

VMware View 4.5

Total Cost of Ownership

Q. What is TCO?

A. TCO stands for “total cost of ownership,” a concept developed and popularized by Gartner Research, is a methodology for analyzing the true cost of owning and operating IT and other business solutions. In context of enterprise desktop management, TCO is defined as the sum of PC acquisition costs (CapEx) and the operating costs (OpEx) associated with supporting that PC over its useful life.

Q. Why does TCO matter?

A. Every business, no matter what industry they are in, has a process for evaluating technology investment. TCO analysis gives the customers an estimate of quantifiable business benefits that can be expected from an investment. A thorough understanding of TCO for any technology platform allows decision-makers to answer questions about:

- 1) **Return on investment (ROI)**—How much will it cost them? What kind of return is expected on their investment? When will they start seeing positive return?
- 2) **Strategic relevance**—How does the investment compliment the strategic goals of the company?

Thus, a TCO-based approach allows decision makers to evaluate technological benefits of in light of financial and strategic incentives.

Q. Who uses TCO?

A. Anyone who wants to understand the cost structure of a specific environment/investment. For VMware View, the likely profiles of TCO users are:

- **CIOs or IT Directors/Managers**—Looking for the lowest-cost IT solution to desktop/client architecture.
- **CFOs**—Want confirm that the most cost-effective solution is adopted.

Q. How do IT organizations utilize TCO?

- A.
- For creating a baseline line cost, that is often used as a benchmark to track actual costs
 - For running “what-if scenarios” prior to implementation, to select the best possible route
 - For understanding future costs estimates

Q. What’s driving VMware View adoption?

- A. Based on the IDC research, the following were/are the key drivers for VMware View adoption:
- **Simplification/CapEx reductions**—Device simplification and/or consolidation, faster deployments, new apps, new employee provisioning, etc.
 - **OpEx reductions**—Power savings, “bring-your-own-PC” approaches, etc.
 - **Reduction of IT staffing costs**—Simplified desk-side support; simplified life cycle management.
 - **Ease and speed of OS/application deployments**—Simplify new HW/OS adoption, Windows 7 migration
 - **Security**—Asset control outside corporate perimeter (“offshoring”), physical device security, data security/control, etc.

Q. What is the VMware View TCO/ROI Calculator?

A. The VMware View™ TCO/ROI Calculator is a free online tool you can use to calculate the TCO and ROI of implementing VMware View in your organization, giving you the means to assess the potential savings you can achieve.

Q. How can I access the VMware View ROI/TCO Calculator?

A. You can access the ROI calculator at <http://roitco.vmware.com/vmw/index.html>

Q. What types of costs are included in VMware TCO/ROI Calculator?

A. In accordance with Gartner’s definition of TCO, the calculator accounts for hard costs (both direct and indirect), power and cooling costs for servers and client devices (PCs, laptops, thin clients, etc).

Q. What specific direct hard costs (capital expenses) are included in the VMware TCO/ROI Calculator?

- A. The calculator measures direct costs associated with acquiring a Desktop. In case of VMware View the direct costs are:
- Server hardware cost
 - Storage cost
 - VMware View software, support & services cost
 - Microsoft VDA license cost (if applicable)
 - Thin Client acquisition cost (if applicable)
 - PC conversion cost (from Thick client to thin-thick client)
 - Retired desktop disposal cost
 - PSO cost

Q. What specific indirect costs (operating expenses) are included in the VMware TCO/ROI Calculator?

A. The calculator measures cost associated with supporting a physical or virtual Desktop. This cost area is broken into three categories:

- **Client deployment**—HW configuration, image and app installation, physical deployment, etc.
- **Client administration**—move/add/change users, policy/entitlement, imaging/reimaging, security and access-rights, license management, etc.
- **Helpdesk**—centralized and dispatched support.

Typical IT activities that fall under the above three categories would be:

- HW selection and procurement
- Desktop Imaging/reimaging
- HW/SW configuration and compatibility testing
- HW/SW deployment
- User Administration (Move/Add/Change)
- Application management
- Backup, archiving, and recovery
- Service desk (Tier 0/1)
- Security management
- IT administration

Q. What specific soft costs are included in the VMware TCO/ROI Calculator?

A. Cost associated with downtime or productivity loss. Some of these costs are quantifiable while the others are more strategic in nature and may vary significantly from customer to customer. Examples include:

- User downtime
- Business interruption due to unforeseen events
- Security breach
- IP leak

Q. What is the average cost of acquisition for a PC?

A. While the acquisition price varies from customer to customer, the average price range for a corporate PC (HW with OS and three-year onsite service contract) is between \$800 and \$1200 USD. Table 1 outlines Gartner-recommended PC configuration for mainstream users

Table 1. Gartner-recommended PC configuration (for mainstream users)

RECOMMENDED DESKTOP CONFIGURATIONS, 2H09	
Intel-Based Desktop Configurations	
User Type	Mainstream
Processor	Core 2 Duo E8500
Chipset	Intel Q45
Memory	2GB DDR2
Hard Drive	120GB SATA
Optical Drive	DVD/CD-ROM (optional)
Graphics	Integrated
Display	21-inch-wide FPD
USB Ports	Four rear, two front
NIC	Integrated 10/100/1,000
Manageability	DASH-compliant
Parallel Ports	Optional
Price	\$800 to \$1,200 USD
Warranty	Three years, on-site

Q. How does the VMware View acquisition cost compare with a traditional PC?

A. Depending on client access devices, the acquisition cost of View, including Microsoft VDA license, is estimated to be between \$400 and \$750 USD. Table 2 provides a comparison of the acquisition costs associated with thin clients, repurposed PCs, and existing PCs.

Table 2. A comparison of VMware View acquisition costs

	PURCHASE THIN CLIENTS	REPURPOSE PCS	USE EXISTING PCS AS IS
Client Cost (for Virtualization)	\$250	\$25	\$0
Servers Cost	\$75	\$75	\$75
Storage Cost	\$75	\$75	\$75
View License	\$250	\$250	\$250
Microsoft VDA	\$100	\$0*	\$0*
Cost/user	\$750	\$425	\$400

* Assumes customer has Microsoft Software Assurance

Q. What is Microsoft VDA? How much does it cost?

A. Windows Virtual Desktop Access (VDA) is a new licensing program from Microsoft for hosted virtual desktops. Windows VDA replaces Microsoft VECD licensing program. Windows VDA licensing program is effective as of July 1st, 2010. Customers who want to use devices such as thin clients (these devices do not qualify for Windows client SA) will need to license those devices with VDA to be able to access a Windows VDI desktop.

Windows VDA is also applicable to third-party devices, such as contractor or employee-owned PCs. Like VECD, Windows VDA is a device-based subscription that is available at \$100 USD annually per device. Windows VDA extends the coverage of Software Assurance to devices such as thin clients for virtual desktops.

Q. If I repurpose existing desktops, do I still need to get VDA license?

A. If the existing desktops are covered by Software Assurance, then VDA license is not required. If the existing Desktops are not covered by Software Assurance, then the VDA license is required. To lower the CapEx of a View solution, we recommend that the customer repurpose, at least some percentage, their existing thick clients.

Q. What factors influence the ROI and TCO of VMware View?

- A. There are several factors that influence the ROI of View. These are (in the order of importance):
- Virtualization schedule (Virtualize as much as possible in year 1, especially if you are approaching a refresh cycle)
 - Conversion of existing desktops into thin-thick client (repurpose as many desktop as possible)
 - Age of current desktops and refresh cycle
 - Desktop acquisition cost
 - Thin client acquisition cost (a mid-to-high range thin client is almost as expensive as an average desktop)

Q. How does View help customers with Windows 7 migration?

A. A traditional desktop refresh project can encompass as many as seven different phases, each of which represents a significant investment in labor and assets. Based on our cost model, adopted from Gartner’s Migration Toolkit, VMware View and VMware ThinApp™ can reduce the time and cost of Windows 7 migration by 50 percent when compared with physical migration. For more information, visit <http://www.vmware.com/solutions/desktop/windows7-migration.html>

Q. What tasks are typically covered in OpEx? And how do customers measure these?

A. The tasks listed below are typically included in OpEx calculations

User administration (Adds and Changes)—This refers to the end user of the desktop system and the work required to bring them into the company as a new hire, or move them into a new office or position.

Metrics: Volume and time spent on:

- User configuration change management
- Identity and access management (passwords)
- Implementing/enforcing group policies
- Directory management

Hardware configuration / reconfiguration—This is the effort required to prep a desktop for use (installing OS, tuning OS, Installing core apps such as AV and productivity software. “Reconfiguration” entails redoing the above when a particular desktop system is repaired or upgraded.

Metrics: Volume and time spent on:

- OS tuning
- User profile/configuration
- Device drivers
- Hardware break-fix management

Hardware deployment—This refers to the costs associated with physically delivering and connecting the end user's desktop. It could include the work to setup a system in the offices or shipping a PC to remote/home office.

Metrics: Volume and time spent on:

- Managing PC installations for new systems, or replacement upgrades

OS and Software deployment—This refers to installing core apps, AV, printer drivers, etc and business client applications such as Oracle apps, SAP or business analytics tools. It also involves the pre-work of deciding what apps a user needs, ex. OS, service pack and deciding what the “approved applications” for users or business unit are, and then the actual deployment.

Metrics: Volume and time spent on:

- Testing, packaging and deploying new software or operating system

Application Management—Once appropriate applications are selected for production use those applications need to be managed. This management includes software license management, patch management etc.

Metrics: Volume and time spent on:

- OS and application updates (patches)
- Application upgrades
- Application de-installations
- Break-fix management of the operating system (including registry) and applications.

Backup, archiving, recovery—This is the cost associated with maintaining backup/archiving client software on users' desktops from a management or maintenance perspective. This is also the cost associated with recovering lost data or data required for SEC investigations or electronic discovery. This includes the backup or archiving software maintenance and support as well as the cost in FTE “man hours” to perform a recovery.

Metrics: Volume and time spent on:

- Managing PC data backup and recovery

Service Desk (Tier 0/1)—This is the cost of X number of support FTEs divided by Y number of managed desktop PCs per year.

Metrics: Volume and time spent on:

- Dispatched support
- Application conflict resolution

Security Management—This refers to work done to track and secure desktops, from both a physical and logical security perspective.

Metrics: Volume and time spent on:

- Managing anti-virus
- Data Security/Disk encryption
- Other security management for hardware and software

IT Administration—This represents the costs of miscellaneous IT administration. An example might be the costs associated with maintaining a helpdesk ticketing system.

Metrics: Volume and time spent on:

- Procurement
- Asset management
- Software tracking
- License management
- Lease and lifecycle management

Q. How does VMware View lower the helpdesk/service desk cost?

A. Help desk operations are one of the major cost components of Desktop OpEx. Based on the IDC report, VMware View customers are able to realize an average savings of 57 percent in overall helpdesk cost. This includes the centralized support as well as the desk-side or dispatched support.

Prior to deploying View, our customers reported spending an average of 190 minutes per user per year on centralized Desktop support. On the dispatched support, it was approximately 60 min per user per year. After deploying VMware View these numbers came down to 141 and 8 minutes respectively.

Q. Does VMware guarantee the claimed ROI?

A. VMware does not guarantee the presented ROI. The purpose of the ROI analysis is to provide an estimated return on investment for a project. There are many variables that could potentially influence the ROI of a desktop virtualization project. The ROI analysis for VMware View utilizes customers' actual data when available, and is based on the data gathered from existing VMware View customers, VMware primary and secondary research, and trade publications/whitepapers etc. available in public domain. Below are the data sources for our ROI analysis

- PC Hardware and labor cost information (IDC research, Gartner whitepaper on Desktop TCO)
- Average Operational savings reported by existing VMware View customers, audited and validated by IDC
- Industry average cost of Electricity
- Industry average cost of Hardware Infrastructure

VMware provides the ROI analysis in good faith and applies best effort to make the analysis accurate.

