



Enabling Your Users to Rightsize Their VMs

by **Helen Abbott**, on Aug 20, 2015 8:00:00 AM

How do you ensure that all VMs in your virtualized infrastructure are allocated the correct resources for their workload? Allowing your users to rightsize their VMs is a great way to minimize cost and maximize performance.

Why rightsize VMs?

There are several reasons to rightsize your VMs:

The screenshot shows a software interface for managing virtual machines. At the top, there's a navigation bar with tabs like Summary, Guest OS Details, Performance Summary, Graphical Usage, Change, Details, Alerts, and Test. Below the navigation is a search bar. The main area displays a VM named 'i-4e8ba8b1'. Under the 'General' tab, there are sections for 'General' (listing details like Stack, Guest OS, Instance Type, Root Device Type, Resources, IP Address, DNS Name, and Private IP Address), 'Commands' (with options like Start VM, Update Performance, Set Compliance Data, etc.), and 'File' (with options like Set Disk Image, Set Custom Attributes, Set Expiry Date, Request Service Change, Generate Inventory Report, and Generate Performance Trending Report). A modal window is open, titled 'There is 1 recommendation for this VM'. It contains a message: 'Change from instance type m1.small to instance type m1.large'. It provides a detailed explanation: 'VM performance data indicates the average weekly CPU is 25%, and the peak weekly CPU is 84%. Data were gathered between 2015/05/01 and 2015/06/12. Increasing the size of the instance will allow more processes to run simultaneously. Increasing the computational power should result in improved performance of the application contained inside the instance. Only the performance data used to generate this recommendation: memory data was not analyzed. Changing the instance type will also affect the amount of available memory.' At the bottom of the modal are 'Apply' and 'Ignore' buttons, and a 'Close' button. At the very bottom of the interface, it says 'Virtual Disk Size (GB): 8.0 File Location:'.

Viewing rightsizing recommendation details for a selected VM

- Over-allocation wastes expensive server resources and decreases ROI for the infrastructure.

- Configuring a VM with more virtual CPUs than its workload may cause slightly increased resource usage, potentially impacting performance on very heavily loaded systems. Common examples of this include a single-threaded workload running in a multi-vCPU VM, or a multi-threaded workload in a VM with more vCPUs than the workload can effectively use. Even if the guest operating system doesn't use some of its vCPUs, configuring VMs with those vCPUs still imposes some small resource requirements that translate to real CPU consumption on the host.
- Allocating enough memory to hold the working set of applications you will run in the VM minimizes swap activity and the associated disk thrashing.
- Allocating more memory than required unnecessarily increases the VM memory overhead, thus consuming memory that could be used to support more VMs.
- Over-allocation of vCPU causes performance problems on heavily loaded hosts (all vCPUs need to be scheduled to run at the same time).
- In the VMware context specifically, VMs with less memory and/or fewer vCPUs provide more opportunities for VMware DRS to migrate them in order to improve balance across the cluster. VMs with larger memory sizes and/or more vCPUs add more constraints for migration. It's also easier to manually distribute and balance smaller workloads across the available hosts.
- For managed service providers, rightsizing can increase billable resources sold to customers.

How does rightsizing work?

Rightsizing Recommendations

Rightsizing means ensuring that all VMs in your virtualized infrastructure are allocated the correct resources for their workload, with the goal of minimizing cost and maximizing performance.

| VM | Resource Type | Status | Cost Before | Cost After | Savings |
|-----------------|----------------------------|---------|-------------|------------|---------|
| 130 - 001 | Memory (down) | Warning | \$3906 | \$3504 | \$302 |
| ibrian | vCPU (down), Memory (down) | Warning | \$4566 | \$3506 | \$1060 |
| test119 | vCPU (down), Memory (down) | Warning | \$6519 | \$4517 | \$2002 |
| win 2003 r2 001 | vCPU (down), Memory (down) | Warning | \$9904 | \$5779 | \$4125 |

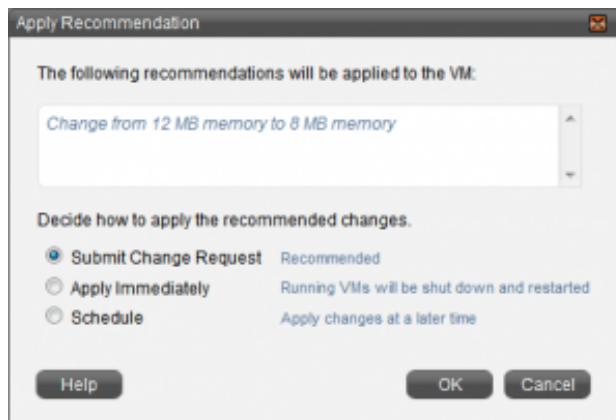
Buttons: Show Details, Apply All, Ignore All, Exclude VM

Easily filter a long list of recommendations by entering text in the filter field.

Embotics® vCommander™ issues CPU and memory rightsizing recommendations for VMs on **VMware vCenter** and **Microsoft SCVMM** using performance data from the virtualization platform (and optionally from Splunk, a performance monitoring tool). vCommander can also rightsize **Amazon EC2** VMs. In this case, vCommander issues instance type rightsizing recommendations based on CPU performance metrics. Performance samples are taken each night, or when manually requested by a user. You can configure the thresholds that trigger a change, as well as the length of the period to analyze before recommending a change.

VM resource configuration changes may occur outside the recommendation system, so that recommendations are fulfilled or no longer apply. vCommander keeps track of resource configuration changes that occur outside the recommendation system and adjusts recommendations accordingly.

Adding more memory to a VM can actually degrade performance of the host or cluster. For example, on a host with 4 GB of memory, if the VMs are using all but 256 MB of that memory, adding 512 MB to one VM on that host might cause performance issues on the host. Likewise, adding memory to a VM that has a high ESX swap rate (indicating that the host is overcommitted) can also cause performance issues on the host. To prevent this problem, if the memory capacity of the host or cluster is less than two VM workloads, memory rightsizing recommendations include a capacity warning.



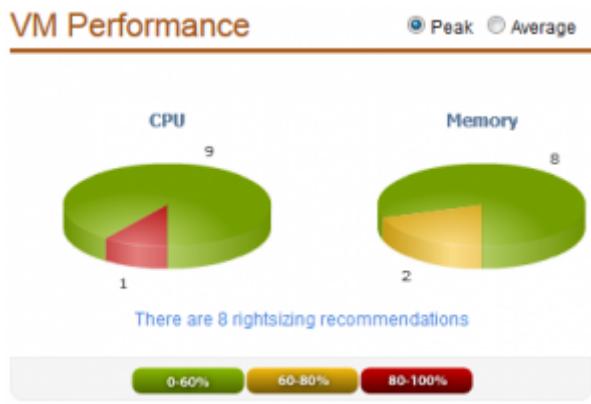
Granular permissions allow you to control what options users see.

Granular permissions

vCommander permissions allow you to control whether Service Portal users can see upsizing recommendations, downsizing recommendations, or both.

You can also control how users can apply a recommendation — immediately, through a change request, or by scheduling it for later.

A flexible, easy-to-use interface



The VM Performance pane on the Service Portal Dashboard

It's easy to find, review, manage and apply rightsizing recommendations with vCommander.

A link to current rightsizing recommendations is displayed in the VM Performance pane on the Service Portal Dashboard.

You can easily search for VMs with recommendations, using a set of rightsizing properties.

You can save your search for easy access at any time. You can schedule this search to be emailed as a report, too.

Print | Email | Download | Feedback

VM Comparative Economics Report

Creation Date: Saturday, October 25, 2014 10:34:18

Report Parameters:

- Reporting Period: Last 3 Months (Jul 1, 2014 - Sep 30, 2014)
- Cost Model: Projected. Use current cost model and VM resource usage. Costs will be projected for the specified timeframe.
- Recommendations: 12 VMs rightsize down.
- Results in single table: 11 VMs.
- Cold Create: 0 VMs.

| Multiple Managed Systems | |
|--------------------------|------------|
| Current cost: | |
| Cost Breakdown | Cost (\$) |
| CPU | \$4325.41 |
| Memory | \$2637.85 |
| Storage | \$5161.58 |
| Total cost | \$12124.84 |

| Multiple Managed Systems | |
|--------------------------|-----------|
| Projected cost: | |
| Cost Breakdown | Cost (\$) |
| CPU | \$1342.58 |
| Memory | \$2697.88 |
| Storage | \$5161.58 |
| Total cost | \$9183.12 |

Cost Breakdown

Cost Breakdown

VM Summary

| | |
|----------------------------------|-----|
| Total Number of VMs | 200 |
| Number of VMs at Start of Period | 200 |
| Number of VMs at End of Period | 200 |

Protected savings: \$3031.52

Resource Change Summary

| | |
|-----------|----------|
| VM CPU | -12 |
| VM Memory | -2770 MB |

Projected savings: \$3031.52

The built-in VM Comparative Economics report

Assessing the cost-effectiveness of rightsizing recommendations

The VM Comparative Economics Report helps you assess the cost-effectiveness of rightsizing recommendations.

Want to learn more about vCommander's rightsizing recommendations? Check out Rightsizing VMs in our online documentation. And stay tuned for a future blog post in which we'll discuss using rightsizing to control public cloud instance costs.

Topics: Administration | How-to | VM Sprawl & Rightsizing | Best Practices | vCommander

[Tweet](#)

[Like](#) [Share](#)

[SHARE](#)

First Name*

Last Name

Email*

Website

Comment*

We're committed to your privacy. Embotics uses the information you provide to us to contact you about our relevant content, products, and services. You may unsubscribe from these communications at any time. For more information, check out our [Privacy Policy](#).

This is a rich text area, you can add whatever copy you like

protected by reCAPTCHA

[Privacy](#) - [Terms](#)

SUBMIT COMMENT

About this blog

Subscribe to the Cloud Management blog for news, analysis, advice and opinions from our team of experts and thought leader guests. Join our community to receive updates directly to your inbox.

Subscribe to Email Updates

Email*

We're committed to your privacy. Embotics uses the information you provide to us to contact you about our relevant content, products, and services. You may unsubscribe from these communications at any time. For more information, check out our [Privacy Policy](#).

SUBSCRIBE

Recent Posts

[Remote Work Has Spiked – Your Cloud Costs Don't Have To](#)

[Taking Stock: The Current State of Enterprise Cloud](#)

[Reducing Your AWS Costs Seem Impossible? We've Got Good News](#)

[Embotics + Snow Software: Technology Intelligence for a Hybrid World](#)

[Commander 8 - Understanding & Insight](#)

Recommended Posts

[Embotics + Snow Software: Technology Intelligence for a Hybrid World](#)

[vCommander 7 Brings Hybrid Cloud Management to the Next Level](#)

[5 Factors to Chargeback/Showback Success](#)

[Service Delivery Success Factors \(Part 3\)](#)

[The Evolution of Cloud Computing](#)

Posts by Topic

Cloud Management Platform (CMP) (75)

vCommander (35)

Cloud Automation Software (31)

Cloud Management (31)

Cost Management (29)

[+ see all](#)

Blog Archive

April 2020 (1)

February 2020 (1)

December 2019 (2)

November 2019 (2)

October 2019 (1)

[+ see all](#)



FROM OUR BLOG

[REMOTE WORK HAS SPIKED – YOUR CLOUD COSTS DON'T HAVE TO](#)

[TAKING STOCK: THE CURRENT STATE OF ENTERPRISE CLOUD](#)

REDUCING YOUR AWS COSTS SEEM IMPOSSIBLE? WE'VE GOT GOOD NEWS

EMBOTICS + SNOW SOFTWARE: TECHNOLOGY INTELLIGENCE FOR A HYBRID WORLD

CONNECT WITH US



© 2021 EMBOTICS CORPORATION