

## Optimization Pack



### *Optimize Capacity Utilization*

#### **VKernel Optimization Pack**

Optimization Pack is an easy to use virtual appliance that enables systems administrators to maximize capacity utilization of expensive server and storage resources. It provides actionable recommendations on how to correctly size application VMs and free up unused allocated capacity without impacting performance.

#### **How it Works**

Optimization Pack is a virtual appliance that can easily be installed in minutes and:

- Automatically collects capacity and utilization metrics from VMware vCenter or ESX;
- Profiles each application workload (VM) and its consumption of CPU, memory, disk and disk I/O resources over time;
- Compares utilization data to allocated VM resources; and
- Provides specific, actionable recommendations that reclaim underutilized resources and reallocate them where needed to maximize utilization.

#### **Reallocate Server and Storage Resources to Increase Utilization**

Because it is difficult to determine exactly what CPU, memory and disk resources a virtual machine will require when it is first created, administrators tend to err on the side of performance. As a result, today's virtualized environment is typified by large numbers of VMs consuming small percentages of their allocated resources.

Optimization Pack's Rightsizer app continuously evaluates every VM's CPU, memory and storage allocations and compares that data to actual utilization. It then makes recommendations to decrease or increase those allocations to the amounts safely needed to assure application performance.

By reallocating underutilized resources systems administrators can maximize capacity utilization while assuring robust application performance. The recommendations include:

- Adding or deleting CPUs
- Increasing or decreasing memory allocations
- Increasing or decreasing storage allocation
- Increasing or decreasing CPU allocations

Recommendations that can be performed without shutdown of a VM can be executed by Optimization Pack with the click of a button.

#### **Reclaim Unused Storage Capacity to Reduce Server and Storage Purchases**

The ease with which users can take snapshots, create templates, provision and deploy new VMs often results in waste. Systems administrators often forget to delete VMs, disk images, snapshots and templates that are no longer needed. Typically in the gigabytes, these files occupy expensive storage and (if running) server resources.

Every day Optimization Pack's Wastefinder app examines each application VM, snapshot and template to determine:

- How long has it been since it was last used or powered on (# of days);
- If it is doing any useful work (i.e. is it a zombie?); and
- If it is still accessible from vCenter or remains only on storage (abandoned image).

Based on this analysis Wastefinder makes specific recommendations to delete unused application VMs, templates, snapshots and abandoned disk images. This has allowed many users to reclaim terabytes of expensive storage space and to grow their environment with fewer servers.

### Identify, Sort, and Tag VMs to Better Manage your VM Inventory

While it is relative easy to deploy virtual machines, it is difficult and time consuming to track and manage a typical datacenter’s VM inventory. System administrators often find themselves at a loss when management asks questions such as:

- How many VMs do we have?
- When were VMs deployed and by whom?
- What resources were allocated to VMs?
- Which VMs have not been patched?
- What OS are the VMs running?

Optimization Pack’s Inventory application helps busy administrators manage their VM inventory and easily provide needed information.

Inventory collects information for each VM from one or multiple vCenter servers. The information is then organized into “Excel like” tables that can be easily sorted by more than 50 attributes and reported into Excel or PDFs.

Inventory also has a custom ‘tag’ feature that allows administrators associate specific data to one or more VMs. With this feature, administrators can more easily search for VMs by parameters such as:

- Dates when VMs should be taken down;

- Assign VM owner names;
- Projects associations; and
- Name of the application or departments using the VM.

To generate a report, administrators simply sort, extract the data into Excel files or PDF and email the reports.

### Increase Utilization to Defer and Reduce Server and Storage Purchases

The promise of virtualization is maximum application performance at minimum hardware cost. Optimization Pack provides the actionable information systems administrators need to maximize utilization of existing resources while safely assuring robust application performance. As a result, IT organizations are able to defer and reduce purchases of expensive server and storage resources.

18 GHz (14%) of CPU, 6.6 GB (14%) of Memory and 159.2 GB (79%) of Storage resources could be recovered by changing 19 Virtual Machine(s)

Virtual machine	CPU Recommendations	Memory Recommendations	Storage Recommendations
VMWare	Configured Properly	Decrease the Memory allocation to 1.7 GB	Decrease the / allocation to 1.6 GB Decrease the core allocation to 86 MB Decrease the data allocation to 628.6 MB
Palanisida Vista x64	Delete a Virtual CPU	Increase the Memory allocation to 32.7 GB or Move the Virtual Machine	Increase the C:\ allocation to 48 GB Decrease the E:\ allocation to 4.3 GB Increase the F:\ allocation to 158 GB
VK_OF_13_GA	Delete a Virtual CPU	Decrease the Memory allocation to 958 MB	Decrease the / allocation to 202.9 MB Decrease the / allocation to 1.1 GB
VK_OF_12_GA_Ken	Delete a Virtual CPU	Decrease the Memory allocation to 1.1 GB Remove a Virtual Machine Memory limit	Decrease the / allocation to 354.8 MB Decrease the / allocation to 1.4 GB
VK_OF_13_GA_Ken	Delete a Virtual CPU	Decrease the Memory allocation to 1.5 GB	Decrease the / allocation to 1.4 GB Decrease the / allocation to 284.3 MB
VK_OF_74	Delete a Virtual CPU	Configured Properly	Decrease the / allocation to 486.8 MB

### Actionable recommendations simplify capacity management

### Systems Requirements

VMware ESX 2.5 or vCenter 2.5 or higher

### Support

For technical support please visit <http://www.vkernel.com/support> , email us at [support@vkernel.com](mailto:support@vkernel.com) or call +1 978 289 6300.

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