



## STA Server Virtualization Comparison and TCO Analysis Tool

In the face of the struggling global economy many IT organizations are attempting to weight the cost/benefit tradeoffs between Microsoft Windows 2008 R2 Hyper-V with Systems Center and VMware vSphere 4 with vCenter. Although VMware is clearly the market leader at this point in time there is no doubt that Microsoft, with its massive resources and innovative culture, will make inroads into VMware's market share. We realize that Citrix XenServer is a viable solution as well but we are not including Xen in this initial version of the TCO comparison tool. Based on our research, experience and discussions with customers, Microsoft is still seen as a less viable option for virtualization of critical and mission critical workloads. Whether or not this is a realistic assumption remains to be seen. None the less a comparison of the costs and benefits is worth exploring. In order to assist our customers and prospects with this analysis we have used our experience developing virtualization business cases to create a virtualization TCO comparison tool. We considered the claims of both Microsoft and VMware in the development of our tool. Will also used information from independent resources like Intel and others. The tool was developed to require minimal user input while providing a useful level of accuracy and detail behind the scenes. The TCO tool compares the estimated costs of continuing with a physical server environment over a five year period vs. costs using virtualization with either Hyper-V or VMware. Some of the key assumptions in the tool include:

- *The model assumes that 20% of the Windows server count entered might not currently be good virtualization candidates due to performance and capacity requirements. However, some advanced virtualization software features can allow for the virtualization of a portion of these questionable servers. If the "Advanced" level is selected in the tool a larger number of servers are virtualized and the cost comparison will reflect this. This applies to VMware only.*
- *Microsoft costs include Windows operating systems and the Systems Center Suite*
- *VMware costs include Windows operating systems, vSphere licensing, vCenter licensing and Systems Center suite costs. Systems Center licensing costs are included in the VMware calculations since there is some Systems Center functionality not yet provided by VMware.*
- *The tool allows the user to toggle between adding memory to Hyper-V servers vs. adding additional virtual host servers. This was a complaint issued by Microsoft in their review of the VMware cost per application analysis.*



- *Systems Center and vCenter servers are virtual servers in the model.*
- *Virtualization functionality levels can be toggled between Basic, Medium, and Advanced. Hyper-V with Systems Center is included in all options. Basic includes vSphere Standard and vCenter. Medium includes vSphere Enterprise and vCenter. Advanced includes vSphere Enterprise Plus, vCenter, vCenter Lifecycle Manager, vCenter AppSpeed, vCenter Chargeback, and Cisco Nexus 1000v.*
- *Consolidation levels can be toggled between Conservative, Medium, and Aggressive. Conservative assumes a baseline of 2 virtual servers per processor core. Medium assumes 3 virtual servers per core. Aggressive assumes 4 virtual servers per core. These baseline levels are used for Hyper-V. The level of consolidation with vSphere is set at 1.25 times the baseline for the Basic and Medium settings above. 1.5 times the baseline for the Advanced setting.*
- *The impact of automation tools can also be toggled between Conservative, Medium, and Aggressive. This option allows the user to reduce or increase the impact of virtualization automation tools on IT staffing hours and costs.*

**Some of the key factors not included in the calculations include:**

- *Impact of improved systems availability with virtualization on both productivity and business*
- *Disaster recovery site infrastructure costs and management impacts*
- *Development and test infrastructure cost impacts*
- *Volume license discounts*

**Conclusion:**

Based on our research, analysis, and experience it appears that from a purely hard cost perspective Microsoft Hyper-V and VMware vSphere provide similar TCO savings in a basic configuration. Although vSphere licensing adds incremental software costs that Microsoft does not, the additional level of physical consolidation and management simplification closes the gap on the software costs. The value delivered by vCenter modules will depend on the maturity of an IT organization and the size of the infrastructure being managed. Before implementing these modules a thorough analysis of the benefits and costs should be completed as these modules can add significant software licensing costs.

For a customized analysis customers and qualified prospects can contact **STA at 1-888-477-8246.**