

Cutting Government Costs: Seven Ways Virtualization Saves Money

As they look for ways to support the mission and reduce spending at the same time, agencies are embracing IT innovations such as virtualization, collaboration, and video. This article explains how virtualization helps to lower the cost of government.

Targeting Redundant Expenditures

Virtualization refers to making one physical device, such as a server or switch, act like multiple devices for different departments or agencies. “Instead of purchasing, deploying, managing, and troubleshooting 100 or 1000 separate physical application servers, you can consolidate all of them onto one system that needs less space, power, cooling, cabling, and management effort,” says Tim Simon, a data center specialist with Cisco’s public sector team.

The most talked about savings from virtualization is increased utilization—from an average of about 20 percent on standalone servers to 80 percent on a virtualized server platform such as the Cisco Unified Computing System™ (Cisco UCS™). “For an agency with \$100,000 worth of servers, increasing utilization from 20 to 80 percent can mean dispensing with \$60,000 in servers,” says Simon. In fact, the city of North Kingston, Rhode Island, shrank its server farm by 86 percent by virtualizing its applications.

Seven More Ways to Save

In March 2011, Forrester Consulting examined the total economic impact of virtualizing applications on the Cisco Unified Computing System. Conclusions were based on before-and-after cost comparisons, using a composite of five organizations actually using the system. Over three years, the composite organization saw a 177 percent return on investment, paying back the initial investment in just four months. Sources of cost savings, starting with the largest, include:

- **Network switch and port costs:** On a Cisco Unified Computing System, all server blades share connectivity to the network and storage through a single pair of built-in switches, eliminating the need for at least two cables and switch ports for each server. In the Forrester study, capital cost savings amounted to \$703,462. As another example, NetApp, a leading storage vendor, saved \$150,000 by configuring a single physical Cisco Nexus® 7000 Series Switch to act like two virtual switches.
- **Administration:** Rather than spending 30 minutes to several hours configuring each server, IT teams can create service profiles just once, and then apply them in less than a minute with a few clicks. In the Forrester study, the composite organization lowered its \$614,000 annual server administration costs by \$307,076. Cisco’s own IT team reports that automation, including service profiles, saves \$4000 per server annually.
- **Refresh cost avoidance:** In the Forrester study, the composite company saved \$185,663 by not having to refresh server hardware.
- **Fewer electrical circuits:** Agencies building new data centers need fewer electrical outlets for virtual servers than standalone servers. Savings in the Forrester study amounted to \$42,764.



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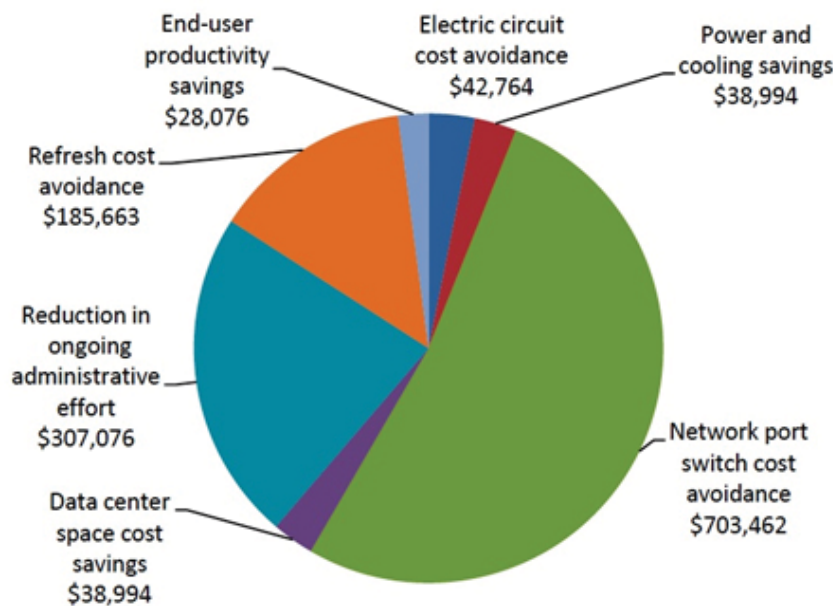
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- **Power and cooling:** In Cisco’s new Texas data centers, the Cisco Unified Computing System used for certain critical business applications is 200 percent more power-efficient than the server it replaced, despite having double the compute capacity. In the Forrester study, power and cooling savings for the composite organization amounted to 30 percent, or a savings of \$38,994 on a total of \$129,980. Utilities also offer energy rebate programs for customers that consolidate or virtualize their compute, storage, and networking resources.
- **Data center space:** Data center space is a significant cost source, and the Cisco Unified Computing System occupies far less space than the standalone servers and individual switches it displaces. In Cisco’s Texas data centers, for example, the four-node Cisco Unified Computing System occupies 10 times less space than its predecessor, a two-node server from another vendor. In the Forrester study, the composite customer subtracted \$16,000 from annual real estate costs of \$38,994.
- **Downtime avoidance:** Scheduled and unscheduled data center downtime detract from agency productivity. Redundant design features in the Cisco Unified Computing System and Cisco Nexus Switch help to avoid lost productivity, as does the In-Service Software Upgrade feature for Cisco Nexus Switches. Regained productivity in the Forrester study amounted to \$28,076.

Figure 1 shows the cost savings for the composite organization that virtualized its application environment using the Cisco Unified Computing System.

Figure 1 Cost Savings Achieved through the Cisco Unified Computing System



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To read a white paper about cutting the cost of government from the Center for Digital Government, visit:

www.cisco.com/web/strategy/docs/gov/CuttingCostOfGovt_WP_Final.pdf

To read "Total Economic Impact of Cisco UCS," by Forrester Consulting, visit:

www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns944/total_economic_impact_forrester_research.pdf



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