Data Center Optimization Overview

Environment Analysis | Server Consolidation | Memory Improvement | Storage Efficiencies | Improved Performance

Data Center Optimizer is designed to aid corporate executives in reducing overall data center costs while maintaining or improving performance. It starts by taking a snapshot of the data center to obtain a baseline of current operations. The snapshot is passed through the Data Center Optimizer heat map to assess server, memory, and storage utilization and to determine opportunities for improved performance and consolidation. It can also provide guidance in the areas of network and infrastructure based on data from hundreds of runs and thousands of data points.

Executive Dashboards

The dashboard feature provides detailed—yet easy to follow— views into how reallocation may impact the current physical and virtual server environment. The assessment analyzed server configuration and utilization characteristics are based on five (5) metrics. These metrics are CPU, RAM, Disk I/O, Storage, and Network. The characteristics are modeled against a pre-defined target server platform to generate a new virtualization plan.

Server Consolidation Summary

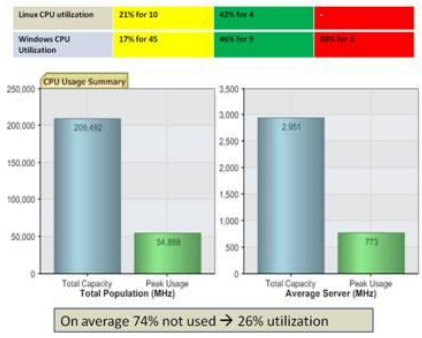
Servers			
	Linux	Windows	All
Total	16	62	78
Virtual	14	57	71
Physical	2	5	7
Percent Virtualized	100%	100%	100%

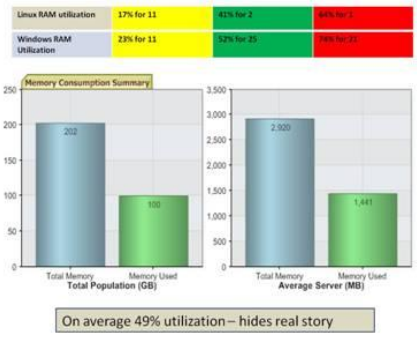
Server Utilization-All Servers			
	Unix	Linux	Windows
CPU		26.9%	24.9%
RAM		24.0%	54.5%
Net		0.0%	0.0%
Storage		11.9%	55.5%

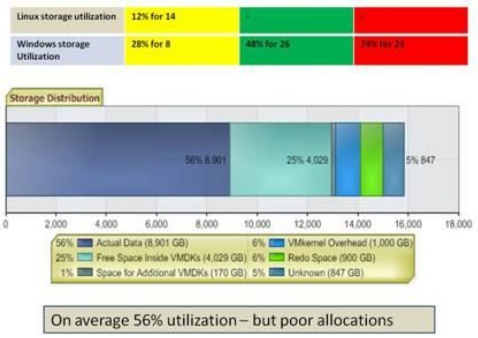
Server Utilization Distribution Linux			
	0% - 35%	36% - 60%	61% - 100%
CPU	21% for 10	42% for 4	None
RAM	17% for 11	41% for 2	64% for 1
Net	0% for 14	None	None
Storage	12% for 14	None	None

Server Utilization Distribution Windows			
	0% - 35%	36% - 60%	61% - 100%
CPU	17% for 45	46% for 9	80% for 3
RAM	23% for 11	52% for 25	74% for 21
Net	0% for 57	None	None
Storage	28% for 8	48% for 26	74% for 23

CPU, Memory, and Storage Usage







Server detail including peak average utilization for CPU, RAM, network, storage, disk I/O and disk bytes per second can be exported to a Microsoft Excel file, allowing users to filter on specific criteria such as CPU usage of less than 40%.

The information contained in the dashboards assists IT organizations in the planning and deployment of Data Center Optimizer recommendations such as consolidation or reconfiguration.

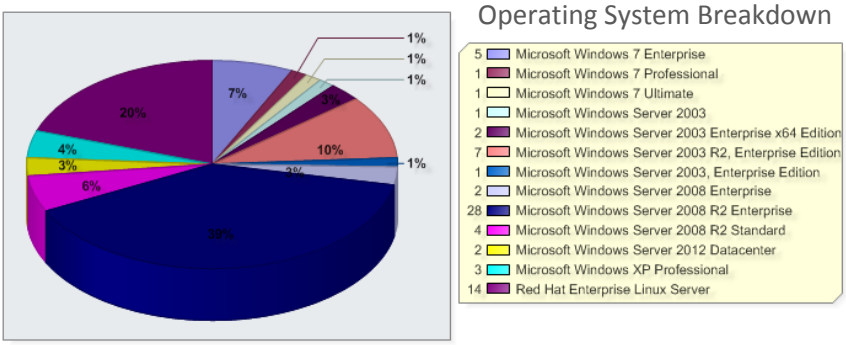
Best Practice Comparison

In today's rapidly changing IT environment, access to accurate industry norms and operational best practices is an asset to business leaders. Data center architectures are constantly being updated as core technology and business practices evolve over time.

Operating System Breakdown

Data Center Optimizer will scan and detect the current operating systems and across the physical and virtual environments. It provides a breakdown that is sophisticated enough to identify Microsoft Windows variants including multiple versions of Windows 7, Windows Server 2003, Windows Server 2008, Windows Server 2012, and Windows XP.

It is critical to identify and correct this type of disparity; it creates complexity and cost in application compatibility, maintenance, patching, and security.



Analysis and Recommendations

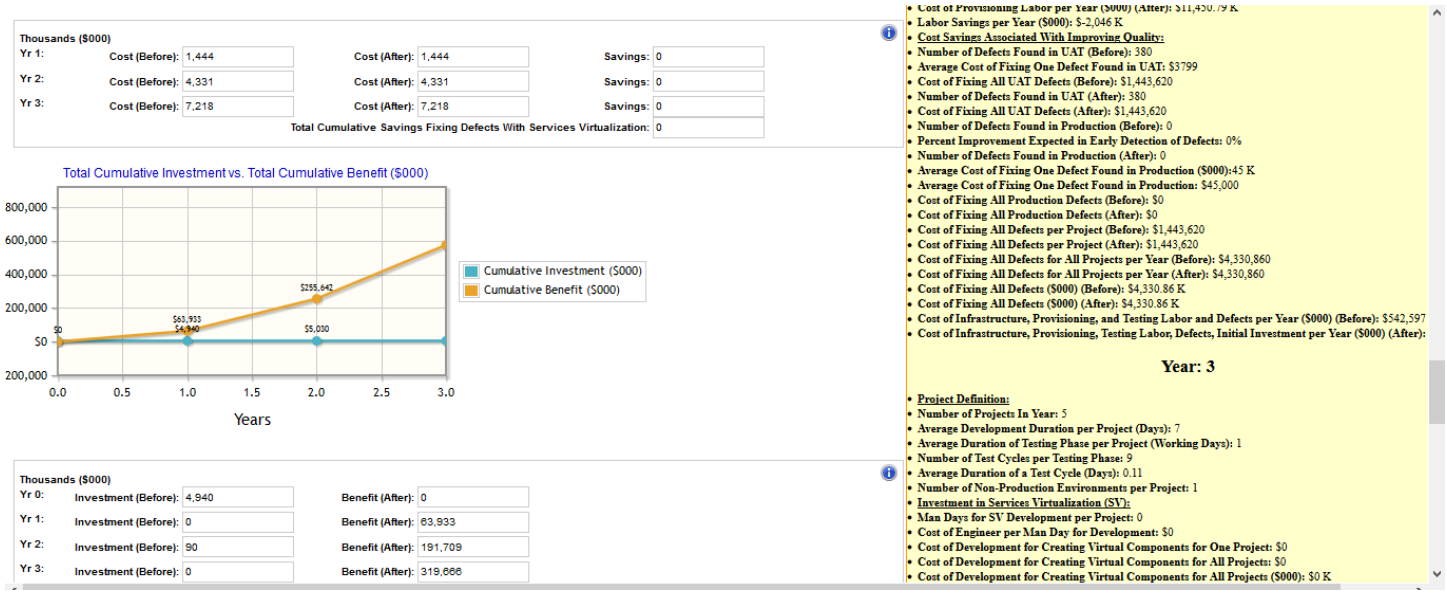
A review of the data center operating environment is conducted including physical, virtual, cloud, or a combination of these platforms. The data is analyzed to determine what steps can be taken to reduce costs and improve operating efficiency. For example, it shows where CPUs for servers are under-provisioned, over-provisioned, or operating within desired parameters along with RAM allocation levels.

In many cases alternative recommendations are provided to address the inefficiencies on affected systems. While this analysis is able to identify specific bottlenecks and over-provisions, companies must take into account the fact that changes to one or more configuration settings will have a cascading effect on other parameters. Data Center Optimizer has the flexibility to try multiple scenarios to increase the chances of achieving maximum efficiency while keeping business critical applications running smoothly.

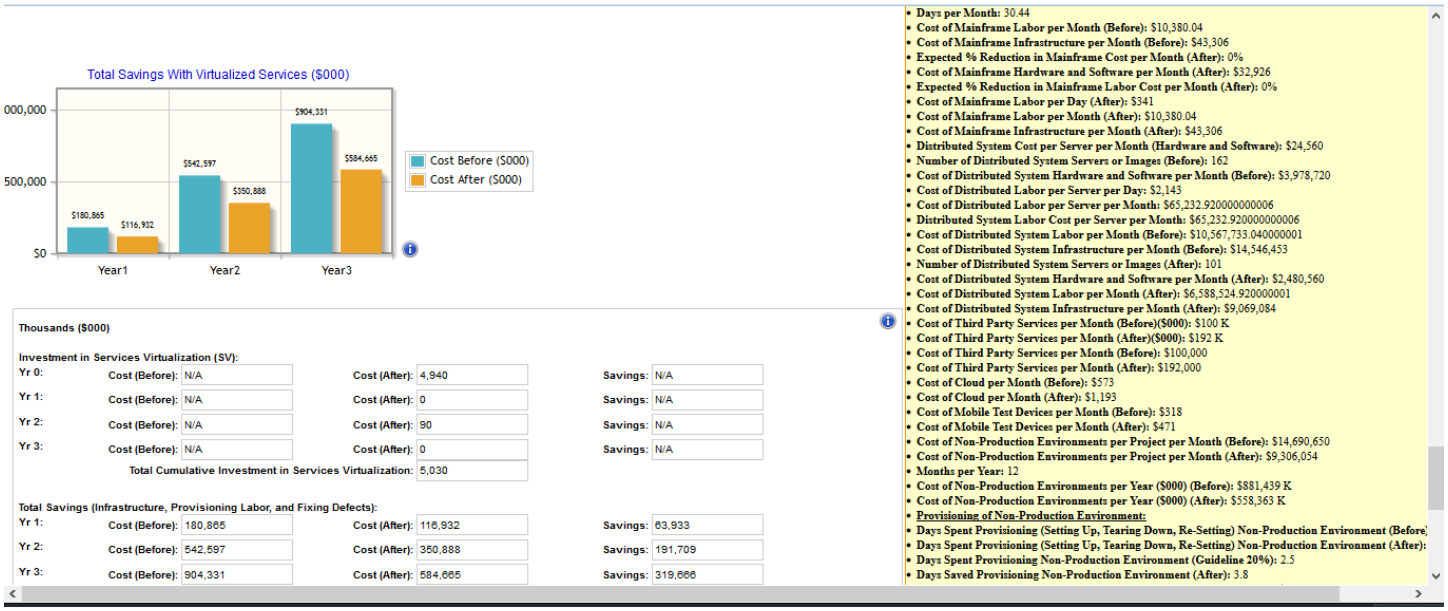
Cost Savings

There is a need in every industry for reliable, actionable information to help companies assess their data center environments and map out realistic plans to reduce operating costs and energy consumption. Implementation of Data Center Optimizer recommendations has been proven to reduce costs, based on thousands of successful engagements. Results show the cost-saving benefits quickly make up for the initial investment.

Sample Total Cumulative Investments vs. Total Cumulative Benefit



Sample Total Savings with Virtualized Services



Data Center Optimizer collects information and provides a comparison to industry best practices, enabling executives to quickly see the areas that need improvement. The benefit to IT professionals is that they will move from just making recommendations to actually having the tools and data to create step-by-step tactical plans to achieve the goals they recommend.