SAS® IT Intelligence for VMware Infrastructure: Resource Optimization and Cost Recovery

Frank Lieble, SAS Institute Inc.

ABSTRACT

SAS® and VMware have collaborated on an offering that leverages VMware VirtualCenter with SAS® IT Intelligence. SAS IT Intelligence combines SAS expertise in data integration and analytics with a set of unmatched capabilities for enterprise-wide business intelligence.

This presentation will provide key insights that will allow IT organizations to effectively manage and optimize valuable virtual resources and to track and recover cost across both physical and virtual environments.

INTRODUCTION

Virtualization technology gives organizations the opportunity to drive capital and operational efficiency. As more companies adopt VMware Infrastructure as their primary platform for mission-critical applications, the need for IT resource utilization, performance monitoring, and capacity planning increases. Companies want to track compliance and accounting down to the minute, and they need a system that can predict needs and outcomes, enabling them to quickly make changes to service level agreements and costing models.

SAS and VMware have collaborated to provide a solution that enables IT to manage and optimize all physical and virtual IT operations. SAS® IT Intelligence for VMware Infrastructure gives organizations the insight and foresight to determine how, where, and when IT resources should be optimally deployed, while also providing an enterprise solution in a virtual environment for tracking and managing IT costs. This solution integrates both virtual and physical IT environments, providing a common view for forecasting and planning future IT infrastructure needs.

WHAT IS A VIRTUAL INFRASTRUCTURE?

A *virtual infrastructure* provides companies the ability to share physical resources (i.e., CPU, memory, storage, and networks) of multiple servers across the entire IT infrastructure. A *virtual machine* allows for the sharing of resources for a single physical server across multiple virtual machines for maximum efficiency. Resources are pooled and shared across multiple virtual machines and applications. Figure 1 illustrates a basic virtual infrastructure.
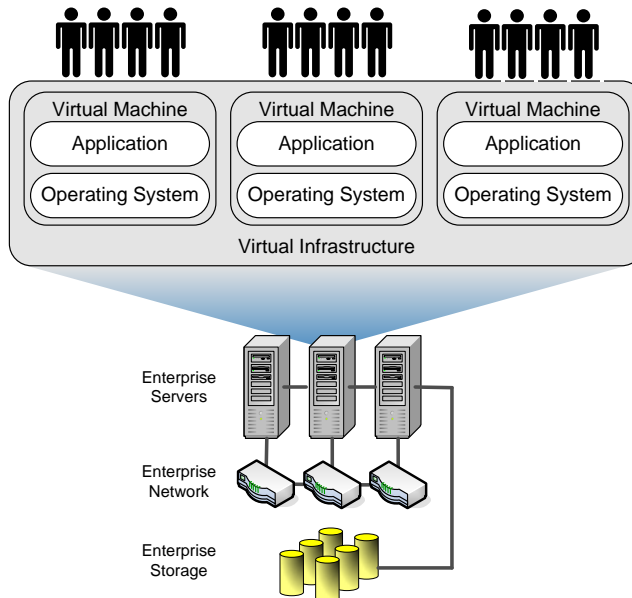

Figure 1 – Virtual Infrastructure

CHALLENGES OF MANAGING VIRTUALIZED INFRASTRUCTURES

As with any new IT technology, challenges in managing virtualized infrastructures quickly become apparent to IT organizations:

- *Tracking and optimizing physical and virtual resources* – Today's complex data centers must manage thousands of systems, and existing methods for tracking resource utilization are intensive and time-consuming.

- *Measuring use, availability, and performance of IT resources* – Data from multiple sources must be manually consolidated and analyzed to quantify and demonstrate IT value of systems, and existing methods for tracking resource utilization are intensive and time-consuming.

- *Managing IT costs* – Often viewed as a cost center, IT faces pressure for accountability, financial justification, and regulatory transparency. A system is needed to track costs and implement cost recovery/chargeback methodologies across physical and virtual environments.

- *Finding time for innovation* – IT runs the risk of being marginalized if it cannot contribute to innovation and growth in the organization. A centralized view of physical and virtual resources is needed to deliver IT services in a credible manner and to optimize infrastructure to meet business demands.

A partnership between SAS and VMware was formed to address these challenges.

SAS AND VMWARE PARTNERSHIP

VMware customers have harnessed the power of VMware Infrastructure to drive down costs, increase application availability, and provide operational flexibility to better manage IT capacity. Now they need a system that provides transparency into the performance and capacity utilization information so they can accurately apply chargeback costs, predict availability of IT resources, and make changes on the fly to maximize service level agreements (SLAs).

SAS IT Intelligence combined with VMware VirtualCenter (the management component of VMware Infrastructure) enables data centers to run, manage, account, and predict IT needs. SAS IT Intelligence for VMware Infrastructure integrates information from VMware VirtualCenter, physical hardware, and accounting structures, and runs it through analytic algorithms to produce the intelligence needed to support key business decisions. It can direct VirtualCenter to deliver services in a reliable manner, account for IT services down to the hour or minute, and feed the information into internal and external billing or revenue systems. The solution enables IT to better understand who is using certain IT resources and recover cost/chargeback accordingly.

SAS IT INTELLIGENCE FOR VMWARE INFRASTRUCTURE

VMware customers have harnessed the power of VMware Infrastructure to drive down costs, increase application availability, and provide operational flexibility to better manage IT capacity. Now they need a system that provides transparency into the performance and capacity utilization information so they can accurately apply cost recovery, chargeback costs, predict availability of IT resources, and make changes on the fly to maximize service level agreements.

SAS IT Intelligence for VMware Infrastructure enables IT to understand and demonstrate the value of their physical and virtual resources to support evolving business needs. Only SAS enables IT organizations to gain:

- An enterprise view of all IT resources and services – Integrate VMware performance and capacity utilization information with other IT resource measurements to monitor, analyze, and anticipate utilization and performance of your entire IT infrastructure.

- Operational effectiveness – Determine which virtual machines should be deployed on which physical servers to maximize licensing and service agreements.

- Foresight into planning scenarios – Gain insights into demand, capacity, and licensing scenarios needed to support future growth.

- Accurate cost recovery/chargeback mechanisms for IT – Make reliable cost information available for chargeback based on actual consumption of IT resources.

- Improved levels of service – Being tuned to business priorities enables IT to deliver services and resources in a predictable and timely manner.

- Credibility – Establishing the value and efficiency of IT resources and services supports faster, better decisions.

VIRTUALIZATION RESOURCE OPTIMIZATION AND COST RECOVERY

CONSOLIDATE, MEASURE, AND MANAGE

Consolidate, measure, and manage all IT resources and services in virtual and physical environments – The first order of business for IT Intelligence is getting past the perennial roadblock of disparate, heterogeneous data sources, including IT infrastructure, network systems, transactional systems, databases, financial sources, and workflow engines. Without the ability to extract, transform, and load infrastructure data on an enterprise scale, apply predictive analytics, and produce meaningful intelligence in a consistent, reliable manner, the measurement and management of IT resources will be nonexistent or suboptimal. With SAS IT Intelligence for VMware Infrastructure, you can gather and consolidate all IT resource measurement data. This solution stages, standardizes, transforms, aggregates, and delivers analysis and report-ready performance data from both physical and virtual data sources. It provides everything needed to analyze IT resource performance data for capacity planning, resource forecasting, and performance summaries. It gives decision makers the information they need for quick and accurate analysis of all IT resources to streamline the delivery of IT services. Figure 2 illustrates the process flow for accessing, consolidating, and managing virtual infrastructure measurement data.
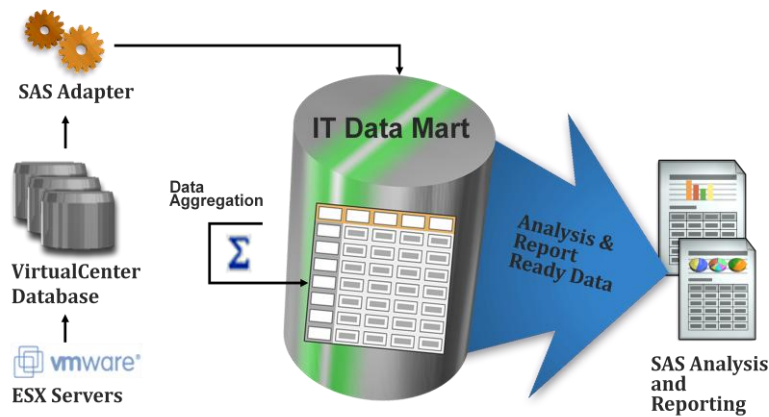

Figure 2 – Data Process Flow

RESOURCE AND COST OPTIMIZATION

Reduce IT costs through better use of resources – With a fact-based approach to managing IT resources, SAS IT Intelligence for VMware Infrastructure enables efficient IT procurement processes, deployment planning and operational activities that are required to effectively deliver IT services. Information from this solution enables IT organizations to uncover bottlenecks and address poor service level delivery. Through effective use of information and proper planning, personnel, facilities, hardware, and general IT operating costs will be reduced. Figure 3 illustrates a virtual infrastructure view of how resources (CPU and memory) are over or under utilized, which affects costs.
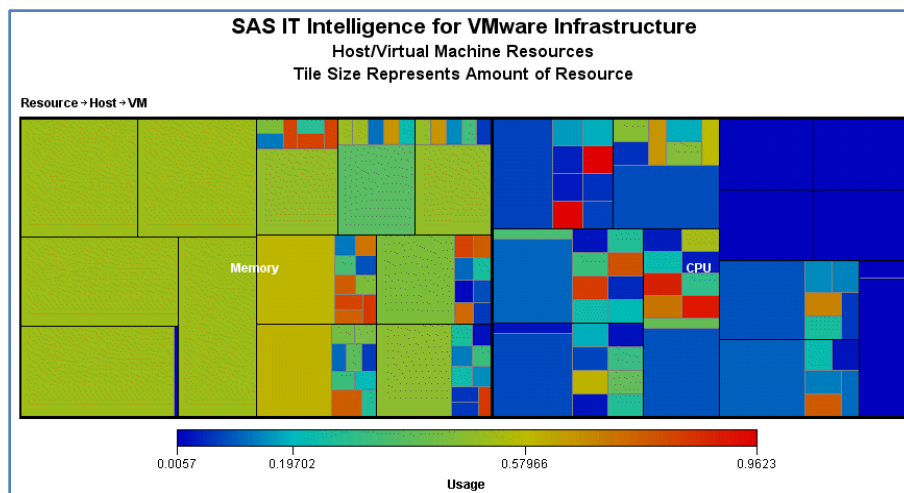

Figure 3 – Virtual Infrastructure Resource Utilization Tile Chart

ANTICIPATE DEMAND AND OPTIMIZE USE

Anticipate demand on physical and virtual resources and optimize use of all IT resources – With SAS IT Intelligence for VMware Infrastructure, companies can understand resource utilization and consumption in granular detail. It enables workload profiling, peak period analysis, and capacity forecasting, allowing companies to proactively predict when resource capacity will be exceeded and additional IT resources are needed. It provides the insights needed to effectively manage and optimize physical and virtual IT operations. Figure 4 illustrates the forecasting of virtual resources.
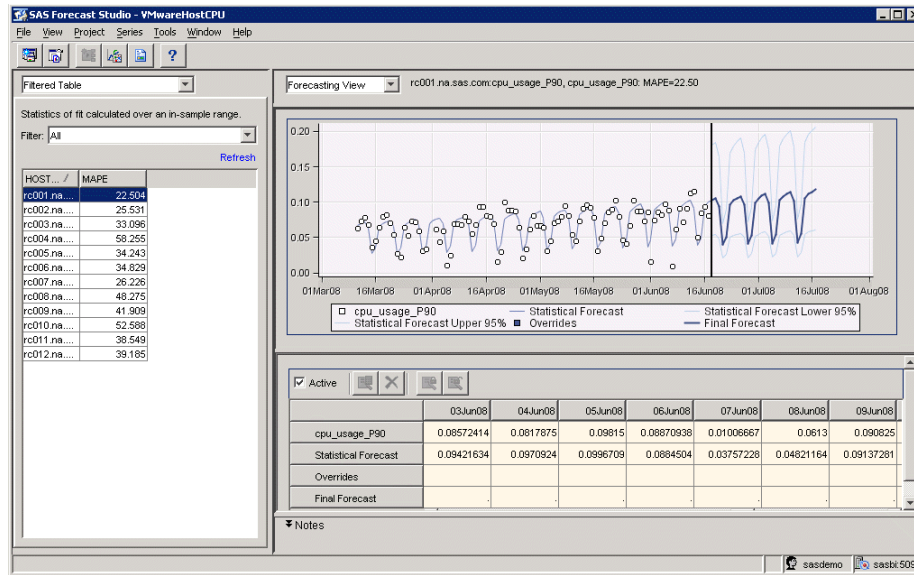

Figure 4 – Virtual Resource Forecast

REPORTING AND INFORMATION DELIVERY

Make reliable information available to support IT costing, budgeting, and profitability analysis – SAS IT Intelligence for VMware Infrastructure provides powerful query, reporting, and analysis functionality. IT dashboards and a Web-based interface enable different types of users to easily view, interact, and distribute resource performance information. Reporting and data visualization capabilities provide a centralized view of IT resources and services to help decision makers understand capacity, service levels, and costs in business terms. Figure 5 illustrates an example IT dashboard accessible via a Web portal.
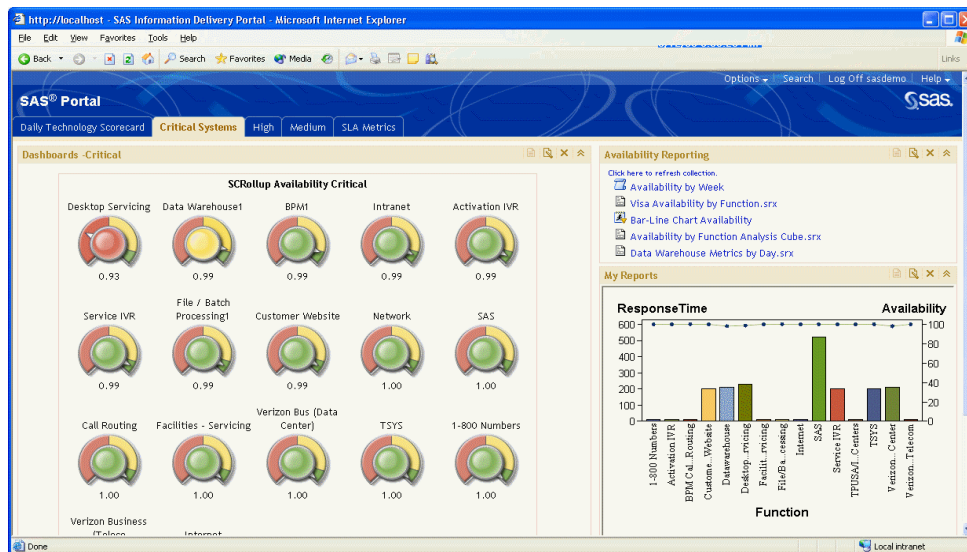

Figure 5 – IT Dashboard Accessible Via a Web Portal

COST RECOVERY/CHARGEBACK

Accurately charge business units based on consumption – Different IT organizations have different objectives in setting up cost recovery/chargeback mechanisms for IT. SAS IT Intelligence for VMware Infrastructure supports a wide variety of accounting methodologies, providing flexibility to meet needs now and as the IT organization changes. Figure 6 illustrates an example the cost recovery/chargeback of IT services utilizing a virtual infrastructure.
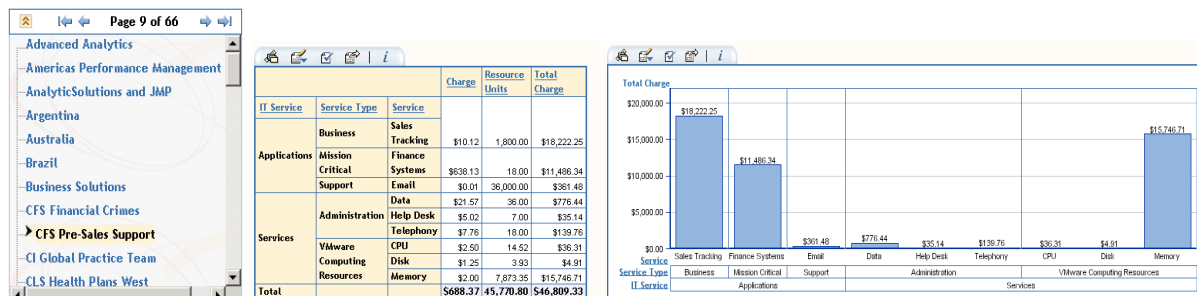

Figure 6 – Cost Recovery/Chargeback

CONCLUSION

SAS and VMware have collaborated on an offering called SAS IT Intelligence for VMware Infrastructure that leverages VMware offerings with SAS IT Intelligence. SAS IT Intelligence combines SAS expertise in data integration and analytics with a set of unmatched capabilities for enterprise-wide business intelligence. SAS IT Intelligence for VMware enables VMware field personnel to position SAS IT Intelligence software within the VMware Infrastructure landscape. This solution provides IT organizations key insights to effectively manage and optimize entire physical and virtual IT operations as well as recovering cost.

ADDITIONAL INFORMATION

For more information about SAS IT Intelligence for VMware Infrastructure:

- Solution: http://www.sas.com/solutions/itsysmgmt/vmware/index.html

- Webcast: http://www.vmware.com/a/webcasts/details/115

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author:

Frank Lieble
Senior IT Solutions Architect
IT Intelligence Global Practice
SAS Institute Inc.
100 SAS Campus Drive
Cary, NC 27513
Work Phone: 407-322-8114
Fax: 919-677-4444
E-mail: Frank.Lieble@sas.com
Web: http://www.sas.com/solutions/itsysmgmt/index.html

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