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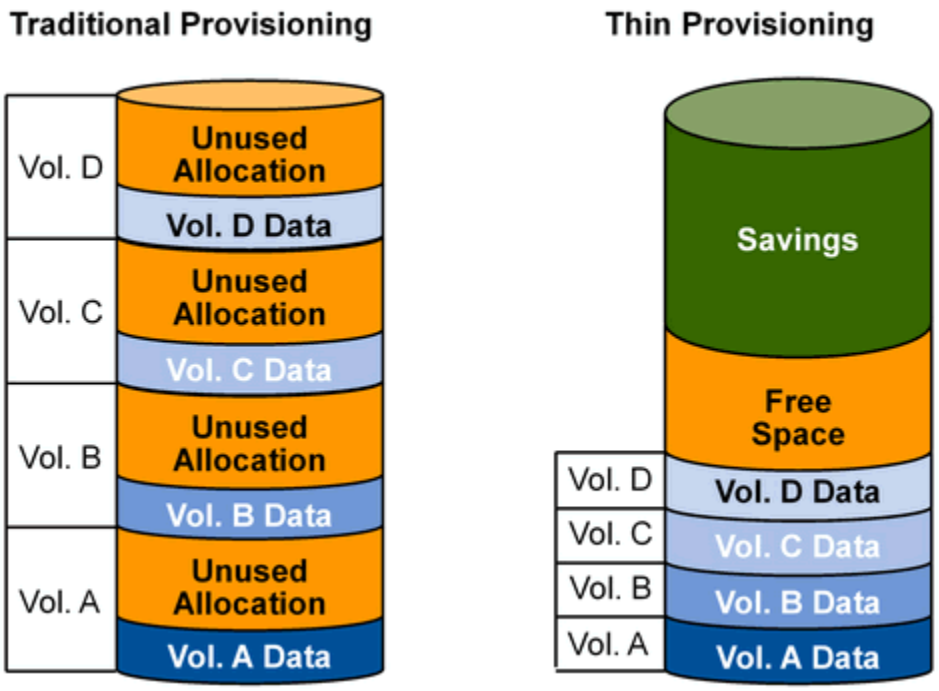
# Servers and Storage Technologies

Thin provisioning can increase storage utilization rates to as much as 75% to 80% and it can also help in delaying costly hardware acquisitions. It can also decrease operational cost by lowering power and cooling cost. Thin provisioning is the ability to allocate physical capacity from a virtualized pool of storage to logical volume on a just-in-time basis.

The traditional provisioning model estimates how much capacity will be needed for a particular application over the life of the disk array, and it allocates that much to the workload (Figure 1). Most time administrator intentionally over allocates capacity just to be safe, this means that disk capacity if often not fully utilized. Thin provisioning allows storage administrators to take a virtual pool of storage and let us allocate however much capacity we think may ultimately be needed for each workload. Since the physical capacity is not actually utilized until data is stored in it, there will be no over allocation issues. Thin provision allows disk capacity to be used more efficiently, so fewer drives will be needed to meet the existing data requirements. Overall thin provision simplifies storage provisioning and capacity management.

Thin provisioning is very important to implement, since the workloads can benefit when capital expenditure and operation expenses are constrained. The benefit of thing provisioning can include delayed additional storage purchase or lessened amount of capacity purchase, and improved staff productivity due to improvement in management. Thin provisioning can improve our storage utilization rate, amortize capacity purchases, and postpone storage hardware acquisitions. There will be increasing net benefit, since the costs are decreasing.

**Figure 1.** Traditional vs. Thin-Provisioning Models



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