Converged Infrastructure TCO

A Real-world Customer Study

This TCO analysis presents a real-world study completed for a local government that was planning to replace more than 2500 physical desktops with virtual desktop infrastructure (VDI). It provides a detailed financial comparison of different infrastructure options, including VCE Vblock and the Nutanix Virtual Computing Platform.

Planning Assumptions

- The organization was considering deploying 2860 virtual desktops, with 75 percent concurrent usage across the population
- Five-year planning period—606 virtual desktops to be created each of the first three years, and then 521 in the each of the next two years. This transition rate to match the refresh rate of PCs (five years) and laptops (three years)
- Organization historically spends $750 per PC (including taxes, shipping, administration, set-up time, and other), and $1,815 per laptop (including taxes, a docking station, and a monitor). PC and laptop disposal costs are $100 each.
- Existing PCs and laptops will be locked down as thin clients, kept for three years after their normal refresh cycle and then replaced with 22-inch LG integrated zero-client monitors. The LG devices will be purchased for new users.
- Microsoft Software Assurance costs are $50/user/year, and Microsoft's Virtual Desktop Access license costs are $100/user/year
- Server cost: $11,512 each
- SAN cost: $722,000
- VMware Horizon View Premier as VDI solution platform

The table below provides a detailed cost analysis of the cost for four different infrastructure options:

- **Status Quo**—Do not implement virtual desktops
- **Traditional Servers and SAN**—Use traditional infrastructure to deliver virtual desktops.
- **VCE Vblock**—Implement the VDI solution using pre-built converged infrastructure from VCE
- **Nutanix**—Implement the VDI solution using Nutanix Virtual Computing Platform

	Type	Initiative	Status Quo	SAN + Server	VCE Vblock	Nutanix
Year 1	**CapEx**	Primary Hardware & Software Purchases	$610,743	$1,225,568	$1,969,957	$595,843
	OpEx	Ongoing Mantenance	$254,508	$278,826	$289,904	$209,836
	Total	**CapEx & OpEx Total**	**$865,251**	**$1,504,384**	**$2,259,861**	**$805,679**
		Savings Over Status Quo	N/A	($639,133)	($1,394,610)	$59,572
Year 2	**CapEx**	Primary Hardware & Software Purchases	$610,743	$254,203	$185,129	$387,317
	OpEx	Ongoing Mantenance	$260,035	$313,712	$321,200	$305,016
	Total	**CapEx & OpEx Total**	**$870,778**	**$567,915**	**$506,329**	**$692,333**
		Savings Over Status Quo	N/A	$302,863	$364,449	$178,445
Year 3	**CapEx**	Primary Hardware & Software Purchases	$610,743	$242,619	$185,129	$353,619
	OpEx	Ongoing Mantenance	$265,561	$333,006	$337,494	$347,433
	Total	**CapEx & OpEx Total**	**$876,304**	**$575,697**	**$522,623**	**$701,052**
		Savings Over Status Quo	N/A	$300,607	$353,681	$175,252
Year 4	**CapEx**	Primary Hardware & Software Purchases	$610,743	$371,069	$336,532	$471,324
	OpEx	Ongoing Mantenance	$271,088	$631,001	$782,811	$493,647
	Total	**CapEx & OpEx Total**	**$881,831**	**$1,002,070**	**$1,119,343**	**$964,971**
		Savings Over Status Quo	N/A	($120,239)	($237,512)	($83,140)
Year 5	**CapEx**	Primary Hardware & Software Purchases	$610,743	$359,556	$336,532	$403,928
	OpEx	Ongoing Mantenance	$276,615	$696,006	$844,373	$565,659
	Total	**CapEx & OpEx Total**	**$887,356**	**$1,055,622**	**$1,180,905**	**$969,587**
		Savings Over Status Quo	N/A	($168,264)	($293,547)	($82,229)
Totals	**CapEx**	Primary Hardware & Software Purchases	$3,053,715	$2,453,087	$3,013,279	$2,212,031
	OpEx	Ongoing Mantenance	$1,327,807	$2,252,601	$2,575,782	$1,921,591
	Total	**CapEx & OpEx Total**	**$4,381,522**	**$4,705,688**	**$5,589,061**	**4,133,622**
		Savings Over Status Quo	N/A	($324,165)	($1,207,539)	247,900

Figure 1: Five-year cost analysis

Notes:

1. Ongoing maintenance includes annual hardware and software maintenance necessary to keep the selected solution in operational condition.
2. All costs are actual (i.e. costs are not amortized)

The IT team for this local government calculated that the total cost (capital and operating) of the current infrastructure (non-converged) over five years would total approximately $4.4 million. Implemented with Nutanix, however, that five-year cost drops to $4.1 million, for a savings of $247,900 over the five-year period.

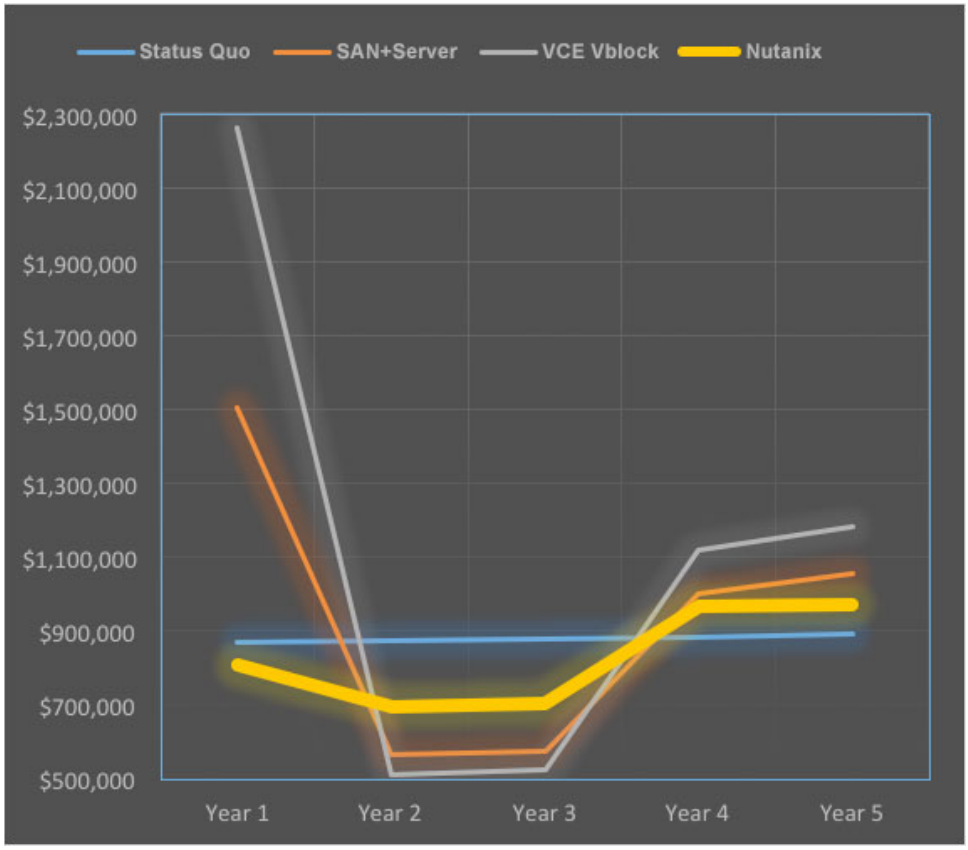

Figure 2: Annual costs estimates

In Figure 2 above, the SAN + Server and Vblock architectures both require massive upfront costs, while the Nutanix costs remain fairly even over the planning period. This budgeting advantage is a result of Nutanix's Pay-As-You-Grow, scale-out architecture that enables capacity to be added incrementally as project scale increases.

Figure 3: Five-year cost comparison

This chart makes clear that: 1) Vblock is more expensive than all other architectural approaches, and 2) Nutanix-based infrastructure offers the least overall cost.

How About Operating Costs?

Vblock solutions are almost always delivered pre-wired and pre-configured, so local IT staff does not have to do much in the way of initial configuration. These solutions, however, still often require a traditional set of IT skills to perform ongoing operations, such as configuring LUN, zones and datastores. Expansion (adding more storage capacity and/or UCS servers) is a time-consuming effort, which diverts limited IT resources that would otherwise be directed toward more value-added, business-centric activities.

In contrast, the Nutanix solution is plug-and-play. The IT staff administrator simply installs each Nutanix 2U appliance into the 10G Ethernet network, and walks through the simple initial configuration from the Nutanix Prism UI. Capacity can be added incrementally, one server at a time – with zero system downtime. Each server provides additional storage, storage control and compute capacity. And, unlike Vblock, Nutanix is built as a distributed system so that performance remains consistent at any scale.