Linux is the 'logical successor' to AIX, says IBM

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New York — The day is approaching when Linux will likely replace IBM's version of Unix, the company's top software executive said, an indication that the upstart operating system's stature is rising within Big Blue.

While IBM doesn't expect Linux to replace its own AIX version of Unix any time soon, Big Blue is pushing the open-source OS in that direction, Steve Mills, senior vice-president of IBM's Software Group, told CNET News.com at last week's LinuxWorld Conference and Expo.

Asked whether IBM's eventual goal is to replace AIX with Linux, Mills responded, "It's fairly obvious we're fine with that idea ... It's the logical successor."

A replacement "won't happen overnight," Mr. Mills said, but years of experience designing operating systems at IBM and other companies means developers know just where Linux needs to go. "The road map is clear. It's an eight-lane highway."

No one believes replacing AIX with Linux could happen quickly, or that IBM will leave its AIX customers in a lurch. But the degree of Mills' Linux support surprised some.

"They've denied it would replace AIX in the past," said Illuminata analyst Gordon Haff. "Perhaps their thinking is beginning to shift. They've been quite clear that they see Linux as picking up AIX technologies maybe a year, two years later, but they've certainly been quite circumspect about saying Linux would ever replace AIX."

The IBM executive in charge of AIX — a product overseen by IBM's server group, not the software group Mr. Mills heads — exemplifies that more circumspect outlook, and argues that AIX still has a promising future.

"Steve's view is really on a multidecade time frame," said Nick Bowen, vice-president of Unix and Intel server software development at IBM. "Over time, Linux and Intel and Windows will catch up to where we were yesterday [with AIX]. When they catch up, we'll be two steps down the road."

It's not difficult to connect Linux to the profit motive at IBM. The company said it had $1.5-billion (U.S.) in Linux-related revenue in 2002. Its Linux customers include Thrifty car rental, China Post, the Bank of Birmingham in Alabama, Unilever, J.P. Morgan, Tommy Hilfiger, Dresdner Kleinwort Wasserstein and L.L. Bean.

Though IBM relies on partners such as Red Hat and SuSE to produce the versions of Linux used by these customers, Big Blue makes money by selling servers, additional software and services.

Linux is in many ways a clone of Unix, but it has several major differences. For one thing, Linux is an open-source project, meaning that any company or person may see, modify and redistribute the
software. Additionally, it works on many processors, most notably Intel's widely used products. Various versions of Unix are typically tied to a particular processor — for example, AIX to IBM's Power chips.

Linux's flexibility when it comes to running on many types of computers is one reason the OS has caught on at IBM, which has four major server lines. Another advantage, Mr. Mills said, is that Linux's low cost compared with that of rival Windows leaves customers who opt for the cheaper OS with more money to spend on IBM's related products and services.

Customers have a finite amount of money they can spend on applications, hardware, operating systems, storage and the other components of their computing infrastructure, Mr. Mills explained. "Reducing the cost of the operating system allows them to spend more money elsewhere," he said.

IBM is aware that its strong backing for Linux likely isn't well-received at Microsoft, Mr. Mills said.

"Microsoft sees IBM spending money on Linux, making Linux more robust, getting in the way of their aspirations. I think it makes them very unhappy," Mr. Mills said.

While IBM sells numerous servers running Windows, the company also had a long and bitter falling out with Microsoft over the OS/2 operating system in the 1980s and 1990s.

"There's a long history of no love lost between Redmond and Armonk," Illuminata's Mr. Haff said, referring to Microsoft's and IBM's respective headquarters, in Washington and New York.

Microsoft argues that Linux, like Unix, is good for customers who like to assemble all the various components of their computer systems on their own, while Microsoft's goal is to offer integrated software that includes many features.

Most analysts agree that Linux is growing fast but still hasn't matched the abilities of AIX or of other versions of Unix, including Hewlett-Packard's HP-UX and Sun Microsystems' Solaris.

"It's very clear that Unix still has some significant functional advantages over Linux in high-end systems," said D.H. Brown Associates analyst Tony Iams, who annually assesses the abilities of different versions of Unix and Linux.

Specifically, Unix can take advantage of all the chips in servers with 16 or more processors, Mr. Iams said. With Unix, several copies of an OS can run simultaneously in separate "partitions" on the same server. The OS has features that let processors and memory be added or removed without shutting down the computer. And workload management features can be used to govern the amount of computing power that can be dedicated to a particular process.

Linux is growing rapidly, however. What was once a project by hobbyists is now funded by just about every major computing company except Microsoft.

"The notion of a lead in Unix is eroding faster than we expected. Linux has grown up incredibly fast already. I don't see any sign of a deceleration," said RedMonk analyst James Governor.

Mr. Bowen, the executive in charge of AIX, emphasized that IBM's Unix isn't being replaced by Linux on any product plans.
"We've got people now who are building chips for 2007 systems. If we had any belief that AIX was going to fall down and stumble, we wouldn't be doing that," Mr. Bowen said.

In particular, a major revamp of AIX is due in early 2004.

And though Mr. Bowen wouldn't provide specifics, he said the AIX development team is somewhere between two and four times as large as the 250 people IBM employs to improve Linux at its Linux Technology Center.

"IBM has never decommissioned an operating system, and they're not about to start now," said Mr. Governor.

Rather, the debate is over how IBM can best spend its money.

"As IBM puts more resources into Linux ... you do have to ask, what incremental value does AIX bring? And is it worth the incremental development costs?" Mr. Haff said.

There are reasons IBM needs to project confidence in AIX: HP and Sun, which aggressively promote their own versions of Unix, will pounce on any weakness. IBM doesn't want to undo the last few years of work rebuilding AIX and the pSeries hardware it runs on, which was outpaced in the market by HP and Sun.

"What happens is the competitive folks at HP and Sun immediately say, 'IBM is shooting AIX,'" and that customers should move to a version of Unix with a future, Mr. Haff said. And IBM has some vulnerabilities in this area. Measured by how much support software companies have given AIX, "certainly it's not as strong as other Unixes out there," Mr. Haff said.

But the tables could turn if demand means a fast adoption of Linux, giving IBM the edge.

"I think they like sticking it to Sun and HP, who are less interested in seeing their Unix franchises go away," said Giga Information Group analyst Stacey Quandt.