



VMware Total Performance Analysis

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As customers have continued to virtualize their servers over the last 5+ years, many aspects of the modern data center have changed. Some virtual infrastructures started with one host and some with many more, but they all have grown and evolved with the realization how much a virtual environment simplifies the management of server deployments, streamlines maintenance, and reduces the associated capital and operational costs. However, as more servers, more storage, more networking, and more VMs are added, lack of planning and visibility within the infrastructure can create obstacles for continued expansion. In many cases rapid growth and sprawl have created a lack of documented infrastructure, and VMs are becoming stressed while other resources are being wasted. In addition, new features in VMware vSphere and changes in best practices make it imperative to assess and update your knowledge base.

We have constructed a service to help you prepare your virtual infrastructure for the future. We look at your infrastructure and make sure it is built on current best practices, and we completely document the infrastructure so you have a great "as is" build book. Our analytics tools allow us to understand the true capacity of your infrastructure and determine how much of the infrastructure is consumed and where there is waste to be recovered. We can show you how well your virtualized infrastructure is running, and uncover under- and over-allocated VMs. Finally, we help you through the next wave of physical-to-virtual conversion to move more physical servers to VMs. We can model the effects of more virtual servers or more/less infrastructure on your actual resources.

Let Us Help You Leverage Your Virtualization Investment Toward Its Full Potential.

Phase 1—Virtual Infrastructure and Health Assessment

This phase involves the installation and configuration of the various tools and services, the kick-off of the assessments, and the generation of the “as is” build books.

- Collect VMware vSphere inventory, configuration, and utilization data
- Analyze data to generate a report card; present observations, findings, and data categorized by VMware HealthCheck best practices
- Discover and collect information about your virtual environment, its components and configuration settings, and provide comprehensive visual reports for analysis, documentation, and decision-making support; optimize resource utilization and track implemented changes
- Provide a “current state” analysis of your vSphere environment and compare configuration data against VMware vSphere best practices to provides a visual overview of your vSphere environment

2.3.1 Technical Recommendations

Table 4: Technical Recommendations

Priority	Component	Recommended Action Item
1	Compute	Deploy ESX in compliance with all configuration maximums as documented in the most current vSphere Configuration Maximums document.
1	Compute	Use remote syslog logging to improve manageability.
1	Compute	Deploy networking in compliance with all configuration maximums as documented in the most current vSphere Configuration Maximums document.
1	Compute	Configure networking consistently across all hosts in a cluster.
1	Compute	Verify that there is redundancy in networking paths and components to avoid single points of failure. For example, have at least two paths to each network.
1	Compute	Configure management/service console, VMkernel, and virtual machine networks so that there is separation of traffic (physical or logical using VLANs).
1	Compute	Change portgroup security default settings ForgedTransmits and MACAddressChanges to Reject unless the application requires the defaults.
1	Network	Minimize differences in the number of active NICs across hosts within a cluster.
1	Virtual Datacenter	Set up a redundant service console portgroup to use a separate vmnic/uplink, and an alternate isolation response gateway address for more reliability in HA isolation detection. Set up a redundant service console portgroup to use a separate vmnic/uplink on a separate network. Configure isolation address for the redundant

Figure 1: The VMware TPA includes technical recommendations to help optimize your environment.

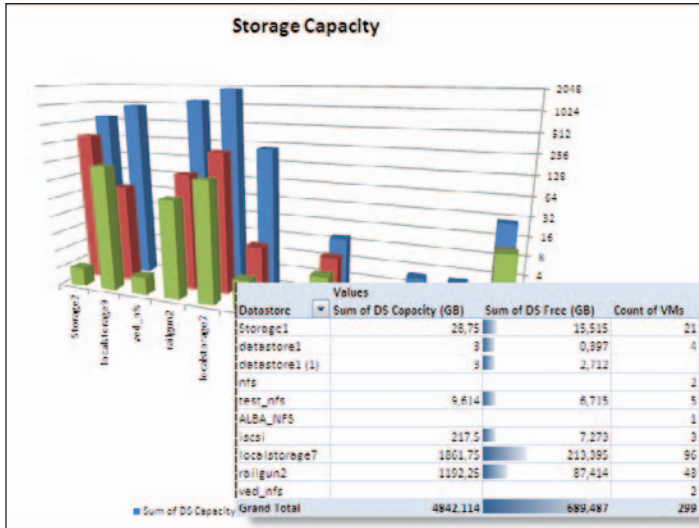


Figure 2: Numerous graphic reports are available; here we see a report on disk space capacity.



Figure 3: Dashboard-like graphics help summarize the environment making further analysis easier.

Phase 2—Monitoring and Performance Analysis

This phase involves the collection of performance and metrics data that will generate the various reports and recommendations to improve and repair your current infrastructure.

- Provides automated operations management using patented analytics and an integrated approach to performance, capacity and configuration management
- Analysis of your vSphere Environment that will detail overall and individual resource Health, Risk, and Waste metrics and provide Trouble-shooting, Root Cause Analysis, and Remediation recommendations for any problematic resources



Figure 4: The overall environment is scored, and data centers, clusters, hosts, and VMs are color-coded based on their relative health.

Phase 3–Capacity Analysis

This phase will generate resource usage and recommendations reports that will be used to determine resource availability for further Virtual Infrastructure expansion. It coincides with the information collected in Phase 4.

- **Capacity Awareness:** At-a-glance charts and graphs, to view and analyze past, present, and future capacity states.
- **Capacity Optimization:** Detailed reports with recommendations letting you reclaim excess capacity from idle, oversized, or powered-off virtual machines (VM), as well as indications of VMs that are starved for resources. This helps with right-sizing or decommissioning decisions that can help to avoid any further waste.



Figure 5: Capacity is rated for both risk and efficiency; opportunities for reclaimable waste are identified.

Phase 4–Virtualization Candidate Analysis

This phase (along with the reports from Phase 3) will generate a report that details the remaining physical servers and workloads that would be ideal candidates for virtualization and what the capacity requirements would be. It also provides visibility into what resources are available and/or required to accommodate these additional workloads.

- For customers that are in phase 1 or 2 of their virtualization journey and are interested in virtualizing their next wave
- Assess the current workload capacity of the remaining physical servers in the data center or desktop infrastructure (separate option) through comprehensive discovery and inventory of IT assets
- Measure system workloads and capacity utilization across various elements of the IT infrastructure
- Plan for capacity optimization through detailed utilization analysis, benchmarking, trending, and identification of capacity optimization alternatives
- Monitor resource utilization through anomaly detection and alerts based on benchmarked thresholds
- Feed appropriate info from this section into the customer's existing model captured in Phase 3; determine how many physical servers can be accommodated into existing infrastructure or determine how much additional infrastructure would be needed to accommodate the additional workloads

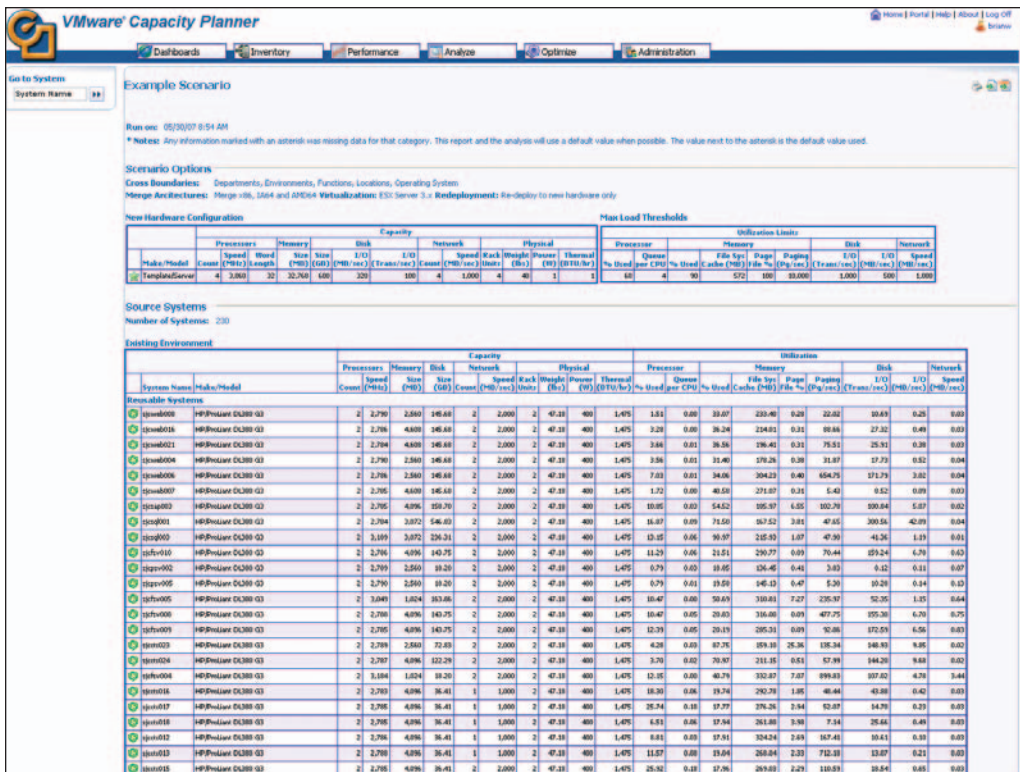


Figure 6: Detailed reports are available including scenario modeling and performance statistics.

Final Phase—Remediation and Next Steps

Once the data has been collected and the analysis reviewed, remediation alternatives are discussed. We can help you with any or all of the next steps. Some customers opt to assign the remediation steps to their internal staff; some choose to engage with us for assistance with the more challenging steps. The delineation point between performing the remediation steps internally or not is usually based on a combination of the complexity of the task, the criticality of the issue needing correction, and the available cycles of the customer’s IT staff.

- Create a “Recommended Task List” for implementation to optimize the virtual infrastructure
- Generate a “Virtualization Roadmap” for the future that includes the Physical to Virtual recommendations from the Capacity Analysis and Planning Phase
- Provide recommendations for VMware software licensing and hardware upgrades/expansion
- Provide knowledge transfer to the customer’s Management and IT staff

Optional HP Blade Infrastructure Health Assessment:

Setting up your HP BladeSystem infrastructure to best practices is a sure way to get the best experience in performance, manageability, and uptime from your HP BladeSystem blade servers. Having your HP blade enclosure, Virtual Connect modules, and blade server firmware updated to a current, stable release, plus their configuration reviewed by specialists for optimal configuration, keeps your converged infrastructure working in concert and at its highest efficiency. This option examines the key components of your HP BladeSystem infrastructure to make sure things are running at peak performance, and that redundancy is properly configured for maximum uptime. If you use HP Systems Insight Manager (SIM) and HP Insight Control (ICE), this option can review them for proper configuration to deliver the highest level of functionality and optimal manageability.