

EVALUATE



FAQ: Devising a server consolidation plan

A server consolidation plan should optimize server capacity. A well-devised server consolidation project eliminates physical servers that waste resources and rack up hardware costs.

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[Server consolidation](#) is a main benefit of virtualization, but many admins struggle to develop a server consolidation plan. How do you decide which servers to consolidate, and when?

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As you virtualize a data center infrastructure, take stock of resource requirements, performance needs and host capacities. [Capacity planning](#) and resource allocation are important elements of a server consolidation project, because the goal is to maximize capacity and [improve resource utilization](#).

Server consolidation allows you to run multiple virtual machines (VMs) on a single physical server, which reduces hardware costs, saves data center space and improves resource sharing. Most traditional servers use only 5% to 10% of their total computing capacity, but you can run consolidated servers at nearly full capacity (although this isn't always a best practice).

<https://searchservervirtualization.techtarget.com/feature/FAQ-Devising-a-server-consolidation-plan>

The responses to these frequently asked questions will help you create a [server consolidation plan](#), decide which servers to consolidate and understand the benefits of a server consolidation project in your virtual infrastructure.

What are the benefits of a server consolidation project?

There are many [server consolidation benefits](#) that come from server virtualization. With proper server consolidation planning, you can increase physical server capacity utilization to about 50% to 80%. And you can run a greater number of workloads on less hardware, which reduces data center power, cooling and hardware costs. Server consolidation makes it easier to take backup [snapshots](#) of VMs and provide quick data recovery when VMs fail. It can also improve workload migration, management and intercommunication between hosts and VMs. In a server consolidation plan, you should consolidate less-critical servers first, then systematically consolidate more mission-critical workloads.

Is a server consolidation plan only beneficial for large enterprises?

No, server consolidation also benefits branch offices. Smaller offices are often ideal sites for a server consolidation project because they have lower resource utilization, and consolidation reduces space and power usage. Server consolidation planning can also reduce spare desktops or low-end rack servers that waste resources. When a data center has fewer servers, they are easier to secure, particularly in small offices where physical security is a main concern.

How should I start my server consolidation project?

To determine the number of physical servers you'll need, identify which applications require certain hardware and organize VMs accordingly. Instead of traditional tape-based backups, you should perform VM migrations for backup. Setting up a test environment is another good way to start server consolidation planning. Before you execute your server consolidation strategy, it's important to understand the benefits and what the payoff will be.

How can server consolidation planning benefit test environments?

Test environments enable you to stay up to date on virtualization strategies. But [server consolidation in test and development](#) environments offer numerous other benefits than honing your virtualization skills, including accelerated deployment time for the intended infrastructure. You can maximize CPU and memory usage, optimizing resources under stress testing. You can even save test VMs as templates for future environments or new hosts. Server consolidation also allows you to create consistency in a test environment and create uniform backups.

How does a server consolidation plan prevent sprawl?

Running multiple VMs on a single server prevents a common data center problem: the proliferation of servers in physical environments. But of course, with virtualization, you still have to consider and prevent VM sprawl. When you deploy new applications or assign tasks too quickly, this overproliferation of VMs often happens. A server consolidation plan, however, helps avoid physical server sprawl by eliminating unnecessary servers in a data center.



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Virtual systems management tools can improve server consolidation planning. These tools improve server consolidation ratios through configuration management, VM management, workload automation and job scheduling. Important performance indicators include the number of physical servers retired because of virtualization, the percentage utilization of resources and the number of VMs per physical server. With management tools, you can track and control resource allocation, dynamically manage VMs and dynamically balance allocation between batch and online workloads.

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