Infrastructure, Applications, Data and Business Services" — We describe how Web platforms will develop within the context of alternative delivery models, resulting in a significant impact on consumer and business markets. **By David Mitchell Smith, David Cearley and Charles Abrams**
- "Alternative Delivery Models: A Sea of New Opportunities and Threats" — We identify 14 new delivery models that will transform the IT market by 2012 and describe their impact on various stakeholders. **By Claudio Da Rold, Mark Margevicius, Linda Cohen and Thomas Bittman**

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