Is California's data center consolidation plan feasible?

By Mark Fontecchio, News Writer
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When IT pros talk about California's planned data center consolidation, they often use the word *aggressive* to describe the timeline. Indeed, some think the timeline is so aggressive that it could render the consolidation project impossible.
If the high-stakes move of Governor Arnold Schwarzenegger pays off, the cash-strapped state could reap big rewards. State officials have not discussed expected savings on the data center consolidation plan specifically. But the consolidation is part of an overall state IT reorganization plan that California estimates will save $1.5 billion in cost savings and avoidance.

"When you're talking about a $3 billion IT budget, you can get significant savings," said Brian Lillie, the CIO of Equinix, a data center colocation company. "There is probably a lot of low-hanging fruit."

Massive data center consolidation -- by state fiat
Last week, Governor Schwarzenegger issued an [executive order](#) calling for a massive consolidation of the state's data centers and servers. The mandate is, by July of 2010, to reduce the total amount of data center square footage used by state agencies by 25% and, by July 2011, to reduce square footage by 50%. The order also mandates that by 2012 IT energy use be cut by 30%.

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CIOs and CTOs in other states said that while the plan is possible in theory, it's not clear it can be accomplished in the time allotted. California uses about 409,000 square feet of data center space spread out among 405 data centers and server rooms that run some 10,000 servers. Dropping 25% of that-- or losing 100,000 square feet of data center space -- in five months will be no picnic.

"I think their goals to reduce their footprint and energy consumption are doable," said Jeff Paschke, a senior data center analyst at [Tier1 Research](#). "The big question is the timeline. It doesn't seem too realistic, especially if you look at the track record of other states' data center consolidation efforts."

California is not the first state to streamline its IT operations:

- Texas is consolidating 27 data centers into two. The project began in early 2007, and by the fall of 2009, it was less than 10% complete.
- Michigan consolidated 38 data centers into just three facilities. The state began in 2004 and finished in 2008.
- Oregon consolidated 12 data centers into one. It took more than two years, and the state was subsequently blasted by auditors because the new facility was almost out of room shortly after it opened.

There's no doubt that data center consolidation can save state governments boatloads of cash by slicing energy, hardware, software and personnel costs. With Michigan's consolidation, for example, the state saved an estimated $19 million in savings, Paschke said.

"The vision of these savings from consolidating facilities is possible," he said. "But actually moving IT equipment isn't cheap, especially when you factor in how you pack the systems, the downtime and productivity loss for state employees and the end users in the state that have to access some of these systems."

Bob Seese, the chief data center architect at Advanced Data Centers, a colocation company that is building a 230,000-square-foot data center in Sacramento, Calif., estimated that the consolidation could save California around $21 million in annual maintenance, operations and energy costs. But that doesn't include savings from eliminated lease costs. It also doesn't include staff reductions, which could be huge considering California's admission that it has 130 employees acting as CIOs or equivalent functions within state agencies.

By exploring other state data center consolidation plans and multiplying accordingly, Paschke said, one can roughly estimate the potential savings. The data center consolidation in Michigan, for example, converged 38 data centers to three and took four years to do so, finishing in 2008. It estimated $19 million in savings. Since California has more than 10 times as many data centers, it may save as much as $200 million with its consolidation.

"By centralizing IT and consolidating data centers, IT staffing needs should be reduced dramatically, which will be a big part of the savings," Paschke said. "Also real estate costs, maintenance costs and power costs will be reduced with a smaller data center footprint. I suspect a number of the facilities to be consolidated will be lower-end, older facilities or server rooms in office buildings, and not knowing more details about owned vs. leased facilities makes estimating facility cost savings nearly impossible."

There is also risk just in shutting down servers to physically move them, because it is likely some just won't start back up again. Still, the obstacles are not big enough to dissuade states from trying to consolidate, especially in a difficult economy when most governments have tightened their belts.

"The opportunities to save money and to refresh technology and provide better service, I would say most states are looking to do some sort of consolidation to meet those objectives," said Stephen Fletcher, the state of Utah's CIO. That state went from 35 data centers to two and, in a project that took six months to plan and another year to complete, reduced the server count from 1,800 to about 320.

Fletcher thinks the California consolidation is doable, but he foresees potential problems.

"My issue with it is when they put the legislation in place to do the consolidation, they only looked at the hardware consolidation," he said. "The issue will now become that you have a lot of server admins that don't have a lot to do. They'll be sitting in agencies, and the servers will be sitting in the data center. All these IT personnel won't have anything to do now."

California may have a tougher row to hoe than do other states because it is so large geographically that moving employees around isn't easy.

West Virginia's game plan was to consolidate by attrition. As servers reach end of life, instead of replacing them in their data center or server room, the new machines go into the target data center, where everything is ultimately consolidated.

Kyle Schafer, West Virginia's CTO, said that over the next five years the goal is to consolidate 30 data centers and about 100 IT and server closets into two data centers: a primary and a backup.

"We're doing this because of the state's financial situation," Schafer said. "We didn't have the money to go out and buy equipment and replicate equipment. We're killing our data centers through normal attrition."

Putting that consolidation plan together took about a year; and now Schafer's staff has replaced about 20% of servers each year.

The magnitude of California's project is huge, he said. "They're probably going to have 30 times as much hardware as we have here, at least. The physical geography is much larger. Their politics will probably be much stronger than ours was. The most difficult challenge we've run into with the consolidation effort has nothing to do with the technology. It's strictly a desire of public employees and their agencies to remain autonomous," Schafer said.