

# The Price is Right

## The Case for Linux, in Reducing Total Cost of Ownership in the Federal IT Sector

By John Persinos, Larstan Business Reports

**B**udget deficits, combined with new regulations and mandates, are compelling agencies, departments and programs within the federal sector to defend their funding and operate more efficiently. These cost constraints are putting enormous pressure on federal IT managers, who are increasingly compelled to streamline their computing systems for improved total cost of ownership (TCO).

The federal Office of Management and Budget's latest Federal Financial Management Status Report and Five Year Plan asserts that federal IT systems must become more efficient and lower their TCO. Case in point: different organizations within a single agency — e.g., budget and contracting offices — often use different systems, complicating efforts to aggregate information. The unavoidable fact is that the management of multiple enterprise server and storage systems increases IT operating costs.

OMB and the executive branch have launched a flurry of initiatives to curb IT operating costs and enforce overall financial accountability in the federal sector. Specifically, OMB recently initiated a Performance Metric Tracking System, by which key financial indicators provide Congress, financial managers and other “stakeholders” agency-specific assessments of financial management health.

This concerted drive in the federal sector for lower TCO is resulting in greater adoption of Linux open-source architecture. Because it's a non-proprietary code base, Linux brings the benefits of lower costs, faster development innovation, and flexibility in government applications.

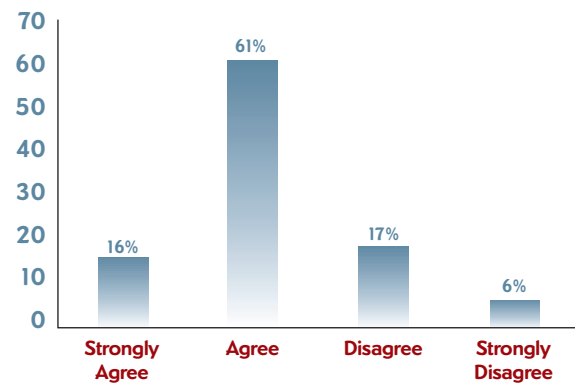
A new survey conducted by Larstan Business Reports tells the story. The survey of IT managers in federal civilian and defense agencies finds that the U.S. government is increasingly embracing Linux and the open-source environment, as a way to lower TCO. Most strikingly, the survey found that 77 percent of respondents either strongly agreed or agreed that if a system is not open, their choices will be impeded and they find themselves paying too much money for products and in operating costs (see chart, above).

Moreover, 60 percent of respondents agreed or strongly agreed that Unix and Microsoft environments are based on proprietary technology that can be expensive to deploy and maintain and can limit overall flexibility. (To download a free copy of Larstan's entire Federal Linux Survey: <http://www.larstan.net/linux.htm>.)

### The TCO Proposition

Because they enjoy full and unimpeded access to the Linux source code, developers can modify and tailor it to address the needs of a specific organization faster. The benefits are many; chief among them are increased productivity and lower TCO.

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The growing need to operate efficiently and at the same time address bruising cost constraints creates ample incentive to adopt open source software to replace the proprietary “closed” products that are used to handle functions common to all entities, public or private. It defies logic to spend more than necessary on tasks that range from the routine to the more advanced.

Jon Hall, executive director of Linux International, a non-profit, unaffiliated group with the aim of raising awareness of open-source software, points out that the continuing work of the broader, open source community of developers also addresses inevitable bugs that arise, increasing the long-term stability of Linux. “Linux lowers TCO but it is also reliable and very suitable for mission-critical applications,” Hall says.

Patton Demers, channel manager, federal government group, Unisys, says Linux adds value without adding costs.

***“When you compare the acquisition costs and the support and maintenance costs of proprietary systems with those of Linux, the costs are much lower for Linux. Federal IT managers get better performance as well. It can be very expensive and time-consuming for federal agencies to transition a proprietary system to a different platform structure, or to modernize to an updated one.”***

***— Patton Demers, channel manager, federal government group, Unisys***

Demers says the “open” nature of Linux eventually reduces its cost of ownership, by generating efficiencies through rapid knowledge transfer. “What the open source of Linux allows is for a developer to make a change or a suggestion, and it's submitted to the code, and it's available for everybody,” he says.

Demers assails the popular misconception in the federal sector that Linux is a new and untested innovation not suitable for the high stakes of government applications. This misperception is borne out by Larstan's empirical survey data. Indeed, the Larstan survey reflects a disturbing disconnect within the federal arena.

According to the Larstan survey, a whopping 75 percent of respondents have no plans whatsoever to migrate from Unix to Linux. The answer to this paradox probably lies in this particular response: 53 percent of respondents agreed or strongly agreed that an institutional bias exists within their organization against migration to Linux, because it is perceived as unready for mission-critical applications.

Demers says Unisys is spearheading efforts to debunk this myth. Specifically, the company is carrying the cost efficiencies and reliability of Linux into the enterprise space, with the Unisys Enterprise Server (ES) 7000.

"We're pointing out that Oracle systems working on older RISC-based machines should migrate to the Unisys server, the ES7000, with Linux," he says. "We're telling federal IT managers that they shouldn't listen to the propaganda from proprietary vendors, who say Linux isn't stable or reliable enough. They can run the most demanding mission-critical applications on Unisys and Linux. And we welcome the challenge to prove it to them."

Demers notes that Linux still faces a challenge in the federal market space. "Linux has made leaps and bounds as a true enterprise class system," he says. "However, Linux has usually been deployed as firewalls, web servers, or the like, and not on the broader database tier, because users are skeptical. Users must be made aware that the Oracle database will run on Linux. Oracle has embraced Linux, and that's a great testament. It's a vote of approval for open source."

### **Oracle: Out in the Open**

To be sure, the actions of Oracle loom large in the federal IT community. According to the Larstan survey, a clear majority of respondents — 66 percent — either strongly agreed or agreed that Oracle's embrace of Linux confers credibility on that system and it would make them more likely to migrate towards it.

Oracle is widely used by the federal government. Databases perform better in a 64-bit environment, as opposed to 32-bit, but many applications may not benefit from the 64-bit architecture, or maybe they haven't been ported to it yet. Linux allows users to go to 64-bit for a database, and use 32-bit for the applications. They can keep both and the Unisys hardware can support both, so there's no change necessary. "It's a flexible deployment," Demers explains.

He says that on the database side, Unisys can show that databases perform better on one large system rather than many distributed ones. "This sort of architecture is much more powerful than a bunch of smaller, clustered machines," he says. "It's easier to program and code a database system in a monolithic state than one that's distributed. The TCO is lower, it's more scalable, it's more reliable, and it provides the resources you need, as you need them, on a dynamic basis. Also, it's easier to secure, because there are fewer points of access and vulnerability."

Jim Sweeney, practice manager, Enterprise Linux Solutions, GTSI, emphasizes that Unisys solutions "ease integration," by using 32-bit applications on a 64-bit database. He says this method allows users to integrate the two, whereas with proprietary Unix, they must use a different proprietary server for each one, or different system types, which may not all fall under one management umbrella. Users get scalability, in the form of four processors up to eight processors. The system can be scalable incrementally, which means users can choose the technology they need based on strategic decisions, not hardware availability.

Demers says Unisys brings enterprise-class servers, services and support to high-end Linux-based solutions, for real-time Infrastructure. "You make the operating system choice, we let you take advantage of the broadest and most capable line of Intel-based systems, which is the Unisys ES7000 family of servers," he says.

He says federal IT managers are discovering the operational benefits and cost-efficiencies of Unisys' ES7000 servers that leverage the flexibility and openness of the Linux 2.6 kernel. Indeed, experience among end users shows that enterprises can save up to 65 percent in computing costs by consolidating multiple server functions on the ES7000.

"The ES7000 is a powerful alternative to expensive, proprietary RISC-based systems for running mission-critical applications," he says. "ES7000 servers establish a more uniform and flexible infrastructure through Intel standardization in the data center."

### **Islands of Resources**

Unisys also provides management software that dynamically allocates resources as needed, to facilitate server consolidation.

"If I were to buy commodity servers from another company, they would be islands of resources," says Demers. "The Unisys architecture allows resources to be shared. Let's say I'm running an Oracle database on proprietary RISC machines. If I need to update, because I've run out of capacity, I won't be able to incrementally add resources, I'd have to purchase an entirely new system. What we have the ability to do is deploy an eight-processor system, and if the application demands more resources,

the customer can buy another eight-processor cell, and run them together as a single database system.”

These capabilities, he says, constitute Unisys’ single greatest differentiator over the competition in the Intel space. Specifically, when applying Linux, Unisys can dynamically reallocate resources from other cells, to maintain performance levels. The Unisys architecture allows users to move processor capacity around, in a modular fashion, as needed.

“This method, called Cellular Multiprocessing, or CMP, can be accomplished at the server level or at the application level,” he says. “This means that customers can tailor the server processing power to real-time needs, in the real world. They’re not limited by their hardware infrastructure. What we’re talking about here is flexibility, or resource re-allocation. We’re talking about adaptability, agility — and ultimately, better TCO.”

Demers says Linux doesn’t require a lot of upgrades, especially with the Unisys platform. “The Unisys platform can grow on a modular basis — you can keep adding processors, instead of purchasing a new infrastructure,” he says. “Users simply add on, as needed. It’s very scalable. Hence, the low TCO.”

He says CMP’s dynamic partitioning is only available with Linux, because only open source architecture makes it possible. “We have the ability to dynamically re-allocate processor resources on the hardware end, but customers couldn’t take advantage of it until Linux came along,” he explains.

Jim Sweeney says proprietary platforms are “inherently more expensive” than open ones, because open source systems can run on standard X86 platforms — i.e., standard Intel-based PCs. “Proprietary systems, on the other hand, must run on high-end systems based on RISC chips, because that’s the way they are designed,” he says.

***“The advantage of open-source Linux over closed-source, proprietary Unix comes right down to total cost of ownership.”***

***— Jim Sweeney, practice manager, GTSI  
Enterprise Linux Solutions***

Demers points out that GTSI, an IT solutions provider in Chantilly, Virginia, operates a leasing program for government customers. “Many integrators can’t do leases,” he says. “We also appreciate GTSI’s intimate knowledge of the government customer base. GTSI’s also a systems aggregator, so when a user is looking to implement a new system, GTSI can supply the networking, software, and peripherals, in addition to the server and the storage. When you buy all those components, it’s delivered as a single system, instead of components trickling in.”

To view Larstan’s “Federal Linux Survey” in its entirety: <http://www.larstan.net/linux.htm>. For a complete set of Larstan reports and surveys: <http://www.larstan.com>.

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