

# ASG-TMON® PERFORMANCE ANALYZER VIRTUALIZATION PLANNING TOOL (VPT)

For Virtualization Lifecycle Management and Cloud Computing Readiness

## OVERVIEW

While the promises of virtualization and cloud computing are great, many organizations are not prepared for the challenges that a virtualized data center present in managing the new cloud environments. A virtualized data center is more complex and offers unique challenges not faced in the physical environment. Issues commonly include VM sprawl, poor capacity management, performance bottlenecks, and difficulty pinpointing and resolving performance issues. In fact, virtualization may result in exactly the opposite of what was originally intended—too many relatively lightly-used VMs causing the unnecessary consumption of server resources, resulting in poor service delivery for cloud environments.

ASG-TMON® PA virtualization lifecycle management solution eliminates these issues and ensures that both the physical and virtual infrastructures are performing at their optimal levels at all times. Our approach starts before the first application is ever virtualized, and continues through the entire life cycle of systems management.

- **Discovery:** A disciplined approach begins with full understanding of the performance characteristics of physical and virtual environments
- **Analysis:** The keystone of proper identification of server virtualization is based on performance characteristics of supported applications
- **Planning:** A structured methodology for what-if modeling of planned virtualized environments eliminates risks and guess work
- **Implementation:** With confidence, driven by a well informed and thought-out plan
- **Monitoring:** Once servers are virtualized, the real capacity planning must take place. A complete view of all available information is vital.
- **Management:** Virtual environments require a disciplined approach to tracking historical growth trends, planned changes, failover, etc.

## BENEFITS

- Identifies good candidates for virtualization based on data collected
- Selects candidates for virtualization based on user defined criteria
- Analyzes size of servers that will run VMware ESX Server
- Maps virtualization candidates to target ESX Server systems subject to user defined server limitation and classification rules
- Analyzes resource usage on the target ESX Server systems including CPU, Memory, Disk IO/Sec, Disk KB/Sec, Disk Space, Network KB/Sec
- Models the performance of the target ESX Server systems to assess the impact of changes to the ESX Server environment

Select	System Name	Server Model Description	ESX Server Eased?	Host ESX Server Name	Target ESX Server	Class Used	Total Server Count	Server % Utilization	Server Capacity
1	CHACE01	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	18.31	24.9
2	CHACE02	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	13.67	24.9
3	CHADP01	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	14.20	24.9
4	CHADP02	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	20.86	24.9
5	CHAVG01	PowerEdge R610 (Intel Xeon X5520, 2.40 GHz)	Yes	CHAES01		1	4	4.43	32.6
6	CHADG02	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	22.07	24.9
7	CHADG04	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	No			2	8	1.70	68.1
8	CHABY01	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	20.85	24.9
9	CHABY02	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	23.65	24.9
10	CHABY03	PowerEdge R610 (Intel Xeon X5520, 2.40 GHz)	No			4	4	6.20	32.6
11	CHADG02	Dell Precision 790 (Intel Xeon 2.93 GHz)	No			2	2	6.98	24.9
12	CHADG04	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	No			2	8	11.17	68.1
13	CHABVAPP02	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	Yes	CHAES03		1	8	0.20	68.1
14	CHABVAPP01	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	Yes	CHAES03		1	8	1.54	68.1
15	CHAVABSD03	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	Yes	CHAES03		1	8	1.74	68.1
16	CHAVWEB01	PowerEdge 190 (Intel Xeon E5450, 3.00 GHz)	Yes	CHAES03		1	8	2.10	68.1

The Candidate Systems for Virtualization component identifies the systems and servers that could be virtualized based on their observed utilization rates and server capacity.

The ASG-TMON® PA Virtualization Planning Tool (VPT) automates many of the tasks associated with the virtualization lifecycle process.

VPT estimates the contention for virtual CPUs within each guest operating system running in a virtual machine and the contention for physical CPUs experienced by the virtual CPUs of the virtual machines as they contend for CPU service.

## IDENTIFYING VMWARE GROWTH AND SPRAWL

Virtualization has helped the IT industry deploy servers faster than ever before. While a fast turnaround time may be critical to meet short term business needs, how fast is too fast? With ease of deployment comes a new challenge - keeping track of the ever-increasing population of virtual machines and reporting on the growth of virtualization enterprise and clusters.

ASG-TMON® PA's VMware solution provides web-based reports to help pinpoint unwanted server proliferation, while at the same time allowing organizations to see the growth of their virtualized environment and help plan for the future.

ASG-TMON® PA tracks virtual machine growth over days, weeks or years to help quickly see how an organization's environment is growing, and if it is growing at the rate expected. This analysis helps identify when virtual machines are being unknowingly allocated and consuming valuable resources.

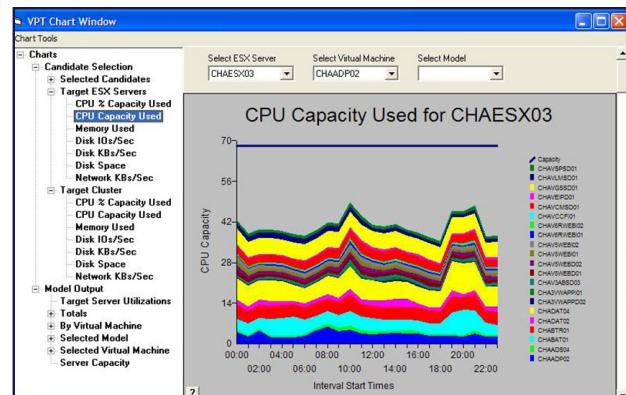
## FROM VIRTUALIZED INFRASTRUCTURES TO CLOUD COMPUTING

Cloud computing involves the delivery of hosted or virtualized services via the Internet, on a flexible, as-needed basis. It offers enterprises a way to cut costs and avoid having to rework or grow internal IT infrastructures to meet increased business demands. It enables IT organizations to increase hardware utilization rates and instantly scale to larger capacities—without having to invest in new infrastructure, train new personnel, or license new software. Cloud computing lets organizations take advantage of business applications, without significant upfront costs or the need to own the physical infrastructure to support those applications. It allows businesses to share infrastructure costs and thus reduce overhead for IT, maintenance, and support.

With all these advantages, Cloud Computing is something that IT organizations are in the process of grappling with, just like they did with outsourcing and virtualization. The key is to be ready, and to understand the right opportunities under which to leverage cloud computing. Just as ASG-TMON® PA provides the right information at the right times to properly exploit outsourcing and virtualization, ASG-TMON® PA offers the necessary methodologies and intelligence to best leverage cloud computing technologies.

Select	Virtual Machine Name	Target Server % Utilization	vCPU (Cont. Used)	Total Server Cores	Server Capacity	CPU Min %	CPU Max %	CPU No. of Shares	CPU Share %
2	CHAAEP02	7.56	2	8	68.1	0	200	1000	4.55
3	CHAAQ004	1.70	4	8	68.1	0	400	1000	4.55
4	CHAB010	7.53	2	8	68.1	0	200	1000	4.55
5	CHAB1101	8.85	2	8	68.1	0	200	1000	4.55
6	CHADAT02	2.95	2	8	68.1	0	200	1000	4.55
7	CHADAT04	11.17	4	8	68.1	0	400	1000	4.55
8	CHALNVAAPP002	0.28	1	8	68.1	0	100	1000	4.55
9	CHALNVAAPP01	1.54	1	8	68.1	0	100	1000	4.55
10	CHAVAS003	1.74	1	8	68.1	0	100	1000	4.55
11	CHAVW0E001	2.18	1	8	68.1	0	100	1000	4.55
12	CHAVW0E002	1.78	1	8	68.1	0	100	1000	4.55
13	CHAVW0E001	2.05	1	8	68.1	0	100	1000	4.55
14	CHAVW0E002	2.00	1	8	68.1	0	100	1000	4.55
15	CHAVW0E001	1.26	1	8	68.1	0	100	1000	4.55
16	CHAVW0E002	1.33	1	8	68.1	0	100	1000	4.55
17	CHAVW0E001	0.30	1	8	68.1	0	100	1000	4.55
18	CHAVW0E001	4.30	2	8	68.1	0	200	1000	4.55

The modeling component of the VPT can then be used to estimate contention for resources on VMware ESX server should the candidate systems be moved to that server.



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